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COMPARATIVE FEDERALISM:

Best Practices Analysis of Environmental Protection Authorities in Federal States

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BEST PRACTICES ANALYSIS OF ENVIRONMENTAL PROTECTION AUTHORITIES IN FEDERAL STATES

Environmental Law Institute
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EXECUTIVE SUMMARY

Many nations throughout the world use a federalist form of government. Under this form of government sovereignty is shared between the central national government and constituent bodies, such as provinces or states. Shared sovereignty means that the two levels of government each have responsibilities to govern, some shared and some allocated to one or the other. This report provides a comparative study of how a number of federalist nations govern with respect to environmental issues, and more specifically pollution control and prevention. The principal nations studied include Brazil, China, Mexico, and the United States, while information on selected aspects of environmental governance is provided for Australia, Canada, Germany, and Switzerland.

At the most basic level these nations vary significantly in how they organize governance of pollution control and environmental protection. Brazil's constitution explicitly provides that the federal, state, and municipal governments share power to protect the environment, while Germany's constitution states that the federal government holds such power. Nevertheless, in both these nations, as with the others, legislation provides more specific direction concerning shared and divided authority to govern with respect to the environment. Such variation extends to all aspects of governance of environmental protection and pollution prevention and control.

The fundamental organization of government between federal and provincial or state bodies significantly affects allocation of authority over environmental and pollution matters. China is unusual in that its system is formally a unitary rather than a federalist form of government, yet provinces have significant authority to implement the general directives issued by the central government. In countries such as Switzerland and the United States the federal government has limited powers and cantons or states retain all residual power, which generally leads to greater autonomy in the constituent bodies. In contrast Mexico's version of federalism provides greater power to the central government. As a result the canton/state environmental agencies in Switzerland and the United States have more independence from the federal agencies than do Mexico's state agencies. These differences should be considered when making comparisons between the various federalist countries.

The case studies presented here demonstrate that there is no single best method and no single model for governing environmental issues in a federalist system. Best practices may be found in each of the nations studied and with respect to some issues it is not clear that any practice has clearly been demonstrated to be most effective. As a result, numerous sections of the chapter on "Best Practices" include examples from several countries in order to demonstrate the range of alternatives that have been put to use.

Of the countries studied, the United States has the longest experience with shared responsibility for environmental protection while China has perhaps the least experience. As a result of its long experience, the United States has developed strong institutions and extensive mechanisms for environmental protection and pollution prevention and control at

the federal and state levels. China, in contrast, is still developing its institutions and mechanisms for governing in this field. Despite this relative inexperience, however, China has developed a number of innovative and potentially effective institutions, including the adoption of 'green benches' by some of its courts. As a general matter the United States has well-developed institutions and mechanisms for fiscal management, oversight of environmental agencies, compliance monitoring, enforcement, capacity-building for state agencies, compliance assistance, accountability, addressing grievances, involving the public in decision-making, transparency, and prosecution of crimes. In part the effectiveness of these institutions and mechanisms is due to the type of federalism in the United States. The relative autonomy of US states has allowed many of them to make significant innovations in environmental policy and management at the state level, with many of the best policies and management ideas being adopted at the federal level.

Brazil's Ministério Público, or office of the public attorney, is one of the most effective institutions for assuring accountability of a nation's system for environmental protection. These public attorneys are charged with protecting the public interest and have broad powers to accomplish that goal including investigations and requiring police investigations. They operate at the federal and state levels and have oversight authority over all levels of government as well as to prosecute crimes and bring lawsuits on behalf of the public. The Ministério Público is effective at the state and federal levels in many roles from assuring accountability of the environmental agencies to civil and criminal enforcement against industrial and municipal or other government violators of environmental law.

Mexico has developed an ecological gross domestic product to measure progress toward its sustainable development goals. Mexico also has well-developed systems for monitoring and overseeing the funding of its environmental agencies, although the actual levels of funding are acknowledged to be lower than needed.

Each of the countries studied has mechanisms for providing the public with information about environmental issues and decisions and public participation in environmental protection. Several nations have particularly noteworthy provisions relating to public participation. Access to public information is a constitutional right in Mexico. Brazil has a national environmental education policy requiring environmental education in all public and private schools at all levels. Canada provides funding to non-profit organizations to participate in environmental impact assessment processes. China requires Environmental Protection Bureaus to respond to public complaints about pollution with an inspection within two hours in urban areas and six hours in rural areas.

The polluter pays principle is universally applied among the nations studied as key to effective enforcement of pollution control laws. The United States has developed a significant mechanism for assuring that violators do not obtain an economic benefit as a result of their non-compliance. US EPA has developed methods for determining that amount of benefit a polluter gained as a result of the violation and adds that amount to the penalty to assure that the penalty is greater than the illicit benefit gained through violating the law. The benefit can be measured by amount of money saved by not installing required equipment or by excess profits earned by failing to comply.

TABLE OF CONTENTS

INTEGRATIVE ANALYSIS OF BEST PRACTICES

I. Status and Design

Many nations have a federalist structure, a national government that shares significant power, authority, and responsibility for governing with state or provincial governments. As a general matter, significant variation exists among such nations in the degree of centralized versus decentralized power, authority, and responsibility and this variation extends to governance of environmental matters.

1. National Environmental Protection Authority (NEPA)

Most of the federalist nations studied in this report have a national environmental protection authority that is at the ministry or highest level of national government institutions. These include Brazil, China (created in 2008), Germany, and Mexico. The United States Environmental Protection Agency (US EPA) is an exception in not being a "Department" formally recognized as part of the President's Cabinet. Nevertheless, some US Presidents have included the agency in the Cabinet and the Administrator of the agency reports directly to the President. The NEPA can be insulated from political pressure to weaken enforcement efforts by denying the president or other appointing official the power to fire the head official of the agency except "for cause."

a. Authorization

Most of the countries studied for this report have constitutional provisions relating to the environment, often providing a right to a clean environment. Typically these are nations that have recently adopted new constitutions or amendments to the constitution and include Brazil, China, Germany, and Mexico. Federal States often include provisions establishing the structure of government in their constitutions. The constitutions of Brazil, Germany, Mexico, Switzerland, and the United States all divide governmental responsibilities between the national and state levels, with the German constitution being the most specific with respect to environmental issues and the US constitution the most general. It is unclear whether a particular degree of specificity is more effective, but the better practice may be to set out general powers of the different levels without being either too vague or too specific. In the case of both extremes (i.e., in Germany and the U.S.), the extremes have produced substantial litigation focused on "sovereign rights" rather than environmental effectiveness, and in both cases have produced judicial decisions that interfere with a rational administrative framework. A combination of overlapping powers and clear procedural mechanisms for resolving disputes between the different levels can help forge a partnership approach to environmental enforcement rather than an antagonistic division of jurisdiction and authority.

Legislation is typically the means for establishing and providing specific authority to NEPAs (Brazil, Germany, Switzerland, and Mexico), although the US EPA was established by executive action of the President. Although the latter form of authorization is potentially

less stable than legislation, the US EPA has remained and grown in responsibility over forty years, in part due to legislation granting it specific authority. China's Ministry of Environmental Protection (MEP) was established by action of the State Council, and previously existed as a lower-level administration before it was elevated to ministerial status. It appears that the best practice is to establish the powers, authority, and responsibilities of the NEPA through legislation.

b. Governance structure

At the national level the best practice for the structure of government agencies is a ministry of environmental protection that has broad authority for the environment. Ministry level is important for assuring that environmental protection is accorded the highest level of importance and priority within the national government structure. In Brazil, China, Germany, Switzerland, and Mexico the ministry-level organization has responsibility for natural resource protection as well as pollution control, while the United States separates authority for protection of natural resources among several ministry-level departments and the states, with the US EPA having little direct authority over plants and animals. Mexico, China, and Brazil also have separate national water authorities that have substantial authority, with Mexico's water authority having responsibility for water quality and supply. Mexico has also transferred jurisdiction over fisheries, once the purview of SEMARNAT, to the agricultural ministry (SEGARPA).

MEP is China's highest ranking central authority of environmental protection and operates directly under the State Council. MEP's minister can vote on State Council decisions.[1] Passed in 1989, the Environmental Protection Law gives MEP responsibility for conducting "unified supervision and management of environmental protection throughout the country."[2] The law also stipulates that other relevant state departments not under MEP, including marine affairs, fisheries, and transportation, shall also "conduct supervision and management of the prevention and control of environmental pollution."

In addition to departments and agencies of MEP, China also has fifteen environmental courts spread across seven provinces. With no national laws or precedents for central oversight governing environmental courts, they vary in procedure, interpretation, and focus from place to place. The environmental courts have created room for public interest litigation, a new frontier for Chinese law. So far, these environmental courts are in nascent, developing phases and accept relatively few numbers of cases, but they are significant in terms of enhancing enforcement and supervisory roles of EPBs, as well as building proficiency in environmental law.

The US EPA is significant in not having departmental (ministry level) status as a formal matter, though it is an independent agency whose Administrator reports directly to the

[1] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[2] Zhonghua Renmin Gongheguo Huanjing Baohu Fa [Law on Environmental Protection] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.

President. In addition to the EPA, the US splits authority for different aspects of environmental protection across several ministry-level departments: US Department of Justice (litigation), US Department of the Interior (wildlife, parks, recreation, natural resources, oil and gas on public lands, and coal mining), the US Department of Agriculture (forests, agriculture), and the US Department of Commerce (fisheries, ocean and marine).

c. Funding (sources, oversight, monitoring)

Obtaining secure funding for operation of the NEPA is a concern in most nations. Brazil, China, and Mexico dedicate certain fees for NEPA operations, but in none of these cases are such fees sufficient for all operations, and Mexico in particular recognizes that its NEPA (SEMARNAT) is severely underfunded. Most NEPAs rely to some degree on funding from the national budget, which is subject to variation according to changes in the political climate.

China's Ministry of Finance is responsible for setting the budget, which must be first approved by the State Council and the National People's Congress. Money is distributed to various ministries, including MEP, through the State Council. In 2009, 115.18 billion yuan were allocated to environmental protection, representing an increase of 10.7% from the previous year. Of that figure, 56.747 billion yuan were spent energy conservation and emissions reductions measures. Funding for renewable energy development totaled 7.679 billion yuan, and land conservation totaled 46.636 billion yuan.[3] At the close of each fiscal year, it is the Ministry of Finance's responsibility to review actual expenditures. In addition to national funding, fees collected from administrated violations are collected and given to the Treasury to be used for further prevention and control of pollution.[4]

Mexico's budget for SEMARNAT and that of its constituent agencies comes out of Mexico's federal budget, managed by the Secretary of Treasury and Public Credit (SHCP) under the budgetary law and a decree and regulation issued in 2006. Mexico has implemented a series of budgetary oversight mechanisms to ensure quality standards and effectiveness. These include, for example:

- General programming within the Directorate General of Planning and Budget (DGPP)
- Meeting submission deadlines for draft budgets set by the Ministry of Finance and Public Credit (SHCP) for the overall federal budget
- Developing, implementing, and updating a framework of 471 indicators for assessing priorities in budgetary programs according to the Model Results Based Budget Program (RBB) and Performance Evaluation System (DIS)

[3] Ministry of Finance, 2009 Budget *available at*: http://www.gov.cn/english/official/2010-03/16/content_1556778_3.htm.

[4] Law on the Prevention and Control of Atmospheric Pollution, Art. 14 (promulgated by National People's Congress, Aug. 29, 2005, effective Sept. 1, 2000) (P.R.C.) *available at:* http://www.greenlaw.org.cn/files/laws/air-pollution-control-law.pdf.

- Conducting activities requested by the Chamber of Deputies (Mexico's lower house of Congress) in conjunction with expanding the federal budget for the environmental and natural resources sectors
- Coordinating activities with the Secretaries of Labor and Social Security on operating programs that generate employment
- Managing and updating records in the 2010 investment portfolio of SEMARNAT and its various branches, with an eye to prioritizing projects with social and economic co-benefits
- Working with SHCP on reviewing and improving the Indicators for Results Matrix (MIRS) in conjunction with units operating programs within that budget program; also, adapting indicators developed by SHCP to special budgeting effectiveness issues within SEMARNAT's areas
- Better coordinating and linking results-based budgeting with strategic planning objectives in the Sector programming for 2007-2012 and the National Development Plan.

SEMARNAT's work is subject to oversight through the Annual Programme Evaluation operated by the National Council of Social Policy Evaluation (CONEVAL). This process involves an Outcomes Assessment to establish areas for improvement and corresponding recommendations. The relevant administrative unit then develops an integrated work program setting out steps by which the improvements will be made. CONEVAL and the relevant unit coordinate on the publishing and dissemination of reports.

In addition, SEMARNAT uses an Integrated System of Resource Administration / Government Resource Planning (SIAR/GRP). This is an electronic system to allow holistic planning for financial, material, and human resources. The goals of SIAR/GRP are to: unify operational criteria across programs; simplify processes; speed up the consolidation of information; improve planning and resources management; and meet Mexico's INTRAGOB transparency requirements.

In the United States, US EPA's funding is provided by the legislature on an annual basis, as is the case for all government agencies. This process is inherently political, with the agency submitting a proposed budget to the Office of Management and Budget (OMB), which is in the President's immediate office and prepares a consolidated budget for the entire executive branch. The agency's budget may be changed at this level to reflect the President's priorities and overall spending goals. It is then submitted to Congress, which uses it as a starting point for passing a budget, which is then used as guidance for passage of appropriations bills for specific programs and agencies. The appropriations bills control the amount of funding available to the agency and may differ in total amount and allocations to specific programs. This process makes it difficult for US EPA, or any federal department or agency in the US, to make specific plans beyond the current year as federal law prohibits the government from committing to spending money that has not been appropriated.

Oversight of US EPA's funding and how it is spent is provided at several levels by both the legislative and executive branches and is generally effective. The US Government

Accountability Office (GAO) is a nonpartisan agency of the US Congress and has authority to oversee the fiscal and management accountability of the federal government. GAO audits the financial statement of the executive branch as a whole and also undertakes special audits of specific agencies and programs at the request of members of congress. Committees in each house of Congress also oversee the spending and program effectiveness of EPA and all federal agencies.

Additional oversight of US EPA's financial management is provided by the executive branch, with OMB exercising oversight on behalf of the President. US EPA also has substantial financial management controls within the agency. Its Chief Financial Officer is responsible for financial management of the agency, while the independent Inspector General is authorized to investigate and report on waste, fraud, and abuse within the agency. Each of these oversight organizations regularly discovers and reports on examples of wasteful practices within EPA, but instances of fraud are relatively rare and when discovered are referred to the US Department of Justice for potential prosecution.

As is the case with all federal agencies in the US, the US EPA has an Office of Inspector General (OIG) which routinely audits EPA grants and contracts to ensure the absence of fraudulent action, and to ensure that the costs reported were accurate. They monitor grantee and contractor activities for signs of fraud, waste, and abuse, and therefore effectively audit EPA activities. The intention of this Office of the Inspector General is to ensure that costs claimed are acceptable and appropriate.

d. Organizational structure

It is not clear that a particular organizational structure is better at ensuring effective functioning of a NEPA, as the nations studied have a variety of structures and each appears to be successful to some degree.

An important responsibility of NEPAs in federal nations is to coordinate with state or provincial governments. China has five regional Environmental Supervision Centers operating under MEP to oversee and assist local environmental law enforcement, monitoring, and reporting. Mexico's environmental enforcement office, PROFEPA, has taken a step further with offices in all 31 states, assuring a federal enforcement presence throughout the country. The US EPA has 10 regional offices that oversee states' implementation of federal laws. This allows oversight to be at a level closer to the states and assures that the federal agency has staff with specific responsibility for assuring the federal laws are implemented effectively by the states.

e. Functions, responsibilities, and staff competencies

All NEPAs employ a multidisciplinary workforce with a wide spectrum of scientific expertise as well as economists, attorneys, and engineers. The largest agency studied, the US EPA, has 17,000 employees These employees are primarily based in the headquarters of US EPA in Washington, D.C., and in the 10 Regional Offices around the country. US EPA staff are highly qualified in many fields, including sciences, engineering, economics,

and law, and funding for staff is a significant portion of the annual budget request of the US EPA. By comparison, in Brazil, IBAMA employed over 4000 permanent staff members in 2008.[5] It also had 2000 employees working under temporary contracts and 227 trainees.[6] In China, as of 2008, SEPA had a staff of only 2200, of which 219 worked as administrators in the Beijing headquarters and approximately 2,000 worked in SEPA-affiliated offices around the country.[7] Since SEPA's conversion to MEP, its staff size has grown, but MEP's capacity still remains limited.

f. Relationship to state agencies including oversight and grants

The relationship between federal and state agencies varies widely among the studied countries. In China and some European systems, such as Switzerland, the state agencies are essentially devolved offices for carrying out the federal law, with little autonomy or independent decision making authority.[8] In other countries, particularly Mexico and the U.S., a much stronger emphasis is placed on autonomous decision making by state-level authorities. In both Mexico and the U.S., however, the Constitution makes clear the supremacy of federal law. In the U.S. and Australia, the relationship is explicitly governed by laws and policies intended to create a "cooperative federalism" in which power is shared between state and federal authorities with the purpose of creating a comprehensive scheme for implementation. In Mexico, SEMARNAT will enter into binding agreements with states that devolve power to the state and leave the federal agency with virtually no oversight authority. Once the state takes over an area of environmental law, the relationship is governed by contract theory, with the federal government able to hold the state accountable for breaches. This is perhaps the highest degree of decentralization.

The Mexican framework environmental law, LGEEPA, delineates which environmental responsibilities are in the hands of the federal government, the state governments, and municipalities, and allows the federal government to coordinate its duties with state and local governments. Generally, states have the power to make policy and regulate for compliance where express authority has not been granted to the federal government. In terms of financial support to states, in 2010, SEMARNAT will distribute $1,340 million pesos to state programs, a 68% increase over 2009. These direct grants are contingent on state compliance with agreed upon obligations, and SEMARNAT will use the threat of removing the subsidies to the states to spur more aggressive state action.[9] SEMARNAT also provides support to state environmental agencies through the Environmental Institutional Development Program (AIDP). In 2007, 2.5 million pesos were transferred to seven states to undertake ecological surveys. In 2008, 20 milllion pesos were dedicated to

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[5] *Annual Report of Audits of Accounts*, Federal Bureau of Internal Control (2008), *available at* http://www.cgu.gov.br/relatorios/ra224272/RA224272.pdf.
[6] *Id*.
[7] Alex Wang, *The Role of Law in Environmental Protection in China: Recent Developments*, VT. J. ENVTL. L. 8 (2007), *available at:* http://www.vjel.org/journal/VJEL10057.html.
[8] *See, e.g.*, Bundesverfassung der Schweizerischen Eidenossenchaft [BV], Constitution fédérale de la Confédération Suisse [Cst] [Constitution] April 18, 1999, art. 45, ¶ 1-2, art. 48a, ¶ 1 (Switz.).
[9] *See* Acuerdo que establece las Reglas de Operación para el Otorgamiento de Subsidios del Programa de Desarrollo Institucional Ambiental. Diario official de Secretaria de Medio Ambiente y Recursos Naturales. December 29, 2009.

state entities, including 8.4 million to undertake 23 ecological studies in 14 states, and 1.5 million to undertake reviews and improvements in state environmental laws in 10 states.

In the U.S., many of the national pollution control statutes (Clean Air Act, Clean Water Act, and the solid and hazardous waste law, for example) allow US EPA to delegate responsibility for implementing the requirements of the federal law to the states if a state demonstrates that it has laws and standards that meet the minimum federal requirements and has the capacity to implement the program. Authorized state programs generally must meet requirements for reporting information back to the US EPA. This information includes environmental indicators and data on state implementation and enforcement actions. The US EPA oversees implementation of approved state programs and may withdraw approval of a program or portion of a program if it determines that the state is not meeting the minimum federal requirements. The US EPA also provides a wide range of grants to states for program development, as well as education, research, and pollution reduction.

2. State Environmental Protection Authorities

a. Authorization including relationship to national EPA

The manner in which state agencies are set up depends on the nature of the federal system in question. For example, in the U.S., states are regarded under the Constitution as retaining many of the fundamental aspects of sovereignty. Thus, all states in the US have their own environmental agencies, which are authorized under state law and primarily accountable to the governor, legislature, and residents of their respective states. The U.S. federal government has no authority to establish these entities or mandate that they undertake specific duties.[10] Typically, however, under the "cooperative federalism" statutes such as the air and water pollution control statutes and the solid and hazardous waste disposal statutes, states can choose to either implement federal laws under programs that they design, approved by US EPA, or simply allow the federal EPA to retain control over the implementation of the federal law. State programs are created by the states, and may vary from one state to the next in terms of authorities and responsibilities, including subjects not covered under the federal environmental laws.

Switzerland's system is a dramatic contrast. In Switzerland, both the cantons' and Confederation's authority to create environmental protection agencies was established by the 1966 Federal Act on the Protection of Nature and Cultural Heritage. The statute states that "[t]he cantons shall set up a specialist agency to consider environmental questions or designate existing public agencies to carry out this task."[11] Thus the national government directly mandated to the cantons that they must establish environmental agencies. In China, regional and local environmental protection authorities are called Environmental Protection Bureaus (EPBs), which operate on provincial, municipal, and county levels. EPBs are

[10] *See, e.g.,* New York v. United States, 505 U.S. 144 (1992) (holding that option provided to states by federal legislation to either regulate radioactive waste according to federal standards or take title to the waste and bear liability for damages was constitutionally impermissible intrusion of state sovereignty).
[11] Federal Act on the Protection of Nature and Cultural Heritage, art. 4, § 1 (July 1, 1966).

established through the respective local people's governments.[12] In reality, they are under the close supervision of the federal government and are tasked with carrying out "unified supervision and management of the environmental protection work within areas under their jurisdiction."[13]

In Mexico, state agencies have wide autonomy under decentralization programs, but, similar to Switzerland and China, these programs are set up and authorized by the federal constitution and the federal environmental law. In many cases the state agency may have been technically established by state-level authority, but in doing so, the state was acting on the mandate of the national government to create state-level bodies to take on environmental protection obligations. Mexico's national law, LGEEPA expressly gives states environmental responsibilities to: devise and evaluate environmental policy; make use of state environmental policy instruments, such as environmental impact statements (EIAs), in those instances not expressly reserved to the Federation; protect and restore the environment and the ecological balance of states where express jurisdiction has not been granted to the Federation; prevent and control air pollution from stationary and mobile sources which are not under federal jurisdiction; establish, administer and guard natural protected areas; regulate non-hazardous solid and industrial wastes; monitor compliance with Official Mexican Standards (NOMs); and other powers.

The1996 amendments to LGEEPA accelerated the process of devolution of environmental authority. Heightened duties were not delegated to states that did not have the necessary local laws or administrative agencies in place. SEMARNAT (or its predecessor, SEMARNAP) was responsible for enforcing federal environmental standards in the states that had not yet enacted environmental laws.[14] At this stage all Mexican states have enacted at least basic environmental laws.[15] Those still lacking LGEEPA-like regulations generally incorporate the federal LGEEPA regulations. The backstop of federal environmental standards and regulations in place and enforced during the transition period to greater decentralization and competent state control of environmental matters in Mexico appears to work well.

Germany represents a hybrid approach between countries like the U.S., which has virtually no federal authority to establish or directly control state environmental agencies, and federal systems such as those found in Mexico and Switzerland, which mandate the creation of state-level environmental agencies through national legislation. In Germany, a constitutional amendment in 1994 established a new, justiciable constitutional rule that

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[12] *See*, e.g., Dalian Environmental Protection Bureau: http://www.epb.dl.gov.cn/English/index.aspx, Shaanxi Environmental Protection Bureau: http://www.snepb.gov.cn/admin/pub_newsshow.asp?id=1000026&chid=100139, and Hubei Environmental Protection Bureau: http://www.hbepb.gov.cn/jgzn/zyzz/200910/t20091016_25683.html.

[13] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 7 Tiao [Law on Environmental Protection, Art. 7] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.

[14] LGEEPA, Transitory Provisions, arts. 3 & 5 DOF Jan. 28, 1988; *see also* George R. Gonzalez & Maria Elia Gastelum, Overview of the Environmental Laws of Mexico (1999), http://www.natlaw.com/pubs/spmxen13.htm.

[15] Summary of Mexican Laws § 2.

certain substantive areas of law are reserved only to the states, and federal legislation intruding on those areas could be overturned in court. This was called the "subsidiarity principle." This ultimately proved unworkable in practice due to excessive litigation over the exact contours of what was intended to be a bright-line rule. As a result, Germany amended the Constitution again in 2006. Rather than reject the subsidiarity principle altogether, the national government restricted its application to a narrower set of policy areas. The current German Constitution approaches the balance of competencies between the national and state level by establishing three categories of powers: The first category are powers reserved exclusively to the federal government (the states may not legislate at variance to these).[16] The second are powers on which the federation may legislate, but states can override federal legislation with their own, so long as the federal legislation is not necessary for the "the establishment of equivalent living conditions throughout the federal territory or the maintenance of legal or economic unity renders federal regulation necessary in the national interest."[17] (This is the formulation of the subsidiarity rule.) These powers include hunting (except the law on hunting licenses), protection of nature and landscape management, land distribution, regional planning, and managing of water resources.[18] The third set of powers govern matters "under concurrent legislative powers" but not subject to the subsidiarity rule. These include virtually all other areas of environmental law.[19] In these areas, the two levels share constitutional power, with federal law recognized as supreme in the case of conflicts between the two. Article 83 of the German Constitution states: "*Länder*[states] *s*hall execute federal laws in their own right insofar as this Basic Law does not otherwise provide or permit." Thus, environmental protection is a concern to German states in the implementation of federal legislation. Although some environmental issues fall only under federal statutes, states have a substantial independent authority regarding environmental law making and enacting and carrying out their own authorities for environmental protection.

b. Governance structure

In Brazil, states have the power to organize themselves and to be governed by a Constitution and laws of their making.[20] At the state level, laws are enacted by the State Legislative Assembly, which is composed of State Deputies.[21] The state environmental board, CONSEMA, further defines these laws by passing regulations. CONSEMA is the state equivalent of CONAMA.

Brazilian state environmental agencies (SEMAs) roughly correspond with the federal environmental agency (IBAMA) in terms of responsibilities. These agencies "issue licenses related to industrial plants and any other activity that may have an effect on the environment, and also investigate complaints about environment pollution and damages."[22] While there is no direct state correlation to the federal Ministry of Environment,

[16] German Const. arts. 73, 71.
[17] *Id.* art. 74(1).
[18] *Id.* art. 72(2).
[19] *Id.* art. 74.
[20] EDILENICE PASSOS, DOING LEGAL RESEARCH IN BRAZIL 13 (2001).
[21] *Id.* at 21-22.
[22] de Moraes Filho, *supra* note 7 at 144.

Governors' environmental secretaries may play a similar advisory role to the chief executive in each state.

As in Brazil, US states have the power to govern themselves under their own laws. The state environmental protection agencies in the US are each created by their respective state governments and have varying authorities and responsibilities. Most states have their own environmental protection laws, some essentially mirroring the federal laws while others have integrated statutes covering the environment in a more comprehensive manner than the federal statutes. Some states provide the state agency broad authority to protect the environment, while others limit their agency to carrying out specific tasks. In many cases, the state environmental agency is directly responsible for the implementation and enforcement of federal and state environmental statutes, as a result of being approved by the US EPA to implement the state's laws in lieu of the federal pollution control laws.

c. Funding (including degree of reliance on national EPA)

Currently in China, provincial governments fund provincial EPBs, while municipal and county governments fund their respective EPBs,[23] but MEP also provides some funding to local EPBs to develop and implement projects, particularly in the interior provinces and rural areas. In 2008, at the first National Teleconference on Rural Environmental Protection Work, the State Council established a special fund out of the Central Budget that allocates 500 million RMB to reward pollution control in rural areas. This is the first such program dedicated to provide rural financial assistance for environmental compliance.

In Mexico, the federal government is aware of the limited financial capacity of the public sector for carrying out environmental management. For example, in 2009, SEMARNAT released a plan for a National Program for Prevention and Integral Management of Waste 2009-2012. Though the Plan did not offer direct funding from SEMARNAT, it contained a section noting possible financial mechanisms to support implementation of components of the national plan. Of particular note is that the National Bank of Public Works and Services (BANOBRAS) offers financing and technical assistance to states and local governments on, among other things, natural resources and environmental protection. The National Infrastructure Fund was created in 2008, and is funded and managed by BANOBRAS. It provides support on solid waste for municipalities, groups of counties or regions with more than 100,000 residents, with the purpose of developing integrated waste management plans in partnership with the private sector. BANOBRAS also oversees the Metropolitan Fund, which finances plans, studies, assessments, programs, projects, operations and infrastructure and facilities in metropolitan areas particularly related to sanitation and waste of all kinds, and the protection of natural resources and the environment.

Attempts at implementing user fees in Mexico have faltered despite repeated attempts. The federal law on waste management, for example, authorizes municipalities to charge resident-users for integrated waste management, but local authorities have not implemented

[23] Stefanie Beyer, *Environmental Law and Policy in the People's Republic of China*, Oxford University Press (2006).

this option on a wide scale due to political and social resistance. Similarly, with respect to cost recovery for water supply and sanitation systems, because it is left to each municipality to set pricing for water tariffs, the national average is very low, at 2 pesos for 1000 liters as of 2007, far too low to cover capital costs and outlays. Mexico is currently engaged in a pilot study to determine if waiver of water use and discharge fees for users who install clean technologies will be successful and whether such an incentive can be applied in other contexts. As a matter of best practices, it may be more effective to have user and permitting fees set in a consistent manner across the entire federal system, perhaps by a dedicated authority that has real and perceived legitimacy and whose members do not have conflicts of interest. Efforts to privatize water management have met strong resistance throughout Mexico.

The Swiss Confederation must provide the cantons with sufficient financial resources and "contribute towards ensuring that they have the funds required to fulfill their tasks."[24] Two provisions of the 1966 Federal Act on the Protection of Nature and Cultural Heritage govern financial support to the cantons for environmental protection initiatives. The first states that "[t]he Confederation shall provide the cantons with global compensatory payments within the scope of the authorized credits on the basis of programme agreements for the protection and upkeep of biotopes of national, regional, and local importance and for ecological compensation."[25] The second provision allows the Confederation to support cantonal initiatives to protect nature, cultural heritage, and monuments by providing global financial assistance.[26] The amount of financial assistance is determined by the importance of the site in question and is only provided for cost-effective measures that are carried out in a professional manner.[27]

In the US, states receive funding from a number of different sources, including the US EPA. According to a study by the Environmental Council of the States (ECOS), federal funds contributed to an average of 23 percent of the source of state environmental agency funds during the period from 2005 to 2008. Other sources of funding for state environmental agencies include general state revenue, permit fees, bonds, and state trust bonds.

d. Accountability and reporting to national EPA

As a general rule, all countries studied impose obligations on states to report to the NEPA on status of enforcement and accomplishment of environmental standards. However, countries vary in the types to mechanisms used to obtain state-level compliance with federal standards. Government agencies in Brazil on the federal, state, and municipal level are held accountable by the Ministério Público (office of public attorneys). Often described as the fourth branch of Brazil's government, the Ministério Público is charged with investigating and prosecuting violations of law, as well as the failure of government

[24] Bundesverfassung der Schweizerischen Eidenossenchaft [BV], Constitution fédérale de la Confédération Suisse [Cst] [Constitution] April 18, 1999, art. 47, ¶ 2 (Switz.).
[25] Federal Act on the Protection of Nature and Cultural Heritage, art. 14 (July 1, 1966).
[26] *Id*. at art. 13, § 1.
[27] *Id*. at art. 13, §§ 3-4.

agencies to carry out their respective duties. The Ministério Público does not have discretion with regard to whether suit should be filed; if a violation has occurred, it must bring an action against the responsible parties or agencies. In addition, IBAMA oversees some activities conducted by the state environmental agencies. The National Environmental Policy authorizes IBAMA to take over an activity, such as licensing, if a state is delinquent in accomplishing a task.

In the United States, the US EPA has specific reporting requirements as a means for having a basis to evaluate a State's program. These requirements include self-assessments and reports on program activities, and the US EPA can review programs through the use of file audits, inspections, annual program reviews, information database reviews, and permit reviews. States also have their own reporting requirements to the state governor and state legislature. States sometimes report finding these reporting requirements to be redundant and burdensome, and – in response – the US EPA has made efforts to streamline the reporting process. States generally also have their own environmental standards, which must be at least as stringent as federal standards, where such standards exist.

When a U.S. state environmental agency wishes to implement the requirements of a federal environmental statute it must submit an application with state laws, regulations, and evidence that it has sufficient staff and funding to successfully implement the provisions of the particular federal program e.g. the water pollution control program. US EPA reviews the proposed program and may approve it if the state has demonstrated that it meets the federal requirements. Once approved a state administers its own laws and regulations with respect to that program (e.g. the water pollution control program) in lieu of the US EPA applying the federal law. State environmental programs also work with the Regional Offices of the EPA. The US EPA retains the power of oversight of these programs. This authorization of state programs allows the implementation and enforcement of environmental laws to be carried out by those closest to the issue, but is highly complex and can create difficulties for businesses that operate in many states.

Problems can arise when the federal NEPA is restricted in its ability to oversee state efforts. This is exemplified with respect to air pollution control in Mexico. Mexico established a clear split between air pollution sources under federal, state, and municipal jurisdiction. Municipalities were given jurisdiction over mercantile and services point sources such as restaurants. Federal air jurisdiction covers the following fixed-source industries: chemical, oil and petrochemical, paint and ink, automotive, metal works, glassworks, electric power, lime, cement and asbestos, and hazardous waste treatment. State jurisdiction covers mobile sources and other emission sources not covered by federal or municipal jurisdiction. The federal government was given little backstop or oversight authority with respect to air emissions sources outside its jurisdiction. The states have had difficulty meeting their obligations with respect to those sources, but the federal government has little authority to step in, take over programs, or take legal action against delinquent state-level programs. As a result, OECD recommended in 2003 that the federal government needed to extend federal air emissions regulation to additional industrial sectors, because

e. Functions, responsibilities, and staff competencies

The responsibilities of state environmental agencies in Brazil mirror those of the federal agency, but because the states are closer to the specific problems they are usually the point of first contact for problems. As a result of the similarity in responsibilities, state personnel have similar competencies as the federal agency staff.

Each of Mexico's thirty-one states now has its own framework environmental law modeled on the federal law.

In the United States, states programs that have been approved by US EPA have primacy on the implementation and enforcement of federal environmental statutes and the US EPA is responsible for oversight and setting national standards and priorities. Personnel in both the US EPA and state environmental agencies have backgrounds in areas including science, law, policy, technology, and engineering.

II. Functions and Operations (including allocation with states)

1. EIA

Laws to require environmental impact assessments (EIA) for major projects are one of the most basic regulatory tools for environmental protection, and every federal country researched has an EIA law. These laws differ in their scope and the manner in which they structure the relationship between the state and federal levels.

The scope of an EIA law refers to the types of projects and activities required to obtain an EIA, as well as the ultimate authority of the government to authorize or deny projects based on the EIA. For example, EIA in Australia is carried out at the federal level under the Environmental Protection and Biodiversity Conservation Act of 1999. The EPBC Act requires EIA for projects impacting the following eight matters of "national environmental significance": world heritage sites; national heritage sites; wetlands of international importance; listed threatened species and communities; listed migratory species; nuclear activities; the marine environment; and the Great Barrier Reef Marine Park.[28] Ultimate decision making authority on EIA under EPBC Act rests with the Minister for Environment Protection, Heritage and the Arts, a political appointee who serves at the pleasure of the Prime Minister.

In Mexico, the law governing EIA takes a more general approach, requiring an Environmental Impact Statement (EIS) to be prepared for (1) projects that may cause ecological imbalance; or (2) projects that exceed the limits or conditions set in an Official Mexican Standard (NOM). Mexico's EIA regulation uses a more specific, "list-based" approach when determining whether to require a more comprehensive "regional" EIS rather than a "particular" EIS. This list expressly includes: industrial and aquacultural parks

[28] EPBC Act §§ 12-24C.

and aquaculture farms of more than 500 hectares; highways and railways; nuclear power plants, dams, and projects that alter hydrological basins; works or undertakings included in a partial urban development or zoning plan or program; works or undertakings to be carried on in a determined ecological region; and projects to be carried on at sites for which cumulative, synergetic or residual impacts are foreseen by reason of the different regional environmental components, which may lead to the destruction, isolation or fragmentation of the ecosystem.

In several countries, the EIA law gives the government the power to make a substantive decision approving or denying projects based on the EIA. In Brazil, the results of environmental impact assessments are binding upon licensing authorities. For example, if the assessment concludes that significant environmental harms will occur if the project moves forward, the licensing agency may not issue a license. Project developers are responsible for preparing environmental impact assessments, which frequently results in submissions favoring their position. State and federal environmental agencies have the discretion to seek additional studies if the original assessment is insufficient. If an agency fails to request necessary studies, the Ministério Público may have grounds to file a lawsuit. Similarly, in Mexico, on the basis of the EIA, SEMARNAT can authorize the project, authorize it with conditions, or deny authorization outright. PROFEPA is charged with performing inspections and compliance oversight of the EIS project and may impose safety measures or sanctions. It does this through notification by citizen complaint, on the recommendation of SEMARNAT, or through its own audits and inspections.

In Switzerland, a general standard is defined in the statute for which projects require EIA, while an administrative body is charged to develop a specific list of projects based on that standard. Under the 2008 Federal Act on the Protection of the Environment, EIAs are mandatory for those installations "that could cause substantial pollution to environmental areas to the extent that it is probable that compliance with regulations on environmental protection can only be ensured through measures specific to the project site."[29] It is the responsibility of the Federal Council to designate the type of installations that are subject to EIAs.[30] The Council also has the discretion to determine "threshold values above which the assessment must be carried out."[31]

While many countries include private actors in the scope of projects that require EIA, several countries notably limit EIA requirements to government activities. EIA in Canada is guided and supported by the Canadian Environmental Assessment Agency (CEAA), under the Environmental Assessment Act of 1999 (EAA), as amended in 2003. EAA procedures are triggered generally where a federal authority (i) is the proponent of a project; (ii) lends or contributes financial assistance for a project to proceed; (iii) provides an interest on federal lands to enable a project to proceed; or (iv) issues a permit or other authorization specifically identified by regulation to trigger EAA.[32] Actual responsibility for carrying out EIA is in the hands of the relevant federal department, known as a

[29] Federal Act on the Protection of the Environment, art. 10a, §2 (Aug. 1, 2008).
[30] *Id.*
[31] *Id.*
[32] EAA § 5.

responsible federal authority (RFA),[33] with most of the actual preparation of EA handled by project proponents themselves.

The United States has one of the most limited frameworks for EIA. The National Environmental Policy Act (NEPA) generally requires an environmental impact statement (EIS) for major actions proposed by federal agencies which could have a significant environmental impact. The first step of this review process is to conduct an Environmental Assessment (EA) to determine whether it is necessary for the federal agency to conduct an Environmental Impact Statement (EIS). If the EA shows that an EIS is not necessary, a Finding of No Significant Impact (FONSI) is issued. If an EIS is necessary, the agency submits a Draft EIS -- exploring all the possible environmental impacts and potential alternatives -- to the US EPA for review. Comments are received from the US EPA, as well as other state and federal agencies and affected parties and members of the public. Upon integrating these comments, the agency submits a Final EIS and Record of Decision (ROD) which outlines the decision made with a discussion of alternatives and steps to minimize environmental impact. The EIS is intended to inform the federal official making the decision on the project about the potential environmental effects of the project, but the official is not required to follow recommendations in the EIS.

Federal countries' EIA laws handle the relationship between federal and state-level decision making authority in different ways.

Several countries provide clearly defined roles for the different levels of government. Under Australia's law, for instance, states are literally "accredited" by the Commonwealth government to perform EIA under an "assessment" bilateral agreement or an "approval" bilateral agreement. If the former type, then proposed activities are assessed under the state process, but they require final approval from the Commonwealth Minister under the EPBC Act. If the state has an "approval" bilateral, however, then an action can be both assessed and approved through the state process without further approval from the Commonwealth Minister. It appears, however, that no state currently has an approval bilateral. Thus, once a state has undertaken an assessment, in all cases currently it refers the matter back to the Commonwealth with recommendations for decision. With respect to enforcement of conditions on approvals, a typical bilateral agreement will provide, "The parties agree to inform one another before commencing action to prosecute a person for breaching conditions…."[34] Similar language with respect to coordination and cooperation in implementing EIA is found throughout such agreements.

Under the bilateral agreements, the Commonwealth is obligated to reimburse states for "implementation costs" defined as costs "incurred by the [state] in implementing the agreement [that] would not, in the absence of this agreement, have been incurred by [the state] in carrying out an adequate assessment of each action to which [the state EIA

[33] EAA § 2.

[34] *E.g.*, Agreement between the Commonwealth and the State of Victoria under Section 45 of the Commonwealth Environmental Protection and Biodiversity Conservation Act of 1999, § 17 (signed June 20, 2009), [hereinafter Victoria Agreement] *available at* http://www.environment.gov.au/epbc/assessments/bilateral/index.html.

process] applies."[35] In Fiscal Year 2009 DEWHA distributed approximately $9 million (Aus.) in grants and transfers to state, local, and territory governments.[36] It is unclear how much money the Commonwealth provides states and territories to support carrying out EIA under EPBC Act.

Similar to Australia, Canada uses bilateral agreements with the states to coordinate and harmonize state-level and federal EIA requirements. All Canadian provinces have their own EIA authorities that are independent of the federal program (this is distinct from Australia's accreditation process for the states). Representatives of sectors most impacted by EIA requirements argue that state and federal EIA processes are duplicative and inefficient. In general, however, joint EIA processes in which both state and federal processes are triggered, are rare. By one estimate, 98% of projects subject to federal EIA do not require provincial EA, and only around 7-8% of projects subject to provincial EIA also trigger federal EA.[37] This has led some commentators to argue that industry concerns over "duplicative" EIA processes are misplaced. However, one perhaps insurmountable source of disconnect between federal and provincial EIA is that all but one province uses a "list approach" to EIA triggering, whereas the federal EIA law uses a "category" trigger based in part on the relationship of the type of environmental impact to matters within the constitutional jurisdiction of the federal Canadian government.[38] The federal government under Canada's constitution cannot use a specified list of project types as the basis for determining what projects require an EIA because it does not have automatic jurisdiction over all of the activities that would probably be included on that list. Thus efforts at streamlining and harmonization of EIA requirements between the state and federal levels may run into an irreducible obstacle in this regard. For any given project, it is generally necessary to perform two separate threshold analyses: one to determine if the project falls under province-level EIA regulations, and another to determine if the project also falls under the federal-level EIA law.

Nonetheless, Canada has taken a number of steps and continues to encourage cooperation, coordination, and harmonization through bilateral and multilateral agreements among the provinces and federal government. The federal Canadian government and all provincial governments except Quebec, acting through the Canadian Council of Ministers of the Environment, have entered into "A Canada-Wide Accord on Environmental Harmonization" and a "Sub-Agreement on Environmental Assessment."[39] The latter contains sections on objectives; scope; principles; EIA content; implementation; and accountability, management and administration.[40] Implementation of the Sub-Agreement

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[35] Victoria Agreement, *supra* note X, §§ 33-34.
[36] Department of the Environment, Water, Heritage and the Arts, Financial Statements for the Period ended 30 June 2009, at 362.
[37] Arlene Kwasniak, *Environmental Assessment, Overlap, Duplication, Harmonization, Equivalency, and Substitution: Interpretation, Misinterpretation, and a Path Forward*, 20 J. ENVTL. L. & PRACTICE 1, 10 (2009).
[38] *Id.* 8-9.
[39] CEAA, Environmental Assessment Agreements, http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=CA03020B-1#1 (last visited June 29, 2010).
[40] *Available at* http://www.ccme.ca/assets/pdf/envtlassesssubagr_e.pdf.

on EIA for individual projects takes place through bilateral agreements, which Environment Canada has entered into with eight provinces.[41]

Though industry and government have frequently complained of "duplication" and "inefficiency" in cases where there is overlapping jurisdiction with respect to EIA, some commentators have questioned the reality behind this rhetoric.[42] As noted above, instances in which a project triggers both province and federal EIA are actually quite rare. Further, the preferred remedy for duplication has been to rely on "coordination agreements," in which a province and the federal CEAA share jurisdiction over an EIA process. These, while possibly speeding the process, pose other risks. In practice, the state agency is often given "Lead Agency" role while the federal authorities are reduced to a consultative role—potentially leading to a loss of federal jurisdiction or full treatment and analysis of environmental issues that are of national but not provincial concern.[43]

The Canadian Council of Ministers of the Environment (CCME), a cross-jurisdiction body of provincial-level officials, is interested in "streamlining" the process even further. CCME has formed four sub-committees to examine: short term streamlining actions that can be implemented within existing legislative frameworks and bi-lateral agreements; options to streamline consistent with a "one project one assessment" approach; exploring regional strategic environmental assessment to streamline EIA processes; and coordinating Aboriginal consultation in joint assessments.[44] However, this process is perceived to be driven by industry and officials interested in economic development. According to one legal scholar, given other weaknesses in Canadian EIA identified by environmental groups and federal officials, these may not reflect actual priority areas to improve coordination and cooperation. Other options to consider might include:

- Late triggering of EIA requirements due to lack of clear processes within RFAs may be a cause of uncertainty and delays in EA. At the federal level, CEAA currently plays a support role in EIA, with primary responsibility in the hands of the government units handling the specific activity. Thus, CEAA could play a more active and earlier role in the process.
- The coordination regulation that governs federal interagency cooperation on EIA could be updated and strengthened by imposing enforceable timelines for decisions, and giving CEAA greater backstop authority to step in where an RFA's process is deficient.

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[41] CEAA, Environmental Assessment Agreements, http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=CA03020B-1#1 (last visited June 29, 2010).

[42] *See* Arlene Kwasniak, *Environmental Assessment, Overlap, Duplication, Harmonization, Equivalency, and Substitution: Interpretation, Misinterpretation, and a Path Forward*, 20 J. ENVTL. L. & PRACTICE 1, 25 (2009) (noting that "harmonization" of EIA standards can be good "when it does not interfere with constitutional jurisdiction or unduly affect autonomy," and "equivalency can work if legislative provisions of two jurisdictions are the same and there are no issues of loss of jurisdiction or, in the case of the federal government loss of national approach and concerns," but "[i]t is unlikely that full substitution can ever be good in a federalist state" because it will produce "loss of jurisdiction or national perspective.").

[43] *Id.* at 27.

[44] *Id.* at n.91.

- Complete a federal quality assurance program designed to pinpoint systemic weaknesses in EIA processes using empirical methods (criticisms of inefficiency from duplication of efforts have been largely anecdotal to date)
- RFAs in charge of an EIA need support and guidance from CEAA that it currently isn't providing. CEAA could better utilize a provision of the 2003 amendments to the EAA making CEAA the official interagency "coordinator."
- Better utilize the Major Projects Management Office within Canada's Natural Resources department designed to facilitate a "one-stop-shop" approach to permitting for major resources projects.
- Encourage project proponents to initiate EIA process early in the planning stage rather than plan the project in full, using a series of mitigation measures to produce a "no significant outcome" determination. The federal EIA law specifically calls for EIA to be begun early in the process, but industry practice in many sectors is to delay EIA, which is a major source of delays, redundancy of efforts, and inefficient use of resources.[45]

Canada's EIA experience reflects dynamics that are likely to be observed in federalist EIA frameworks in which state and federal EIA laws are organically distinct. They may be less likely to arise in EIA systems in which federal and state roles are clearly set forth within the federal framework itself.

China provides an example of the last approach. In China since 2003, EIAs are required for all construction projects, not just ones proposed by the government. Environmental impact reports must include a comprehensive analysis, prediction, and assessment of how the intended project might impact the environment, countermeasures for mitigating those impacts, analysis of environmental and economic benefits and losses, and proposals for environmental monitoring. The state-level EPB must then assemble licensed and pre-approved third-party experts to evaluate the report and submit their opinions, a component unique to China's EIA review process. If an EIA is not completed before project construction, the only penalty an EPB can issue is to require a "make-up" EIA. If the developer still does not conduct the EIA, only then can the EPB fine the developer between 50,000-200,000 RMB (or approximately 7,350-29,400 USD). Weak penalties and poor oversight mean that many developers do not conduct EIAs. In fact, in 2004, SEPA found that only 30-40% of mining construction projects actually fulfilled EIA requirements, and that the rate was as low as 6-7% in certain provinces.

The EIA rules and regulations in Mexico have been criticized for allowing federal centralization of a broad range of decision making; ambiguity as to the types of works or undertakings to which it applies; lack of clear administrative procedures and citizen participation mechanisms to provide transparency and certainty in the decision making process. SEMARNAT and PROFEPA in June 2009 developed a set of guidelines for situations in which projects are discovered going forward without the appropriate

[45] *See* Arlene Kwasniak, *Environmental Assessment, Overlap, Duplication, Harmonization, Equivalency, and Substitution: Interpretation, Misinterpretation, and a Path Forward*, 20 J. ENVTL. L. & PRACTICE 1, 31-34 (2009).

authorizations or taking place outside the EIA process. This may be an important step toward programming to ensure full compliance with EIA law.

In the U.S., state-level agencies can become involved in the federal EIA process by electing to participate as "cooperating agencies."[46] While this program may be effective at increasing the role and visibility of local officials and concerns in the federal process, it generally does not provide the state or local agency power to make final determinations with respect to a project.[47] Approximately twenty states have their own laws requiring an EIS for certain types of projects, while the majority of the states do not require environmental impact assessments for projects.[48]

a. Planning, sectoral and strategic EIA

All studied countries have significantly less capacity and experience with carrying out broader scale environmental assessments, generally referred to here as "strategic environmental assessment (SEA)." SEA comprises a range of "analytical and participatory approaches that aim to integrate environmental considerations into policies, plans and programmes and evaluate the inter linkages with economic and social considerations."[49] The *Paris Declaration on Aid Effectiveness* states that the "progress [in use of EIA] needs to be deepened, including on addressing implications of global environmental issues such as climate change, desertification and loss of biodiversity," and calls on donor agencies and partner countries to "develop and apply common approaches for 'strategic environmental assessment' at the sector and national levels."[50] SEAs are meant to close gaps in the EIA framework by providing environmental analysis at a policy and planning level higher than a specific project.

Many countries are only now beginning to implement SEA. Germany, for example, recently incorporated Strategic Environmental Assessment into Part 3 of the UVPG, which lays out EIA procedures, in order to comply with a European Commission Directive. The BMU recently published guidance on SEA in light of legislative changes at the start of March 2010.

Mexico has undertaken strategic environmental assessments (SEA) only on an ad hoc basis by certain sectors. For example, an SEA was prepared in 2002 for the tourism sector that proposed to introduce a certification scheme for tourist facilities (which could earn firms a

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[46] 40 C.F.R. §§ 1501.6 & 1508.5 (U.S.A.).
[47] *Forty Most Asked Questions Concerning CEQ's NEPA Regulations* (hereinafter "Forty Questions"), 46 Fed. Reg. 18026 (March 23, 1981), Q. 14a.
[48] *See* Kenneth S. Weiner, *NEPA and State NEPAs: Learning from the Past, Foresight for the Future*, 39 Envtl. L. Rep. 10675, 10677 (2009) (discussing state-level innovation in EIA that for the first time allowed agencies to deny otherwise sufficient building permit applications on the basis of unacceptable environmental impacts).
[49] ORGANIZATION FOR ECONOMIC CO-OPERATION & DEVELOPMENT (OECD), APPLYING STRATEGIC ENVIRONMENTAL ASSESSMENT: GOOD PRACTICE GUIDANCE FOR DEVELOPMENT CO-OPERATION 24-25 (2006), *available at* http://www.oecd.org/dataoecd/4/21/37353858.pdf.
[50] OECD, Paris Declaration on Aid Effectiveness arts. 40 & 41 (adopted Mar. 2, 2005), *available at* http://www.oecd.org/dataoecd/11/41/34428351.pdf.

"sustainable tourism award"); in contrast, no SEA has been prepared for transport sector policies.[51] Mexico's EIA regulations require "regional" rather than "particular" EIAs for specified projects such as industrial and aquaculture parks of more than 500 hectares, highways and railways, nuclear energy generation facilities, dams, and projects in designated ecological regions.

There are no requirements to perform SEA in the United States. However, federal laws governing several natural resource sectors cross-reference the National Environmental Policy Act and establish a "tiered" program for carrying out EIA with respect to management decisions for that resource. This approach is most noticeable in the the National Forest Management Act of 1976 (NFMA), governing the U.S. Forest Service's management of national forests, and the Outer Continental Shelf Lands Act, governing leasing and environmental permitting for offshore oil and gas exploration and production. The "tiered" or "programmatic" approach to EIS under these laws generally requires the relevant agency to perform multiple environmental analyses at a scale appropriate to the scope of the planning or decision process in question, with increasing specificity as resource decision making reaches the project-level.

2. Promulgation of regulations, interpretation, and establishing guidance

In China, national laws, including the major environmental protection laws, are promulgated by the National People's Congress. Chinese laws are often more like policy statements and include broad, vague language. More specific information about how to implement the national laws is provided in administrative regulations. Regulations are promulgated by ministries directly under the State Council. In addition, priorities set forth by the National People's Congress in the Five Year Plans (FYP) are considered to have a stronger influence than laws on what actually is implemented on the ground. MEP also develops a sectoral FYP to guide environmental policies.

Brazil's CONAMA is responsible for promulgating regulations and standards based on national legislation while the equivalent state bodies (COSEMAs) have similar responsibilities with respect to legislation enacted by their state legislatures.

The U. S. EPA promulgates regulations implementing the provisions of federal environmental legislation as directed by the legislation. The regulations provide the detailed rules for obtaining permits and complying with standards and have the force of law. US EPA also issues interpretations and guidance for understanding and applying its regulations. Interpretations and guidance do not have the force of law but indicate how the agency intends to apply its regulations in particular circumstances. Formal interpretations and guidance documents are made available to the public so that regulated entities and the public may better understand how the agency intends to apply its regulations.

[51] OECD, Mexico Asssessment 2003, at 141 & 144.

3. Procedure for setting and revising standards

Within MEP, the Chinese Academy for Environmental Planning (CAEP), the research institution of the ministry, drafts standards, which must then be approved by MEP and the State Council. When dealing with cross-ministry issues, MEP sometimes issues regulations jointly with other relevant ministries.

In 1992, Mexico enacted the Federal Law on Metrology and Standardization to modernize the standard-setting process. Under this law, Official Mexican Standards (NOMs) are issued in all areas of environmental regulation. NOMs are adopted pursuant to the National Standardization Program under the direction of the Secretariat of the Economy. In the basic process, the relevant Secretariat will submit a draft NOM to the relevant Advisory Committee, which has 75 days to comment on it. The original proponent then has 30 days to make "corresponding modifications." The revised NOM is published in the Federal Official Gazette, with 60 days for public comment. If the original proponent of the NOM believes the Advisory Committee's comments are unjustified, it may petition to have the NOM published in the Official Gazette without modification. At the end of the public comment period, the Advisory Committee has 45 days to study and make changes to the proposed NOM and prepare responses to public comments, also published in the Gazette. Members of the Advisory Committee, the National Commission on Standards, or the corresponding Secretariat may recommend that the NOM be cancelled. Upon final approval by the Standardization Committee, the text of the standard is issued by the competent authority and must be published in the Gazette to take legal effect.

One factor in determining what government level should handle standard setting is whether the environmental harm at issue manifests primarily at the local, national, or international scale. However, too strong a delineation of responsibilities or jurisdiction based on this approach can lead to cumulative or cross-boundary environmental impacts being ignored or downplayed. Germany's experience with municipal waste water standards demonstrates how this problem might be avoided. Such standards are to be set, in the first instance, at the municipal level. However, municipalities must follow district level requirements, and the district government must, in turn, follow Länder and Federal Government conditions. Finally, the Länder and Federal Government are obligated to comply with an EU Directive concerning municipal waste water. District or state governments have the authority to tighten municipal standards for particular areas, for example, if a river is particularly susceptible to environmental damage. The extensive interaction among different government levels, as well as with independent organizations improves consistency and convergence in Germany's waste-water standards. Similar to Mexico's standard setting process, scientific organizations have come to play a greater role in Germany's process, and can exert significant influence on new legislative proposals through consultations. In Germany's experience, it has become clear that municipalities alone do not often have the capacity to handle waste-water regulation on their own, and assistance has had to come from other governmental bodies and non-governmental organizations.[52]

[52] UBA, THE GERMAN WATER SECTOR: POLICIES AND EXPERIENCES (2001), *available at* http://www.umweltdaten.de/publikationen/fpdf-l/2752.pdf

In the United States, the U.S. EPA sets regulatory standards for implementing the goals outlined in federal environmental legislation. For example, the U.S. EPA sets effluent standards for specific pollutants for particular industries in order to meet the Clean Water Act's goal of making all water bodies safe for fishing and swimming. It is important to note that federal environmental standards will generally govern where federal environmental statutes exist. States may set their own environmental standards, but these must be at least as stringent as federal standards where they exist. If there is not a federal law, states do not have restrictions on how they set their regulations. At times in EPA's history, it has been unable due to political reasons or lack of capacity, to carry out rulemaking explicitly mandated by a federal statute. This happened most notably in the case of defining and setting standards for "criteria air pollutants" under the Clean Air Act. In response to the agency's failure to regulate as mandated by statute, Congress enacted amendments to the Clean Air Act in 1990 that were essentially regulatory in their high level of specificity and scientific content.

4. Permits and approvals

One unique aspect of Brazil's licensing regime is that both federal and state governments may issue permits in accordance with the environmental goods that each is constitutionally permitted to regulate. Projects' size and location are also determining factors with regard to whether the federal environmental agency (IBAMA) or state agencies (SEMAs) will serve as the licensing authority.

The licensing procedure is set out in Resolution No. 237/97. It involves three separate licenses. The first are preliminary permits, which are issued during the project's earliest stages. It enables a "preliminary examination of the feasibility of the intended activity at the location selected" and allows applicants to conduct tests at the site in question. The second are called installation permits. They "authorize[] installation of the project or activity in accordance with the specifications set forth in the approved plans, schedules and drafts, including the environmental control measures and other conditions, which shall constitute a determining factor." The last set of permits are called operating licenses. Once the licensing agency has verified actual compliance with prior permits, environmental control measures, and specified conditions, the final operating license may be granted.

In the United States, most permits under the Clean Air Act, Clean Water Act, and the hazardous waste regulations are issued by individual state and local permitting authorities. These permitting authorities must receive approval from the US EPA, and the US EPA retains the right to revoke states' authority to grant permits.

5. Research

China has several research institutions housed directly under the State Council or within ministries. Of those, the Chinese Academy of Sciences (CAS) is one of the most important, providing a wide breadth of scientific and technical research to inform many government policies. CAS includes twelve branch offices and over one hundred national laboratories and research centers and supports a staff of 50,000 people. Other relevant

research institutions include the Development Research Center and the Chinese Academies of Environmental Planning, Engineering, Social Science, Transportation Sciences, and Research Academy of Environmental Sciences. The CAEP, the equivalent research body for MEP, conducts scientific research to provide support and consultation to government agencies for environmental planning. CAEP is a "public institution with independent legal status" that operates under MEP's leadership.

The United States also offers a good example of sufficient institutions in place for research and development. Within the US EPA, there is an Office of Research Development which focuses on science and technology research. The US EPA also provides funding to other research institutions, including academic institutions and scientific organizations, through its Science to Achieve Results (STAR) grant program.

The United States also has a number of national research institutions that address environmental issues, including the National Institute of Environmental Health Sciences (NIEHS), which is part of the National Institutes of Health under the US Department of Health and Human Services. The United States also has the National Center for Environmental Health (NCEH) under the Centers for Disease Control and Prevention. Additionally, there is a division of the National Research Council, part of the National Academies, called Division on Earth and Life Sciences, which addresses environmental issues and works with the US EPA and other federal agencies.

6. Economic and other reviews of proposed legislation or regulations

China's environmental protection plans formulated by state must be incorporated into national economic, social, and urban development plans, including FYPs. In 2008, the National People's Congress also passed the Circular Economy Promotion Law, which became effective on January 1, 2009. The concept of a "circular economy" refers to "reducing, reusing, and recycling activities conducted in the process of production, circulation, and consumption" and provides new direction for guiding economic development.

In the United States, some environmental statutes have specific requirements regarding economic analyses. In addition, several federal statutes and Executive Orders require economic analyses. Executive Order 12291 (first issued by President Reagan in 1981) requires all federal agencies to assess the costs, benefits, and economic effects of major rules put forth by federal agencies, and also establishes a formal review process by the Office of Management and Budget. Other federal statutes such as the Paperwork Reduction Act of 1980, the Data Quality Act of 2001, and the Freedom of Information Act of 1966 also set mandatory procedures for administration, rulemaking, and the dissemination of information.

7. Special programs such as compliance assistance for small and medium sized enterprises

Small- and medium-sized enterprises (SMEs) in China without access to adequate monitoring equipment are allowed to contract EPBs or private monitoring centers to conduct the monitoring for them.

SMEs in Germany receive subsidies from the regional government for voluntarily implementing Eco Management and Audit Schemes (EMAS). They also enjoy up to 50% reduction in the cost of an environmental audit with a maximum of €900 reduction. The audit covers issues such as the extent of the SME's environmental impact and advice on how they can improve these and also the costs they will save if they improve these environmental practices. If a SME incorporates an environmental management system then they can receive subsidies with regards to having to employ extra personnel and charges for certifications. SMEs that implement EMAS also receive 30% reduction in costs of permitting procedures and are not subject to certain inspections and monitoring requirement by different environmental laws. SMEs still face a cost, however, for being part of the agreement. At least 50% of the costs for the EMAS in other parts of the agreement they and large companies will have to pay fully in order to carry out their obligations.[53]

Under Mexico's recently released regulation on industry self-audits, SEMARNAT is establishing regional support centers for small and medium enterprises. SEMARNAT also has a strategic goal of reducing and consolidating regulatory requirements on industry. For example, it has a goal of consolidating the 258 separate regulatory processes currently in force as of 2009 into only 120 processes in 2012, and adding only five new processes.

The United States has a number of resources available for assisting small businesses with compliance. The US EPA has a Small Business Division and Office of the Small Business Ombudsman, and has also released a publication entitled "Environmental Assistance Services for Small Businesses: A Resource Guide." The US EPA also has a number of assistance programs and resources to help small businesses comply with environmental regulations, including Compliance Assistance Centers, Industry Sector-based Performance Partnership Programs, and the State Small Business Assistance Program.

In the United States, national legislation to assist small businesses includes the Small Business Regulatory Enforcement Fairness Act and Small Business Regulatory Flexibility Act. Many states and the federal government try to provide mechanisms for offering tax relief to small business, such as the recent introduction of the Small Business Tax Relief and Job Growth Act of 2010 in the US Congress.

[53] Whole paragraph: Environmental Compliance Assistance Programme for SMEs, 'Case 11: Bavarian Environmental Agreement, Germany'http://ec.europa.eu/environment/sme/pdf/environmental_agreement_en.pdf, Access page last updated May 28th 2009

8. Approaches to critically polluted areas or new generation "area-based" pollution management for multiple sources to achieve ambient quality outcomes

"Three-synchronizations," has been a central principle of Chinese pollution control and prevention policy since the 1970s.[54] "Three-synchronizations" is the idea that pollution control facilities should be implemented during all phases of construction projects: design, construction, and operation. In terms of pollution response, China takes an area-based approach to pollution management. Local people's governments are responsible for atmospheric environmental quality of their jurisdictions, as well as for developing plans and measures to maintain atmospheric environmental quality. Similarly, water pollution prevention and treatment plans are "planned on a uniform basis by valley or region" by the local people's governments for their respective regions.

The United States has several methods for addressing area-based pollution under the different pollution control statutes, including the "Prevention of Significant Deterioration" tool, which applies to new major sources of air pollutants or major modifications at existing sources. This requires careful impact analysis of any decisions to permit increased air pollution. Another area-based tool is Total Maximum Daily Load (TMDL), which is a calculation under the Clean Water Act to determine a maximum amount of a specific pollutant that a particular waterbody can receive and still meet water quality standards. The US has also had successful experience with area-based approaches to water management, in the form of regional river basin commissions.

9. Procedure for redressing grievances including establishment, operation, and effectiveness and use of conflict resolution methods

Procedures in the US for redressing grievances include the ability of permit applicants and members of the public to make appeals on permit decisions and civil penalty decisions through the Environmental Appeals Board of the US EPA. The US EPA also has an Office of Administrative Law Judges, which deals with enforcement and permit proceedings between the EPA and regulated entities. The US also has methods of third-party assisted conflict resolution and collaborative problem solving for dealing with environmental conflicts.

11. Public-private partnerships

Public-private partnerships (sometimes known as PPPs) have been touted as a means of ensuring public-service provision at less cost to government, higher quality services for consumers, and investment certainty and predictability for the private sector. Without explicit regulations in place to manage PPPs, however, these relationships can falter under existing legal frameworks and fail in their laudable objectives. Thus, many countries have now enacted laws and regulations governing PPPs. For example, under Brazil's Public

[54] Alex Wang, *The Role of Law in Environmental Protection in China: Recent Developments*, VT. J. ENVTL. L. 8 (2007), *available at:* http://www.vjel.org/journal/VJEL10057.html.

Private Partnerships Law, enacted in 2004, public-private partnership contracts are agreements that are "entered into between government or public sector entities and private sector entities that establish a legally binding obligation to establish or manage, in whole or in part, services, undertakings and activities in the public interest, in which the private sector partner is responsible for the financing, investment and management."[55] The law governs bidding processes for public-private partnerships involving irrigation and drainage, transportation, basic sanitation, energy, and gas. It also establishes a system of regulatory requirements for public oversight, quality assurance, environmental protection, powers to terminate or intervene in the service-provision, and rate- and tariff-setting in the public interest, among other things. PPPs are controlled by a Management Committee composed of public and private representatives.[56]

While it may be too early to assess the benefits of this law, lessons learned from efforts to establish PPPs for water service provision in Mexico in the 1990s demonstrate the dangers of a weak legal framework for PPPs. Much of Mexico's water governance since passage of the Law of National Water in 1994 was premised on the hope of greater public-private collaboration, with the law focused on creating transferable water rights and participation of the private sector, and setting up a system of water concessions available to private companies for 5 to 50 year periods. Indeed, the 1994 law, along with amendments to it in 2003 has had some success in normalizing and integrating water management. As of 2003, 330,000 private water users, including virtually all major users, were registered with the government. The registry of water users has been successful at exposing over-concessions and overexploitation of aquifers and has helped identify which users remain unregistered and do not pay for water rights. 104 of 653 aquifers remained under unsustainable exploitation as of 2007, and so the government continues to promote integrative and sustainable water management. With the normalization process largely complete, the CNA is prioritizing modernization of irrigation and agricultural infrastructure to minimize losses and leakage.

However, Mexican water reform has been beset by a number of problems, stemming in part from the interaction of Mexico's efforts at decentralization with programs to set up PPPs in the absence of sufficient governance capacity at the local level. Under the 1994 water law, municipalities are responsible for potable water management and provision, drainage, sewage systems, and wastewater treatment and disposition. With this devolution has come a wide disparity in management design and capacity. Some municipalities maintain total government control while others' water systems are operated as PPPs. This variation means that reforms originating from the central level are difficult to implement in practice. And because each municipality retains authority to set pricing for water tariffs, under-pricing of water services (operating as an indirect subsidy for overexploitation) remains the norm. The national average is very low, at 2 pesos for 1000 liters as of 2007.

[55] India's Department of Economic Affairs, *Approach Paper on Defining Public Private Partnerships* 16-17 (Feb. 2010), *available at* http://www.pppinindia.com/pdf/ppp_definition_approach_paper.pdf.
[56] Walter Stuber, *Brazil: The Brazilian Public-Private Partnership Program* (Mar. 2005), *available at* http://www.mondaq.com/article.asp?articleid=31207.

The creation of water markets in Mexico, once considered a crowning achievement of the 1994 law, is no longer widely publicized by the government, with studies of water markets in urban Cancun and Mexico City showing that they resulted in higher tariffs without better services. Monterrey's water market produced better results, perhaps in part due to being solely under public administration, rather than a PPP. Public suspicion and opposition to water markets remains high. Nonetheless, the cities of Cancun, Aguascalientes, Navajoa, and Nogales maintain fully privatized water services.

12. Relationship with industry (and other regulated entities)

One German state, Bavaria, has an Environmental Pact with companies in the region, the "Umweltpakt Bayern," which over 3500 companies have signed.[57] This voluntary pact aims to ensure protection of the environment is through collaboration that does not require coercion or excessive paperwork and can enable better communication between key actors. All members of the pact contribute to discussion groups that focus on key topics such as renewable energy and emissions and form the basis then for policy decision making. SMEs are given certain financial incentives for joining the pact, such as eligibility to receive funding from the Bavarian Environmental Advisory and Audit Program to create an environmental management system and access to the Information Center Environmental Economics, which provides guidance on legal requirements, technical mechanisms for improving environmental performance, and important contacts. Bavaria has found the pact to be successful overall in better environmental protection and energy use by companies.

In the US, the relationship of the US EPA to industry ranges from confrontational to collaborative -- tilting more towards collaborative in recent years. The US EPA has many resources to make it easier for industry to comply with environmental regulations, including online guides, resource centers, guides, trainings, and one-to-one counseling. The US EPA offers reductions in civil penalties for self-policing, when an industry self-discovers, discloses, corrects, and/or prevents the violation of regulations. The US EPA also interacts with industries through non-regulatory, voluntary programs such as the EnergyStar program, which offers incentives for increasing energy efficiency.

13. Mechanisms for sharing information on pollution prevention and compliance assistance, what conflicts arise and how are they resolved

The "German Environmental Information Portal (PortalU)," a database for environmental information developed by the federal government, became active in 2006 and serves as a collaborative project for information sharing between Länder and the Federal Government. Information includes monitoring data, environmental news and environmental information and this is all accessible online. Five Federal Environmental Agency databases are also

[57] Bavaria State Government, 'Responsibility for Nature and the Environment', http://www.bayern.de/Responsibility-for-Nature-and-the-Environment-.605.htm Last accessed May 19th 2010

attached to PortalU and include the "UBA Environmental Data Catalog" and "Joint Substance Data Pool of Federation and *Länder*"[58].

Since acceding to NAFTA, Mexico has participated in the North American Pollutant Release and Transfer Register (PRTR), which tracks and publishes information on amounts, sources, and handling of toxic chemicals, including best practices and strategies for managing such chemicals. In order to comply with PRTR, Mexico operates a "Registry for Emissions and Transfer of Contaminants" (RETC). This regulation mandates that companies under federal jurisdiction must annually file an inventory of releases of wastewaters, hazardous materials, and other pollutants, with an emphasis on persistent, bioaccumulative, and toxic substances. Under the 2001 reform of LGEEPA, information is to be gathered by all levels of government from environmental authorizations, certificates, reports, licenses, permits, and concessions. Commentators have noted that the inclusion of best management practices and strategies in this information network has created a support base of information, guidance, and "know-how" on environmental management in Mexico.

In the United States, the US EPA's Office of Enforcement and Compliance Assistance (OECA) offers a number of resources for pollution prevention. These include guides (e.g. "Leak Detection and Repair: A Best Practices Guide"), tools (e.g. "Compliance Assistance Tool for Clean Air Act Regulations: Subpart GGG of 40 CFR NESHAPS for Source Category Pharmaceutical Production"), and networks (e.g. "Technology Transfer Network"). These resources are just a few examples of the mechanisms in place for sharing information on pollution prevention and compliance assistance.

Many US states separate compliance assistance functions from the enforcement office (and in a few cases from the environmental agency) in order to avoid conflicts or potential conflicts between enforcers and those providing compliance assistance.

14. Procedures for inspections, frequency of inspections, mechanisms for targeted inspections, self-monitoring and other means of assuring compliance

Effective inspection techniques to catch and remediate environmental infractions can be carried out in a number of ways. Highlighted here are three in particular: targeted inspections of individual facilities on suspicions that environmental violations are occurring; surprise visits to facilities to avoid giving possible violators the opportunity to clean up operations in advance of an inspection visit; and large-scale inspection campaigns carried out for an entire industry or region. Self-monitoring and reporting can help reduce the burden to perform extensive inspections by government agencies, but any program for self-monitoring must be overseen through a strict program of third-party or government audits. (Self-monitoring programs, using Mexico's new 2010 regulations as an example, are discussed in greater detail under Self Monitoring and Reporting, below.)

[58] Whole paragraph: UBA, 'German Environmental Information Portal Portal U and the Environmental Data Catalog', http://www.umweltbundesamt.de/service-e/portalu.htm, Last updated: April 9th 2008

Targeted inspection visits on information of violations generally begin with a report or indication that an unlawful practice may be occurring. In Brazil, if a company is suspected of causing environmental degradation, the general practice has been for that company to complete a study of the harm and propose several possible solutions. This is frequently done in consultation with an environmental consultant. The proposed solutions are discussed with the licensing agency. Once the agency has approved the company's suggested solutions and timetable to complete the work, the matter may be brought before the Ministério Público. If the Ministério Público likewise agrees with contents of the study and proposed restorative actions, it may execute a Terms of Adjustment of Conduct agreement, which must be signed by the company, the licensing agency and the Ministério Público. Completion of this process reduces the company's likelihood of being subjected to liability. If the Terms of Adjustment of Conduct fails, the Ministério Público may file a public civil action.

China's EPBs are responsible for conducting both routine and surprise inspections. Often, public complaints about polluting enterprises will lead to inspections, in which case EPB officials are required to arrive at a site within two hours of receiving an environmental complaint in urban areas and within six hours in rural areas. Requiring that inspectors arrive early enough at a site to catch a violation in progress is a critical aspect of environmental enforcement.

In Mexico, PROFEPA ensures compliance through two mechanisms: inspection visits and voluntary environmental audits. PROFEPA is given the power of "methodological examination of operations, regarding the pollution and risk generated, as well as the degree of compliance with environmental law and with international parameters and good applicable operational and engineering practices, with the object of defining, preventing, and correcting measures necessary to protect the environment."[59] Inspection procedures must be consistent with the Federal Law of Administrative Procedure. Thus, first an order of inspection is issued, listing the reasons justifying an inspection, the specific objectives of the inspection, and any supportive legal precedent for the inspection. With this order in hand, officials may inspect facilities and observe activities. LGEEPA Article 170 gives PROFEPA the power to impose "security measures" when there is an "imminent risk of imbalance, or serious damage or deterioration to natural resources, in cases of pollution with hazardous impact on ecosystems, their components, or on public health." These powers include closing the facility, confiscation of goods and materials, and neutralization of waste.

In the United States, most federal environmental statutes and regulations allow the U. S. EPA and its regulatory partners to conduct inspections or evaluations. The frequency of inspections is specified by each statute, as is the procedure for conducting the inspection. The US EPA provides detailed inspection manuals for each statute, which are available online. In most cases inspectors are authorized to enter a facility unannounced, either by the terms of a permit or under the statute. Site visits can include a number of activities, including: interviewing facility or site representatives, reviewing records and reports, taking photographs, collecting samples, and observing facility or site

[59] LGEEPA art. 38 bis.

operations. States may receive primary enforcement responsibility for conducting inspections if their plan is approved by the US EPA Administrator, and states conduct the majority of inspections. Under many circumstances, it is also permissible for regulated entities to conduct self-evaluations.

The use of large-scale inspection campaigns can net a large number of violators quickly, if there are adequate human and agency resources dedicated to the effort. In China, MEP also conducts "inspection campaigns" in key regions or sectors known to be highly polluting. These campaigns have been carried out for the chemical and mining industries, as well as in the Bohai Sea, Lake Tai, and the Huai River areas, in which many plants were shut down or consolidated and plant managers penalized. In Mexico, enhanced inspections and enforcement against the hazardous waste industry carried out over a seven year period (2001-2007) produced an impressive record for environmental protection: PROFEPA carried out inspections and verifications at 100% of registered facilities processing hazardous waste. Over the same period, this led to a 26% reduction in emergencies related to hazardous waste releases. Also in the same period, under the Inspection Program for Federal Jurisdiction Pollution Sources, 7,583 inspection visits were carried out for high-pollutant establishments, 1,487 of which were deemed to be "high-rsk" facilities. 2,647 were found to be in full compliance; 4,669 had infractions and minor irregularities; and 71 had serious infractions. This Inspection Program led to the initiation of 5,282 administrative procedures, 37 facility closures, 34 partial closures, and fines amounting to a total of 151.8 million pesos.

15. Procedure for environmental monitoring and how data is shared with stakeholders

Dedicated and independent authorities and programs for environmental monitoring and information sharing is certainly a best practice for environmental protection. "Total" environmental information management systems (i.e., multi-media, multi-threat, multi-sector) are found in Mexico and Brazil. For example, IBAMA houses two programs that are responsible for collecting and sharing environmental data. The first is a database entitled the Shared Environmental Information System (SISCOM).[60] This computerized database shares information generated by the Ministry of the Environment, IBAMA, SEMAs, and the Ministério Público.[61] The second program is entitled the National Information Network on the Environment (Renima). It is a decentralized network of Cooperating Centers around the country that aim to advance environmental management and provide informational support for the private and public sectors.[62] One of Renima's

[60] *Integration of Environmental Information*, Ministério do Meio Ambiente, *available at* http://translate.googleusercontent.com/translate_c?hl=en&sl=pt&tl=en&u=http://www.ibama.gov.br/monitoramento-ambiental/index.php/servicos/siscom/&rurl=translate.google.com&twu=1&usg=ALkJrhhB36BlOBXGzAVs5vtz-VSzAv6ecA (last viewed June 4, 2010).
[61] *Id*.
[62] *Renima*, Ministério do Meio Ambiente, *available at* http://translate.googleusercontent.com/translate_c?hl=en&sl=pt&tl=en&u=http://www.ibama.gov.br/renima/&rurl=translate.google.com&twu=1&usg=ALkJrhgxhWCDhMLbU7ijIUBacU7gL-HY4w (last viewed June 4, 2010).

primary functions is to integrate the various entities that constitute SISNAMA.[63] Participating governing bodies serve as Cooperating Centers.[64]

Germany provides an example of an advanced monitoring and database system to keep track of levels of multiple pollution types in organisms, including humans. This is known as the environmental specimen bank. The bank has been collecting and storing samples since 1985.[65] Samples are taken from various ecosystems across Germany and include samples from the bottom to the top of the food chain as well as blood and urine samples from humans.[66] An analysis is made of the presence of chemical substances in the samples and changes in data can be measured against previous samples taken.[67]

In contrast to these "total" environmental information management institutions, other countries maintain monitoring, databases, and information sharing programs that are media- or pollution-specific, or operate within a regulatory framework rather than across all regulatory frameworks. Thus monitoring of air quality in the United States is achieved through permanent monitors established throughout the country to determine if air quality meets the National Ambient Air Quality Standards established by the Clean Air Act. Water quality is monitored by the US Geological Service, which is part of the Department of the Interior, and by the states. A mechanism for peer-to-peer information sharing is going forward in the U.S. called the National Environmental Information Exchange Network, which receives funding from US Congress and has participation from the US EPA, states, and many tribes and territories. The network allows states, municipalities, federal officials, and other users to view data and success stories from other parts of the country, and upload their own content using a series of "nodes" within six "communities of interest": air, waste, health, natural resources, water, and "cross-program."[68] The Network is working on strengthening and systematizing data standards to ensure quality and consistency of information.

Other innovative systems have emerged at the multi-state regional level in the U.S. for monitoring and sharing information. Examples of regional information sharing networks include:

- **Great Lakes Information Network (GLIN):** includes eight US states (Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, and New York); Ontario, Canada; multiple federal agencies; and other public and private groups in the US and Canada.[69]

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[63] *Id*.
[64] *Id*.
[65] Umweltprobenbank, 'Search data', http://www.umweltprobenbank.de/de/documents/10027, Last accessed May 20th 2010
[66]Umweltprobenbank, 'Introduction' http://www.umweltprobenbank.de/de/documents/10018, Last accessed May 20th 2010
[67] *Ibid*
[68] The Exchange Network, Network Data Exchanges, http://www.exchangenetwork.net/exchanges/index.htm (last visited August 30, 2010).
[69] Evans, John D. (1997). "Infrastructure for Sharing Geographic Information Among Environmental Agenices." PhD Dissertation. http://web.mit.edu/jdevans/thesis.html

- **Gulf of Maine Environmental Data and Information Management System (EDIMS):** three US states (Massachusetts, New Hampshire, and Maine) and two Canadian provinces (New Brunswick and Nova Scotia).[70]

- **Northwest Environmental Database** with the states and tribes of the Pacific Northwest (Montana, Idaho, Washington, and Oregon) who worked together to build two region-wide rivers information systems with data on fisheries and wildlife.[71]

16. Measures or indicators of progress toward ambient quality goals and compliances with standards

All countries studied undertake broad assessments of the status of environmental progress. Several countries, notably China and Mexico, include environmental quality levels within economic indicators like GDP. In order to measure environmental progress and to assess effects of environmental degradation on the economy in China, CAEP developed the Integrated Environmental and Economic Accounting framework (also known as Green GDP) in 2006 to evaluate China's GDP loss due to environmental degradation. The study concluded that in 2004, environmental degradation cost the country 511.82 billion yuan (or 3.05% of the GDP), most of which came from air and water pollution (42.9% and 55.9% of the total environmental costs respectively).[72]

Similarly, in Mexico, SEMARNAT has developed environmental performance indicators to measure progress towards environmental sustainability goals. Several examples:

- Ecological GDP to measure progress toward sustainability
    - [Ecological GDP = (PINE – PIN)] where PIN = (GDP – depreciation of capital) and PINE = (PIN – depreciation of natural capital)
- Indicators on quantity and quality of water resources
    - Shortage indicator = Number of over-exploited aquifers / total number of aquifers
    - Quality Indicator = % volume of treated waste water that complies 100% with environmental standards / total collected water volume
- Indicators on forest resources
    - Number of recovered forest ha
    - Number lost forest ha
    - Number forest ha with sustainable management programs
    - Number forest ha unsustainably managed
    - Number reintroduced species / year
- Indicators on hazardous waste

[70] Id.
[71] Id.
[72] http://www.caep.org.cn/english/paper/A-Framework-of-Environmental-and-Economic-Accounting-in-China.pdf

- Tons of hazardous waste sustainably management / yearReintroduction and recovery of priority strange species, threatened species, or species in danger of extinction.

Regarding progress on attaining programmatic environmental objectives and standards, notable examples come from Mexico and the United States. In Mexico, SEMARNAT's work is subject to oversight through the Annual Programme Evaluation operated by the National Council of Social Policy Evaluation (CONEVAL). This process involves an Outcomes Assessment to establish areas for improvement and corresponding recommendations. The relevant administrative unit then develops an integrated work program setting out steps by which the improvements will be made. CONEVAL and the relevant unit coordinate on the publishing and dissemination of reports.

In the US, progress toward environmental goals is measured through a number of indicators. Some measures of progress are by statute; for example, the Clean Air Act has the National Ambient Air Quality Standards. The US also has the Government Performance and Results Act of 1993, through which federal agencies are held responsible for "using resources wisely and achieving program results." As a result of this law, US EPA, along with all federal agencies, develops goals and performance measures and reports on its progress toward those goals to the Office of Management and Budget within the White House. Although the U.S. has media- and pollutant-specific environmental measures, it lacks a comprehensive, official measure of total environmental quality, such as China's Green GDP or Mexico's Ecological GDP.

17. Procedures for addressing cross sectoral environmental issues with sectoral ministries/departments and how to address damage due to conflicts in policies

In China, cross-sectoral procedures are a major problem in implementing laws. There is no unified or standardized system to guide cross-ministry collaboration in sectors that apply to more than one agency. In many cases, the division of responsibility in laws and regulations is vague, allowing "other related departments" to carry out certain environmental management responsibilities along with EBPs or MEP, but failing to name particularly agencies, define specific roles, or provide guidance on overriding authority.

In the United States, cross-sectoral environmental conflicts are often handled by the Office of Management and Budget (OMB), as well as the President's Council on Environmental Quality (CEQ). Solutions can sometimes be found through processes of Environmental Conflict Resolution. A policy memorandum from OMB and CEQ entitled "Basic Principles for Agency Engagement in Environmental Conflict Resolution and Collaborative Problem Solving" outlines advice for dealing with environmental issues that fall across more than one agency.

18. Capacity building programs for state agencies

Capacity building programs for state agencies is particularly important for impoverished regions and interior provinces in countries where there are significant wealth disparities

between states. In China, for example, to improve capacity in those areas, MEP established a program for county-level EPBs, which are responsible for most environmental monitoring, to apply for special funding through the Environment and Natural Resources Department of the Ministry of Finance's Economic Construction Division. The program is intended for central and western provinces resources where institutional capacity often lags behind coastal provinces.

In Mexico, within the Executive Office of the President, the Office for Strategic Planning and Regional Development was created to facilitate policymaking where the federal government is no longer the only actor as a result of decentralization and to facilitate interstate and intersectoral coordination. This has been accompanied with efforts to decentralize fiscal resources through greater subnational shares in tax revenues, and tools to build capacity, transparency and accountability at subnational levels. SEMARNAP formed the *Coordinación General de Decentralización* (CGD) (Office of General Coordination of Decentralization) to assist in decentralization of environmental law. CGD's main purpose is to direct, promote, coordinate and evaluate the decentralization process to the state and local governments, social organizations and private parties in accordance with the provisions of LGEEPA. CGD has signed agreements with a number of states to promote decentralization. Also of note are the efforts of the federal water commission (CONAQUA) to work with state congresses to enact legal frameworks for water management.

As part of Mexico's efforts to develop supportive relationships with emerging state environmental authorities, SEMARNAT will commonly enter into coordination agreements with the executive branches of states with respect to particular environmental issues. For instance, such an agreement was made on the construction of three wastewater treatment plans and rehabilitation of existing plants in the state of Jalisco in 2003.[1] On matters of controlling emissions of air pollution a state may enter into a coordination agreement with SEMARNAT as well. For example, according to such an agreement with the State of Sonora, operation of air quality monitoring equipment was transferred to the state, while SEMARNAT agreed to provide technical training and capacity building and conduct oversight. Specifically, SEMARNAT was to "provide technical assistance to [municipalities] in order to obtain a more adequate and efficient operation of the ambient air monitoring stations; … participate in technical personnel training …. [and] conduct supervision and auditing activities of the ambient air monitoring system."

In the United States, the US EPA helps state agencies develop their programs so that they may effectively fulfill their responsibilities of enforcement and implementation of federal environmental statutes. Grants, such as the Wetland Program Development Grants, are authorized under each of the major pollution control statutes to help states develop programs. These program development grants were particularly important in the 1970s and 1980s when most states were actively developing the majority of their pollution control programs. The US EPA also operates numerous capacity-building programs in cooperation with state environmental agencies to train staff in specific aspects of enforcement, negotiations, permit writing, and other activities essential to implementing environmental protection programs.

III. Citizen Participation

All reviewed systems include provisions for citizen participation in environmental decision making. It is important to recognize there are different levels of participation, from mere notification of decisions, to consultations, to active roles in decision making, and finally, explicit authorizations to bring citizen suits either against polluting entities or to challenge unlawful government actions. At a minimum, federal environmental authorities are generally obligated to publish their activities, such as rulemakings, notifications, changes in policy, and other regulatory actions in an official gazette. In the United States, this is the Federal Register, which is published daily and available for free online. In Mexico, this is the Diario Oficial Federale, which is also available for free on line. Generally, publishing all significant regulatory activities through a centralized journal or database is an essential predicate to all other forms of citizen participation.

The other key channel for citizen participation is through the EIA process, because it allows for the introduction of environment perspectives or concerns related to activities that may not otherwise be perceived as having an environmental aspect. Brazil, Germany, and the United States all require that EIA documents be accessible to the public. In most cases, the public is entitled to comment on the environmental impacts of a project at EIA hearings or other forums. Canada has developed several innovative participation-enhancing EIA procedures, discussed below.

1. Procedures to assure public outreach and transparency

All studied countries provide at least statutory transparency requirements while several enshrine the right to environmental information directly in the constitution itself. Beyond transparency, which can be understood to refer to the passive availability of information, outreach and public education on environmental issues are key components of governance in each of the countries as well.

Mexico has received recognition for developing one of the strongest regulatory frameworks for access to information in Latin America. Mexico's constitution guarantees a right of access to information, and requests for information must be honored in a short period of time if the request is in writing and submitted in a "peaceful and respectful manner." Mexico implements this right with respect to environmental information through several procedures by which private citizens may access information in the government's possession. Under LGEEPA's chapter on "Rights to Environmental Information," citizens have a subjective right to access environmental information held by the government and this right is available against the states, municipalities, and authorities of the Federal District as well. Under LGEEPA article 204, citizens may also request a technical report from SEMARNAT when they have been injured by a violation of LGEEPA—this is actually an information-forcing mechanism that spurs government to gather data. The report can be used as evidence in civil suits for compensation by the citizen. General rules on information access also apply under the Federal Transparency and Access to Public governmental Information Act (LFTAIPG), which provides for public access to information across all branches of government. This law has driven the creation of

transparency and information access units across the federal administration, including within SEMARNAT.[73]

One choice that may need to be considered is whether public outreach efforts should be handled by a special office or by the regulatory entity itself. For example, under the Chinese Measures on Open Environmental Information adopted by SEPA in 2007, each respective level of national and local environmental protection authority is responsible for "promoting, guiding, coordinating, and supervising open environmental information work throughout the whole country." In Mexico, by contrast, there are three non-regulatory divisions handling outreach and transparency within SEMARNAT: the General Coordination for Social Communication, the Center for Education and Training on Sustainable Development, and the National Commission for the Understanding and Use of Biodiversity (an intersecretarial agency).

There are tradeoffs in either approach: Dedicated outreach and communication bodies may be more accessible and welcoming to businesses and the public, but may have a weaker ability to provide more specific regulatory information. If regulatory offices themselves are solely in charge of public outreach, however, more specific and accurate regulatory information may be made available, but only to the extent regulators are willing and able to disclose politically and legally sensitive information. In the end, a "both-and" approach may be more effective than "either-or": regulatory officials should have some responsibility for ensuring transparency in regulatory operations, while special outreach offices encourage broader environmental education and sustainability goals.

In the United States, there are overarching transparency requirements with which all federal agencies must comply. These include the Administrative Procedure Act of 1946, the Government in the Sunshine Act of 1976, and the Freedom of Information Act (FOIA) of 1966. Specific environmental statutes also have specifications regarding transparency, and the EPA holds public meetings to allow for public commenting on rulemaking. All EPA decisions are published in the Federal Register. Specific offices within the US EPA also conduct public outreach by releasing advice and guidelines on health-related issues such as fish consumption. The US EPA proactively provides information on a number of issues.

Many governments have launched non-regulatory initiatives to improve public outreach on environmental issues and the role of environmental authorities. This effort can begin at a very young age. Brazil's National Environment Education Policy requires that environmental education be included as a basic and obligatory curriculum "at all public and private levels of education." The public may also be given a role in high-level environmental planning processes. In Mexico, the constitution obligates democratic planning processes, and the Planning Law guarantees public participation in the formulation of the National Development Plan. This was accomplished in 2001 through nine national citizen consultations dealing with issues including biodiversity, deforestation, pollution, and desertification, In addition to approximately 6200 in-person participants, citizens could also participate via surveys and the Internet. 117,040 questionnaires were

[73] *But see infra* page 52 for discussion of withholding "reserved" information from public disclosure.

received in this manner. Recently, the President of Mexico initiated a special program to raise awareness of water resources and waste management.

2. Public participation through stakeholder and community consultations, inclusive decision making, and advisory committees

The US EPA offers opportunities for public participation at various stages of rulemaking, compliance, and enforcement procedures. The Administrative Procedure Act of 1946 establishes specific requirements for transparency and public participation in rulemaking and public meetings, including the publication of all US EPA rules in the Federal Register and the Code of Federal Regulations. The US EPA also provides opportunities for citizens to report environmental violations and emergencies through hotlines, online forms, and local government offices. Switzerland has also been recognized for fostering public involvement.[74] For example, "[c]itizens may intervene in the preparation of legislation, propose subjects for referendums and vote directly on major policy issues."[75] Many of these referendums have been influential in improving environmental protections.[76]

Under Canada's environmental impact assessment (EIA) law, the most rigorous method of carrying out an EIA, used in a small but growing number of cases, is the "review panel" composed of experts appointed by the Minister of the Environment. The panels are intended to be used for large or contentious projects to encourage greater public discussion and exchange of views, and to involve larger groups of stakeholders through open public hearings.[77] For projects that require authorization under both federal and provincial EA, there are special rules for join review panels, operated under harmonization agreements between the province and federal government.[78]

Canada uses a novel program to provide financial support for public participation in review panels and other EIA processes. The CEAA maintains web resources for organizations and groups interested in receiving funding to support their participation in the EA process.[79] A 2004 survey of groups participating in panel reviews determined that participation has been useful under the following conditions:

- Flexible consultation methodologies that are inclusive, educative, and accessible to lay public;
- Full disclosure of materials and information related to the assessment;
- Effective processes for gathering information and input;
- Adequate participant funding; and

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[74] *Switzerland*, OECD Report, *available at* *http://www.oecd.org/dataoecd/8/31/2451893.pdf* (last viewed Apr. 16, 2010).
[75] *Id.*
[76] *Id.*
[77] http://www.ceaa.gc.ca/default.asp?lang=En&n=B053F859-1#1 (last visited June 29, 2010).
[78] CEAA, Basics of Environmental Assessment, http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=B053F859-1#panel (last visited June 30, 2010).
[79] CEAA, Participant Funding Program, http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=E33AE9FB-1 (last visited June 30, 2010).

- Public input and feedback regarding the development and improvement of the process.[80]

Obstacles to effective participation that were identified included:

- Inadequate funding for hearing participants
- Poor advertising of available funding
- Unrealistic time limits on commenting and participation
- Public and First Nation consultations being initiated too late in the process or without due care to cultural differences, precluding appropriate issue definition and resulting in alternatives being rejected before they have even been considered
- A general lack of engagement of the public in the scoping process, and lack of funding for the scoping process
- An overly-narrow definition of the project
- An overly-formal hearing process; and
- A panel that appears predisposed to a particular outcome.[81]

3. Procedures for citizen monitoring, reporting, and enforcement,

Citizen participation is minimally addressed in China's environmental laws, but citizens do have the right to access information, participate in decision-making, sue, and participate in reporting environmental pollution. In China, public complaints about polluting enterprises can lead to inspections, whereby EPBs are required to arrive at a site within two hours of receiving an environmental complaint in urban areas and within six hours in rural areas. Notably, over 80% of county EPBs also have environmental 24-hour "hotlines" for citizens to report instances of non-compliance via telephone. Chinese citizens can also initiate class action or administrative lawsuits. NGOs were not historically granted standing to sue, although the recent establishment of environmental courts in certain provinces opens the door for public interest lawsuits. One key player in this arena is the Center for Legal Assistance to Pollution Victims (CLAPV), the only environmental litigation public interest group in China. The organization was established in 1999 and has provided training and legal assistance for over 135 cases brought to trial. In addition, the organization has also published handbooks to increase public understanding China's legal process and citizens' rights.

The problem of proving legal standing to bring citizen suits to enforce environmental laws or to obtain judicial review of agency action is a recurring problem for public interest and community-based environmental organizations in many nations. Even countries with broad standing doctrines as a matter of constitutional or judge-made law may find it to be in the interest of predictability and clarity to provide statutory authority for citizen enforcement mechanisms that give these groups access to courts. In Germany, the Environmental Appeals Act (UmweltRechtsbehelfsgesetz- UmwRG) was recently enacted to clarify the

[80] Susan Rutherford & Karen Campbell, *Time Well Spent? A Survey of Public Participation in Federal Environmental Assessment Panels*, 15 J. ENVTL. L. & PRACTICE 71, 80 (2004).
[81] Susan Rutherford & Karen Campbell, *Time Well Spent? A Survey of Public Participation in Federal Environmental Assessment Panels*, 15 J. ENVTL. L. & PRACTICE 71, 80-81 (2004).

scope of citizen legal action.[82] Previously, environmental associations could only bring legal actions if their rights had been infringed. Under UmwRG, associations can now bring suit when they believe there has been an infringement of an environmental law, irrespective of their own legal interest in the case. However, the alleged violation must infringe at least one citizen's legally protected interest, even if they are not a party to the litigation.[83] In contrast, in the United States, organizations may not bring suit on behalf of another party; at least one member of the organization must meet the requirements of standing in order for the organization as a whole to have standing. In order to bring a legal action, the association must meet several requirements, including that the basis of its work is environmental; that it has open membership; and that it has been established for at least three years at the time it seeks official recognition (see Article 3(1) UmwRG).[84]

Legally protected rights in Germany include the right to health, for example, but not a right in the well-being of the environment per se.[85] Some environmental lawyers have criticized the requirement that a substantive right be violated as overly restrictive and claim the new legislation has merely increased the ambit of representation.[86] In the United States, by contrast, the definition of what constitutes "injury" for purposes of standing analysis is distinct, and much broader than, the analysis of whether a specific legal right has been violated. Germany's NEPA is considering whether to recommend increasing the scope of environmental decisions covered by the act to include actions that have strictly environmental impacts.[87] Germany's experience highlights that while specificity in the law as to when and how organizations may use the courts is essential as a matter of administrative procedure, too many procedural requirements can prevent the use of citizen suits and judicial review as an avenue of participation and enforcement.

IV. Legal Assessment

While judicial review of agency action is available in Mexico, it may be less effective at directing policy than in other systems because decisions are only binding on the parties, do not create precedent until there have been five similar rulings on the same issue, and cannot bind other branches of government. Environmental groups are frequently kept out of court by a relatively high *locus standi* requirement to show direct and immediate legal interests in pollution cases or in requesting access to information. Some have argued the courts are

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[82] This law implements Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice.
[83] UBA, 'Helping the environment gain its rights', http://www.umweltbundesamt.de/uba-info-presse-e/2009/pe09-048_helping_the_environment_gain_its_rights.htm, Last updated: July 13th 2009
[84] UBA, 'Greater rights on the part of environmental associations to file collective legal actions', http://www.umweltbundesamt.de/umweltrecht-e/verbandsklage/index.htm, Last updated: October 15th 2009
[85] Whole paragraph: UBA, 'Greater rights on the part of environmental associations to file collective legal actions', http://www.umweltbundesamt.de/umweltrecht-e/verbandsklage/index.htm, Last updated: October 15th 2009
[86] Schaffrin.D and Mehling.M, 'Public Interest Litigation in Environmental Matters: A German Perspective', Number 2, 2007, Environmental Law Network International Review
[87] UBA, 'Helping the environment gain its rights', http://www.umweltbundesamt.de/uba-info-presse-e/2009/pe09-048_helping_the_environment_gain_its_rights.htm, Last updated: July 13th 2009

the weakest link in Mexican environmental enforcement, also due in part to low understanding of environmental issues and law by Mexican judges.

1. National authorization and oversight of state programs

In the United States, most of the major federal environmental statutes allow the US EPA to authorize state environmental authorities to implement and enforce various federal programs. In order to receive this authorization states must submit their plan for a specific program, which the US EPA will decides whether or not to approve. Authorization of a state program suspends the direct federal role of implementing the environmental program in that state.

a. Methods of assuring compliance and enforcement at the state level

Brazil's Ministério Público (the public attorney's office), operates at both the state and federal level and has watchdog authority over federal, state, and municipal environmental agencies. This authority, granted under the Public Civil Action Law of 1985, enables it to conduct routine information requests, with which agencies must comply. The overall mandate of the Ministério Público is described in the federal Constitution. Article 129 stipulates that the following are institutional functions of the Ministério Público:

> • "to initiate, exclusively, public criminal prosecution, under the terms of the law;
> • to ensure effective respect by the Public Authorities and by the services of public relevance for the rights guaranteed in this Constitution, taking the action required to guarantee such rights;
> • to institute civil investigation and public civil suit to protect public and social property, the environment and other diffuse and collective interests; …
> • to issue notifications in administrative procedures within its competence, requesting information and documents to support them, under the terms of the respective supplementary law; …
> • to request investigatory procedures and the institution of police investigation, indicating the legal grounds of its procedural acts;
> • to exercise other functions which may be conferred upon it, provided that they are compatible with its purpose, with judicial representation and judicial consultation for public entities being forbidden."

In other words, the Ministério Público is empowered to investigate and if necessary file suit against government agencies that fail to properly assess proposed projects, issue licenses, monitor permit-holders and environmentally detrimental activities, investigate complaints, or enforce permit conditions. In the event that a person or organization brings a valid claim for an environmental violation and later drops the suit, the Ministério Público must assume the role of the plaintiff so long as the underlying infraction persists.

In the United States, agreements between state and federal governments take the form of grant agreements, State/EPA Agreements, Memoranda of Agreement or Understanding, or a statement of Regional Office operating policy. These documents help ensure compliance and enforcement at the state level. Under key environmental statutes, the U.S. EPA retains the right to disapprove and reject aspects of delegated state-permitting programs when they are determined to be out of compliance with minimum federal standards. EPA may also be able to sidestep state regulators and work directly with industry to ensure compliance with minimum federal standards.[88]

b. Methods used that are beyond command and control

Environmental authorities in many nations have made efforts to achieve environmental standards through a variety of non-traditional techniques. These include tax and other financial incentives; voluntary labeling programs; "shaming" programs; market-based trading solutions; and industry self-auditing (discussed above). Critics of these approaches challenge the notion that "command-and-control" techniques are really as burdensome as industry claims.[89] Others have noted that any efforts at voluntary or "soft" environmental governance are most effective when they take place against a backdrop of mandatory environmental standards and the threat of regulatory enforcement.[90] With these concerns in mind, effective non-traditional environmental programs are present in every country studied.

In cooperation with the World Bank, China's SEPA established a Green Watch program to rank and publicly disclose industrial polluters in 1998. In July 2007, MEP launched a "Green Credit" policy to discourage lending to highly polluting and energy intensive industries. The new program includes a "credit blacklist" of approximately 40 companies, but is still limited in size and influence. Another program is the Green Insurance System, announced in 2009, which requires companies to have the financial means to cover environmental liabilities. The system will be phased in starting with the highest-risk industries, and is not expected to be fully implemented until 2015.

Germany uses an eco-tax known as "Environmental Tax Reform" introduced in 1999 and placed on energy suppliers. Since labor is expensive in Germany a tax formerly placed on workers was shifted to the energy sector. The revenue goes to reducing the pension contributions of employers and employees as well as creating investment funds for

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[88] Both of these steps were taken recently with respect to the state of Texas's air pollution program. *See, e.g.*, EPA, Approval and Promulgation of Implementation Plans (Texas), 75 Fed. Reg. 26,892 (May 13, 2010); EPA, Audit Program for Texas Flexible Permit Holders, 75 Fed. Reg. 34,445 (June 17, 2010).

[89] *See* CENTER FOR PROGRESSIVE REGULATION, A NEW PROGRESSIVE AGENDA FOR PUBLIC HEALTH AND THE ENVIRONMENT 62 (Christopher H. Schroeder & Rena Steinzor eds. 2005) (noting best-technology approaches to reducing pollution typically leave industry free to "implement any technology they choose as long as the technology performs at least as well as the model technology upon which the agency based the standard").

[90] Ramon Alvarez, *Harnessing the Power of the Private Sector to Improve Environmental Quality on the U.S.—Mexico Border*, *in* 101, 107 ("Studies show that a key motivator for firms to adopt eco-efficiency measures is a stringent regulation or enforcement action (EPA). The threat of enforcement fulfills an important role in creating 'outside pressure in overcoming organizational inertia and creative thinking'") (quoting Michael E. Porter & Class van der Linde, *Green and Competitive: Ending the Stalemate*, Harvard Business Review, Sept-Oct. 1995, pp. 120-34).

renewable energy development. The reduced burden on labor means greater job security and the creation of new employment opportunities, especially in alternative energy sectors. The tax has increased every year from 1999 to 2003; however, certain industries receive exemptions or relief from the tax to remain competitive. For example, those operating public transport only have to pay 50% of the tax.

Germany also has a well-established eco-labeling program called the Blue Angel, which is awarded to products or processes with demonstrated low environmental impacts.[91] Founded in 1978, Blue Angel is the world's longest-operating eco-labeling program.[92]

In the United States, a cap-and-trade system of emissions control was first introduced at the national scale to control sulfur dioxide emissions through the "Acid Rain Program" of the Clean Air Act Amendments of 1990. Similar trading program have been initiated to reduce smog in the Los Angeles air basin and at a regional-scale for the East Coast (the Clean Air Interstate Rule). Trading of greenhouse-gas emissions is going forward at the state-level in the United States through programs such as the Regional Greenhouse Gas Initiative (RGGI)—a collaborative effort of the Northeastern states. The states developed RGGI jointly but implement it individually by adopting state-specific versions of model legislation and regulations. The market covers carbon dioxide emissions from fossil-fuel-powered electricity generating plants and functions interstate, but the states cooperate on the basis of voluntary MOUs rather than binding interstate agreements. In part, this was done to avoid a potential violation of the Compact Clause of the federal U.S. Constitution, which forbids states from entering into binding treaties with one another in a way that could challenge the sovereignty of the federal government. Trading began under RGGI in early 2009, and while it is too early in the program to say whether RGGI is reducing emissions, it has not faced serious legal challenge to its constitutional legitimacy.

Emissions trading programs may not need to be run through a regulatory agency. In 1999, Mexico's state-owned oil and gas company, PEMEX, established a company-wide cap-and-trade program to reduce its greenhouse gas emissions. Although emissions were calculated to have dropped 3.6% in the first three years, it is unclear whether the market mechanism was the cause. Environmental Defense Fund, a non-governmental organization, has been assisting PEMEX in the set-up and operation of the program.

2. Allocation of enforcement between national and state agencies

Federal countries generally seek to delegate much of the responsibility for environmental enforcement to state authorities, while retaining authority where states fail to enforce their environmental standards, and providing mechanisms for resolving enforcement disputes between states or between a state and the federal government. In China, Brazil, and the United States, most enforcement responsibilities are delegated to state or local environmental programs, while the federal government retains authority to enforce against violators as needed. A counterexample from Mexico demonstrates why this is a best practice. While Mexico generally follows a similar structure, under its air pollution law,

[91] http://www.blauer-engel.de/en/index.php
[92] http://www.blauer-engel.de/en/index.php

SEMARNAT may only sanction violations that fall under federal jurisdiction, and state environmental agencies are responsible for enforcing regulations for activities under their jurisdiction.[93] The result has been a lack of enforcement at the state level and there have been recommendations to expand federal jurisdiction to ensure these gaps do not persist.[94]

a. Decentralized federal enforcement

Devolution of enforcement to local levels happens not only by delegating authority to state governments but by setting up a decentralized structure of operations within the federal agency. Both Brazil (through the Ministério Público) and Mexico (through PROFEPA) maintain federal civil enforcement offices in each state to oversee, support, and ensure enforcement of environmental standards. In recent years, China's SEPA set up a Bureau of Supervision and established five regional Environmental Supervision Centers to assist EPBs with their growing enforcement needs. The U.S. EPA, like China, maintains ten regional offices (rather than state-based offices) to provide assistance and oversight in ensuring the states meet their own standards or federal standards in enforcing environmental law.

Looking more closely at China's Environmental Supervision Centers,[95] these function as environmental law enforcement, monitoring, and reporting branches that operate directly under the national authority (now MEP) and assist local enforcement efforts. They are given the task of supervising regional implementation of the states' environmental policies, laws, and standards, undertaking investigative cases of environmental pollution and ecological destruction, coordination cross-provincial disputes, oversight of law enforcement in national nature reserves and parks, and handling investigation of major environmental emergencies.

The same state-federal conflicts over central versus localized control arise within a decentralized federal agency. An observer of the U.S. EPA noted, "[I]n the hazardous waste areas, each region[al office] seems to have its own view of policy, and headquarters has found it almost impossible to ensure uniformity. Each region is jealous of its turf, and often views headquarters as out-of-step with the real world… Headquarters…view[s] the regions as not being totally aware of the Agency's mission and not always cognizant of the implications of its decisions."[96] These tensions are not necessarily bad. They are a natural dynamic of the need to mediate between interests at different scales, and can be channeled constructively through effective leadership and coordination.

b. Methods of resolving conflicts

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[93] Summary of Mexico's Environmental Laws § 8.4.
[94] OECD 2003 Summary, at 4.
[95] Guanyu Yinfa Zongju Huanjing Baohu Ducha Zhongxin Zujian Fangan De Tongzhi [Notice on the Plan for Establishing Environmental Supervision Centers] (adopted by the State Environmental Protection Administration, Jul. 8, 2006) (P.R.C.) *available at:* http://www.mep.gov.cn/gkml/zj/bgt/200910/t20091022_173965.htm.
[96] FRANK B. FRIEDMAN, PRACTICAL GUIDE TO ENVIRONMENTAL MANAGEMENT 397 (Envtl L. Inst. 10th ed.2006).

Conflicts on whether and how to enforce environmental laws can arise between states or between state-level and federal-level authorities. In Brazil, IBAMA "is [] responsible for cases where there is a conflict between the states, usually when a source of pollution is located in one state but affects another."[97] Similarly, conflicts between the state-level EPBs in China are handled and resolved by the federal Environmental Supervision Centers, which oversee regional disputes. In the United States, conflicts between the states are more likely to be litigated before the Supreme Court (through a Special Master) in the first instance rather than going through a dispute resolution process within EPA.

With respect to conflicts between federal and state authorities, it is generally the case that the federal government will have either statutory or constitutional authority to override the state should a disagreement reach the point of litigation. In reality, this rarely happens. Most civil environmental enforcement actions are handled by either the federal government or the state, not both, reducing the potential for conflict. However, joint enforcement actions can be undertaken, and are encouraged, for resource-intensive cases, or where it is important that the federal and state governments present a united front to a court, a defendant, or the public. Guidance on such collaborations issued by the U.S. Department of Justice and the National Association of Attorneys General recommends, beyond case-specific partnerships, "on-going collaboration and communication among federal and state environmental enforcement personnel in order to help ensure effective and efficient enforcement, avoid duplication of effort, reduce opportunities for state/federal conflict, and promote effective use of state and federal enforcement resources."[98] China also provides guidance for undertaking joint enforcements in special cases.

Perhaps the best way to deal with conflicts between state and federal authorities is to prevent them in the first place. In Australia, for example, a typical bilateral agreement on EIA between the Commonwealth and a state will provide, "[t]he parties agree to inform one another before commencing action to prosecute a person for breaching conditions…."[99] Similar language on coordination and cooperation in implementing Australia's EIA requirements is found throughout these agreements. Nonetheless, it is important that federal authorities retain the power to take enforcement actions even in the face of opposition, hostility, or apathy from the state. Indeed, this is a familiar dynamic in federal environmental law enforcement.

3. Procedures for prosecuting criminal violations

The manner in which prosecutions are brought for environmental crimes depends largely on the underlying legal system, constitution, and political structure of the country in question. For example, in the United States, much criminal procedure is governed by the

[97] de Moraes Filho, *supra* note X at 145.
[98] U.S. DEP'T OF JUSTICE & NAT'L ASS'N OF ATTY'S GEN., GUIDELINES FOR JOINT STATE/FEDERAL CIVIL ENVIRONMENTAL ENFORCEMENT LITIGATION 3 (2003).
[99] *E.g.*, Agreement between the Commonwealth and the State of Victoria under Section 45 of the Commonwealth Environmental Protection and Biodiversity Conservation Act of 1999, § 17 (signed June 20, 2009), [hereinafter Victoria Agreement] *available at* http://www.environment.gov.au/epbc/assessments/bilateral/index.html.

Constitution's Bill of Rights, such as the Fourth Amendment (unreasonable search and seizure); the Fifth Amendment (due process); and the Sixth Amendment (variety of procedural rights such as the right to a jury and a speedy trial). Congress has provided more detailed statutory rules to carry out these principles. For example, the Speedy Trial Act sets deadlines for various steps in any criminal prosecution.

Under Mexico's constitution, the Office of the Public Prosecutor (within Mexico's Department of Justice – MPF) is the sole entity with authority to request punitive action and redress before a judge in a criminal proceeding. The power is called *acción penal* -- "criminal action." Mexico, however, has a unique program for private citizens to initiate environmental criminal actions. LGEEPA Article 182 provides that every person may file criminal complaints with the Federal Public Prosecutor for actions or omissions that may constitute federal environmental crimes. The power of victims or witnesses of crime to play this role has been a part of Mexican criminal law since 1986, but was unclear with respect to SEMARNAT until LGEEPA article 182 was augmented in 2002.[100] Now SEMARNAT, acting through PROFEPA, may participate in criminal investigations as a third-party intervener or assistant. Further, under LGEEPA article 169, the relevant environmental authority has an affirmative obligation to notify the Office of the Public Prosecutor of acts that may constitute environmental offenses. Until 2002, however, PROFEPA "had no specialized administrative criminal law enforcement structure for pursuing, opening files on, gathering evidence on, or carrying out any other activity to substantiate the existence of environmental offenses."[101] (See "In-house prosecution capability" below.)

4. Procedures for imposing penalties and fines for non-compliance

China operates on the polluter pays principle. Fines are imposed in over 60% of non-compliance penalties, although violators can also face permit revocations or shut-downs or criminal charges. The Law on Environmental Protection specifies that fees and penalties levied from non-compliance must go toward the prevention and control of pollution. Criminal liability for non-compliance was established in 2003 after the revision of the PRC's Criminal Law, but less than 20 cases of environmental crimes have been prosecuted so far.

In the United States, penalties for civil compliance violations include civil penalties and other sanctions. Civil penalties under most of the federal statutes are assessed for each day of the violation. Civil penalties also include a calculation of the economic benefit realized by the violator, which is added to the amount of the penalty in order to assure that violators do not benefit from non-compliance. U.S. policy calls for "at a minimum, [...] recovery of the economic benefit of non-compliance plus some appreciable portion reflecting the gravity of the violation." The recovery of the economic benefit of non-compliance reflects that the financial disincentive for violations needs to be greater than the benefits of noncompliance. Penalties for noncompliance in Mexico are often set as a factor of minimum wage per day of violation. Criminal penalties, for example, range from fines amounting up to 3000 times the minimum daily wage and jail terms of six months to ten

[100] http://www.cec.org/Storage/71/6550_98-6-FR-E.pdf (Aquanova) at 10.
[101] ALCA-Iztapalapa II, at 31.

years. Thus the highest criminal fine that can be imposed is around $13,500 per violation, a relatively weak maximum fine. While this may be an effective disincentive for smaller operators, it has not been effective at preventing noncompliance by medium- and large-size firms.

5. System for administrative penalties, hearings, and appeals

Most countries require environmental agencies to comply with administrative procedures set by cross-cutting laws that apply to all government agencies. In Mexico, this is the Federal Law on Administrative Procedure and in the U.S. it is the Administrative Procedure Act. In China, the procedures for administrative litigation, penalties, hearings, and appeals are outlined in the Administrative Procedural Law, Administrative Reconsideration Law, and their respective implementation rules. As administrative law relates to environmental law and permitting, courts accept cases in which entities: (1) refuse to accept administrative penalties or compulsory administrative measures; (2) claim that an administrative body has infringed upon its legally authorized decision-making powers; (3) applied for a permit or license in conformity to the provisions of laws, but an administrative organ has refused to issue it; or (4) were asked to perform duties by an administrative organ in violation of laws.

In addition to these general administrative laws, statutes governing a particular environmental matter may also set out procedures for administrative actions and generally these are interpreted to supersede anything in the more general law. Thus in the US administrative penalties are set by the Toxic Substances Control Act (TSCA); Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); and the Resource Conservation and Recovery Act (RCRA). These statutes in particular rely on administrative penalties for enforcement. The recipient of the penalty may appeal the decision to an Administrative Law Judge (ALJ) and may appeal the decision of the ALJ to the Environmental Appeals Board (EAB). Decisions of he EAB may be appealed to the federal court of appeals, but that court will only review whether the decision was in accord with the law, it does not review the facts as determined by the ALJ and EAB.

Mexico's general administrative procedure law provides a good example of the basic requirements for a system of administrative penalties and procedures to impose them. SEMARNAT's regulatory acts or orders must meet the following requirements:

- Issued by a competent authority meeting the formalities of the law or decree at issue;
- Limited to determinable and precise circumstances of time and place;
- Comply with the public interest goals of the statute;
- Stated in writing and signed by the issuing authority;
- Rational and reasoned;
- Issued subject to the provisions on administrative proceedings under the law;
- Issued without errors on the object, cause or reason, or end of the act in question;
- Issued without intentional violence;
- Identify the issuing body;
- Properly identify the documents, files, and individuals in question;

- State the place and date of issue;
- Note the location of the office where relevant records may be consulted;
- Disclose appeals and remedies available; and
- Expressly decide all issues raised by the parties or established by law.[102]

The law also provides detailed requirements for appealing administrative decisions. Individuals affected by acts and decisions of administrative authorities may seek to end the procedure through filing an "appeal for revision" or seeking judicial review.[103] Objections must be made in the course of the administrative proceeding; failure to do so renders the objectives waived.[104] Complainants have 15 days to lodge an application for review from the day following that on which the decision being appealed takes affect.[105] The notice of appeal must be submitted to the authority that issued the contested order and will be resolved by the authority's supervisor, or if the head of the unit issued the order, the appeal will de resolved by that person.[106]

Content and filing requirements are then set for, among other things, letters of intent to appeal.[107] Conditions are identified for when the measure to be implemented may be suspended. [108] Situations and conditions under which appeals are inadmissible are listed.[109]

The law sets out grounds for dismissal of appeals.[110] Finally, the law identifies situations in which the agency may revoke or modify its action, ex parte or ex officio. [111]

A key concern in administrative environmental law is ensuring officials have sufficient flexibility to use their powers in highly fact specific circumstances while also ensuring regulated industry has certainty in terms of regulatory expectations and procedural safeguards. Mexico's detailed administrative review procedures are commendable for providing certainty of process; however, some requirements in the administrative order itself (e.g., a statement that the action complies with the "public interest goals of the statute") may hinder effective action by giving regulated entities too many bases on which to contest the legitimacy of the act.

6. Compliance assurance mechanisms and their effectiveness

Methods for assuring compliance with regulations include self-monitoring, self-reporting, inspections and/or compliance evaluations, penalties, and fines. In federal systems, the primary responsibility for assuring compliance with regulations generally will be delegated

[102] LFPA § 3, last published in DOF 2000). Mexico's administrative law is set out in greater detail in the Country Report infra.
[103] *Id.* § 80.
[104] *Id.* § 84.
[105] *Id.* § 85.
[106] *Id.* § 86.
[107] *Id.*
[108] *Id.* § 87.
[109] *Id.* S 89.
[110] *Id.* § 90.
[111] *Id.* § 95.

to the state, with the federal agency and its regional offices playing a backup role. For instance, the US EPA retains residual enforcement authority and is entitled to take direct enforcement action if a state is unwilling or unable to do so.

a. Self monitoring and reporting

Self-monitoring and reporting is an important aspect of any compliance program, but must be done systematically and with oversight to ensure it is effective. In the United States, for example, most federal environmental laws have self-reporting requirements through which industries are required to monitor their own emissions or discharges. Incentives for self-policing -- including voluntary discovery, disclosure, correction, and prevention -- can include up to 75-percent mitigation in penalties and "a recommendation for no criminal prosecution of the violations against [the] entity." To safeguard against failure to monitor or report accurately, it is recommended that self-reporting requirements be "combined with a program of field audits by government personnel." In addition, intentionally filing a false report is a violation.

Mexico's government is interested in developing a stronger regime of voluntary compliance and promulgated a new regulation on self-audits in 2010. The regulation includes the following components:

- Strategic planning to identify which sectors have highest impact on environment and most compatible with self-auditing programs
- Regional support centers for small and medium enterprises
- Process for obtaining certification through environmental auditing
- Review mechanisms using performance indicators
- System of awards and incentives for companies that voluntarily participate, graduated to the level of achievement
- Approval and assessment processes for Environmental Auditors, including procedures and requirements to be met, including expertise in the provisions of the Federal Law on Metrology and Standardization
- Operational tools including terms of reference formats, user manuals, seal certificates, and training programs.

Environmental audits are based on terms of reference (ToR) developed and issued through industry and pollution specific NOMs. Obtaining a self-audit certificate takes place in four stages: (1) application for Certificate; (2) Presentation of the Environmental Audit Report (EAR); (3) Developing a Plan of Action (if necessary); and (4) Certification. PROFEPA retains the authority to verify compliance and monitoring and preventive measures and remedies, and may at any time verify compliance with the self-audit regulation. If PROFEPA determines an EAR does not satisfy the applicable ToR, the company must commit to carrying out a remedial Action Plan. Once an Action Plan has been accepted, an independent Environmental Auditor must file updates on the status of the Plan. If at any point PROFEPA determines the company is not in compliance with the Plan, it may revoke Certification.

Environmental auditors are accredited by the Technical Committee of Environmental Auditors under Mexico's metrology and standardization law. PROFEPA may carry out verification visits to evaluate the performance of Environmental Auditors. Violations of any rules are grounds for cancellation of the auditor's license. PROFEPA can annul a company's certificate if it is found to have: (1) provided false or incomplete information; (2) withheld information to auditor or PROFEPA; (3) misused its certification; or (4) been sanctioned for environmental crimes.

b. Public disclosure of information

Ensuring adequate public disclosure of information while protecting sensitive, privileged, or confidential information has posed significant challenges under key environmental statutes for many countries. In Mexico, for example, Article 13 of the transparency law, LFTAIPG, allows information to be classified as "reserved" when it may "cause serious harm to the activities to verify compliance with the law, the prevention or prosecution of crimes, administration of justice, collections from taxpayers, immigration control operations, and procedural strategies in judicial or administrative proceedings while rulings are pending." Mexico's authorities may be over-using this power to block access to politically sensitive information. For example, information related to criminal or internal investigations is frequently classified as reserved or restricted by the Mexican Attorney General, and even PROFEPA may be denied access to that information.[112]

In the United States, EPA has established rigorous guidelines for public disclosure of data provided by regulated industry, with the goal of protecting confidential business information (CBI).[113] Several sources of concern have arisen, however. Some statutes restrict EPA's ability to share CBI with regulators in state and foreign governments, hampering efforts at inter-jurisdictional cooperation.[114] In contrast, Canada and Europe specifically authorize such data sharing so long as the other government agrees to keep the information confidential.[115] Further, under the U.S. chemicals law, "manufacturers claim substantial amounts of information they submit as CBI and are not always required to provide upfront justification for their claims. Furthermore, the EPA must review CBI claims on a case-by-case basis, and partly because of resource constraints, does not review or challenge large numbers of such claims."[116] (In response to these concerns, EPA recently instituted a new policy of treating most information related to chemical health and safety as presumptively not qualified for CBI treatment.[117]) The EU's general approach to public

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[112] *See, e.g.*, Sec. Comm'n on Envtl. Cooperation, *Alca-Iztapalapa II*, SEM-03-004, at 4-5 (Aug. 23, 2004), *available at* http://www.cec.org/Storage/73/6745_03-4-ADV_en.pdf.
[113] *See generally* 40 C.F.R. part 2 (USA), *available at* http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title40/40cfr2_main_02.tpl.
[114] *See* U.S. GAO, Options Exist to Improve EPA's Ability to Assess Health Risks and Manage Its Chemical Review Program, GAO-05-458, at 13-14 (2005).
[115] *Id.*
[116] LINDA BREGGIN ET AL., SECURING THE PROMIS OF NANOTECHNOLOGIES: TOWARDS TRANSATLANTIC REGULATORY COOPERATION 52 (September 2009).
[117] Claims of Confidentiality of Certain Chemical Identities Contained in Health and Safety Studies and Data from Health and Safety Studies Submitted Under the Toxic Substances Control Act, 75 Fed. Reg. 29,754 (May 27, 2010) (U.S.A.).

disclosure of environmental information in the chemicals sector under the new REACH Act may provide a better model for processing CBI claims, though it is still too early in implementation of the new law to be sure. REACH delineates "among types of information that: 1) normally is considered CBI; 2) must be made publicly available unless an acceptable justification is provided; and 3) will be made available to the public free of charge."[118] The burden to justify a claim of CBI is thus placed on the regulated entity rather than the agency for the most contentious category of information.

7. Procedures for initiating legal actions

In the United States, states typically initiate legal actions, but the US EPA may do so if a state is unable or unwilling to. Specific procedures for initiating legal actions can vary from one environmental statute to the next, and can depend upon the severity of the violation. Tools that can be used include: information requests, Warning Letter/Notice of Violation, Administrative Compliance Orders, Judicial Actions, Corrective Action Orders, Corrective Action Letters, and Compliance Orders.

a. In-house prosecution capability

In Brazil, an activity or conduct that causes environmental damage may be reported to the Ministério Público, which is authorized to investigate such matters. Once it is sufficiently convinced of the existence of environmental damage or threat thereof, a public civil action or criminal prosecution under the Environmental Crimes Law may be filed. The Ministério Público's attorneys have the legal authority to bring both civil and criminal suits and collect damages when there has been a violation of environmental regulations; they have broad discretion to interpret regulations and decide who should be charged. Traditionally in Brazil the Ministério Público has played an invaluable role in environmental enforcement due to the high caliber and dedication of its prosecutors.

In the United States, EPA has had full law enforcement authority since it was granted this authority by US Congress in 1988. The Civil Enforcement program of the US EPA helps bring polluters into compliance with federal environmental regulations, and does not require the use of criminal sanctions. The Criminal Enforcement program of the US EPA may use "stringent standards, including jail sentences, to promote deterrence and help ensure compliance in order to protect human health and the environment." Federal prosecutors, called U.S. Attorneys, one of which is appointed to serve in each of the U.S.'s 94 federal judicial districts, have concurrent jurisdiction to file criminal cases.

In contrast, in Mexico, enforcement of environmental criminal laws has been historically weaker due to a constitutional requirement that criminal cases may be initiated only by the Attorney General's office, not PROFEPA. PROFEPA thus never developed expertise in prosecuting environmental crimes, even though it would be the appropriate agency, and Mexico's Justice Department never dedicated resources or training for handling environmental crimes, even though it was the only government body with legal authority. Throughout the 1990s, Mexico's environmental criminal enforcement was anemic, with

[118] Breggin et al., *supra* note 142. at 52.

attempted prosecutions routinely collapsing, often officially justified with the excuse that there was a "lack of evidence."[119] This problem has been alleviated more recently by greater coordination and dedication of resources to environmental criminal prosecution by both PROFEPA and the Justice Department.[120]

b. Relationship to Legal Department

Most countries have a special legal office dedicated to handling the general legal affairs of the environmental ministry or agency. The chief legal officer or general counsel is generally directly below the agency's head in the hierarchy and will handle a diversity of issues, from policy coordination to appellate litigation and human resources management. However, this office generally does not play the lead role in civil or criminal enforcement activities. In Mexico, for example, PROFEPA is the special enforcement arm of SEMARNAT, and in the U.S. the Office of Enforcement and Compliance Assurance handles these matters within EPA. U.S. EPA's Office of General Counsel, the chief legal advisor to EPA, handles legal support for rules and policies, supports case-by-case decisions on permits and clean-up actions, evaluates legislative actions, works with U.S. Department of Justice's Environment and Natural Resources Division in representing the agency in court defending agency actions like rulemakings, appeals of enforcement cases, and Supreme Court litigation. The Office also handles day-to-day operations like contract management, grant awards, property and money, and employment issues.[121] Similarly, in Mexico, the Coordinación General Jurídica (CGJ) unit within SEMARNAT is the office that coordinates and evaluates the legal affairs of SEMARNAT and its devolved bodies, promotes updating legal frameworks, handles legal issues arising from day-to-day operations, and provides legal review and defense of decrees and NOMs.[122]

8. Procedures for alternative dispute resolution to achieve compliance

In the United States, alternative dispute resolution refers to "the resolution of disputes through non-adversarial processes with the assistance of an impartial third party." These processes include arbitration and mediation, as well as collaborative monitoring, consensus building, joint fact-finding, and negotiated rulemaking. China, in contrast, identifies three main methods of ADR: negotiation, arbitration, and mediation. All three are used often in environmental cases. Alternative dispute resolution mechanisms in China are actually authorized by the Constitution, which explicitly provides for the organization of people's mediation committees. These committees have been in existence since the 1940s. However, these provisions have not necessarily contributed to stronger environmental governance in China. In practice, many appeals are settled through arbitration to avoid the

[119] As demonstrated for example, in CEC, Factual Record in ALCA-Iztapalapa II (SEM-03-004) (June 2, 2008).
[120] *See* CEC, Factual Record in ALCA-Iztapalapa II (SEM-03-004), at 20 (June 2, 2008); United Nations Development Program, *Informe sobre desarrollo humano en Mexico 2004*, 2005, p. 150. *See infra* page 142.
[121] U.S. EPA, Office of General Counsel, About Us, http://www.epa.gov/ogc/aboutus.htm (last visited July 8, 2010).
[122] SEMARNAT, Manual de Organizacion General de la Secretaria de Medio Ambiente y Recursos Naturales, miercoles 13 de agosto de 2003 D.O.F., at 50-51.

legal process altogether. Without clear legal rules and procedure, weakened application of mandatory standards, and the use of private negotiations to settle matters of public concern, rent seeking through either corruption or lack of effective oversight is much more likely to occur.

Nonetheless, ADR mechanisms can work for some types of environmental disputes, especially where legal enforcement remains as a backstop. In Brazil, for example, when a company causes environmental degradation, it is widely practiced that the company (in consultation with an environmental advisor) will complete a study of the harm and generate suggestions regarding possible restorative solutions.[123] The proposed solutions are discussed with the licensing SEMA.[124] Once SEMA has approved the company's suggested solutions and timetable to complete the work, the matter may be brought before the Ministério Público.[125] If the Ministério Público likewise agrees with contents of the study and proposed restorative actions, it may execute a Terms of Adjustment of Conduct agreement, which must be signed by the company, SEMA, and the Ministério Público.[126] Completion of this process significantly reduces the likelihood of being subject to liability.[127] If the Terms of Adjustment of Conduct fails, the Ministério Público may file a public civil action.[128]

In Mexico, under regulatory guidance issued in 2002 there has also been an official policy shift toward using preventive and voluntary measures to achieve compliance in the first instance and only resorting to civil and criminal enforcements as a last resort.[129] The case of a shrimp aquaculture farm, Aquanova, demonstrates how PROFEPA has used alternative methods of resolving environmental disputes. PROFEPA initiated enforcement proceedings against Aquanova following a determination that the farm had destroyed 50 hectares of mangroves due to the obstruction (authorized by an EIA issued by another division of SEMARNAT) of a local creek. Rather than continue with enforcement actions, however, PROFEPA and Aquanova entered into an administrative agreement terminating the enforcement action and creating a committee of experts. The committee concluded that Aquanova was partially responsible for the harm to the mangroves and as a result of its report, Aquanova built hydraulic structures and initiated a Mangrove Restoration Program in 1999. These efforts have so far been successful but must be maintained and ultimately, water flow must be restored, according to the committee of experts.

[123] de Moraes Filho, *supra* note 7 at 152.
[124] *Id*.
[125] *Id*.
[126] *Id*.
[127] *Id*.
[128] MCALLISTER, *supra* note 10 at 92.
[129] *Id*.

COUNTRY REPORTS

BRAZIL

Overview: Brazil is organized as a federal republic, which contains twenty-seven states, including the Federal District where the nation's capitol, Brasilia, is located. The country's most recent Constitution was enacted in 1988 and "divides responsibility for environmental protection among federal, state, and municipal bodies."[130] Article 225 establishes that all people "have a right to an ecologically balanced environment," which is "essential to a healthy quality of life."[131] In order to achieve this ideal, the Constitution empowers the government to promote ecological processes, environmental education, and the protection of the nation's flora and fauna.[132]

I. Status and Design

1. National Environmental Protection Authority

a. Authorization

In 1981, Brazil enacted the National Environmental Policy, which established a broad framework for environmental governance on federal, state, and municipal levels.133 The statute created the National Environmental System (SISNAMA), which comprises a network of agencies and entities "that are responsible for the protection and enhancement of environmental quality."134 Act No. 99.274/90 amended the original structure of SISNAMA defined in the National Environmental Policy.135

b. Governance structure

Nearly all entities involved in Brazil's environmental governance fall under SISNAMA's umbrella. On the federal level this includes the Governing Council, Ministry of Environment, CONAMA, and IBAMA.

The Governing Council assists Brazil's president "plan and formulate the national policy and governmental objectives concerning the environment and natural resources."[136] It is an

[130] Janelle E. Kellman, *The Brazilian Legal Tradition and Environmental Protection: Friend or Foe*, 25 HASTINGS INT'L & COMP. L. REV. 145, 152 (2001-2002).
[131] Constituição Federal, art. 225.
[132] *Id*. at ¶ 1.
[133] Lei da Politica Nacional do Meio Ambiente, Lei No. 6.938/81.
[134] Lei da Politica Nacional do Meio Ambiente, Lei No. 6.938/81, art. 6.
[135] DUVAL DE NORONHA GOYOS, JR., LEGAL GUIDE: BUSINESS IN BRAZIL 55 (1992).
[136] Oswaldo Leite de Moraes Filho, *Legal Aspects of the Environmental System in Brazil*, DOING BUSINESS IN BRAZIL 143 (2002).

upper body tasked with formulating environmental guidelines and advising the president. The Minister of the Environment presides over the Governing Council.[137]

The Ministry of Environment is a government entity that coordinates CONAMA, and IBAMA.[138] In addition, it serves as a conduit for the exchange of information between state and federal levels of government.[139] The Ministry has the authority to issue policy-oriented orders that compel CONAMA to further analyze a particular issue. There are numerous secretariats within the Ministry of the Environment. The Secretariat of Climate Change and Environmental Quality heads the following departments: Department of Climate Change, Department of Licensing and Environmental Evaluation, and the Department of Environmental Quality.[140] The Secretariat of Biodiversity and Forests oversees the Departments of Biodiversity Conservation, Forests, Protected Areas, and Genetic Heritage.[141] The Secretariat of Water Resources and Urban Environment governs the Department of Water Resources, Department for Revitalization of Hydrographic Basins, and the Department of Urban Development.[142] The Secretariat of Extractivism and Sustainable Rural Development oversees the following departments: the Department of Extractivism, the Department of Sustainable Rural Development, and the Department of Territorial Zoning.[143] Lastly, the Secretariat of Institutional Coordination and Environmental Citizenship controls the Departments of Coordination of the National System for the Environment, Citizenship and Social-Environmental Responsibility, and Environmental Education.[144]

The National Environmental Council (CONAMA) was established by the National Environmental Policy and falls under the control of the federal executive branch.[145] It is charged with the task of deliberating and consulting on matters related to Brazil's environmental policy.[146] CONAMA is responsible for developing "standards and guidelines to orient environmental policymaking and implementation."[147] For example, CONAMA creates environmental norms, passes regulations, and establishes licensing standards.[148] It also serves as the final arbitrator of appeals for administrative sanctions.[149] CONAMA is composed of the Secretary of the Environment, President of IBAMA, as well

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[137] Fundo Nacional do Meio Ambiente**,** *available at* http://www.conservationfinance.org/Documents/EF_profiles/English%20versions/Brasil-FAN-NEW.pdf (last visited May 12, 2010).
[138] Kellman, *supra* note 1 at 155.
[139] *Id*.
[140] *The Ministry*, Ministério do Meio Ambiente, *available at* http://www.mma.gov.br/sitio/en/index.php?ido=conteudo.monta&idEstrutura=206.
[141] *Id*.
[142] *Id*.
[143] *Id*.
[144] *Id*.
[145] Lei da Politica Nacional do Meio Ambiente, Lei No. 6.938/81.
[146] DUVAL DE NORONHA GOYOS, JR., *supra* note 6 at 55; Janelle E. Kellman, *supra* note 1 at 154.
[147] LESLEY K. MCALLISTER, MAKING LAW MATTER: ENVIRONMENTAL PROTECTION AND LEGAL INSTITUTIONS IN BRAZIL 23 2008).
[148] Kellman, *supra* note 1 at 154.
[149] *Id*.

as representatives from each ministry, state and federal districts, several companies, NGOs, and environmental groups.[150] CONAMA's plenary body votes on all resolutions.

The Brazilian Institute of Environment and Renewable Resources (IBAMA) was established in 1989 "to unify the various federal agencies that dealt with environmental and natural resource issues."[151] It administers federal environmental regulations issued by CONAMA and provides CONAMA with administrative and technical support when necessary.[152] IBAMA is also responsible for conducting environmental impact assessments, monitoring industry, providing technical assistance to the states, and issuing licenses with regard to those projects and activities within its jurisdiction.[153] Its governance structure is composed of a "Chair [of] Planning, Administration and Logistics, Department of Environmental Quality, Environmental Licensing Board, Department of Environmental Protection, [and] Department of Sustainable Use of Biodiversity and Forests….154

c. Funding (sources, oversight, monitoring)

Federal environmental governing bodies are funded by the federal government. Permitting fees and the enforcement of penalties also provide another source of funds. In addition, a 0.5% tax is imposed for the benefit of federal environmental bodies on all projects located within ten kilometers of a protected conservation area that are deemed to have a significant environmental impact.[155]

According to Brazil's national budget, the Ministry of the Environment receives three and one half billion reais ($1.8 billion) annually, which is designated for the operation of all three federal environmental governing bodies (Ministry of the Environment, CONAMA, and IBAMA).[156]

In 1989 Brazil's National Environmental Fund (FNMA) was established for the purpose of financing "environmental projects that promote rational use of natural resources and the maintenance, improvement or restoration of the environmental quality of the distinct

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[150] Larissa Metne Lindenbojm, ABA Section of Environment, Energy, and Resources, 3 INTERNATIONAL ENVIRONMENTAL LAW COMMITTEE—NEWSLETTER ARCHIVE (May 2001), *available at* http://www.abanet.org/environ.committees/intenviron/newsletter/may01/lind.html.
[151] MCALLISTER, *supra* note 10 at 25.
[152] Kellman, *supra* note 1 at 155.
[153] *See* de Moraes Filho, *supra* note 7 at 144.
[154] *About Us*, Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis *available at* http://www.ibama.gov.br/institucional/quem-somos/&prev=/search%3Fq%3Dbrazil%2BInstituto%2BBrasileiro%2Bdo%2BMeio%2BAmbiente%2Be%2Bdos%2BRecursos%2BNaturais%2BRenov%25C3%25A1veis%26hl%3Den%26client%3Dfirefox-a%26rls%3Dorg.mozilla:en-US:official%26prmd%3Db&rurl=translate.google.com&twu=1&usg=ALkJrhgC8MKlXcZrxygJuvQ9TMsiaxcv3A (last visited June 7, 2010).
[155] Lei No. 9985/2000.
[156] *Quotation of the Union*, *available at* http://www9.senado.gov.br/portal/page/portal/orcamento_senado/LOA/Elaboracao:PL?p_ano=2010 (last visited June 3, 2010).

Brazilian ecosystems."[157] It is a public institution within the Ministry of Environment that aids in the implementation of the National Environmental Policy.[158] Since its conception, FNMA has funded more than eight hundred projects totaling over forty-five million dollars.[159] Funding comes from a variety of sources including: an International-American Development Bank loan, Brazil's national budget, ten percent of the funds raised through fines levied by the Environmental Crimes Law, and resources generated by Petroleum Law No. 9.478/97.[160]

d. Organizational Structure & Jurisdiction

The federal government's jurisdiction over a particular activity or natural resource is dictated first by the ecological medium in question and second by its location. Brazil's Constitution indicates which ecosystems and ecological processes are designated as union or state property. For example, the following environmental media belong to the union: "lakes, rivers and any watercourses in lands within its domain," "bank lands and river beaches," "natural resources of the continental shelf," "tide lands and those added to them," "hydraulic energy potentials," and "mineral resources."[161] In addition, article 225 of the Constitution stipulates that the Brazilian Amazon Forest, the Atlantic Forest, the Sea Mountain, the Mato Grosso's Marsh (Pantanal) and the Coastal Zone are part of the "national patrimony."[162] As a consequence of these designations, "the Brazilian state is responsible for the preservation, restoration, and management of ecological processes in general, the definition and regulation of conservation areas, the requirement and analysis of environmental impact reports, as well as for the control of production, trading and employment of potentially harmful techniques and substances."[163]

However, the federal government may regulate projects and activities outside the scope of its jurisdiction, where one or more state is involved or a matter of national interest arises.[164]

e. Functions, responsibilities, and staff competencies

Article 23 of Brazil's Constitution gives the federal government, states, and municipalities "'common legislative competence'" to protect "'notable natural landscapes and the environment.'"[165] Likewise, "[a]rt. 24 provides the federal union, the states, and the municipalities with 'concurrent legislative competence' over forests, hunting and fishing, protection of species, and mitigation of environmental damages."[166] However, Brazilian doctrine dictates that concurrent legislation gives the federal government absolute power to

[157] Fundo Nacional do Meio Ambiente, *supra* note 8; Loi No. 7.797/89.
[158] Fundo Nacional do Meio Ambiente, *supra* note 8.
[159] *Id.*
[160] *Id*.
[161] Constituição Federal, art. 20.
[162] Constituição Federal, art. 225, ¶ 4.
[163] Ernesto Fernandes, *Constitutional Environmental Rights in Brazil*, ENVIRONMENTAL RIGHTS IN BRAZIL 278 (1995).
[164] *See* de Moraes Filho, *supra* note 7 at 144.
[165] Kellman, *supra* note 1 at 153; Constituicão Federal, Art. 23.
[166] Kellman, *supra* note 1 at 153; Constituicão Federal, Art. 24.

establish laws and regulations, while state and municipal governments retain limited power.[167] In other words, the federal government creates general terms, while states and municipalities have broad discretion to implement more restrictive measures.[168]

In terms of available human resources, IBAMA employed over four thousand permanent staff members in 2008.[169] It also had two thousand employees working under temporary contracts and two hundred twenty-seven trainees.[170]

f. Relationship to state agencies including oversight and grants

IBAMA generally works closely with state environmental agencies.[171] More specifically, it assists CONAMA where local efforts and resources "are unable to perform according to federal standards."[172] It is also responsible if a conflict should arise between states; this usually occurs when one state's pollution has negative transboundary impacts.[173]

The Ministério Público (Public Prosecutor, discussed in section III.6 infra) has watchdog authority over both federal and state agencies.[174] This authority allows it to conduct routine information requests in accordance with the Public Civil Action Law of 1985, and agencies are required to comply with these requests to the fullest extent possible.[175]

2. State Environmental Protection Authorities

a. Authorization (including relationship to national EPA)

Like their federal counterpart, states are also empowered by the National Environmental Policy to engage in environmental governance within their jurisdiction.[176] State environmental agencies and environmental boards are part of SISNAMA.[177]

b. Governance structure

States have the power to organize themselves and to be governed by a Constitution and laws of their making.[178] At the state level, laws are enacted by the State Legislative Assembly, which is composed of State Deputies.[179] The state environmental board,

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[167] Kellman, *supra* note 1 at 153.
[168] *Id*.
[169] *Annual Report of Audits of Accounts*, Federal Bureau of Internal Control (2008), *available at* http://www.cgu.gov.br/relatorios/ra224272/RA224272.pdf.
[170] *Id*.
[171] de Moraes Filho, *supra* note 7 at 144.
[172] Kellman, *supra* note 1 at 155.
[173] de Moraes Filho, *supra* note 7 at 145.
[174] MCALLISTER, *supra* note 10 at 123.
[175] *Id*.
[176] Lei da Politica Nacional do Meio Ambiente, Lei No. 6.938/81.
[177] *Id*. at art. 6.
[178] EDILENICE PASSOS, DOING LEGAL RESEARCH IN BRAZIL 13 (2001).
[179] *Id*. at 21-22.

CONSEMA, further defines these laws by passing regulations. CONSEMA is the state equivalent of CONAMA.

State environmental agencies (SEMAs) roughly correspond with IBAMA in terms of responsibilities. These agencies "issue licenses related to industrial plants and any other activity that may have an effect on the environment, and also investigate complaints about environment pollution and damages."[180]

While there is no direct state correlation to the federal Ministry of Environment, Governors' environmental secretaries may play a similar advisory role to the chief executive in each state.

c. Funding (including degree of reliance on national EPA)

Nearly all "state and municipal taxes collected are first funneled through the federal government before a small portion is returned to the various localities, giving them little incentive to implement environmentally friendly tax policies."[181] Primarily state environmental governance is funded by state taxes; however, in some cases the federal government may seek Congressional approval to issue grants for particular environmental programs within a state.

d. Organizational Structure & Jurisdiction

In general, states have jurisdiction over projects and activities occurring entirely within their territory, but that extend beyond the boundaries of one or more municipality.[182] "Under SISNAMA, state 'sectional bodies' …supervise and are responsible for environmental activity within their spheres of jurisdiction."[183] Just as there are some ecosystems reserved for federal governance, the federal Constitution also specifies that certain property belongs solely to the state.[184] For example, the state has exclusive jurisdiction over "surface or subterranean waters, flowing, emerging or in deposit," "areas, on ocean and coastal islands, which are within their domain, excluding those under the domain of the Union, the municipalities or third parties," "the river and lake islands which do not belong to the Union," and "unoccupied lands not included among those belonging to the Union."[185]

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[180] de Moraes Filho, *supra* note 7 at 144.
[181] Zachary Lazarus, *A War Worth Fighting: The Ongoing Battle to Save the Brazilian Amazon*, 9-SPG L. BUS. REV. AM. 399, 410 (2003).
[182] Pinheiro Neto Advogados, *Guide to Doing Business in Brazil*, São Paulo Chamber of Commerce of the Associação Commercial de São Paulo, *available at* www.brazilian-consulate.org/secom/incs/DoingBusinessinBrazil.pdf.
[183] Kellman, *supra* note 1 at 154.
[184] Constituição Federal, art. 26.
[185] *Id*.

Where environmental issues are reserved for the Federal Government, State Legislative Assemblies and CONSEMAs may only legislate on such matters upon express federal authorization.[186]

e. Accountability and reporting to national EPA

While state and federal environmental bodies work collaboratively in many respects, IBAMA ultimately oversees several activities conducted by SEMAs.[187] The National Environmental Policy dictates that if state environmental agencies take too long to accomplish a particular task, the federal entity may step in and take over. For example, with regard to state licensing procedures CONAMA Resolution 237/97 dictates that if a SEMA does not comply with the timelines established in that regulation, IBAMA may take over the licensing activity.[188] (Similarly, states have authority over municipalities with respect to licensing timelines.)[189]

In addition, the Ministério Público (as referenced in section I.A.5 supra) has watchdog authority over both federal and state agencies.[190] As a result, SEMAs may be subjected to routine information requests, which require their compliance.[191]

f. Functions, responsibilities, and staff competencies

Due to the fact that state environmental governance mirrors the federal system, states conduct many of the same functions as their federal counterpart. They have the authority to "draw up additional and supplementary rules and standards related to the environment in conformity with those laid down by CONAMA."[192] However, state actions tend to be "more specific and restrictive" than those of the federal government.[193] By way of example, SEMAs, like IBAMA, are responsible for regulating environmental matters, as well as monitoring and licensing activities that impact the environment.[194] Yet unlike IBAMA, SEMAs are generally the first bodies contacted regarding the prospective sale of a Brazilian company because it is in the buyers' interest to ensure the company has no outstanding violations prior to assuming liability.[195]

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[186] Advogados, *supra* note 47.
[187] *See* de Moraes Filho, *supra* note 7 at 144.
[188] Resolution No. 237/97, art. 16 (Dec. 19, 1997), *available at* faolex.org/docs/texts/bra25095.doc; Claudia Marçal, *Análise jurídica do procedimento do licenciamento ambiental* (Jan. 2003), *available at* http://jus2.uol.com.br/doutrina/texto.asp?id=6675.
[189] *Id*.
[190] MCALLISTER, *supra* note 10 at 123.
[191] *Id*.
[192] Lei da Politica Nacional do Meio Ambiente, Lei No. 6.938/81, art. 6(1).
[193] Kellman, *supra* note 1 at 153.
[194] GOYOS, JR., *supra* note 6 at 56.
[195] See *id*.

3. Municipal Environmental Protection Authorities

a. Authorization (including relationship to national & state EPA)

The National Environmental Policy enables municipalities to participate in environmental governance at the local level. It states, "[t]he directives of the National Environmental Policy shall be drawn up as rules and plans, for the purpose of offering guidance to the Government of the States, the Union, the Federal District, the Territories *and Municipalities* in all that concerns the preservation of environmental quality and the maintenance of the ecological equilibrium…."[196]

b. Governance structure

Many municipal governments encourage the establishment of environmental secretaries and advisory councils, in which the civil society has an opportunity to participate.[197] Of the nation's five thousand municipalities, over thirty-one percent have a local environmental secretary and thirty-four percent have a local environmental council.[198]

c. Funding (including degree of reliance on national EPA)

Municipal taxes are first collected and sent to the federal government, and then a small portion of the original amount is returned to the municipality for use.[199]

d. Organizational Structure & Jurisdiction

Licensing decisions made by municipal authorities are limited to those local environmental activities whose effects will be felt within the territory of their own municipality.[200] More specifically, the federal Constitution gives municipalities the authority to "legislate upon matters of local interest," "supplement federal and state legislations where pertinent," and "promote, wherever pertinent, adequate territorial ordaining, by means of planning and control of use, apportionment and occupation of the urban soil."[201]

e. Accountability and reporting to national and state EPAs

Municipal environmental entities are subject to the rulings of "Federal, State and Federal District government bodies with jurisdiction thereover…."[202] Similar to the relationship between state and federal environmental entities with regard to licensing procedures, states may take over municipalities' licensing activities if those bodies are not in compliance with

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[196] Lei da Politica Nacional do Meio Ambiente, Lei No. 6.938/81, art. 5.
[197] Sheila Wertz-Kanounnikoff and Kenneth M. Chomitz, *The Effects of Local Environmental Institutions on Perceptions of Smoke and Fire Problems in Brazil*, The World Bank Research Group (2008).
[198] *Id*.
[199] Lazarus, *supra* note 41, at 410.
[200] Advogados, *supra* note 47
[201] Constituição Federal, art. 30.
[202] Resolution No. 237/97, *supra* note 53 at art. 6.

the mandated timelines.[203] Any complaints about a municipality are investigated by the Ministério Público, which is also responsible for filing enforcement actions.

f. Functions, responsibilities, and staff competencies

Municipal bodies are responsible for the "inspection of conduct" within their respective jurisdiction.[204] They also issue licenses for "projects and activities with a local environmental impact and those delegated thereto by the State by legal instrument or agreement."[205] Municipalities' jurisdiction over local projects is affected by both the size of the project and type of activity or pollutant involved; larger projects, although contained within one municipality exceed municipal jurisdiction. Unlike state environmental agencies, municipal bodies do not conduct traditional environmental impact assessments because those projects falling within their jurisdiction are by definition too insignificant to merit such a review. However, municipalities do conduct Environmental Impact Declarations, which are a simplified version of the state and federal EIA.[206]

II. Functions and Operations (including allocation with states)

1. Environmental Impact Assessment

In Brazil, federal and state regulators require an environmental impact assessment "for any project which may present risks to, or otherwise negatively affect the environment."[207] Such assessments involve two separate documents. The first is an environmental impact study (EIS). It considers all technical alternatives, evaluates those environmental impacts generated by the project, and defines the geographical limits of the area to be affected by the project.[208] The second document is an environmental impact report (EIR). The report must reflect the conclusions reached in the EIS, and also justify the project's purposes.[209] Both the EIS and EIR must be reviewed by a competent authority that is responsible for deciding whether or not a license for the proposed activity should be granted.[210]

Collectively, the EIS and EIR constitute a public procedure requiring publication, and a hearing, if applicable.[211] Both assessment documents should be written in non-technical language to facilitate understanding and public discussion.[212] It takes between eight and eighteen months for the EIS and EIR to be completed and approved.[213]

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[203] *See infra* note 50 and accompanying text.
[204] GOYOS, JR., *supra* note 6 at 56.
[205] Resolution No. 237/97, *supra* note 53 at art. 6.
[206] *Id*.
[207] GOYOS, JR., *supra* note 6 at 53.
[208] de Moraes Filho, *supra* note 7 at 146.
[209] *Id*. at 146-7.
[210] Lindenbojm, *supra* note 14.
[211] Resolution No. 237/97, *supra* note 53 at art. 3; de Moraes Filho, *supra* note 7 at 147.
[212] de Moraes Filho, *supra* note 7 at 147.
[213] *Id*.

IBAMA is the licensing authority for projects of national or regional significance. This includes projects straddling state lines, projects that may have extra-territorial impacts, and military projects.[214] SEMAs serve as the licensing authority when a project is located within two or more municipalities or the project is sufficiently large to exceed municipal jurisdiction. The results of environmental impact assessments are binding upon licensing authorities. For example, if the assessment concludes that significant environmental harms will occur if the project moves forward, the licensing agency may not issue a license. Project developers are responsible for preparing environmental impact assessments, which frequently results in submissions favoring their position. State and federal environmental agencies have the discretion to seek additional studies if the original assessment is insufficient.[215] If an agency fails to request necessary studies, the Ministério Público may have grounds to file a lawsuit.

2. Promulgation of regulations, interpretation, and establishing guidance

Both CONAMA and CONSEMAs are responsible for promulgating regulations and standards based on laws passed by the National Congress and state legislatures respectively.[216]

3. Procedure for setting and revising standards

The Ministério Público and NGOs may petition CONAMA to amend previously implemented regulations. If such a petition is filed, CONAMA must consider the proposed change or complaint. The creation of a working group is usually CONAMA's preferred method for considering such a change. CONAMA may also autonomously reconsider prior regulatory actions. All changes must be approved by CONAMA's plenary body.

4. Permits and approvals

In Brazil, environmental licensing is an administrative act that follows a proposed activity from its inception through the commencement of operations and beyond.[217] The licensing procedure is set out in Resolution No. 237/97. First, IBAMA or a SEMA, in consultation with the project's contractor, must specify the types of plans and studies to be set forth before the applicant can request a license.[218] A request for a license may then be submitted along with the specified plans and studies.[219] The licensing body then has an opportunity to assess the studies, perform technical inspections, and if necessary, request supplementary information for clarification.[220] If applicable, a public hearing may then be held, and the licensing agency will have a second opportunity to seek supplementary information based

[214] Resolution No.237/97, *supra* note 53 at art. 4.
[215] CONAMA Resolution No. 1, January 23, 1986.
[216] *See supra* Sections I.A.2 and I.B.2.
[217] Advogados, *supra* note 47.
[218] Resolution No. 237/97, *supra* note 53 at art. 10(I).
[219] *Id*. at art. 10(II).
[220] *Id*. at art. 10(III), (IV).

on inquiries raised at the hearing.[221] The licensing body must then issue a conclusive technical (and potentially legal) opinion, followed by a decision to approve or reject the applicant's request for a license.[222]

The licensing process involves three separate licenses. The first are preliminary permits, which are issued during the project's earliest stages.[223] It enables a "preliminary examination of the feasibility of the intended activity at the location selected" and allows applicants to conduct tests at the site in question.[224] Preliminary permits take between twenty and forty days to be issued.[225] The second are called installation permits. They "authorize[] installation of the project or activity in accordance with the specifications set forth in the approved plans, schedules and drafts, including the environmental control measures and other conditions, which shall constitute a determining factor."[226] Installation permits take between thirty and ninety days to be issued.[227] The last set of permits are called operating licenses. Once the licensing agency has verified actual compliance with prior permits, environmental control measures, and specified conditions, the final operating license may be granted.[228] It takes between sixty and ninety days to be issued.[229]

The contractor is responsible for covering all expenses related to the licensing procedure, including environmental impact assessments.[230]

In order to transfer permits to a new owner in the event of a sale, the licensing authority must investigate whether the original permit still reflects the actual operation and that the operation in question is in compliance with the conditions stated in the permit.[231] If one of the following occurs, the environmental licensing body may terminate or amend a previously issued license: violation of any conditions, omission or false description of relevant information that was meant to assist the environmental body in issuing a license, or need to override to avoid environmental or health risks.[232]

5. Research

One of the National Environmental Policy's primary objectives is to facilitate environmental research that will foster new technologies for the rational use of Brazil's natural resources.[233] IBAMA houses the following research institutes: the National Center

[221] *Id*. at art. 10(V), (VI).
[222] *Id*. at art. 10(VII), (VIII).
[223] *Id*. at art. 8(I).
[224] de Moraes Filho, *supra* note 7 at 145.
[225] *Id*.
[226] Resolution No. 237/97, *supra* note 53 at art. 8(II).
[227] de Moraes Filho, *supra* note 7 at 146.
[228] Resolution No. 237/97, *supra* note 53 at art.8(III).
[229] de Moraes Filho, *supra* note 7 at 146.
[230] Resolution No. 237/97, *supra* note 53 at art. 11.
[231] de Moraes Filho, *supra* note 7 at 147.
[232] *Id*.
[233] Lei da Politica Nacional do Meio Ambiente, Lei No. 6.938/81, art. 4(IV).

for Environmental Information,[234] and the Center for Environmental Monitoring.[235] The former is responsible for gathering, organizing, and distributing environmental data, while the latter conducts remote sensing to monitor Brazil's most vulnerable natural resources.[236]

6. Economic and other reviews of proposed legislation or regulations

Due to the number and diversity of factions that comprise CONAMA, the economic feasibility of proposed regulations is weighed more heavily by some groups then others.[237]

7. Approaches to critically polluted areas or new generation "area-based" pollution management for multiple sources to achieve ambient quality outcomes

In 1974, Brazil enacted the Industrial Pollution Control and Prevention Law, which identified seven of the nation's nine metropolitan areas as critically polluted.[238] This law placed the burden on states to establish industrial zoning guidelines.[239] The following year Law 1413 enabled states and municipalities to regulate industrial operations.[240] A later enacted statute, Decree 76.389, gave the federal government the authority to halt operations at any industrial facility that significantly violated pollution laws.[241]

8. Procedure for redressing grievances including establishment, operation, and effectiveness and use of conflict resolution methods

CONAMA's Special Appeals Board is responsible for hearing appeals that relate to all administrative decisions.[242] This includes decisions pertaining to both licensing decisions and the imposition of administrative penalties imposed by IBAMA.[243]

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[234] *The National Center for Environmental Information—CNIA*, Ministério do Meio Ambiente, *available at* http://translate.googleusercontent.com/translate_c?hl=en&sl=pt&tl=en&u=http://www.ibama.gov.br/cnia/&rurl=translate.google.com&twu=1&usg=ALkJrhho-vAaEMOeqK2D9CqT9wtXKLB0VQ (last viewed June 4, 2010).

[235] Ministério do Meio Ambiente, *available at* http://translate.googleusercontent.com/translate_c?hl=en&sl=pt&tl=en&u=http://www.ibama.gov.br/monitoramento-ambiental/index.php/servicos/centro-de-monitoramento-ambiental/&rurl=translate.google.com&twu=1&usg=ALkJrhjwF5FVHJwlT4w_xlGy7VZ7Hwz2Bw (last viewed June 4, 2010).

[236] *Id*; *The National Center for Environmental Information—CNIA*, *supra* note 98.

[237] *See supra* Section I.A.2.

[238] David Shaman, *Brazil's Pollution Regulatory Structure and Background* (Sept. 9, 1996), *available at* http://siteresources.worldbank.org/NIPRINT/Resources/BrazilsPollutionRegulatoryStructureandBackground.pdf.

[239] *Id*.

[240] *Id*.

[241] *Id*.

[242] Kellman, *supra* note 1 at 154-155; *Special Appeals Board*, CONAMA, *available at* http://www.mma.gov.br/conama/ (last viewed June 7, 2010).

[243] *Special Appeals Board*, *supra* note 108.

9. Procedures to assure public outreach and transparency

A law enacted in 2003 requires the government to make environmental information accessible to the public.[244] It states that "[t]his Law provides for public access to environmental data and information existing in the bodies and entities in the National System of Environment [SISNAMA]," with regard to environmental quality, pollution control, environmental emergencies, solid waste production, toxic and hazardous substances, and biodiversity.245 In order to implement this statute, government authorities may "demand the disclosure of any information by private entities through specific system to be implemented by all organs of [SISNAMA] on the potential environmental impacts and effects of their activities…." In addition, the law requires both IBAMA and the SEMAs to prepare and public annual reports on air and water quality.[246]

Likewise, Brazil's environmental assessment procedure is both transparent and ensures opportunities for public participation.[247] Environmental impact assessments must be published, and in many cases a public hearing must be held.[248] As a means of furthering the transparency of government affairs, it is required that environmental assessments avoid technical jargon, so that they may be comprehendible to concerned citizens.[249]

In addition, by requiring that environmental education be included as a basic and obligatory curriculum "at all public and private levels of education," the National Environmental Education Policy seeks to increase citizen involvement in environmental matters.[250]

a. Public Private Partnerships

Under Brazil's Public Private Partnerships Law, public-private partnership contracts are agreements that are "entered into between government or public sector entities and private sector entities that establish a legally binding obligation to establish or manage, in whole or in part, services, undertakings and activities in the public interest, in which the private sector partner is responsible for the financing, investment and management."[251] The law governs bidding processes for public-private partnerships involving irrigation and drainage, transportation, basic sanitation, energy, and gas.[252]

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[244] Lei No. 10.650/2003.
[245] *Id*. at arts. 1-2.
[246] *Id*. at art.8.
[247] *See supra* Section I.D.A.
[248] Resolution No. 237/97, *supra* note 53 at art. 3.
[249] de Moraes Filho, *supra* note 7 at 147.
[250] Lindenbojm, *supra* note 14; Lei No. 9.795/99.
[251] India's Department of Economic Affairs, *Approach Paper on Defining Public Private Partnerships* 16-17 (Feb. 2010), *available at* http://www.pppinindia.com/pdf/ppp_definition_approach_paper.pdf.
[252] Walter Stuber, *Brazil: The Brazilian Public-Private Partnership Program* (Mar. 2005), *available at* http://www.mondaq.com/article.asp?articleid=31207.

10. Criminal Liability for Non-Compliance

Under Brazil's Environmental Crimes Law, "criminal liability applies to whoever has given cause to any conduct or activity that is damaging to the environment, to the extent of the degree of negligence or willful misconduct involved."[253] Criminal liability not only reaches people directly responsible for environmental harms, but also individuals who had knowledge of the crime and failed to intervene.[254] The following corporate actors are frequently deemed accessories to environmental crimes: officers, directors, board members, auditors, managers, agents, and the attorney of the offender.[255]

Violations of the Environmental Crimes Law may be penalized in one of the following manners: fine, community service requirement, home confinement, suspension of activities, temporary interdiction of rights.[256] A corporation associated with perpetrators of environmental crimes may become ineligible for government procurement or may be forced to temporarily halt its activities.[257] Prosecution of environmental crimes is subject to plea bargaining with the Ministério Público.[258]

11. Relationship with industry (and other regulated entities)

a. Mechanisms for sharing information on pollution prevention and compliance assistance, what conflicts arise and how are they resolved

The relationship between environmental regulators and industry differs from sector to sector. The Associação Brasileira de Normas Técnicas, though not a true industrial organization, generates industrial standards that are occasionally adopted by federal, state, and municipal governments.[259] It also employs various certifications for industrial systems and products.[260]

With regard to industrial pollution, Brazil employs the concept of objective liability, meaning that when a business changes hands, the new owner is responsible for previous damages regardless of blame or intent.[261] However, a process entitled "Terms of Adjustment of Conduct" administered by the Ministério Público assists industry come into compliance while simultaneously avoiding litigation.[262]

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[253] Advogados, *supra* note 47; Lei No. 9.605/98.
[254] Advogados, *supra* note 47.
[255] *Id*.
[256] *Id*.
[257] *Id*.
[258] *Id*.
[259] *Associação Brasileira de Normas Técnicas*, *available at* http://www.abnt.org.br/ (last viewed June 7, 2010).
[260] *Id*.
[261] GOYOS, JR., *supra* note 6 at 54.
[262] *See infra* Section III.5.

12. Procedures for inspections, frequency of inspections, mechanisms for targeted inspections, self-monitoring and other means of assuring compliance

While federal, state, and municipal employees of environmental agencies and the Ministério Público are empowered to conduct inspections, most are extremely understaffed. IBAMA, for example, "has only 275 environmental inspectors and one helicopter to monitor 5.1 million square kilometers of forest, thereby allocating one inspector for every 18,500 square kilometers."[263]

Many SEMAs and IBAMA employ auditores ambientais, which are special environmental auditors responsible for inspecting all licenses issued by their agency. IBAMA conducts compulsory audits with respect to forests and oil companies, while SEMAs employment of auditores ambientais remains discretionary.264 Requirements pertaining to the use of private contractors versus in-house auditors differ from state to state. For example, Paraná's Order 049/2005 demands that technical auditing teams must be done independently from the state agency.265 Companies may conduct their own audits, but most choose to hire professional auditors.266 The results of these inspections must be recorded and made available to the public. Though the environmental auditors do not have the authority to enforce any violations discovered during the course of their inspections, such discoveries may be shared with the Ministério Público for enforcement purposes.

The Ministério Público usually conducts inspections in response to public or agency complaints, or as part of a monitoring schedule for priority pollution sources.[267] While most states barely have sufficient resources to inspect public complaints, others have funds to conduct investigations outside of complaints. São Paulo, for example, is one of the few states that can conduct routine inspections in addition to those based on complaints.[268]

CONAMA require self-monitoring of some, but not all industrial sectors. Most commonly, records of toxic waste or effluent discharge must be submitted to the licensing agency. However, the reliability of these records is known to be questionable and proper recording practices are not well enforced.

13. Procedure for environmental monitoring and how data is shared with stakeholders

IBAMA houses two programs that are responsible for collecting and sharing environmental data. The first is a database entitled the Shared Environmental Information System

[263] Kellman, *supra* note 1 at 157-8.
[264] Lei No. 11.284/2006, art. 42; CONAMA Resolution 265/2000; State of Rio de Janeiro Law 1.898/91; State of Espirito Santo law 4.802/93.
[265] Ana Luiza Piva, *Auditoria Ambiental: Um Enfoque Sobre a Auditoria Ambiental Compulsória e a Aplicação dos Principios Ambientais* 8 (on file with author).
[266] *Id*.
[267] MCALLISTER, *supra* note 10 at 44.
[268] *Id*.

(SISCOM).[269] This computerized database shares information generated by the Ministry of the Environment, IBAMA, SEMAs, and the Ministério Público.[270] The second program is entitled the National Information Network on the Environment (Renima). It is a decentralized network of Cooperating Centers around the country that aim to advance environmental management and provide informational support for the private and public sectors.[271] One of Renima's primary functions is to integrate the various entities that constitute SISNAMA.[272] Participating governing bodies serve as Cooperating Centers.[273]

14. Procedures for addressing cross sectoral environmental issues with sectoral ministries/departments and how to address damage due to conflicts in policies

With regard to licensing, IBAMA makes decisions after first considering "the technical examination carried out by the environmental bodies of the State Municipality in which the activity or project is located…."[274] Where applicable, the licensing agency must also consider "the rulings of other Federal, State, Federal District and Municipal bodies with jurisdiction…."[275]

III. Citizen Participation

1. Procedures for citizen monitoring, stakeholder involvement, advisory committees, community engagement, inclusive decision making, and public participation

Brazilian citizens have the right to bring a class action against the government or any person "to invalidate acts that may damage the environment."[276] To foster such citizen participation, Brazil's National Environment Education Policy requires that environmental education be included as a basic and obligatory curriculum "at all public and private levels of education."[277]

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[269] *Integration of Environmental Information*, Ministério do Meio Ambiente, *available at* http://translate.googleusercontent.com/translate_c?hl=en&sl=pt&tl=en&u=http://www.ibama.gov.br/monitoramento-ambiental/index.php/servicos/siscom/&rurl=translate.google.com&twu=1&usg=ALkJrhhB36BlOBXGzAVs5vtz-VSzAv6ecA (last viewed June 4, 2010).
[270] *Id*.
[271] *Renima*, Ministério do Meio Ambiente, *available at* http://translate.googleusercontent.com/translate_c?hl=en&sl=pt&tl=en&u=http://www.ibama.gov.br/renima/&rurl=translate.google.com&twu=1&usg=ALkJrhgxhWCDhMLbU7ijIUBacU7gL-HY4w (last viewed June 4, 2010).
[272] *Id*.
[273] *Id*.
[274] Resolution No. 237/97, *supra* note 53 at art. 4, ¶ 1.
[275] *Id*.
[276] Lindenbojm, *supra* note 14.
[277] Lindenbojm, *supra* note 14; Lei No. 9.795/99.

2. Examples of public involvement that improved outcomes will be provided

Environmental Impact Studies and Reports should be written in non-technical language, so that the public may understand their contents and may be able to discuss the project at a hearing.[278]

III. Legal Assessment (to the extent not incorporated in individual topics above)

1. National authorization and oversight of state and municipal programs

a. Methods of assuring compliance and enforcement at the state and municipal level

The Ministério Público has watchdog authority over federal, state, and municipal environmental agencies.[279] This authority, granted under the Public Civil Action Law of 1985, enables it to conduct routine information requests, with which agencies must comply.[280] The overall mandate of the Ministério Público is described in the federal Constitution. Article 129 stipulates that the following are institutional functions of the Ministério Público:

> - "to initiate, exclusively, public criminal prosecution, under the terms of the law;
> - to ensure effective respect by the Public Authorities and by the services of public relevance for the rights guaranteed in this Constitution, taking the action required to guarantee such rights;
> - to institute civil investigation and public civil suit to protect public and social property, the environment and other diffuse and collective interests; …
> - to issue notifications in administrative procedures within its competence, requesting information and documents to support them, under the terms of the respective supplementary law; …
> - to request investigatory procedures and the institution of police investigation, indicating the legal grounds of its procedural acts;
> - to exercise other functions which may be conferred upon it, provided that they are compatible with its purpose, with judicial representation and judicial consultation for public entities being forbidden."[281]

In addition to the Ministério Público's oversight capacity, the National Environmental Policy dictates that if a federal or state environmental agency (either IBAMA or one of the SEMAs) takes too long to complete a particular task, the other may take over to ensure the undertaking is completed in a timely manner.

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[278] de Moraes Filho, *supra* note 7 at 147; *see supra* Section I.D.1.
[279] MCALLISTER, *supra* note 10 at 23.
[280] *Id*.
[281] Constituição Federal, art. 129.

b. Methods used that are beyond command and control

Brazil's National Environmental Policy primarily relies on command and control instruments, such as environmental standards, licenses, and sanctions.[282]

2. Allocation of enforcement between national and state agencies

In general, the Ministério Público Federale exercises its watchdog authority over SISNAMA's federal environmental entities, while state-specific branches of the Ministério Público oversee and enforce environmental standards pertaining to their respective SEMAs and CONSEMAs. Additionally, the federal agencies themselves may delegate tasks to their regional counterparts. For example, IBAMA has the authority to delegate licensing activities to the states where activities "involving a significant environmental impact or regional scope…."[283]

a. Methods of resolving conflicts

IBAMA "is [] responsible for cases where there is a conflict between the states, usually when a source of pollution is located in one state but affects another."[284]

3. Criminal Liability for Non-Compliance

Under Brazil's Environmental Crimes Law, "criminal liability applies to whoever has given cause to any conduct or activity that is damaging to the environment, to the extent of the degree of negligence or willful misconduct involved."[285] Criminal liability not only reaches people directly responsible for environmental harms, but also individuals who had knowledge of the crime and failed to intervene.[286] The following corporate actors are frequently deemed accessories to environmental crimes: officers, directors, board members, auditors, managers, agents, and the attorney of the offender.[287]

Violations of the Environmental Crimes Law may be penalized in one of the following manners: fine, community service requirement, home confinement, suspension of activities, temporary interdiction of rights.[288] A corporation associated with perpetrators of environmental crimes may become ineligible for government procurement or may be forced to temporarily halt its activities.[289] Prosecution of environmental crimes is subject to plea bargaining with the Ministério Público.[290]

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[282] RICHARD M. HUBER, JACK RUITENBEEK, AND RONALDO SERÔA DA MOTTA, MARKET-BASED INSTRUMENTS FOR ENVIRONMENTAL POLICYMAKING IN LATIN AMERICA AND THE CARIBBEAN 44 (1998).
[283] Resolution No. 237/97, *supra* note 53 at art. 4, ¶ 1.
[284] de Moraes Filho, *supra* note 7 at 145.
[285] Advogados, *supra* note 47; Lei No. 9.605/98.
[286] Advogados, *supra* note 47.
[287] *Id*.
[288] *Id*.
[289] *Id*.
[290] *Id*.

4. Procedures for imposing civil & administrative penalties and fines for non-compliance

There are three types of penalties issued in Brazil: administrative violations are punishable by fines; civil violations require the defendant to mitigate damages and restore the environment; and criminal violations result in the restriction of freedom or rights. In many cases of environmental degradation, all three types of penalties apply to the same action.

a. Administrative Penalties for Non-Compliance

Administrative penalties are a product of the Environmental Crimes Law (discussed *infra*), as regulated by Federal Decree No. 3179.[291] Such penalties are issued and enforced by IBAMA or the SEMAs in the wake of "any conduct that is damaging to the environment."[292] Offenses are punished in the following ways: warning, one-time or daily fine, seizure or destruction of irregular products unfit for further use or sale, remediation order, suspension or cancellation of registration, forfeiture or suspension of tax benefits, ineligibility for credit facilities from official credit establishments, and ineligibility for government procurement.[293] In addition, many states have their own rules pertaining to administrative penalties for environmental violations.[294]

b. Civil Penalties for Non-Compliance

Individuals are empowered to file a popular action against a person or firm that damages the environment. However, it is more common for a lawsuit to be filed under the Public Civil Action Law of 1985 by the Ministério Público, governmental agencies, or an environmental organization that was organized at least one year prior to the claim.[295] When an environmental group files a civil action, it "does not have to pay any judicial costs, lawyers' fees, or any other expense, unless the association is litigating with fraudulent intent."[296] If an environmental organization or company files a civil public action and later drops the claim, the Ministério Público must replace the plaintiff so long as the merits of the case persist.[297] The Ministério Público does not have discretion whether or not to take a case; if an environmental violation exists, a claim must be filed. A recent case held that there was no statute of limitations for environmental harms triggering the civil action law.[298]

Individuals liable for a civil violation must restore the environment to its prior condition or mitigate damages. The National Environmental Policy dictates that "the polluter is required, irrespective of the existence of fault, to redeem or repair the damages caused to

[291] Lindenbojm, *supra* note 14; Kellman, *supra* note 1 at 152; Advogados, *supra* note 47.
[292] Advogados, *supra* note 47.
[293] *Id*.
[294] *Id*.
[295] *Id*. at 151.
[296] *Id*.
[297] *Id*.
[298] S.T.J., Ap. No. 2009/0074033-7, Relator: Ministra Eliana Calmon, Recurso Especial No. 1.120.117 (Brazil).

the environment and third parties affected by the activity."[299] An offender is liable for remediation or payment of damages even when their environmentally damaging emissions are below legal thresholds.[300] The polluter pays principle rests upon the theory of strict liability.[301] "The duty to redress is triggered by the existence of a causal relation between the activity performed by the venture and damage caused to the environment."[302] If restoration and mitigation are not feasible, civil violators must contribute money that would otherwise be spent on such efforts to the National Environmental Fund.[303]

5. System for administrative hearings and appeals

The National Environmental Policy dictates that if an individual or company harms the environment and fails to repair the damage, it may be ordered to suspend all activities.[304] Such an order may be appealed to the President of the Republic within five days of when the order is issued.[305]

6. Compliance assurance mechanisms and their effectiveness

a. Self monitoring and reporting and public disclosure of information

Self-monitoring is not expressly listed as one of the instruments of the National Environmental Policy, but is widely required by CONAMA for certain activities, such as air emissions, oil and water discharges.[306] In addition, CONAMA Resolution 01/86, which governs environmental impact assessments, dictates that a monitoring program weighing the positive and negative impacts of a project must be conducted during the facility's operation.[307]

In the event that a company causes environmental degradation, it is both advisable and widely practiced that the company (in consultation with an environmental advisor) will complete a study of the harm and generate suggestions regarding possible restorative solutions.[308] The proposed solutions are discussed with the licensing SEMA.[309] Once SEMA has approved the company's suggested solutions and timetable to complete the work, the matter may be brought before the Ministério Público.[310] If the Ministério Público likewise agrees with contents of the study and proposed restorative actions, it may execute a Terms of Adjustment of Conduct agreement, which must be signed by the company,

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[299] Lei da Politica Nacional do Meio Ambiente, Lei No. 6.938/81, art. 14(I).
[300] Advogados, *supra* note 47.
[301] *Id*.
[302] *Id*.
[303] *See supra* Section I.A.3.
[304] Lei da Politica Nacional do Meio Ambiente, Lei No. 6.938/81, art.14(IV).
[305] *Id*. at art. 15(2).
[306] *See* CONAMA Resolution 416/09, art. 7.91 (VI); CONAMA Resolution 264/99, art. 10 (VII) (b); CONAMA Resolution 03/90; CONAMA Resolution 316/02.
[307] CONAMA Resolution 01/86, art. 6(IV).
[308] de Moraes Filho, *supra* note 7 at 152.
[309] *Id*.
[310] *Id*.

SEMA, and the Ministério Público.[311] Completion of this process reduces the company's likelihood of being subjected to liability.[312] If the Terms of Adjustment of Conduct fails, the Ministério Público may file a public civil action.[313]

7. Procedures for initiating legal actions

a. In-house prosecution capability, relationship to legal department

IBAMA's General Counsel Office is "a department unit associated with the Federal Office of the Attorney General [whose purpose it] is to provide legal assistance to the Chairman of IBAMA, to defend the interests of the Institute in court or out of it, to examine and issue opinions on instruments of a legal nature, and such other items as may be submitted for its deliberation."[314] The Office of the General Counsel has the following responsibilities: "standardizing the understanding within the scope of IBAMA on legal matters, by means of regulatory opinion; …promoting the defense of the Institute's interests in legal and administrative matters; representing the Autarchy in court, and by express appointment of the Chairman, out of it; providing legal advice to the Chairman, and by his appointment, any unit of the Institute, responding to the questions posed; and proposing the opening of an administrative proceeding when requested by the Chairman…."[315]

b. Role of public prosecutors in initiating legal actions

An activity or conduct that causes environmental damage may be reported to the Ministério Público, which is authorized to investigate such matters. Once it is sufficiently convinced of the existence of environmental damage or threat thereof, a public civil action may be filed.[316] The Ministério Público's attorneys have the legal authority to bring both civil and criminal suits and collect damages when there has been a violation of environmental regulations; they have broad discretion to interpret regulations and decide who should be charged.[317] The Ministério Público is not the only entity that has standing to sue, but also state owned corporations, independent governmental agencies, organizations or consumers engaged in environmental protection.[318]

With regard to government agencies, if the Ministério Público discovers an agency violation, the prosecutor may solicit a technical opinion or make a written recommendation to the agency about the illegality discovered.[319] The Ministério Público may then either make suggestions as to how the agency should alter its practices to come into compliance or file an action against the agency.[320]

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[311] *Id*.
[312] *Id*.
[313] MCALLISTER, *supra* note 10 at 92.
[314] IBAMA Administrative Decree No. 55-N/98, art. 1.
[315] *Id*. at art. 23.
[316] Lindenbojm, *supra* note 14.
[317] Kellman, *supra* note 1 at 156; Constituição Federal, art 14.
[318] *Id*.
[319] MCALLISTER, *supra* note 10 at 124.
[320] *Id*.

Law No. 7.347/85 allows class action lawsuits for damages to either the environment or a consumer; any interested party may initiate an investigation.[321]

8. Procedures for alternative dispute resolution to achieve compliance

In Brazil, ADR stands for "amicable dispute resolution," which is "based on the concept of attempting to reconcile the parties before going to an adjudicated solution."[322] The Ministério Público generally tries to settle cases extra-judicially rather than bringing the matter to court; one way this is accomplished is through a Terms of Adjustment of Conduct contract.[323] Other common ADR methods include mediation, conciliation, neutral evaluation, and mini-trials.[324] Under Brazilian doctrine, mediation is a negotiation process that is facilitated by a neutral third party.[325] Conversely, conciliation "goes beyond mere assistance to the parties in an attempt to reach an amicable solution."[326] The conciliator gives the parties advice and informs each of their respective rights.[327] Under the Code of Civil Procedures, judges are obligated to try to conciliate parties both at pre-trial hearings and during trial.[328]

[321] GOYOS, JR., *supra* note 6 at 55.
[322] JOAQUIM T. DE PAIVA MUNIZ AND ANA TEREZA PALHARES BASÍLIO, ARBITRATION LAW OF BRAZIL: LAW AND PROCEDURE 12 (2006).
[323] MCALLISTER, *supra* note 10 at 91-2.
[324] *Id*.
[325] *Id*. at 13.
[326] *Id*. at 14-5.
[327] *Id*.
[328] *Id*. at 15.

CHINA

Overview: The Constitution of the People's Republic of China (PRC) was adopted on December 4, 1982. It entrusts to the state the protection of the environment, natural resources, and rare species, as well as afforestation and the prevention and control of pollution and "other public hazards."[329] China's environmental laws and policies are also guided by national and sectoral Five Year Plans (FYP), which play key roles in agenda setting and are often more influential than actual legislation or regulation.

I. Status and Design

1. National Environmental Protection Authority

a. Authorization

In 2008, China's Eleventh People's Congress "super ministry reform" established the Ministry of Environmental Protection (MEP).[330] Previously, environmental protection fell under the jurisdiction of the State Environmental Protection Administration (SEPA). In this transition, MEP retained SEPA's internal organizational structure and governmental responsibilities, but the new ministry designation represents an elevation to the highest level of institutional ranking for an agency. This elevation gave MEP's minister the right to attend the conference of the State Council. As a result, environmental protection will have an advocate when the State Council considers strategy or important decisions for the whole country.

It is important to note that since China's environmental protection authority has gone through several iterations, including name and status changes, the Environmental Protection Law does not authorize any specific agency or division by name. Rather, the law refers to the current overarching environmental protection body as the "competent department of environmental protection administration under the State Council," and provincial, municipal, and county environmental protection bureaus (all referred to as EPBs) as "competent departments of environmental protection administration of the local people's governments at or above the county level."[331]

b. Governance structure

China has two main bodies in charge of rule- and law-making: the State Council and the National People's Congress. As the executive branch of the PRC, the State Council is composed of the Premier (currently Wen Jiabao), Vice-Premiers, State Councilors, the heads of ministries and departments, the Auditor-General, and the Secretary-General,

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[329] XIAN FA arts. 9 and 26 (1982) (P.R.C.).
[330] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[331] Zhonghua Renmin Gongheguo Huanjing Baohu Fa [Law on Environmental Protection] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229..

altogether totaling approximately 50 members. It is authorized by the Constitution to issue administrative measures, rules, and regulations, submit proposals to the National People's Congress delineate and oversee ministerial roles, help draft and implement national economic and social plans and the state budget, and conduct foreign affairs.

The National People's Congress is the PRC's legislative branch. The elected deputies from each province, autonomous region, and municipality that comprise the National People's Congress convene annually, and the Standing Committee convenes every two months.[332] The National People's Congress' main functions include enacting or amending statutes, approving the state budget, approving national social and economic development plans, and electing officials to certain leadership positions.

MEP is the highest ranking central authority of environmental protection and operates directly under the State Council. MEP's minister can vote on State Council decisions.[333] Passed in 1989, the Environmental Protection Law gives SEPA (the predecessor of MEP) responsibility for conducting "unified supervision and management of environmental protection throughout the country."[334] The law also stipulates that other relevant state departments not under MEP, including marine affairs, fisheries, and transportation, shall also "conduct supervision and management of the prevention and control of environmental pollution."

While MEP serves as the national environmental protection authority, MEP coordinates with the National Development Reform Committee (NDRC) to implement national environmental policies, planning, and major projects. Internal policies, rather than legislation, established and govern the agency's internal structure.[335]

c. Funding (sources, oversight, monitoring)

The Ministry of Finance is responsible for setting the budget, which must be first approved by the State Council and the National People's Congress. Money is distributed to various ministries, including MEP, through the State Council. In 2009, 115.18 billion yuan were allocated to environmental protection, representing an increase of 10.7% from the previous year. Of that figure, 56.747 billion yuan were spent energy conservation and emissions reductions measures. Funding for renewable energy development totaled 7.679 billion yuan, and land conservation totaled 46.636 billion yuan.[336] At the close of each fiscal year, it is the Ministry of Finance's responsibility to review actual expenditures.

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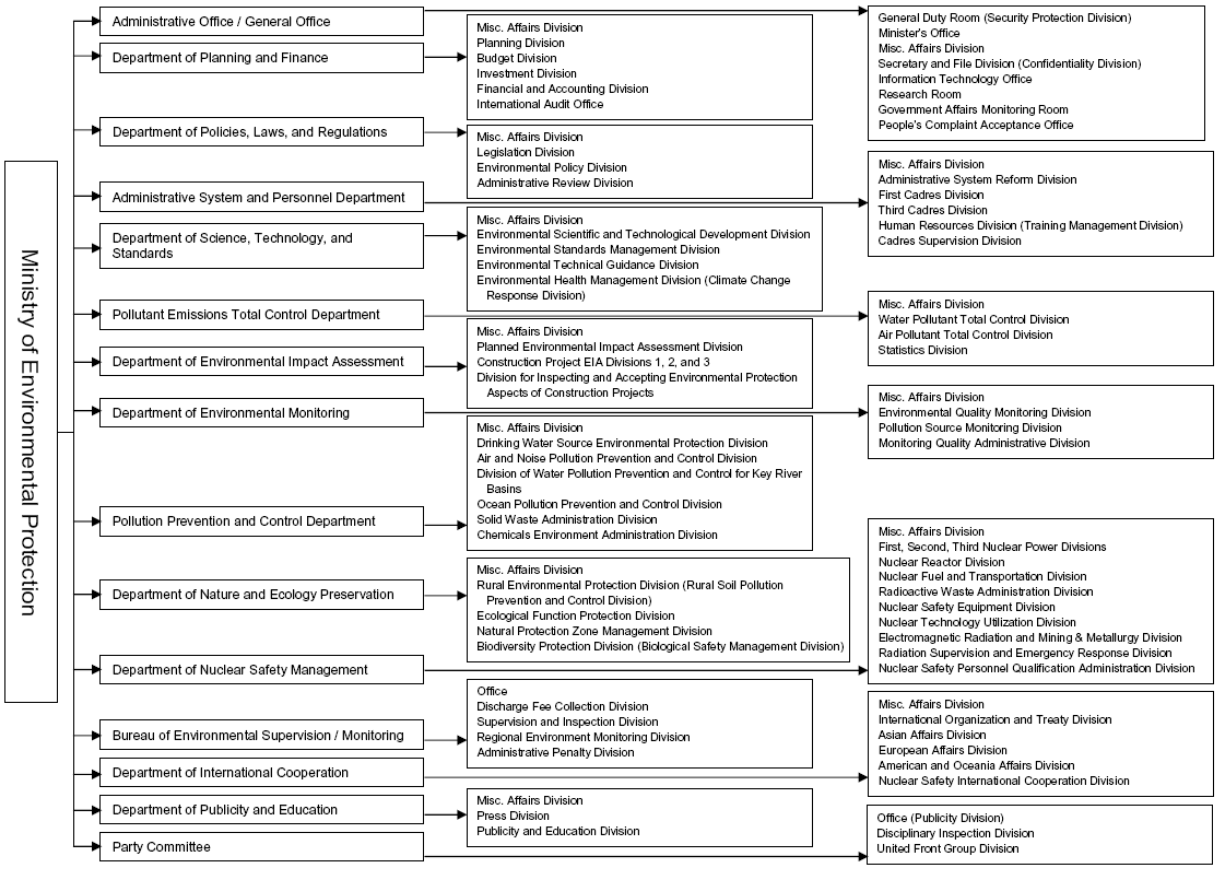
[332] National People's Congress *at* http://www.china.org.cn/english/archiveen/27743.htm
[333] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[334] Zhonghua Renmin Gongheguo Huanjing Baohu Fa [Law on Environmental Protection] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[335] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[336] Ministry of Finance, 2009 Budget *available at*: http://www.gov.cn/english/official/2010-03/16/content_1556778_3.htm.

In addition to national funding, fees collected from administrated violations are collected and given to the Treasury to be used for further prevention and control of pollution.[337]

d. Organizational structure

MEP oversees fourteen departments, which in turn house several divisions, as pictured below:[338]



MEP leadership consists of a Minister, four Vice-Ministers, a Head of Permanent Discipline Inspection Group, and a Member of the Leading Party Group of MEP. The MEP Administrative Office is in charge of coordination and monitoring internal MEP departments and local EPBs, among other things.[339] While MEP's Department of Pollution Control is broken down into specific divisions for urban areas, water, river basins, drinking water, air and noise, and solid waste and toxic chemicals, the Ministry is not organized by media.

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[337] Law on the Prevention and Control of Atmospheric Pollution, Art. 14 (promulgated by National People's Congress, Aug. 29, 2005, effective Sept. 1, 2000) (P.R.C.) *available at:* http://www.greenlaw.org.cn/files/laws/air-pollution-control-law.pdf.

[338] Ministry of Environmental Protection, *Institutional Structure*, *at* http://english.mep.gov.cn/About_SEPA/Institutional_structure/200707/P020080318428876879466.pdf.

[339] Ministry of Environmental Protection, *General Office*, *at* http://english.mep.gov.cn/About_SEPA/Internal_Departments/200910/t20091015_162430.htm.

e. Functions, responsibilities, and staff competencies

As a ministry under the State Council, MEP is authorized to issue administrative rules and regulations.[340] MEP is in charge of setting national environmental quality standards on pollutants, establish and run monitoring programs, protect ecological systems and endangered and wild animals and plants, and fine or order suspension of operations that fail to control pollution as required by law.[341] MEP also drafts and issues the Environmental Protection Five Year Plans that set the environmental protection agenda for the country.

While MEP shoulders most of the responsibility for most aspects of environmental protection, some responsibilities fall under other ministries or require overlapping oversight. The Ministries of Water, Land and Resources, Transportation, Agriculture, Railways, and Housing and Rural-Urban Development and State Forestry Bureau also share authority with MEP on certain issues.

As of 2008, SEPA had a staff of 2,200 total people, of which 219 worked as administrators in the Beijing headquarters and approximately 2,000 worked in SEPA-affiliated offices around the country.[342] Since SEPA's conversion to MEP, its staff size has grown, but MEP's capacity still remains limited.

2. Regional and Local Environmental Protection Authorities

a. Authorization (including relationship to national EPA)

EPBs are established through the respective local people's governments.[343] They are tasked with carrying out "unified supervision and management of the environmental protection work within areas under their jurisdiction."[344]

b. Governance structure

In terms of vertical structure, China has four levels of environmental protection authority: central (MEP), provincial, municipal, and county.[345] The provincial, municipal, and county

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[340] XIAN FA art. 89 (1982) (P.R.C.).
[341] Zhonghua Renmin Gongheguo Huanjing Baohu Fa [Law on Environmental Protection] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[342] Alex Wang, *The Role of Law in Environmental Protection in China: Recent Developments*, VT. J. ENVTL. L. 8 (2007), *available at:* http://www.vjel.org/journal/VJEL10057.html.
[343] See, for example, Dalian Environmental Protection Bureau: http://www.epb.dl.gov.cn/English/index.aspx, Shaanxi Environmental Protection Bureau: http://www.snepb.gov.cn/admin/pub_newsshow.asp?id=1000026&chid=100139, and Hubei Environmental Protection Bureau: http://www.hbepb.gov.cn/jgzn/zyzz/200910/t20091016_25683.html.
[344] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 7 Tiao [Law on Environmental Protection, Art. 7] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[345] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).

authorities are all referred to as EPBs. The PRC Environmental Protection Law dictates that the EPBs "conduct unified supervision and management of environmental protection work within areas under their jurisdiction,"[346] and often does not distinguish jurisdictions among the three EPB levels.

Local government is responsible for appointing the head of the local EPB. MEP or the superior-level EPB has the right to comment on the choice, as well as making sure that EPBs carry out their environmental protection duties. EPBs are accountable to their respective administrative level of local people's government as well as to MEP and the levels of EPBs above it. Because the local people's government usually controls allocation of funding and human resources among its entities, however, it subsequently tends to have more oversight and control of the same-level EPB than the superior-level EPBs.[347]

In addition to departments and agencies operating under MEP, China also has fifteen environmental courts spread across seven provinces.[348] The courts derive authority from Article 23 of the Organic Law of the People's Court, which allows intermediate courts can set up "criminal division, a civil division, an economic division, and such other divisions as are deemed necessary."[349] The first two courts were established in Guiyang in November 2007. With no national laws or other central oversight governing environmental courts, they vary in procedure, interpretation, and focus from place to place. For instance, in roughly each court's first year of operation, 70% of the total cases for the two Guiyang courts combined were criminal, 95% in Wuxi were non-litigious administrative enforcement, and 57% in Kunming were criminal.[350]

It is important to note that in regular courts, cases are separated by type (administrative, civil, criminal, and enforcement), but environmental courts try all four types as long as they are environmentally relevant. The environmental courts also create room for public interest litigation, a new frontier for Chinese law. Four public interest lawsuits have been accepted, three of which were in Guiyang's courts. Yunnan is the first province to specify rules on environmental public litigation at the high and intermediate court levels and the first province to explicitly give NGOs standing to sue.[351] So far, these environmental courts are in nascent, developing phases and accept relatively few numbers of cases, but they are significant in terms of augmenting enforcement and supervisory roles of EPBs, increasing efficiency in processing environmental cases, and building proficiency in environmental law.

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[346] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[347] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[348] http://www.adb.org/documents/briefs/law-policy-reform/2010-Brief-01-Asian-Judges.pdf
[349] Organic Law (promulgated by the Standing Comm. Nat'l People's Cong., July 1. 1979, effective Sept. 2, 1979) (P.R.C.) *available at* http://www.novexcn.com/organic_law.html
[350] Gao Jie, *Environmental Public Interest Litigation and the Vitality of Environmental Courts*, Natural Resources Defense Council, *available at* http://www.greenlaw.org.cn/files/reports/GaoJieEPCourts_En.pdf
[351] Gao Jie, *Environmental Public Interest Litigation and the Vitality of Environmental Courts*, Natural Resources Defense Council, *available at* http://www.greenlaw.org.cn/files/reports/GaoJieEPCourts_En.pdf

c. Funding (including degree of reliance on national EPA)

EPBs rely primarily on their respective local people's government levels for funding.[352] Because of this financial dependence, EPBs are also generally more institutionally accountable to the local people's governments than to the national authority. MEP also provides some funding to local EPBs to develop and implement projects, particularly in the interior provinces and rural areas. In 2008, at the first National Teleconference on Rural Environmental Protection Work, the State Council established a special fund out of the Central Budget that allocates 500 million yuan to reward pollution control in rural areas. This is the first such program dedicated to providing rural financial assistance for environmental compliance.[353]

d. Accountability and reporting to national EPA

EPBs are accountable to upper EPB levels, as well as to MEP. It is responsibility of EPBs to report to MEP regarding the status of projects and environmental quality in its region.[354] As aforementioned, most EPBs are more accountable to the local people's governments that established them. Recently, however, select EPBs became "independent." As independent agencies, the EPBs no longer receive funding no from the local government. This distinction has helped to distance EPB reliance on local governments.[355]

e. Functions, responsibilities, and staff competencies

As part of the "unified" approach to environmental protection, the EPB role is to carry out local environmental management based on laws and guidance from MEP and the State Council, as well as the priorities set forth in the national five year plans. EPBs implement local environmental projects as determined by local governments and MEP, process environmental impact assessments, monitor environmental quality, disclose data to MEP, and pass rules and regulations for their respective domains.

EPBs also contain Environmental Monitoring Agencies for carrying out environmental quality and pollution monitoring and collecting and managing data.[356] EPBs are in charge of organizing the compilation of environmental monitoring reports and releasing

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[352] Stefanie Beyer, *Environmental Law and Policy in the People's Republic of China*, Oxford University Press (2006).
[353] http://english.mep.gov.cn/down_load/Documents/201002/P020100225377359212834.pdf
[354] Measures on Open Environmental Information (for Trial Implementation) (adopted by the State Environmental Protection Administration of China, Feb. 8, 2007, effective May 1, 2008) (P.R.C.) *at* http://www.greenlaw.org.cn/files/laws/open_environmental.pdf (last visited May 27, 2010).
[355] Alex Wang, *The Role of Law in Environmental Protection in China: Recent Developments*, VT. J. ENVTL. L. 8 (2007), *available at:* http://www.vjel.org/journal/VJEL10057.html.
[356] Huanjing Jiance Guanli Banfa, Di 5 Tiao [Methods for Environmental Monitoring Management, Art. 5] (State Environmental Protection Administration, Jul. 25, 2007, effective Sept. 1, 2007) (P.R.C.) *available at:* http://www.gov.cn/ziliao/flfg/2007-08/07/content_708389.htm.

environmental monitoring information and establishing an environmental monitoring network within their jurisdictions.[357]

II. Functions and Operations (including allocation with states)

1. Environmental Impact Assessment (EIA)

MEP has a Department of Environmental Impact Assessment. The concept of EIAs has been around for some time and is broadly addressed in the Environmental Protection Law.[358] Since then, specific implementation measures and guidelines have been passed over time in a very scattered manner.[359] In order to clarify, strengthen, and streamline these piecemeal regulations, the PRC Environmental Impact Assessment Law was passed in 2002 (came into force in 2003). Later, the Measures on Public Participation in Environmental Impact Assessment were passed in 2006, providing even further clarification on the roles and rights of various stakeholders.

The EIA law requires "competent departments of the State Council and the local people's governments at or above the county level and relevant departments" to conduct EIAs before beginning construction, development, or infrastructure projects that may potentially harm the environment.[360] The EIA law requires EIAs for any construction, development, or infrastructure projects, whether government or private, that may potentially harm the environment. Environmental impact reports, which are required for projects that may cause important environmental impacts and special planning, must include a comprehensive analysis, prediction, and assessment of how the intended project might impact the environment, countermeasures for mitigating those impacts, an analysis of environmental benefits and losses, an analysis of economic benefits and losses, proposals for environmental monitoring, and an overall conclusion of the environmental impact.[361] The developer must complete an environmental impact report and the relevant EPB must assemble licensed third-party experts to evaluate the report and submit their opinions. These experts are chosen at random from a pre-approved database of experts in relevant fields.[362] Any institution that provides technical services to evaluate EIAs must be certified by MEP to perform such duties, and no relationship can exist that would cause a conflict of

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[357] Huanjing Jiance Guanli Banfa, Di 4 Tiao [Methods for Environmental Monitoring Management, Art. 4] (State Environmental Protection Administration, Jul. 25, 2007, effective Sept. 1, 2007) (P.R.C.) *available at:* http://www.gov.cn/ziliao/flfg/2007-08/07/content_708389.htm.

[358] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 13 Tiao [Law on Environmental Protection, Art. 13] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229. (P.R.C.).

[359] Stefanie Beyer, *Environmental Law and Policy in the People's Republic of China*, Oxford University Press (2006).

[360] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 7 Tiao [Law on Environmental Protection, Art. 7] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.

[361] Zhonghua Renmin Gongheguo Huanjing Xiang Pingjia Fa, Di 17 Tiao [Environmental Impact Assessment Law, Art. 17] (promulgated by the Ninth Standing Committee of the National People's Congress, Oct. 28, 2002, effective Sept. 1, 2003) (P.R.C.) *available at:* www.tjxzxk.gov.cn/page/guide/lawdown.jsp?lid=9558.

[362] Zhonghua Renmin Gongheguo Huanjing Xiang Pingjia Fa, Di 13 Tiao [Environmental Impact Assessment Law, Art. 13] (promulgated by the Ninth Standing Committee of the National People's Congress, Oct. 28, 2002, effective Sept. 1, 2003) (P.R.C.) *available at:* www.tjxzxk.gov.cn/page/guide/lawdown.jsp?lid=9558.

interest between the institution and the EPB.[363] The local people's government that originally submitted the EIA must then take into consideration the opinion of the expert panel. If the local government decides to proceed with the project despite the recommendations, it must provide an explanation.[364]

Projects with lighter potential environmental impacts do not need to complete an entire environmental impact report, but only need to fill out and submit an environmental impact report form.[365] If a project that has already been carried out is found to have significant environmental impacts, proposed improvement measures are required "in good time."[366] If an EIA is not completed before project construction, the only penalty an EPB can issue is to require the developer to do a "make-up" EIA. If the developer still does not conduct the EIA, only then can the EPB fine the developer between 50,000-200,000 yuan.[367] Failure of compliance with EIA laws make up the most common offence in China.[368] If an EIA is not approved, the developer must revise according to the approval agency's comments.[369]

Usually, EPBs are in charge of evaluating and processing EIAs. MEP has authority, however, over EIAs of special projects such as nuclear facilities or construction projects spanning more than one province.[370]

It is the responsibility of MEP's Bureau of Environmental Supervision to oversee EPBs and check that EIAs are completed for appropriate projects. However, because of weak oversight, as well as the lack of strong legal enforcement measures for non-compliance, many developers do not end up conducting EIAs.[371] For instance, in 2004, SEPA found that only 30-40% of mining construction projects actually fulfilled EIA requirements, and that the rate was as low as 6-7% in certain provinces.[372]

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[363] Zhonghua Renmin Gongheguo Huanjing Xiang Pingjia Fa, Di 19 Tiao [Environmental Impact Assessment Law, Art. 19] (promulgated by the Ninth Standing Committee of the National People's Congress, Oct. 28, 2002, effective Sept. 1, 2003) (P.R.C.) *available at:* www.tjxzxk.gov.cn/page/guide/lawdown.jsp?lid=9558.
[364] Zhonghua Renmin Gongheguo Huanjing Xiang Pingjia Fa, Di 14 Tiao [Environmental Impact Assessment Law, Art. 14] (promulgated by the Ninth Standing Committee of the National People's Congress, Oct. 28, 2002, effective Sept. 1, 2003) (P.R.C.) *available at:* www.tjxzxk.gov.cn/page/guide/lawdown.jsp?lid=9558.
[365] Zhonghua Renmin Gongheguo Huanjing Xiang Pingjia Fa, Di 16 Tiao [Environmental Impact Assessment Law, Art. 16] (promulgated by the Ninth Standing Committee of the National People's Congress, Oct. 28, 2002, effective Sept. 1, 2003) (P.R.C.) *available at:* www.tjxzxk.gov.cn/page/guide/lawdown.jsp?lid=9558.
[366] Zhonghua Renmin Gongheguo Huanjing Xiang Pingjia Fa, Di 15 Tiao [Environmental Impact Assessment Law, Art. 15] (promulgated by the Ninth Standing Committee of the National People's Congress, Oct. 28, 2002, effective Sept. 1, 2003) (P.R.C.) *available at:* www.tjxzxk.gov.cn/page/guide/lawdown.jsp?lid=9558.
[367] Zhonghua Renmin Gongheguo Huanjing Xiang Pingjia Fa, Di 31 Tiao [Environmental Impact Assessment Law, Art. 31] (promulgated by the Ninth Standing Committee of the National People's Congress, Oct. 28, 2002, effective Sept. 1, 2003) (P.R.C.) *available at:* www.tjxzxk.gov.cn/page/guide/lawdown.jsp?lid=9558.
[368] http://www.oecd.org/dataoecd/33/5/37867511.pdf
[369] Charles R. McElwee, II, *The Environmental Impact Assessment in China: The First Step Toward Compliant Operations*, 10 A.B.A. INT'L. ENVTL. L. NEWSL. 4 (2008).
[370] Zhonghua Renmin Gongheguo Huanjing Xiang Pingjia Fa, Di 23 Tiao [Environmental Impact Assessment Law, Art. 23] (promulgated by the Ninth Standing Committee of the National People's Congress, Oct. 28, 2002, effective Sept. 1, 2003) (P.R.C.) *available at:* www.tjxzxk.gov.cn/page/guide/lawdown.jsp?lid=9558.
[371] Alex Wang, *The Role of Law in Environmental Protection in China: Recent Developments*, VT. J. ENVTL. L. 8 (2007), *available at:* http://www.vjel.org/journal/VJEL10057.html.
[372] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), *available at* http://www.oecd.org/dataoecd/33/5/37867511.pdf

2. Promulgation of regulations, interpretation, and establishing guidance

National laws, including the major environmental protection laws, are promulgated by the National People's Congress. Administrative regulations are promulgated by the State Council and the ministries directly under it. In China, however, the priorities set forth by the National People's Congress in the FYPs are considered more influential than laws on what actually get implemented on the ground. The current 12th Five Year Plan for Environmental Protection was drafted by MEP, approved by the State Council, and formulated based on both the 12th Five-Year Plan for the Development of National Economy and Social Development and the Decision of the State Council on the Implementation of the Scientific Outlook on Development and Strengthening Environmental Protection. The Plan lays out broad national environmental priorities, as well as specific targets for pollution control, river basin and drinking water quality, urban air quality, solid waste control, and many other issues.[373] The current Five Year Plan governs the 2006-2010 time span. The next one is expected to be issued at the end of 2010.

The goals outlined in the environmental FYP provide guidance for EPBs do carry out those policies on a local scale. Local decrees are issued by the Local People's Congresses, and local administrative regulations are issued by local People's Governments and the agencies under it.

3. Procedure for setting and revising standards

MEP is responsible for setting many national environmental quality and pollutant discharge standards. More specifically, the Chinese Academy for Environmental Planning (CAEP), the research institution within the MEP, actually drafts standards. When dealing with cross-ministry issues, MEP sometimes issues regulations jointly with other relevant ministries. New standards, as well as revisions, must be approved by the State Council. Provincial EPBs can only set environmental quality standards if no federal one exists Provincial EPBS also are authorized to set pollutant discharge standard that are more restrictive or stringent than the federal ones.

4. Permits and approvals

China's permit system is still developing. The major environmental laws on Environmental Protection, Water Pollution, and Air Pollution do not address permitting or licensing,[374] although the Environmental Protection Law does authorize the "competent

[373] Eleventh Five Year Plan (approved by the State Council, Nov. 22, 2007) (P.R.C.).
[374] Stefanie Beyer, *Environmental Law and Policy in the People's Republic of China*, Oxford University Press (2006).

departments of environmental protection" to conduct onsite facility inspections.[375] Instead, permitting procedures are established through administrative measures.[376]

Permits only take into account ambient environmental quality standards.[377] In general, there four environmental permit types: planning, development, manufacturing, and waste discharge permits. Of those, the most commonly issued type is the waste discharge permit. In the application procedure, the developer must register any pollutants that the enterprise discharges and continue to file yearly registrations. Permits are required for each discharged pollutant. Discharges that exceed pollution standards face additional discharge fees, and usually, permit holders must establish a plan to decrease the levels to conform to the established standards. The discharge permits are valid for a maximum of five years and are renewable.[378]

Because permitting in China is not authorized by national laws, permitting procedures are necessarily not uniform across provinces.[379]

5. Research

There are several research institutions housed directly under the State Council or within ministries. Of those, the Chinese Academy of Sciences (CAS) is one of the most important, providing a wide breadth of scientific and technical research to inform many government policies. CAS includes twelve branch offices and over one hundred national laboratories and research centers and supports a staff of 50,000 people.[380] Other relevant research institutions include the Development Research Center and the Chinese Academies of Environmental Planning, Engineering, Social Science, Transportation Sciences, and Research Academy of Environmental Sciences.

The CAEP, the equivalent research body for MEP, conducts scientific research to provide support and consultation to government agencies for environmental planning. CAEP is a "public institution with independent legal status" that operates under MEP's leadership.[381] CAEP also houses the Center for Climate and Environmental Policy, which focuses on climate change research.

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[375] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 14 Tiao [Law on Environmental Protection, Art. 14] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.

[376] Organization for Economic Co-operation and Development, *Environment and Governance in China*, *available at* http://www.oecd.org/dataoecd/60/37/34617750.pdf

[377] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), *available at* http://www.oecd.org/dataoecd/33/5/37867511.pdf

[378] Pai Wu Xukezheng Guanli Tiaoli (Zhengqiu Yijian Gao) [Discharge Permit Regulations (Draft)] (promulgated by the Ministry of Environmental Protection) *available at* http://www.law-lib.com/fzdt/newshtml/20/20090409142622.htm

[379] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), *available at* http://www.oecd.org/dataoecd/33/5/37867511.pdf

[380] Chinese Academy of Science, *Introduction, at* http://english.cas.cn/ACAS/BI/200908/t20090825_33882.shtml (last visited May 27, 2010)

[381] Chinese Academy of Environmental Protection, *Introduction, at* http://www.caep.org.cn/toptypeEN.asp?typeid=42.

6. Economic and other reviews of proposed legislation or regulations

Environmental protection plans formulated by state must be incorporated into national economic and social development plans.[382] NDRC has a major hand in integrating environmental protection into greater economic goals and nationwide planning in the national FYPs. Similarly, MEP develops its Environmental Protection FYP based on FYPs for the Development of National Economy and Social Development and the Decision of the State Council on the Implementation of the Scientific Outlook on Development and Strengthening Environmental Protection.[383]

In 2008, the National People's Congress also passed the Circular Economy Promotion Law, which became effective on January 1, 2009. The concept of a "circular economy" refers to "reducing, reusing, and recycling activities conducted in the process of production, circulation, and consumption" and provides new direction for guiding economic development.

7. Special programs such as compliance assistance for small and medium sized enterprises

Small- and medium-sized enterprises without access to such monitoring equipment are allowed to contract EPBs or private monitoring centers to conduct the monitoring for them.

8. Approaches to critically polluted areas or new generation "area-based" pollution management for multiple sources to achieve ambient quality outcomes

"Three synchronizations," has been a central tenet of Chinese pollution control and prevention. It is the idea that pollution control facilities should be implemented during all phases of construction projects: design, construction, and operation. This principle has been incorporated into the Environmental Protection Law and construction projects that do not conform to the three synchronizations may not be permitted.[384] Despite this precautionary approach, the compliance aspect of critically polluted areas is relatively weak. The Atmospheric Pollution Law, for example, prescribes that when cities or regions do not meet environmental standards, they must "endeavor to meet such standards within the time limit" set by MEP.[385]

China takes an area-based approach to water pollution management, which is one of the country's most serious pollution issues. Water pollution prevention and treatment plans are

[382] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 22 Tiao [Law on Environmental Protection, Art. 22] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[383] Environmental Five Year Plan
[384] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 26 Tiao [Law on Environmental Protection, Art. 26] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[385] Atmospheric Pollution Law, Art. 21. http://www.greenlaw.org.cn/files/laws/air-pollution-control-law.pdf

"planned on a uniform basis by valley or region" by the local people's governments for their respective regions.[386] For instance, the Ministry of Water Resources houses seven river basin commissions, which were established under the 2002 Water Law of the PRC.[387] These commissions are (1) the Yangtze River Water Resources Commission, (2) the Yellow River Conservancy Commission, (3) the Huai River Water Resources Commission, (4) the Hai River Water Resources Commission, (5) the Pearl River Water Resources Commission, (6) the Songliao River Water Resources Commission, and (7) the Lake Tai Basin Authority.[388] They are responsible for the management and supervision of their respective waterbodies. The commissions cover several critically polluted areas, notably Lake Tai and the Huai River, and are in charge of monitoring water quality and pollutant discharge in the waters. Additionally, as discussed in the section on inspections, if waterbodies are known to be extremely polluted, MEP may conduct an "inspection campaign" to target polluting industries in the surrounding areas.

9. Procedures to assure public outreach and transparency

According the Measures on Open Environmental Information adopted by SEPA in 2007, each level of national and local environmental protection authority is responsible for "promoting, guiding, coordinating, and supervising environmental information disclosure throughout the whole country."[389] EPBs are authorized to independently disclose environmental laws, rules, regulations, and standards; environmental protection plans; environmental quality statistics; information on total emission quotas of major pollutants and issuances of pollutant emission permits; information on type, volume, and disposal of solid waste in medium to large cities; environmental impact assessment documents and results of environmental inspections; pollution emission fees and amounts actually imposed on polluters; public complaints and letters regarding environmental issues; information on environmental administrative penalties and lawsuits; and lists of heavily polluting enterprises that do not meet emissions standards or have caused serious environmental degradation.[390]

Information can be disclosed via publication on government websites, government newspapers, press conferences, broadcasts, or other media. The Measures authorize citizens, legal persons, and other organizations to request environmental information

[386] Shui Wuran Fangzhi Fa [Water Pollution and Prevention Law] (adopted by the Standing Comm. of the Nat'l People's Cong., May 11, 1984, amended Feb. 28, 2008) (P.R. C.) *available at* http://www.greenlaw.org.cn/files/laws/water-pollution-prevention-and-control-law.pdf
[387] Water Law (adopted by the Standing Comm. of the Nat'l People's Cong., Aug. 29. 2002, effective Oct. 1, 2002) *available at* http://www.gov.cn/english/laws/2005-10/09/content_75313.htm
[388] Ministry of Water Resources, *Institutions*, available at http://www.mwr.gov.cn/english/Commissions.html
[389] Measures on Open Environmental Information (for Trial Implementation), Art. 3 (adopted by the State Environmental Protection Administration of China, Feb. 8, 2007, effective May 1, 2008) (P.R.C.) *at* http://www.greenlaw.org.cn/files/laws/open_environmental.pdf (last visited May 27, 2010).
[390] Measures on Open Environmental Information (for Trial Implementation), Art. 11(adopted by the State Environmental Protection Administration of China, Feb. 8, 2007, effective May 1, 2008) (P.R.C.) *at* http://www.greenlaw.org.cn/files/laws/open_environmental.pdf (last visited May 27, 2010).

collected or obtained by EPBs or other government institutions, but not enterprises.[391] These requests may be made via written letter, fax, or e-mail, after which the EPB has fifteen days to reply to the request.[392] Enterprises are encouraged by government to disclose their information. Usually, this is not a compulsory duty, however, those polluters who emit pollutants in excess of the permit are required to disclose their information, such as the name, address, legal representative, main pollutants name, types of discharge activity, concentration of emission, total emissions of major pollutants, condition construction and operation of the environmental protection facilities, emergency response plan for contamination accident etc.

EPBs are also required to publish annual reports on environmental information. These reports must include information on the EPBs own initiatives in information disclosure; requests for environmental information and denials of requests; and administration lawsuit filings regarding environmental information disclosure.[393] In the event of EPB failure to carry out these duties results, the next highest EPB shall correct the situation. Only in very serious cases can administrative penalties be imposed on the principal person(s) responsible for the violations.[394]

Although the Measures provide many mandatory instructions on information disclosure, in practice local officials are often very reluctant to release environmental data (HYEON JU)

10. Relationship with industry (and other regulated entities)

a. Mechanisms for sharing information on pollution prevention and compliance assistance, what conflicts arise and how are they resolved

Several laws and measures establish mechanisms for sharing industry environmental information with the government and public, but disclosure is limited in practice. The Bulletin on Information Disclosure for Corporate Environmental Performance, passed by SEPA in 2003, requires non-compliant companies to publicly release various environmental indicators including pollution emissions levels, measures to reduce emissions, and amount of pollution fines levied.[395] According to the Open Enterprise

[391] Measures on Open Environmental Information (for Trial Implementation), Art. 4 (adopted by the State Environmental Protection Administration of China, Feb. 8, 2007, effective May 1, 2008) (P.R.C.) *at* http://www.greenlaw.org.cn/files/laws/open_environmental.pdf (last visited May 27, 2010).
[392] Measures on Open Environmental Information (for Trial Implementation), Art. 17 (adopted by the State Environmental Protection Administration of China, Feb. 8, 2007, effective May 1, 2008) (P.R.C.) *at* http://www.greenlaw.org.cn/files/laws/open_environmental.pdf (last visited May 27, 2010).
[393] Measures on Open Environmental Information (for Trial Implementation), Art. 25 (adopted by the State Environmental Protection Administration of China, Feb. 8, 2007, effective May 1, 2008) (P.R.C.) *at* http://www.greenlaw.org.cn/files/laws/open_environmental.pdf (last visited May 27, 2010).
[394] Measures on Open Environmental Information (for Trial Implementation), Art. 26 (adopted by the State Environmental Protection Administration of China, Feb. 8, 2007, effective May 1, 2008) (P.R.C.) *at* http://www.greenlaw.org.cn/files/laws/open_environmental.pdf (last visited May 27, 2010).
[395] Guo Peiyuan, *Corporate Environmental Reporting and Disclosure in China*, http://www.csr-asia.com/upload/environmentalreporting.pdf

Environmental Information section of the Measures on Open Environmental Information, enterprises are encouraged, but not mandated, to disclose information regarding their environmental protection guidelines, objectives, and achievements; annual resource consumption; environmental investment and technology development; type, volume, and location of discharged pollutants; disposal or recycling of waste generated from their facilities and production; voluntary agreements on environmental protection with EPBs; and social responsibility initiatives.[396] EPBs have the right to verify any information voluntarily provided by enterprises.[397]

According to one 2003 survey of nearly 1,200 companies listed in the Chinese stock market revealed that 37% of the enterprises engaged in some form of information sharing. When broken down sectorally, the survey showed that the mining and paper industries showed the highest rates of information disclosure, with 87.5% and 72.73% of the surveyed companies engaging in disclosure respectively. However, no standard procedures exist to guide companies on what information to disclose and how to dispense it. For instance, a related 2001 survey of over 120 companies showed that most companies (66.7%) disclose information through corporate brochures, while others publish information on websites, newspapers, and financial statements, or share them through factory tours, symposiums, or television and radio broadcasts – with each method conveying varying degrees and types of information. Additionally, a large majority (70%) of the survey respondents indicated that the main reason they participated in corporate environmental reporting was in response to government mandates, rather than voluntary measures. Additionally, the primary users of corporate environmental data were government agencies, while mass media and the public only made up a small fraction of the information users. Although enterprises are moving toward a more transparent corporate culture, the surveys still show the limitations to acquiring industry information.

11. Procedures for inspections, frequency of inspections, mechanisms for targeted inspections, self-monitoring and other means of assuring compliance

EPBs are responsible for carrying out environmental inspections. EPBs conduct both routine and surprise inspections. Often, public complaints about polluting enterprises will lead to inspections: an EPB official is required to arrive at a site within two hours of receiving an environmental complaint in urban areas and within six hours in rural areas.[398] One 2006 survey estimates that enterprises are inspected 8.6 times per year on average, with an inspection average of 12 times per year in cities and 5.5 times in rural places.[399]

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[396] Measures on Open Environmental Information (for Trial Implementation), Art. 19 (adopted by the State Environmental Protection Administration of China, Feb. 8, 2007, effective May 1, 2008) (P.R.C.) *at* http://www.greenlaw.org.cn/files/laws/open_environmental.pdf (last visited May 27, 2010).
[397] Measures on Open Environmental Information (for Trial Implementation), Art. 22 (adopted by the State Environmental Protection Administration of China, Feb. 8, 2007, effective May 1, 2008) (P.R.C.) *at* http://www.greenlaw.org.cn/files/laws/open_environmental.pdf (last visited May 27, 2010).
[398] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), *available at* http://www.oecd.org/dataoecd/33/5/37867511.pdf
[399] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), *available at* http://www.oecd.org/dataoecd/33/5/37867511.pdf

The EPB monitoring stations provide annual reports to MEP of their pollution monitoring and monitor major pollution sources approximately three to four times per year.

MEP, with assistance from relevant EPBs, also conducts "inspection campaigns" in key pollution regions or sectors. These campaigns include efforts to cut back on polluting enterprises the mining and chemical industries, as well as in the Bohai Sea, Lake Tai, and the Huai River in which many plants were shut down or consolidated and plant managers penalized. In the Huai River campaign, over 84,000 enterprises were shut down between 1995 and 2000.[400] These inspections are sometimes carried out jointly by MEP and other relevant ministries, including the Ministry of Water Resources, the Ministry of Justice, and the Ministry of Supervision.

Companies are required to file information on pollution discharge with EPBs and provide the data through self-monitoring. Industries usually provide this pollution information to EPBs annually, but the frequency is different in some regions that have adopted a quarterly reporting system.[401] In order to ensure that the information is accurate, EPBs must license the monitoring equipment and renew the license every year.

12. Procedure for environmental monitoring and how data is shared with stakeholders

MEP is required to publicly distribute important findings of its annual reports,[402] the first of which was published in 1990.[403] Since 1998, this data has been available on the web. The reports all follow a "stress-status-response" framework, modeled after the "pressure-state-response" structure that OECD countries follow in their environmental reporting.[404] EPBs must also issue periodic reports. While most are annual, a few provinces issue the reports weekly or daily. Environmental Monitoring Agencies, operating under provincial, municipal, and county level EPBs, are responsible for environmental monitoring and inspections. Each EPB is then accountable to disclose that information to both MEP and the superior-level EPB above it.[405]

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[400] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), *available at* http://www.oecd.org/dataoecd/33/5/37867511.pdf

[401] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), *available at* http://www.oecd.org/dataoecd/33/5/37867511.pdf

[402] Measures on Open Environmental Information (for Trial Implementation), (promulgated by the State Environmental Protection Administration of China, Feb. 8, 2007, effective May 1, 2008) (P.R.C.) *at* http://www.greenlaw.org.cn/files/laws/open_environmental.pdf (last visited May 27, 2010).

[403] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), *available at* http://www.oecd.org/dataoecd/33/5/37867511.pdf

[404] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), *available at* http://www.oecd.org/dataoecd/33/5/37867511.pdf

[405] Huanjing Jiance Guanli Banfa [Methods for Environmental Monitoring Management] (State Environmental Protection Administration, Jul. 25, 2007, effective Sept. 1, 2007) (P.R.C.) *available at:* http://www.gov.cn/ziliao/flfg/2007-08/07/content_708389.htm.

Although EPBs and monitoring centers collect a lot of data, sharing the information in the environmental quality reports in a broad and coordinated way is difficult and no unified data system exists for easy, countrywide access to the information.

Sometimes there is a degree of overlapping supervisory authority. For instance, the Ministries of Environment, Agriculture, and Water Resources each have individual water quality monitoring systems.[406]

13. Measures or indicators of progress toward ambient quality goals and compliances with standards

In addition to the annual reports, MEP reviews and publishes information on national environmental progress and achievements after the closure of each FYP period. These FYPs review to what extent goals from the last FYP were met, provide the current measurements of specific pollutants and environmental indicators, and set new targets based on those numbers.

As another measurement of environmental progress, and to assess effects of environmental degradation on the economy, CAEP developed a new Integrated Environmental and Economic Accounting framework (also known as Green GDP) in 2006 to evaluate China's GDP loss due to environmental degradation. The study concluded that in 2004, environmental degradation cost the country 511.82 billion yuan (or 3.05% of the GDP), most of which came from air and water pollution (42.9% and 55.9% of the total environmental costs respectively).[407]

14. Procedures for addressing cross sectoral environmental issues with sectoral ministries/departments and how to address damage due to conflicts in policies

Relevant ministries and non-MEP departments and divisions are also authorized to address and manage environmental protection issues that cross over into other sectors and domains. There is no unified or standardized system to guide cross-ministry collaboration in sectors that apply to more than one agency.[408]

Often, the division of responsibility is vague. For instance, EPBs, along with "other departments invested by law with power to conduct environmental supervision," can conduct on-site pollution discharge inspections,[409] while "other related departments under

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[406] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[407] http://www.caep.org.cn/english/paper/A-Framework-of-Environmental-and-Economic-Accounting-in-China.pdf
[408] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[409] Zhonghua Renmin Gongheguo Huanjing Baohu Fa [Law on Environmental Protection] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229. (P.R.C.).

the State Council" can supervise solid waste pollution control and prevention.[410] Water resources also pose particular jurisdictional problems. MEP, the Ministry of Water Resources, and the Fisheries Bureau (housed under the Ministry of Agriculture), for instance, can all claim monitoring authority over a single fishery. These and other such articles do not name particularly agencies or define specific roles, or provide guidance on overriding authority in the event that one issue is governed by two sets of conflicting regulations.[411]

In other cases, joint ministry oversight is more explicit, but still confusing to implement in practice. Many laws and circulars, such as the 2001 Collaboration Instructions on Environmental Standard Management, are jointly promulgated by more than one relevant ministry. The General Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ), an organization directly under the State Council in charge of national quality standard setting, commodity inspection, and administrative law enforcement,[412] jointly promulgated the Instructions with MEP. The Instructions divide responsibility between MEP and AQSIQ as follows:

(1) national environmental quality standards and the national pollutant emission standards are drafted by MEP, approved the AQSIQ, set by the MEP, and then announced by both departments jointly;
(2) pollutant emission standards for mobile sources, such as vehicles, ships, and air planes, are drafted by the MEP, approved by the AQSIQ, and set by the MEP;
(3) environmental standard of sample standards and environmental baseline standards are drafted and set by the MEP, while the AQSIQ will distribute, approve, arrange, and announce them; and
(4) industrial environmental protection standards are set by the MEP and documented by the AQSIQ.[413]

15. Capacity building programs for provincial agencies

MEP set aside special funds to bolster capacity building for environmental monitoring in poverty-stricken areas specifically at the county level, which handles most monitoring responsibilities.[414] Although the program was established through then-SEPA, county-

[410] Solid Waste Pollution Prevention and Control Law, Article 10 (promulgated by the National People's Congress Standing Committee, Dec. 29, 2004, effective Apr. 1. 2005) (P.R.C.) *available at:* http://ewasteguide.info/downloads/solid-wast.
[411] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[412] Chinese Government Official Web Portal , *Organizations Directly Under the State Council*, *at* http://english.gov.cn/2005-08/05/content_20790.htm.
[413] Guanyu Huanjing Biaozhun Guali De Xietiao Yijian (promulgated by the General Administration of Quality Supervision, Inspection, and Quarantine, Apr. 9, 2001) ChinaLawInfo (last visited May 27, 2010) (P.R.C.) *available at:* http://vip.chinalawinfo.com/Newlaw2002/Slc/slc.asp?gid=35531&db=chl&keyword=%B9%FA%BC%D2%D6%CA%C1%BF%BC%BC%CA%F5.
[414] Notification of Special Funds for the Organization of Law Enforcement Capacity-Building of Environmental Monitoring, Ministry of Environmental Protection, *at* http://gcs.mep.gov.cn/zybz/zfjs/200707/t20070723_107068.htm

level EPBs from eligible areas must apply for the funding through the Environment and Natural Resources Department of the Ministry of Finance's Economic Construction Division. The program is aimed for central and western provinces resources and institutional capacity often lags behind coastal provinces.

II. Citizen Participation

1. Procedures for citizen monitoring, stakeholder involvement, advisory committees, community engagement, inclusive decision making, and public participation

In terms of China's environmental laws, citizen participation is minimally addressed, but citizens do have rights to access information, participate in decision-making, and sue.

Public access to information, as discussed in the section on environmental information disclosure, is protected through the Measures on Open Environmental Information, although information access in practice is quite limited. In addition, citizens can participate in environmental pollution reporting. Over 80% of county EPBs also have environmental 24-hour "hotlines" for citizens to report instances of non-compliance via telephone.

Participation in decision-making occurs mainly through the EIA process. Although the EIA Law "encourages work units, experts, and the public to participate in environmental impact assessments in appropriate ways,"[415] the law's specification of opportunities for public participation is vague: environmental impact reports must "take the opinions of the relevant entities, experts, and the general public about the draft report of environmental impacts into careful consideration, and shall attach a remark whether the opinions are adopted or refused."[416] In 2006, SEPA addressed these issues by through issuing the "Measures on Public Participation in the Environmental Impact Assessment Process." These provisional guidelines provide that the drafting entity must publish and make available EIA information and solicit public comments through workshops, debates, questionnaires, or hearings prior to submitting the documents for approval.[417] No enforcement mechanism exists for failure to follow these rules.

In terms of legal standing, citizens can initiate class action or administrative lawsuits. Reconsiderations of court decisions may be first directed at the next higher administrative level, which has two months to make a reconsideration decision. If the court still refuses to accept the reconsideration decision, a plaintiff may initiate an action to a people's court fifteen days from the decision date. Alternatively, the plaintiff may also initiate action

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[415] Zhonghua Renmin Gongheguo Huanjing Xiang Pingjia Fa, Di 5 Tiao [Environmental Impact Assessment Law, Art. 5] (promulgated by the Ninth Standing Committee of the National People's Congress, Oct. 28, 2002, effective Sept. 1, 2003) (P.R.C.) *available at:* www.tjxzxk.gov.cn/page/guide/lawdown.jsp?lid=9558.
[416] Zhonghua Renmin Gongheguo Huanjing Xiang Pingjia Fa, Di 11 Tiao [Environmental Impact Assessment Law, Art. 11] (promulgated by the Ninth Standing Committee of the National People's Congress, Oct. 28, 2002, effective Sept. 1, 2003) (P.R.C.) *available at:* www.tjxzxk.gov.cn/page/guide/lawdown.jsp?lid=9558.
[417] SEPA Guidelines on Environmental Impact Assessment, Art. 2, *available at* .http://www.worldwatch.org/node/3886

directly to a people's court, and must do so within three months from the date from a specific administrative action.[418] If the plaintiff exceeds the time limit for initiating any of the above actions due to *force majeure* or other extenuating circumstances, the plaintiff can apply for an extension within ten days "after the obstacle is eliminated."[419]

NGOs were not historically granted standing to sue, although the recent establishment of environmental courts in certain provinces opens the door for public interest lawsuits. The Guiyang Intermediate People's Court and the Qingzhen Basic People's, both located in Guizhou Province, established the first two environmental courts in 2007 to address severe pollution in three major lakes in the region. Wuxi Intermediate People's Court in Jiangsu Province (the location of a major pollution incident in Tai Lake) followed suit in 2008, and a handful of environmental courts emerged in Yunnan Province in 2009.[420] Notably, it was not until 2009 that court system accepted the first public lawsuit against the government with an environmental organization as the plaintiff. [421] The All-China Environmental Federation, a government-operated non-government organization (GONGO), sued the City of Wuxi over violations of the EIA Law.

These legal and civil society developments have increased legal awareness among individuals and advocacy groups has led to increased civil society participation in legal actions. One key player in this arena is the Center for Legal Assistance to Pollution Victims (CLAPV), the only environmental litigation public interest group in China. The organization was established in 1999 and has provided training and legal assistance for over 135 cases brought to trial (most are actually private tort cases for harm to individuals). In addition, the organization has also published handbooks to increase public understanding China's legal process and citizens' rights.

2. Examples of public involvement that improved outcomes will be provided

One high profile environmental lawsuit, Zhang Changjian et al. vs. Rongping Chemical Plant, illustrates how the Chinese legal system works in practice and some of the challenges of environmental law. In 1994, the Rongping Chemical Plant was built in a village in Fujian Province. For several years, village residents began to notice marked effects on crops, bamboo and other plants, and fish and shrimp, as well as a significant increase in cancer rates among the population. Residents led by Zhang Changjian and with assistance from the Center for Legal Assistance to Pollution Victims (CLAPV), filed a class action lawsuit in the Intermediate People's Court of Ningde Municipality. The lawsuit included 1721 plaintiffs, who requested a court order for Rongping to stop the pollution, over 10 million yuan in compensation, over 3 million yuan in "emotional damages," and a court order to clean up the waste. The plaintiffs won the case at the Intermediate Court level, but both parties were unsatisfied and appealed to Fujian Province High People's Court. The plaintiffs won again, but received a 684,178.2 yuan

[418] Administrative Procedural, Art. 37, 38, 39 (P.R.C)
[419] Administrative Procedural Act, Art. 40 (P.R.C)
[420] Gao Jie, *Environmental Public Interest Litigation and the Vitality of Environmental Courts*, Natural Resources Defense Council, *available at* http://www.greenlaw.org.cn/files/reports/GaoJieEPCourts_En.pdf
[421] Asia Water Project, *China's Green Courts, at* http://www.asiawaterproject.org/more-interviews/491/

compensation for losses to crops, fish, and shrimp and no money for emotional damages. The court also waved the plaintiffs' case acceptance fee. This lawsuit was considered one of China's ten most important lawsuits in 2005.

In this case, the gravity of the situation allowed the case to be filed at the Intermediate People's Court, which may have allowed for a fairer trial by providing a buffer from local protectionism that the plaintiffs might have faced in the lower court. However, Zhang Changjian still faced assault and repeated harassment when trying to collect water samples. Moreover, the local government suspended operation of Zhang's clinic, where he worked as a local doctor. These instances demonstrate high local pressures against citizen action against polluters. Other factors that contributed to the case's successful outcome included high media awareness, a sizable plaintiff class, and the correct application of the law. Although Chinese law establishes a reversal of burden of proof and no-fault liability, these principles are often not applied resulting in unfavorable trials for plaintiffs.[422]

Although this case was considered a success on paper, in reality, the plant did not suspend its operations and continues to pollute, showing the weaknesses in China's enforcement powers.[423]

III. Legal Assessment (to the extent not incorporated in individual topics above)

1. National authorization and oversight of state programs

a. Methods of assuring compliance and enforcement at the provincial level

General responsibility for inspection and compliance assurance lies mainly with inspectors working under local EPBs. Delegating primary enforcement authority to EPBs means often means weak enforcement due to several reasons.

To begin with, limited staff capacity makes it difficult to carry out comprehensive enforcement actions. In 2006, the average inspection staff capacity of a provincial EPB was 24, municipal was 32, and county was 35.[424] As a result, EPBs often take a "pragmatic enforcement" approach in determining how many cases to undertake.[425] This approach often means that EPBs will target obvious big polluters over small- or medium-sized enterprises, which actually emit more aggregate pollution collectively.

Additionally, local governments often have a stake in severely polluting industries as shareholders or because those industries bring significant economic benefit to the area.

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[422] Alex Wang, *The Role of Law in Environmental Protection in China: Recent Developments*, VT. J. ENVTL. L. 8 (2007), *available at:* http://www.vjel.org/journal/VJEL10057.html.
[423] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), available at http://www.oecd.org/dataoecd/33/5/37867511.pdf
[424] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), available at http://www.oecd.org/dataoecd/33/5/37867511.pdf
[425] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), available at http://www.oecd.org/dataoecd/33/5/37867511.pdf

This creates a conflict of interest for local governments to effectively uphold environmental standards.[426] Due to the disconnect between MEP and its regional and provincial bureaus, it is difficult to ensure proper enforcement even given political will and good intentions in upper levels of government.[427]

Furthermore, in 1994, China underwent a tax system reform. The new system bases government officials' performances on the increase of economic development and tax revenue in their jurisdictions. Because of this emphasis, some local officials focus entirely on revenue generation and fast economic growth while ignoring environmentally sustainable practices.[428] As of 2010, the National People's Congress, MEP, the Ministry of Finance, and the State Administration of Taxation were exploring options of adding an "environmental tax" component to the tax structure to offset this imbalance. If implemented, this policy would institute environmental taxes based on industries and pollution levels.[429] China is trying to find effective methods to improve environmental protection. Some new laws, such as the water pollution control act, which was revised in 2008, make the environmental condition an element to consider when the local government and its head's political achievements are evaluated. Furthermore, MEP is researching environmental administrative system reforms. With respect to accountability and reporting to MEP, select EPBs have become "independent" from local government through a reform called vertical management. Many provinces have carried out this reform. For example, in Shanxi province, all EPBs under the municipal level have been put into vertical management.

b. Methods used that are beyond command and control

China takes various incentive-based measures to encourage environmental compliance. China has a no-fault liability policy for pollution compensation cases, which means that plaintiffs are not required to show violations of environmental quality standards or standards of pollutant discharges by defendants as a condition for liability and compensation.[430]

Public disclosure is another tool frequently employed in China. The major pollution laws authorize EPBs top make public lists of enterprises that are serious pollution violators.[431]

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[426] Stefanie Beyer, *Environmental Law and Policy in the People's Republic of China*, Oxford University Press (2006).
[427] Stefanie Beyer, *Environmental Law and Policy in the People's Republic of China*, Oxford University Press (2006).
[428] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[429] Motoko Aizawa and Chaofei Yang, *Green Credit, Green Stimulus, Green Revolution? China's Mobilization of Banks for Environmental Cleanup*, J. ENV'T AND DEV. 19 (2010)
[430] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 41 Tiao [Law on Environmental Protection, Art. 41] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[431] Water Pollution and Prevention Law, Art. 19

SEPA also established a Green Watch program in cooperation with the World Bank to publicly disclose industrial polluters in 1998. Enterprises are rated based on a five-color system of best-polluting to worst-polluting and the ratings are publicized through various media outlets.[432] The factors considered in the Green Watch Program include timely payment of pollution fees, implementation of various pollution regulations, internal environmental monitoring and training, and energy efficiency. The program is voluntary, and many other public rating and disclosure programs in various cities and provinces have followed suit.[433]

In July 2007, MEP launched a "Green Credit" policy to regulate bank lending. The initiative has discouraged some financing of "*liang gao*" ("two high") industries, referring to projects that both highly polluting and energy intensive. The new program includes a "credit blacklist" of approximately 40 companies, but is still limited in size and influence. The Green Credit Policy has prompted some banks to promote energy efficiency and incorporate environmental sustainability principles into their risk assessment and lending practices. The Green Credit policy has been since supplemented with other regulations and programs relating to financial regulation. One such program is the mandatory Green Insurance System, announced in 2009. Under the Green Insurance System, companies must have the financial means to cover environmental liabilities. The system will be phased in starting with the highest-risk industries, and is not expected to be fully implemented until 2015.[434]

2. Allocation of enforcement between state and provincial agencies

EPBs take care of primary enforcement, while MEP's role mainly entails overseeing local enforcement, and in special cases, undertaking enforcement efforts jointly with EPBs. In 2003, SEPA established the Bureau of Environmental Supervision. The Bureau operates as a department of SEPA, and is responsible for investigating violations of laws on environmental pollution, coordinating cross-provincial disputes, site inspections, providing assistance to MEP to draft new enforcement policies, and most recently, coordinating regional Environmental Supervision Centers.

In 2006, SEPA also established five regional Environmental Supervision Centers to assist with growing environmental enforcement needs.[435] In 2008, the sixth Environmental Supervision Center was established. The centers function as environmental law enforcement, monitoring, and reporting branches that operate directly under the national authority (now MEP) and assist local enforcement efforts. More specifically, they are tasked with supervising regional implementation of the state's environmental policies,

[432] http://www.oecd.org/dataoecd/33/5/37867511.pdf
[433] http://www.csr-asia.com/upload/environmentalreporting.pdf
[434] Willis, *Green Insurance*, 32 Int'l Alert (Feb. 2009) *available at* http://www.willis.com/Documents/Publications/Services/International/2009/Intl_Alert_China_Green_Insurance.pdf
[435] Guanyu Yinfa Zongju Huanjing Baohu Ducha Zhongxin Zujian Fangan De Tongzhi [Notice on the Plan for Establishing Environmental Supervision Centers] (adopted by the State Environmental Protection Administration, Jul. 8, 2006) (P.R.C.) *available at:* http://www.mep.gov.cn/gkml/zj/bgt/200910/t20091022_173965.htm.

laws, and standards, undertaking investigative cases of environmental pollution and ecological destruction, coordination cross-provincial dispute, oversight of law enforcement in national nature reserves and parks, and handling investigation of major environmental emergencies. These centers were not authorized by legislation, but rather via internal policies and notably do not have formal legal authority under the relevant laws of the PRC.[436]

a. Methods of resolving conflicts

Given China's hierarchical governance system, higher level bodies have primacy over lower regional ones. This includes EPBs, courts, and other various agencies, culminating at the State Council. Conflicts resolution between same-level EPBs is handled by MEP's Environmental Supervision Centers, which oversee regional disputes.

3. Criminal Liability for Non-Compliance

In 2003, China's Criminal Law was revised to include an entire section on "Crimes Undermining Protection of Environmental Resources." This law defines which environmentally harmful criminal activities and specifies appropriate punishments. According to the Criminal Law, the following acts are considered criminal activity: illegally dumping, storing, processing, or importing hazardous waste; catching aquatic animals in forbidden areas or using forbidden methods; hunting rare or endangered animals; illegal use of farmland as provided in land administrative regulations; engaging in mining operations without a permit; and illegal logging. Violators can be sentenced to additional imprisonment for some of these crimes, including illegal mining and logging, if their activities caused serious environmental damage to natural resources.[437]

Despite these measures, as of 2008, less than 20 cases of environmental crimes had been prosecuted, accounting for less than 5% of total violations.[438] Most of the time, violators are given administrative penalties instead of being held criminally accountable. The low prosecution rate for environmental crimes is due in part to general lack of judicial training and awareness of environmental issues.[439]

4. Procedures for imposing penalties and fines for non-compliance

a. Civil Penalties for Non-Compliance

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[436] Xin Qiu and Honglin Li, *China's Environmental Super Ministry Reform: Background, Challenges, and the Future*, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10152 (2009).
[437] Criminal Law, Arts. 338-346. (adopted by the Second Session of the Fifth National People's Congress, Jul. 1, 1979, effective Mar. 14, 1997) (P.R.C.) *available at:* http://www.colaw.cn/findlaw/crime/criminallaw1.html.
[438] Tseming Yang, *Introduction: Snapshots of the State of China's Environmental Regulatory System*, VT. J. ENVTL. L. 8 (2007), *available at:* http://www.vjel.org/journal/VJEL10060.html.
[439] Tseming Yang, *Introduction: Snapshots of the State of China's Environmental Regulatory System*, VT. J. ENVTL. L. 8 (2007), *available at:* http://www.vjel.org/journal/VJEL10060.html.

Citizens, legal persons, or organizations bringing lawsuits against polluters must follow the Civil Procedural Law. The Various Regulations Regarding Evidence for Civil Suits of the Supreme People's Court sets forth a reversal of the burden of proof in pollution compensation lawsuits, stating that "the polluter carries the burden of proof with respect to…demonstrating the lack of causal link between the polluter's actions and the harmful result."[440] In practice, however, many courts still require plaintiffs to show evidence of causation in environmental pollution cases.[441] According to the presiding judge of Qingzhen environmental court, judges in environmental courts do better with this regulation than judges in common courts.

5. System for administrative penalties, hearings, and appeals

The PRC Environmental Protection Law established the polluter pays principle, stating that "Enterprises and institutions discharging pollutants in excess of the prescribed national or local discharge standards shall pay a fee for excessive discharge according to state provisions and shall assume responsibility for eliminating and controlling the pollution."[442]

If an entity exceeds pollution national or local pollution standards, it faces a fine, as well as a potential concurrent order to revoke the permit, suspend operations, or shut down the enterprise, depending on the severity of the non-compliance.[443] Over 60% of the time, the penalty for non-compliance is a fine.[444] If the entity does not do so within a specified time frame, it will face an additional fee that is determined "on the basis of damage incurred," or be ordered to suspend operations or shutdown the enterprise.[445]

EPBs have the authority to decide the amounts of the fines, but maximum amount of the fine depend on EPB level. The maximum fine is 200,000 yuan for provincial EPBs, 50,000 yuan for municipal EPBs, and 10,000 yuan for county EPBs.[446]

The level or branch of the "people's government that sets the deadline for the elimination or control of pollution" has the authority to order shutdown or suspension of operations and

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[440] Supreme People's Court Various Regulations Regarding Evidence for Civil Suits, Article 4, Section 3.
[441] Alex Wang, *The Role of Law in Environmental Protection in China: Recent Developments*, VT. J. ENVTL. L. 8 (2007), *available at:* http://www.vjel.org/journal/VJEL10057.html.
[442] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 28 Tiao [Law on Environmental Protection, Art. 28] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[443] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 36 Tiao [Law on Environmental Protection, Art. 36] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[444] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), available at http://www.oecd.org/dataoecd/33/5/37867511.pdf
[445] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 39 Tiao [Law on Environmental Protection, Art. 39] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[446] http://www.oecd.org/dataoecd/33/5/37867511.pdf

enterprises, with approval from the State Council.[447] The Water Pollution Control Law indicates that those who commit severe water pollution can incur fines of up to 200,000 yuan, and those who fail to submit or submit false reports can incur fines of up to 100,000 yuan.[448] And, those who operate the main project without water pollution preventing facilities being built, inspected, or unqualified by inspection can incur fines up to 500,000 yuan. The Air Pollution Law allows fines of up to 50,000 yuan for not operating pollution treatment technologies and submitting false reports. Entities that caused pollution accidents can be fined for up to half of the direct economic damage caused by the incident, but the amount is capped at 500,000 yuan.[449]

The fees and penalties levied from non-compliance go toward the "prevention and control of pollution, and shall not be appropriated for other purposes."[450] The law leaves it to the State Council determine more specific measures for those uses. Despite this requirement, there is no adequate supervisory body or system to ensure that this occurs.[451] Furthermore, in practice, these fines are often negotiated and are therefore much lower than the actual costs of addressing the resulting degradation, or the expenses of installing proper pollution controls.[452]

Most administrative cases start at the lowest court level,[453] although intermediate courts have jurisdiction over "actions initiated against specific administrative acts taken by departments under the State Council or by the people's governments of provinces, autonomous regions or municipalities directly under the Central Government,"[454] and high courts have jurisdiction over "grave and complicated administrative cases in the whole country."[455]

The procedures for administrative litigation, penalties, hearings, and appeals are outlined in the Administrative Procedural Law, Administrative Reconsideration Law, and their respective implementation rules. As administrative law relates to environmental law and permitting, courts accept cases in which entities: (1) refuse to accept administrative penalties or compulsory administrative measures; (2) claim that an administrative body has infringed upon its legally authorized decision-making powers; (3) applied for a permit or

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[447] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 39 Tiao [Law on Environmental Protection, Art. 39] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[448] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), available at http://www.oecd.org/dataoecd/33/5/37867511.pdf
[449] Environmental Compliance and Enforcement in China, Organization for Economic Co-operation and Development (2006), available at http://www.oecd.org/dataoecd/33/5/37867511.pdf
[450] Zhonghua Renmin Gongheguo Huanjing Baohu Fa, Di 28 Tiao [Law on Environmental Protection, Art. 28] (promulgated by the Seventh Nat'l People's Cong., Dec. 26, 1989, effective Dec. 26, 1989) (P.R.C.) *available at:* http://www.law-lib.com/law/law_view.asp?id=6229.
[451] Stefanie Beyer, *Environmental Law and Policy in the People's Republic of China*, Oxford University Press (2006).
[452] Stefanie Beyer, *Environmental Law and Policy in the People's Republic of China*, Oxford University Press (2006).
[453] Administrative Procedural Law, Art. 13
[454] Administrative Procedural Law, Art 14
[455] Administrative Procedural Law, Art 15

license in conformity to the provisions of laws, but an administrative organ has refused to issue it; or (4) were asked to perform duties by an administrative organ in violation of laws.

In practice, many disputes are settled through arbitration to avoid the legal process altogether. This allows a great deal of room for rent-seeking behavior.[456] According to one New York Times report, an internal government investigation on construction projects found violations in over 40% of approved pollution controls.[457]

6. Procedures for initiating legal actions

a. In-house prosecution capability, relationship to legal department

MEP does not have an internal legal branch. The People's Procuratorate, established through the Constitution, is responsible for carrying out judicial and litigation activities for the government.

7. Procedures for alternative dispute resolution to achieve compliance

China has three main methods of alternative dispute resolution (ADR): negotiation, arbitration, and mediation. Historically, China has been a strong proponent of ADR, which some claim to stem from Confucian and eastern values of using compromise in conflict resolution to maintain harmony.[458] This, in combination with China's still-developing court system, lends itself to a strong mediation system. In fact, the Constitution actually authorizes the establishment of people's mediation committees,[459] which have been in existence since the 1940s.

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[456] Zhang Yikai, *Towards Sustainable Development: Chinese Environmental Law Enforcement Mechanism Research*, Graduate Department of Law, University of Toronto (2009) *available at* https://tspace.library.utoronto.ca/bitstream/1807/19011/6/Zhang_Yikai_200911_LLM_thesis.pdf

[457] David Lague, *Corruption is Linked to Pollution in China*, N.Y. TIMES, Aug. 21, 2006, *available at* http://www.nytimes.com/2006/08/21/world/asia/21iht-smog.2550052.html?_r=1

[458] Fu Hualing, *Understanding People's Mediation in Post-Mao China*, 6 J. of Asian L. 2 (1993) *available at* http://www.columbia.edu/cu/asiaweb/v6n2fuhu.htm

[459] XIAN FA art. 111 (1982) (P.R.C.).

MEXICO

I. Status and Design

1. National Environmental Protection Authority

The primary federal authority for environmental protection in Mexico is the Secretaria of the Environment and Natural Resources (SEMARNAT), which was created from a restructuring of the previous environmental authority in 2001. The previous authority, SEMARNAP, the first major, centralized environmental authority in Mexico, was created in 1994 through changes in the Organic Law of Federal Public Administration. The 2001 restructuring creating SEMARNAT removed its jurisdiction over fisheries to the Secretariat of Agriculture, Livestock, Rural Development, Fisheries, and Food (SEGARPA). SEMARNAT is charged with implementing the 1988 General Law on Ecological Equilibrium and Protection of the Environment (LGEEPA),[460] and subsidiary and sector-specific legislation and regulations. The sole federal authority governing water management is the National Water Commission (CNA), created in 1989 to plan and harmonize water administration.[461]

a. Authorization

Article 4 of the Constitution provides, "Every person has a right to live in an adequate environment for her development and welfare." Article 73, paragraph 29(G) of the Constitution calls on Mexico's government to "legislate for the activities on environmental protection and on environmental preservation and restoration directed by the Federal, States and Municipal Governments in a concurrent way and according to their respective jurisdictions." In furtherance of these powers, and operating within the bounds of the Constitution, the executive has, *inter alia*, the power to present legislation to the congress, approve or veto legislation, implement laws passed by the congress, and make administrative rules.[462]

Under LGEEPA, as amended in 1996, the federal government through SEMARNAT is charged not just with enforcing environmental law, but has an expanded mandate to ensure preservation of biodiversity, set up broad national environmental policies, and introduce the concept of sustainable preservation of natural resources to replace the concept of rational development. Under LGEEPA amended Article 5, the federal government now has specific responsibility in the following areas:

- Formulation and management of national environmental policy

[460] Ley General del Equilibrio Ecológico y la Protección al Ambiente [LGEEPA], *as amended*, art. 11, Diario Oficial de la Federación [D.O.], 28 de Enero de 1988 (Mex.).
[461] Andrea C. Zomosa-Signoret, *Mexican Water Reform: Paradoxes of Institutional Development, Integrative Management, and Modernization* 2 (November 2007), *available at* http://fletcher.tufts.edu/ierp/ideas/pdfs/issue3/ZomosaSignoretAndrea_MexicoWater.pdf.
[462] Constitución Política de los Estados Unidos Mexicanos [Const.], *as atended*, Diario Oficial de la Federación [D.O.], art. 89, 5 de Febrero de 1917 (Mex.).

- Matters that affect ecological equilibrium within national territory or in zones subject to Mexican sovereignty and jurisdiction, originating from territory or areas subject to the sovereignty and jurisdiction of other countries, or from zones outside the jurisdiction of any country
- Matters originating from within national territory or areas subject to Mexican sovereignty and jurisdiction that affect the ecological equilibrium in territory or areas subject to the sovereignty and jurisdiction of other countries or areas outside of the jurisdiction of any country
- Issuing of official regulations and oversight to ensure compliance with environmental laws
- Regulation and control of activities consider to be high risk, and of the generation, handling and disposal of hazardous waste
- Prevention and control of environmental emergencies according to civil protection policies and programs
- Establishment, regulation, administration and oversight of federally-protected natural reserves
- Evaluation of environmental impact of the works and activities described in the Law, as well as the issuance of necessary permits and authorizations
- Regulation of sustainable development, protection and preservation of forest areas, land, water, biodiversity, flora, fauna and other natural resources under federal jurisdiction
- Regulation of atmospheric pollution from any source, as well as the prevention and control of atmospheric pollution in federal zones
- In coordination with state and local authorities, the fostering of the use of technologies, equipment and processes that reduce emissions and discharges of pollutants from any source, as well as the establishment of regulations for the sustainable development of energy resrouces
- Regulation of activities related to exploration and exploitation of minerals, substances and other underground resources under federal jurisdiction, with regard to their environmental and ecological effects
- Prevention of ambient pollution caused by noise, vibration, thermal energy, light, electromagnetic radiation and odors
- Promotion of participation by society in environmental matters
- Implementation of the National System of Environmental and Natural Resources Information for public use.[463]

b. Governance structure

SEMARNAT's various divisions are governed by its Internal Regulation, which sets out the responsiblities of each of the units, including its independent and decentralized

[463] English version of article 5 adapted from Goodrich, Riquelme y Asociados, Mexico Business Opportunities and Legal Framework 115-16 (2d ed. 2000).

agencies.[464] Article 118 of the Internal Regulation establishes the specific powers and responsibilities of PROFEPA:

- Monitor and evaluate compliance with legal provisions applicable to prevention and control of pollution, restoration of natural resources, preservation and protection of forest resources, wildlife, turtles, marine mammals and at-risk water species, ecosystems and genetic resources, biosafety agencies, GM federal maritime zone land, coastal areas, natural protected areas, environmental impact assessment, ecological zoning in federal jurisdiction areas, discharges into national waters
- Receive, investigate, address, or forward to appropriate authorities complaints about violations of laws related to same
- Safeguard the public interest and encourage public participation in compliance monitoring with environmental legal requirements, assist in problem solving of environmental emergencies and contingencies, provide advice on environmental and natural resources protection
- Coordinate enforcement of environmental regulation among federal agencies and all levels of government
- Request authorities to revoke, modify, suspend, or cancel licenses, permits, concessions where there are severe risks or violations of environmental laws
- Make recommendations on implementation of standards to competent authorities and monitor implementation
- Ensure "conciliation of interests" between individuals and officials acting within SEMARNAT's authorities
- Perform environmental audits and surveys
- Assist in formulation of expert opinions of damage or injury caused by violations of environmental regulations
- Determine and impose corrective measures and safety techniques and sanctions for violating same
- Report to the federal prosecutor acts or omissions likely to constitute an environmental crime
- Participate and coordinate in drafting NOMs, studies, programs, and projects
- Refer to the Internal Control Agency incidents of corruption and other irregularities in the performance of public servants at SEMARNAT
- Coordinate with all levels of government and state delegations on investigating and responding to complaints against public officials
- Substantiate and resolve administrative appeals and aapplications for revocation or modification of fines
- Track and document for prosecution illegal wildlife trafficking
- Conduct outreach, communication, media and public relationship activities
- Work with Coordinating Unit of International Affairs on international issues
- Access information contained in other administrative units of SEMARNAT to investigate possible violations of environmental laws
- Collect, manage, and report data to the public obtained through exercise of powers

[464] Reglamento Interior de la Secretaria de Medio Ambiente y Recursos Naturales, ultimate reforma publicada en el diario official de la Federacion: 24 de agosto de 2009 (First published in DOF 21 March 2003).

- Certify and promote persons or companies who "go beyond compliance"
- Coordinate and implement economic and financial instruments that further the objectives of environmental policy
- Run strategic planning processes, programming, and budgeting
- "Delegate authority to subordinate public servants, without prejudice to its direct exercise, by direct resolution to be published in the [DOF]."
- Approve and supervise accredited verification and certification units and agencies, working with other departments with specialization in research, standardization, and training
- Approve and supervise operation of testing laboratories
- Implement policies and regulations on transparency and access to information
- Determine territorial jurisdiction and venue of the delegations of the Ombudsman in states

Mexico is well known for its endemic corruption. On Transparency International's Corruption Perceptions index, a survey of businessmen, Mexico tied for 72nd out of 179 countries. And a Mexican research firm found that 79% of companies in Mexico believe "illegal transactions" are a serious obstacle to business development. In 2006, Global Integrity estimated that corruption may cost the Mexican economy as much as $60 billion US per year.[465]

One way Mexico has sought to reduce rent-seeking and corruption in environmental permitting is through splitting up regulatory functions. Enforcement authority is bifurcated from permitting authority, such that SEMARNAT handles general permitting issues, but PROFEPA is charged with inspections, compliance measures, and enforcement. When administrative reforms were undertaken in 1992, "it was thought necessary to separate the law and the management sections from the body in charge of inspections of compliance with environmental law."[466] For example, under the EIA law, SEMARNAT approves the EIS, but PROFEPA performs inspections and compliance oversight of the EIS, and may impose safety measures or sanctions.[467] Further, PROFEPA is an independent, decentralized agency, "i.e., it is an agency subordinated to a State Secretary, which has certain technical and operative autonomy."[468]

When abuses are identified, however, the solution may not always be simple, or politically easy. For example, in 2003, PROFEPA and SEMARNAT improperly authorized the import of dolphins carrying a disease called morbillivirus to Parque Nizuc, a facility out of compliance with relevant regulations covering care of dolphins. This led to the deaths of a number of animals. There was some evidence of corruption or back-room dealing between

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[465] Information in this paragraph from D. Sean Shurtleff, National Center for Policy Analysis, *Economic Freedom and Economic Growth in Mexico*, Brief Analyses No. 605 (Jan. 18, 2008), http://www.ncpa.org/pub/ba605.

[466] Miguel Angel Cancino, *Reflections on the Mechanisms of Environmental Enforcement and Compliance in Mexico*, *in* ___ 55, 61 (2001?).

[467] Summary of Mexican Law § 7.4.

[468] Miguel Angel Cancino, *Reflections on the Mechanisms of Environmental Enforcement and Compliance in Mexico*, *in* ___ 55, 57(2001?).

the authorities and the permittee. When the controversy erupted into a public furor, Mexico's president Fox fired the heads of both PROFEPA and SEMARNAT and set deadlines for many lower level officials to tender their resignations. According to Cetacean Society International's analysis of the incident, while this was a politically popular move, it also had the effect of stifling "the growing official enthusiasm to actually do something to fix the dolphin problem"—responsible officials were forced out along with corrupt ones, and the new officials coming in had to start from scratch in forging a workable solution.[469]

c. Funding (sources, oversight, monitoring)

Mexico has a population of around 112.5 million people as of 2010, with 77% in urban areas in 2008 and a 1.5% annual rate of urbanization. The National budget in 2009 was $208.6 billion in revenues, and $229 billion in expenditures. Public debt comprised 37.7% of GDP in 2009. Mexico has a free market economy, with free trade agreements in place with over 50 countries. Trade with the U.S. and Canada tripled after passage of the North American Free Trade Agreement (NAFTA). Priority areas for economic development are improving the educational systems, upgrading infrastructure, modernizing labor laws, and fostering private energy investments. President Felipe Calderon's top economic priorities are reducing poverty and creating jobs. Asset-based poverty affected 47% of the population in 2008.

SEMARNAT's budget and that of its constituent agencies comes out of Mexico's federal budget, managed by the Secretary of Treasury and Public Credit (SHCP) under the budgetary law and a decree and regulation issued in 2006.[470]

SEMARNAT's administrative units were budgeted as follows for 2007 and 2008 (in millions of pesos)[471]:

Administrative Unit	2007	Planned 2008	Absolute variation	Percentage variation
Total	41,096	39,065	-2,032	-4.9%
Secretary	1,944	2,312	+368	+9.2%
National Water Commission	31,617	29,442	-2,176	-6.9%
National Ecology Institute	206	200	-6	-3.0%
PROFEPA	778	842	64	8.2%
National Commission of	891	771	-120	-14%

[469] William Rossiter, Cetacean Society International, *Greed, Corruption and Captivity*, Whales Alive! Vol. XII, no. 4, Oct. 2003, http://csiwhalesalive.org/csi03401.html.
[470] *See* Decreto por el que se expide la Ley Federal de Presupuesto y Responsibilidad Hacendaria, Jueves 30 de marzo de 2006, Diario Oficial, at 3; Reglamento de la Ley Federal de Presupuesto y Responsabilidad Hacendaria, Miercoles 28 de junio de 2006, Diario Oficial, at 1.
[471] Adapted from SEMARNAT, Second Report of Work § 6.7.7 (Dec. 18, 2008).

Protected Areas				
National Forest Commission	5401	5295	-106	-2.0%
Mexican Institute of Water Technology	259	204	-55	-21.3%

In FY 2010, Mexico increased PROFEPA's budget again to $924 million pesos. This graph demonstrates a relative lack of commitment of resources to environmental permitting, compliance, and enforcement for matters outside the water sector.

Note 41,096 million pesos in 2010 translates into approximately $3.2 billion USD. PROFEPA's share of that budget, at 842 million pesos, would be around $65 million USD at 2010 rates.

By items of expenditure, SEMARNAT's budget for 2007-08 is as follows (in millions of pesos)[472]:

Item	2007	Planned 2008	Absolute variation	Percentage variation
Total	41,096	39,065	-2,032	-4.9%
Personnel Services	5,113	5,481	369	7.2%
Materials & Supplies	551	945	394	71.6%
General Services	6,817	5,348	-1468	-21.5
Subsidies & Transfers	17,084	19,556	2,472	5.1%
Institutional Property	548	398	-150	-27.3%
Public Works	2,780	7,265	4,486	161.4%
Financial investment, economic provisions, aid, pensions, retirements, etc.	8,206	711	-7,495	-91.3%

SEMARNAT's 2008 budget is comprised of 81 programs, distributed as follows:

- Public service provision: 8
- Regulation and supervision: 10

[472] *Id.*

- Investment projects: 14
- Improvements in budget process and institutional efficiency: 1
- Improvements in civil service and management: 2
- Public policy planning, implementation, monitoring, and evaluation: 5
- Programs subject to rules of operation: 22
- Other subsidies programs: 4
- Other activities: 14[473]

In terms of budgetary oversight, Mexico has implemented a series of mechanisms to ensure quality standards and effectiveness. These include, for example:

- General programming within the Directorate General of Planning and Budget (DGPP)
- Timely meeting the submission deadline for draft budgets set by the Ministry of Finance and Public Credit (SHCP) for the overall federal budget
- Developing, implementing, and updating a framework of 471 indicators for assessing priorities in budgetary programs according to the Model Results Based Budget Program (RBB) and Performance Evaluation System (DIS)
- Conducting activities requested by the Chamber of Deputies (Mexico's lower house of Congress) in conjunction with expanding the federal budget for the environmental and natural resources sectors
- Coordinating activities with the Secretaries of Labor and Social Security on operating programs that generate employment
- Managing and updating records in the 2010 investment portfolio of SEMARNAT and its various branches, with an eye to prioritizing projects with social and economic co-benefits
- Working with SHCP on reviewing and improving the Indicators for Results Matrix (MIRS) in conjunction with units operating programs within that budget program; also, adapting indicators developed by SHCP to special budgeting effectiveness issues within SEMARNAT's areas
- Better coordinating and linking results-based budgeting with strategic planning objectives in the Sector programming for 2007-2012 and the National Development Plan.[474]

In addition, SEMARNAT uses an Integrated System of Resource Administration (SIAR; also known as Government Resource Planning (GRP), or SIAR/GRP in SEMARNAT's nomenclature). This is an electronic system to allow holistic planning for financial, material, and human resources. The goals of SIAR/GRP are to: unify operational criteria across programs; simplify processes; speed up the consolidation of information; improve planning and resources management; and meet Mexico's INTRAGOB transparency requirements.[475]

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[473] SEMARNAT, *supra* note X, § 6.7.7.
[474] SEMARNAT, Third Report on Work, §6.7.9 (Oct. 1, 2009).
[475] SEMARNAT, SIAR/GRP, http://www.semarnat.gob.mx/queessemarnat/presupuesto/Pages/siar_grp.aspx (last visited June 7, 2010).

In addition to funding from the federal budget, SEMARNAT receives some funding for specific programs through user fees or taxes associated with pollution-generating activities. For example, a registration fee and annual tax are assessed on automobiles, and there used to be a surcharge on gasoline to fund improving service stations to reduce fugitive emissions; however, this surcharge has been discontinued.[476] Mexico's Program for the Modernization of Water Utilities provides funding to municipalities to upgrade public water infrastructure on three conditions: it is done through a negotiated public-private partnership; the state reforms its water laws; and the municipality imposes full cost recovery for water services.[477]

The federal government is aware of the limited financial capacity of the public sector for carrying out environmental management in Mexico. For example, in 2009, SEMARNAT released a plan for a National Program for Prevention and Integral Management of Waste 2009-2012.[478] This plan contained a section noting possible financial mechanisms to support implementation of components of the national plan that is illustrative of possible financing mechanisms for other environmental sectors. Of particular note is that the National Bank of Public Works and Services (BANOBRAS) offers financing and technical assistance to states and local governments on, among other things, natural resources and environmental protection. The National Infrastructure Fund was created in 2008, and is funded and managed by BANOBRAS. It provides support on solid waste for municipalities, groups of counties or regions with more than 100,000 residents, with the purpose of developing integrated waste management plans in partnership with the private sector. BANOBRAS also oversees the Metropolitan Fund, which finances plans, studies, assessments, programs, projects, operations and infrastructure and facilities in metropolitan areas particularly related to sanitation and waste of all kinds, and the protection of natural resources and the environment.

- **Border Environmental Cooperation Commission (BECC) and North American Development Bank (NADB) Programs:** Created with United States under NAFTA to support environmental infrastructure projects in the border region between the two countries. Both are limited to three types of environmental projects: water supply and treatment, waste water treatment and disposal, and solid municipal waste.[479]
- **Clean Development Mechanism:** SEMARNAT established an office for CDM projects in 2004 in order to facilitate such projects in Mexico and produce revenue streams related to carbon emissions reductions. As of 2008, the Interministerial Commission on Climate Change received 29 applications for projects, and three related to waste disposal are now producing payments.

[476] OECD 2003, at 130-32.
[477] OECD 2003, at 149.
[478] Nacional para la Prevención y Gestión Integral de los Residuos 2009-2012, Diario Oficial 2-112 (Oct. 2, 2009).

[479] Mark J. Spalding, *A Synthesis of Institutional Activities and Practices*, *in* THE MEXICO-U.S. BORDER ENVIRONMENT AND ECONOMY: A CALL TO ACTION TO MAKE THE MEXICO-U.S. BORDER REGION A MODEL OF BI-NATIONAL COOPERATION FOR SUSTAINABILITY 85, 94 (The Aspen Institute 2000).

- **Multilateral agencies**: Development banks such as WB, IBRD, and IDB provide low- and no-interest loans, grants, and technical support for economic development including environmental management.
- **Environmental surcharges**: Ley General para la Prevención y Gestión Integral de los Residuos (LGPGIR) Article 10, Section X The federal law on waste management, for example, authorizes municipalities to charge resident-users for integrated waste management, but local authorities have not implemented this option on a wide scale due to political and social factors.[480]

In the case of BECC / NADB projects, institutional controls to ensure the integrity of projects include public participation requirements; transparency and access to information; bottom-up decision making; a set of BECC certification criteria.[481]

d. Organizational structure

SEMARNAT is composed of three under-secretariats:

(1) Undersecretariat for Planning and Environmental Policy, comprised of:
   a. Director General of Planning and Evaluation
   b. Director General of Statistics and Environmental Information
   c. Director General of Environmental Policy and Regional and Sectoral Integration

(2) Undersecretariat for Development and Environmental Standards, comprised of:
   a. Director General for Industry
   b. Director General for Primary and Renewable Natural Resources Sector
   c. Director General for Promotion of Urban Environment and Tourism
   d. Director General for Energy and Extractive Activities

(3) Undersecretariat for Environmental Protection, comprised of:
   a. Director General of Integral Management of Hazardous Materials and Activities
   b. Director General of Environmental Impact and Risk (handles EIS)
   c. Director General of Forest and Soil Management
   d. Director General of Wildlife
   e. Director General of federal maritime zone land and Coastal Environments
   f. Director General of Air Quality Management and Registration of Pollutant Release and Transfer

Within the Secretariat are eight centralized divisions, not within the undersecretariats. These are:

[480] Adapted from Nacional para la Prevención y Gestión Integral de los Residuos 2009-2012, Diario Oficial 2, 58-59 (Oct. 2, 2009).
[481] BECC & NADB, Quarterly Status Report (March 31, 2010), *available at* http://www.nadb.org/pdfs/status_eng.pdf.

(a) Office of the Principal Official, comprised of:
    a. Director General of Human Development and Organization
    b. Director General of Programming and Budget
    c. Director General of Resources, Materials, Properties and Services
    d. Director General of Information and Telecommunication
(b) Coordination Unit for International Affairs
(c) Coordination Unit for Legal Affairs
(d) Internal Control Agency
(e) Coordination Unit for Delegations
(f) Coordination Unit for Public Participation and Transparency
(g) Coordinator General for Public Communication
(h) Education and Training Center for Sustainable Development

SEMARNAT houses five autonomous agencies:

(a) The Federal Delegations (31)
(b) National Water Commission (CNA)
(c) National Institute of Ecology (INE)
(d) Federal Attorney for Environmental Protection (PROFEPA)
(e) National Natural Protected Area Commission.

Finally SEMARNAT has two decentralized agencies:

(a) National Forest Commission
(b) Mexican Institute of Water Technology[482]

PROFEPA is the independent agency within SEMARNAT responsible for enforcing environmental laws and regulations, assuring compliance, issuing fines and penalties, and handling citizen complaints. It is decentralized, with offices in all 31 states.

CNA enforces water and wastewater laws and regulations with respect to national water bodies. PROFEPA does not usually play a direct role in water law enforcement. (However, PROFEPA may assist CNA in carrying out inspection and surveillance activities over wastewater-discharge facilities, such as it did in the state of Jalisco from 1998-2003.[483]) Under the National Water Law (LAN) article 86, CNA is responsible for "establishing and enforcing the specific conditions of discharge that must be met by wastewater generated on property and zones under federal jurisdiction, wastewater discharged directly into national waters or territory, or any land where such discharges may contaminate the subsoil or aquifers"; and other situations set out in LGEEPA. LAN Article 88 requires all dischargers to hold a permit for discharge into water bodies "whether these be national bodies of water or other property of the nation, including marine waters, as well as where it infiltrates into lands that are the property of the nation or other lands where it may contaminate the subsoil or aquifers." However, the control of wastewaters in drainage or sewage systems in population centers is the jurisdiction of municipalities with support of states. The

[482] SEMARNAT, Third Report on Work 24 (2009).
[483] http://www.cec.org/Storage/73/6724_03-3-ADV_en.pdf at 13.

Regulation under LAN, articles 134-35 sets out a list of obligations for those seeking authorization to discharge wastewater.

e. Functions, responsibilities, and staff competencies

SEMARNAT is working toward a functional organizational structure based on the principle of training specialized human capital, improvement in administrative procedures, and strengthening criteria for effectiveness in reaching institutional goals.

f. Relationship to state agencies including oversight and grants

Article 133 of the federal constitution makes clear the supremacy of federal law. "This Constitution, and the Laws enacted by the Congress which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, by the President of the Republic with the Senate's consent shall be the supreme Law of the Union. The Judges in every State shall be bound thereby, anything in the Constitution or Laws of any State to the contrary notwithstanding."

LGEEPA allows the federal government to coordinate its duties with state and local governments.[484] Generally, states have the power to make policy and regulate for compliance where express authority has not been granted to the federal government.[485] LGEEPA seeks to clearly delineate those facilities, areas, sectors, or issues that are within federal control and those within state or municipal control.

Despite this, confusion between state and federal jurisdiction has at times been an issue. For example, under LGEEPA Article 111 bis, the federal government is assigned jurisdiction over odors from point sources under federal jurisdiction, but under LGEEPA article 8(VI), municipalities have authority to enforce provisions related to odors from commercial and service establishments, but not industrial establishments. Thus, with respect to a shoe-manufacturing facility, the PROFEPA office in Mexico Valley Metropolitan Area (the federal authority) asserted jurisdiction for permitting, inspections, and enforcement throughout the 1990s. However, in a factual investigation by the Commission for Environmental Cooperation (CEC)[486] of the government's record of enforcement against the facility in 2006, the regional PROFEPA office asserted that since 1996, air emissions from the facility were "under the jurisdiction of the Ministry of the Environment of the Department of the Federal District [which has a status equivalent to states under LGEEPA]."[487] The CEC noted that this claim was inconsistent with the record in the case, but the issue of jurisdiction was never resolved.

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[484] Ley General del Equilibrio Ecológico y la Protección al Ambiente [L.G.E.E.] [Ecology Law], *as amended*, art. 11, Diario Oficial de la Federación [D.O.], 28 de Enero de 1988 (Mex.).
[485] *Id.* art. 7
[486] The CEC was established by the North American Agreement on Environmental Cooperation (NAAEC), a side agreement to NAFTA, and is charged with investigating and reporting allegations that NAFTA parties are failing to enforce their environmental laws. Its database of citizen submissions against Mexico is a valuable source of data on Mexico's law and practices of implementation.
[487] ALCA-Iztapalapa at 26.

The federal government has plenary control over water pollution into national water bodies. Thus, under the regulation implementing the federal water law, municipal discharges of waste water are required to enter compliance with the federal standards, but this is done gradually and on a progressive basis, depending on population size. Thus, municipalities with a population over 50,000, compliance was required by 2000, for municipalities with 20,001-50,000 people, compliance was required by 2005, and for municipalities with population of 2,501-20,000, compliance was required by 2010.[488]

The federal executive branch will commonly enter into coordination agreements with the executive branches of states with respect to particular environmental issues. For instance, such an agreement was made on the construction of three wastewater treatment plans and rehabilitation of existing plants in the state of Jalisco in 2003.[489]

Secretariat of the Commission for Environmental Cooperation, Lake Chapala II, SEM-03-003, Article 15(1) Notification to Council that Development of a Factual Record is Warranted, at 10 (May 18, 2005).

Implementation gaps have emerged due to the "complex and sometimes unclear distribution of environmental competency across levels of government and limited local authority to raise revenues from taxes or charges."[490]

In terms of financial support to states, in 2010, SEMARNAT will distribute $1,340 million pesos to state programs, a 68% increase over 2009.[491] SEMARNAT provides support to state environmental agencies through the Environmental Institutional Development Program (AIDP). In 2007, 2.5 million pesos were transferred to seven states to undertake ecological surveys. In 2008, 20 milllion pesos were dedicated to state entities, including 8.4 million to undertake 23 ecological studies in 14 states, and 1.5 million to undertake reviews and improvements in state environmental laws in 10 states. In 2007-08 additional resources were dedicated to states for training and development in the areas of ecological management, environmental law, air quality monitoring equipment, software and equipment for environmental information systems, and other devices and equipment for inspection and monitoring.[492]

2. State Environmental Protection Authorities

Despite the formal federalist structure of Mexico's government system, Mexico remains a highly centralized country, and this has consequences for the status and capacities of state-level environmental authorities. This can be demonstrated by looking at the percentage of

[488] NOM-001-ECOL-1996 art. 4.5(a) (table 4).
[489] http://www.cec.org/Storage/73/6724_03-3-ADV_en.pdf p. 10.
[490] OECD 2003 Summary at 2.
[491] Presentation of Juan Rafael Elvira Quesada, SEMARNAT, to the 1st National Rotary Congress on Human Development, Principle Advances and Challenges of SEMARNAT (May 14, 2010), *available at* http://www.semarnat.gob.mx/informacionambiental/noticias/Presentaciones%20Secretario/Club%20Rotario%20mayo%202010.pdf.
[492] SEMARNAT, *supra* note X, §

public expenditures generated by subnational units. In Mexico in 1990, 17.8% of public expenditures came from states and localities; this rose to 25.4% in 2000. By comparison, Canada's figures are 58.7% and 53.0% for those respective years, and the United States' 42.0% and 48.6%.[493]

Most Mexican states have framework environmental laws modeled on LGEEPA. Those lacking LGEEPA-like regulations generally incorporate the federal LGEEPA regulations.[494] For example, under the State of Sonora's State Ecological Balance and Environmental Protection Act (LEES), Transitory Article 4, with respect to air pollution, the provisions of LGEEPA, its regulations, and air-emissions-related standards apply where LEES is silent on a given issue.[495]

a. Authorization including relationship to national EPA

Constitutionally, state executives are required by Article 120 of the Constitution to "both publish and enforce federal laws." In general, "The powers not explicitly vested in the federal officers by this Constitution, shall be implicitly vested in the States."[496]

In general, under LGEEPA article 7, states are given the following environmental responsibilities:

- To devise and evaluate environmental policy;
- To make use of state environmental policy instruments, such as environmental impact statements (EIAs), in those instances not expressly reserved to the Federation;
- To protect and restore the environment and the ecological balance of states where express jurisdiction has not been granted to the Federation;
- To prevent and control air pollution from stationary and mobile sources which are not under federal jurisdiction;
- To establish, administer and guard natural protected areas;
- To regulate non-hazardous solid and industrial wastes;
- To monitor compliance with Official Mexican Standards (NOMs);
- To promote the participation of society in environmental issues;
- To conduct state policy on environmental information. State regulations and standards must comply with the Ecology Law and the Regulations thereunder.

Municipalities are given jurisdiction over environmental issues not reserved to the states or federal government, and municipal laws must conform to these higher authorities. LGEEPA Article 8 sets out municipal responsibilities:

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[493] Jorge A. Schiavon, *The Central-Local Division of Power in the Americas and Renewed Mexican Federalism: Old Institutions, New Political Realities*, 4 Int'l J. Constl. L. 392, 397-98 (2006)

[494] Gilardo Acosta Ruiz, Assessment of Mechanisms in Mexico for Tracking Imports and Exports of Mercury for Use and Disposal 14 (Feb. 2002).

[495] CEC Submission against Mexico 'Environmental Pollution in Hermosillo II' A14/SEM/05-003/39ADV, at 19.

[496] Constitución Política de los Estados Unidos Mexicanos [Const.], *as atended*, Diario Oficial de la Federación [D.O.], art. 124, 5 de Febrero de 1917 (Mex.)

1. Devising and assessing municipal environmental policy;
2. Preserving and restoring the environment in zones under municipal jurisdiction;
3. Creating ecological parks, city parks and public gardens;
4. Enforcing legal provisions dealing with the prevention and control of air pollution;
5. Regulating commercial and service activities that may produce noise, vibrations, light and odors that are harmful for the ecological balance;
6. Conducting municipal policy on environmental information;
7. Participating in the environmental impact assessment of works or activities under state control in zones under municipal jurisdiction.[497]

In the Federal District, environmental protection is governed by federal laws, as well as by several compacts issued by the Congress of the Union. The recently enacted Environmental Law of the Federal District (Ley Ambiental del Distrito Federal) is now in force in the Federal District.[498]

Many environmental functions are to be delegated to the states through the 1996 amendment of LGEEPA, but those duties were not delegated in states that did not have the necessary local laws or administrative agencies in place. SEMARNAT (or its predecessor, SEMARNAP) was responsible for enforcing environmental laws in the states that had not yet enacted environmental laws.[499] However, at this stage all Mexican states have enacted at least basic environmental laws.[500]

The process of decentralization of an environmental authority to a state agency goes forward on a case-by-case basis in Mexico. Once SEMARNAT has decentralized a given power to a state or municipality, the federal agency generally leaves implementation, compliance, and enforcement matters to the states, retaining little power. However, the powers granted varies greatly from state to state and program to program, as these relationships are determined by binding agreements entered into by SEMARNAT and the state or municipal agency. The little power that is maintained in SEMARNAT post-decentralization is generally through an action for breach of contract if the state does not follow through with its requirements under the agreement with the federal government.[501] SEMARNAT also maintains power through subsidies the federal government provides to assist the state governments with approved actions. The federal government has the power to halt funding to the state project if the state government has been deemed unsatisfactory by an appointed "Director General" (or supervisor) in its implementation, compliance, or

[497] Summary of Mexican Laws § 2.
[498] Summary of Mexican Law § 2, http://www.cec.org/Page.asp?PageID=924&ContentID=2716.
[499] LGEEPA, Transitory Provisions, arts. 3 & 5 DOF Jan. 28, 1988; *see also* George R. Gonzalez & Maria Elia Gastelum, Overview of the Environmental Laws of Mexico (1999), http://www.natlaw.com/pubs/spmxen13.htm.
[500] Summary of Mexican Laws § 2.
[501] Alejandro Guevara Sanginés, La descentralización de la gestión ambiental: fundamentos, estrategias y prácticas en México (Instituto Nacional de Ecologia), http://www2.ine.gob.mx/publicaciones/libros/403/guevara.html (last visited August 9, 2010).

enforcement.[502] It is unclear, however, exactly how SEMARNAT oversees state performance (via monthly or annual inspections, continuous monitoring, etc).

b. Governance structure

No information located on the governance structures of state agencies.

c. Funding (including degree of reliance on national EPA)

Mexico's system of environmental governance has been criticized for devolving significant implementation responsibilities to local levels without providing adequate funding and capacity building resources. "Given Mexico's environmental objectives, there is a financing gap: insufficient Federal spending on environmental protection, limited application of the user and polluter pays principles, the limited revenue-raising ability of states and municipalities and low reliance on external financing explain Mexico's difficulties. … [states and municipalities require] commensurate devolution of power"[503] For example, Mexico's municipalities are charged with water supply management and provision, and in 2001, the Program for Modernization of Water and Sanitary Service Providers (Promagua) was set up with funding from the World Bank. The purpose of the program is to provide financial support for municipalities' water management systems, but because funding is conditioned on municipalities seeking foreign private capital, many municipalities refuse to participate in it.[504]

d. Accountability and reporting to national EPA

On matters of controlling emissions of air pollution a state may enter into a coordination agreement with SEMARNAT. According to such an agreement with the State of Sonora, operation of air quality monitoring equipment was transferred to the state.

Under LGEEPA art. 8, municipalities have the power to enact a municipal environmental protection program. However, Mexican government has taken inconsistent positions before the CEC on whether this power is discretionary or not.[505]

e. Functions, responsibilities, and staff competencies

Each of the 31 states now has its own framework environmental law modeled on LGEEPA.[506]

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[502] Acuerdo que establece las Reglas de Operación para el Otorgamiento de Subsidios del Programa de Desarrollo Institucional Ambiental. Diario official de Secretaria de Medio Ambiente y Recursos Naturales. December 29, 2009.
[503] OECD, Environmental Performance Review of Mexico, Exec. Summary 2 (2003).
[504] Andrea C. Zomosa-Signoret, *Mexican Water Reform: Paradoxes of Institutional Development, Integrative Management, and Modernization* 3 (November 2007), *available at* http://fletcher.tufts.edu/ierp/ideas/pdfs/issue3/ZomosaSignoretAndrea_MexicoWater.pdf.
[505] CEC Submission against Mexico 'Environmental Pollution in Hermosillo II' A14/SEM/05-003/39ADV (original Spanish)

Example from Air Pollution Authorities
As part of Mexico's efforts to decentralize environmental protection, amendments to LGEEPA in 1996 gave state and local authorities the power to develop air quality management plans.[507] The list below shows how air pollution responsibilities are now shared between federal, state, and local authorities, using the State of Sonora and the municipality of Hermosillo as an example.[508]

Regulatory responsibilities of the State of Sonora

- Prevent and control pollution from mobile sources
    - Determine requirements and procedures for regulation of motor vehicle emissions
    - Enforce traffic control measures
    - Ban traffic in cases of serious pollution
    - Implement mandatory vehicle inspection program (federal public transit exempted)
- Standards for verification, monitoring and control to meet ambient air quality standards in NOMs
    - Assessment of ambient air quality
    - Implement and operate air quality monitoring systems
    - Prepare state of the environment reports
    - Prepare plans for verifying, enforcing, and monitoring compliance with standards for major pollutants
- State Urban Development Plan defining zones within which polluting industrial facilities may be sited
- Enforcement of federal NOMs related to air pollution control
- Enforcement of relevant environmental technical standards issued by the state Ministry of Urban Development and the Environment (or in the absence of establishment of such standards, enforce federal standards)
- Reduce or control air pollutant emissions from both mobile and fixed sources to guarantee satisfactory air quality for public health and the environment
- Power to enact legislation on air pollution and update state environmental plans (state law provides that in the absence of state-level enactments of air quality standards, federal law applies)

Powers of the Municipality of Hermosillo

- Implement an Air Quality Assessment and Improvement Program (PEMCA)

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[506] To access the state laws, see PROFEPA, Compendio de Leyes Ambientales, http://www.profepa.gob.mx/PROFEPA/CentrodeDocumentacion/CompendiodeLeyesAmbientales/ (last visited June 7, 2010).
[507] OECD 2003, at 39.
[508] Information adapted from CEC Submission against Mexico 'Environmental Pollution in Hermosillo II' A14/SEM/05-003/39ADV , at 12.

- Power (possibly discretionary) to enact municipal environmental protection program
- Power to create a Municipal Environment Commission
- Issue mandatory regulations, administrative orders, and other provisions to provide for strict compliance with state environmental law, including the municipal environment regulation, the environmental contingency response plan, and air quality management program

Powers of the Federal Authorities:

- Enforce and promote compliance with NOMs governing air quality in zones and sources under federal jurisdiction
- Make recommendations to the governments of the state and municipalities for the purpose of promoting compliance with environmental law

In the case of water pollution, the regulation of discharges into water bodies is divided between the federal CNA, operating under NOM-001-ECOL-1996 with respect to discharges into national bodies of water or onto national property, and municipal governments, under NOM-002-ECOL-1996, regulating discharges to municipal sewer systems.

II. Functions and Operations (including allocation with states)

1. Environmental Impact Assessment (EIA)

LGEEPA, along with the 2000-issued Regulation of the Ecology Law Regarding Assessment of Environmental Impacts, provides the general framework for carrying out EIA in Mexico. Under LGEEPA article 28, before undertaking a project that may cause ecological imbalance or exceed the limits or conditions set in a NOM, an Environmental Impact Statement (EIS) must be prepared.[509] The proponent must first submit a "preventive report" to SEMARNAT, which SEMARNAT uses to determine whether a full EIA is required.[510] Within sixty days or receiving proponent's draft EIA, SEMARNAT can authorize the project, authorize it with conditions, or deny authorization outright.

EIS authorizations were originally provided by the National Institute of Ecology (INE), but INE no longer carries out any of SEMARNAT's regulatory functions.[511] Now the Environmental Impact and Risk Branch (DGIRA) of SEMARNAT handles EIA. DGIRA may seek technical opinions from state ministries and municipal officials in evaluating EIAs.[512] DGIRA is within the Undersecretariat for Environmental Protection, a centralized branch of SEMARNAT (not one of the independent agencies). According to Article 27 of

[509] Gilardo Acosta Ruiz, Assessment of Mechanisms in Mexico for Tracking Imports and Exports of Mercury for Use and Disposal 14 (Feb. 2002).
[510] *See* LGEEPA art. 28.
[511] http://www.cec.org/Storage/71/6550_98-6-FR-E.pdf at n.9 (Aquanova). NOM?
[512] *See http://www.cec.org/Storage/73/6724_03-3-ADV_en.pdf p. 9.*

SEMARNAT's Internal Regulation (last modified in 2006), DGIRA has the following powers:

- Applying policies on EIA and risk, and participate in their formulation with other units of SEMARNAT
- Assess and address EIS and risk assessments of federal projects, draw approvals for conduct, and analyze and resolve preventive reports
- Modify, suspend, cancel, nullify, and revoke EIA where appropriate, or respective risk studies
- Supervise the process of public consultation for EIA projects, and where necessary, arrange the participation of relevant administrative units within SEMARNAT, according to relevant law
- Make publically available preventive reports and EIS, and request publication in the Ecological Gazette information relevant to project work
- Require the provision of insurance and guarantee the fulfillment of conditions set out in the environmental impact authorization
- Issue observations and recommendations on environmental risk assessments to be included as appropriate in EIS
- Establish technical and administrative support guidelines for issuing, processing, and conducting literature reviews for EIS and risk studies
- Participate as a permanent member on the National Standards Advisory Committees established by SEMARNAT on matters related to EIA and risk assessment
- Establish mechanisms for verifying that preventive reports, EIS, and risk assessments incorporate the best existing techniques and methodologies, as well as information on effective prevention and mitigation of impacts
- Participate with the Department of Statistics and Environmental Information in the establishment of information requirements for environmental impacts and risks
- Participate in agreements with governments of states and municipalities, as well as social stakeholders, on implementation of federal powers related to EIA and risk assessment
- Assist other administrative units and the competent decentralized bodies of SEMARNAT in the promotion and development of programs to update, with state and municipal governments, local institutional capacities for EIA and risk assessment
- Receive alerts on and suspend where appropriate permits to carry out activities that cause environmental release of genetically modified organisms, corresponding to the authorities of SEMARNAT under the Biosecurity Act and GMO provisions in other applicable laws, that shall be binding upon the technical review of INE, the National Commission for Knowledge and Use of Biodiversity (NCKUB), and the National Commission of Protected Natural Areas (CONAP), and develop and issue corresponding lists
- Develop technical criteria for assessment procedures and risk impact environment, in order to obtain standards of quality and continuing improvements
- Participate in establishment of international commitments and projects on EIA and environmental risk, in coordination with other relevant units

- Propose to the Undersecretary on Environmental Protection and Management, formulate, and implement ecological restoration programs and draft declarations for restoration areas in areas of degradation, desertification or severe ecological imbalance
- Participate with PROFEPA in assessing penalties against environmental projects and activities that do not comply with EIA regulations
- Issue, suspend, and deny, in whole or part, permits for release of genetically modified bioremediation, experimental release, pilot release, and commercial release of GMOs under the jurisdiction of SEGARPA (Agriculture and Fisheries), upon binding technical opinions, analysis, and risk assessment by INE, NCKUB, and CONAP.

PROFEPA is charged with performing inspections and compliance oversight of the EIS project and may impose safety measures or sanctions. It does this through notification by citizen complaint, on the recommendation of SEMARNAT, or through its own audits and inspections.

a. Planning, sectoral and strategic EIA

Article 26 of Mexico's constitution requires the creation of a national development plan, revised every six years at the start of new presidential administrations, within which environmental issues are high priorities. Each secretariat then develops a national sectoral program consistent with the national plan and based on a long-term (25 year) strategic outlook. Thus the National Program for Environment and Natural Resources (NPENR) for 2001-2006 identified six main goals: integrated ecosystem management; policy integration; environmental management; provision of environmental services; enforcement of environmental legislation; public participation and transparency. The NPENR establishes links with ten other national sectoral programs: agrarian reform, agriculture, economy, education, energy, finance, health, social development, tourism, and transport. In order to coordinate the sectoral policies better, the Federal Public Administration carries out a Program to Promote Sustainable Development, which sets environmental performance requirements for each secretariat. For the first time in 2001, the federal secretariats made specific commitments in their plans related to sustainable development.[513] However, it should be noted that these goals remain nonbinding.

At the legislative level, sustainable development planning is driven by the nineteen principles set out in LGEEPA Article 15. Strategic environmental assessments (SEA) have been carried out only on an ad hoc basis by certain sectors. For example, an SEA was prepared in 2002 for the tourism sector that proposed to introduce a certification scheme for tourist facilities (which could earn firms a "sustainable tourism award"); in contrast, no SEA has been prepared for transport sector policies.[514]

[513] All information in this paragraph from IISD, Mexico Case Study: Analysis of National Strategies for Sustainable Development 6 (June 2004).
[514] OECD 2003, at 141 & 144.

In the water sector, Mexico provides a National Water Program that plans on 5-year periods, while subnational water regions carry out Regional Water Programs that may or may not correspond in timing (for example, a National Water Plan may be for 2001-06 while the Regional Water Plan is for 2002-06). Regions correspond to water basins and may include multiple states.

2. Promulgation of regulations, interpretation, and establishing guidance

SEMARNAT has twenty-two sets of regulations implementing LGEEPA and other environmental laws. In 1992, Mexico enacted the Federal Law on Metrology and Standardization to modernize the standard-setting process. Under this law, Mexican Official Standards (NOMs) are issued in the following areas of environmental regulation: biodiversity and natural resources; water usage, pollution, and aquatic systems; exploration and exploitation of non-renewable resources; prevention and control of air pollution; hazardous waste management; environmental risks; noise emissions; vibrations, thermal, and light energy; and generation of pollution.[515] Under the standardization law, citizens may participate in the process of adopting NOMs. NOMs are generally adopted pursuant to the National Standardization Program under the direction of the Secretariat of the Economy.[516] This program is administered by the National Standardization Commission (CNN) made up of representatives from various Secretariats, private, and public institutions, associations, and organizations. National Standardization Advisory Committees are responsible for elaborating and overseeing particular NOMs and their compliance.

3. Procedure for setting and revising standards

The relevant Secretariat will submit a draft NOM to the relevant Advisory Committee, which then has 75 days to comment on it. The original proponent then has 30 days to make "corresponding modifications." The revised NOM is published in the Federal Official Gazette, with 60 days for public comment. If the original proponent of the NOM believes the Advisory Committee's comments are unjustified, it may petition to have the NOM published in the Official Gazette without modification. At the end of the public comment period, the Advisory Committee has 45 days to study and make changes to the proposed NOM and prepare responses to public comments, also published in the Gazette. Members of the Advisory Committee, the CNN, or the corresponding Secretariat may recommend that the NOM be cancelled. Upon final approval by the Standardization Committee, the text of the standard is issued by the competent authority and must be published in the Gazette to have effect.

4. Permits and approvals

SEMARNAT and CNA (for water) are currently the primary environmental permitting authorities in Mexico, issuing permits for air emissions from stationary sources, wastewater

[515] Summary of Mexican Envtl. L. § 1.6.
[516] *Id.* § 1.6.

discharges, generation and disposal of hazardous waste, and the taking of rare, threatened, or endangered species.

In the 1996 amendments to LGEEPA, Mexico implemented a streamlined approach to environmental permitting called the Comprehensive Environmental License (LAU) allowing industrial firms to acquire a single permit covering EIA, air, water, and toxics regulation. This is part of the "Comprehensive System for environmental Regulation and Management of Industries" (SIRG).[517] The SIRG has three components: (1) the LAU, (2) the Annual Emissions Inventory (COA), and (3) the voluntary Program for Environmental Management (PVG).LAU allows business to apply for several environmental permits, licenses, concessions and authorizations through a single procedure, thus 'avoiding the need to appear before several federal departments or authorities…'[518]

5. Research

The National Ecology Institute (INE) within SEMARNAT is the primary environmental research institution within the federal government. It has the following functions:

- Provide technical and scientific support for the development of environmental policy
- Coordinate, promote and develop scientific research and the development of a general policy on
    - environmental cleanup
    - the conservation and sustainable use of wildlife and priority species and ecosystems
    - the prevention and control of pollution and the handling of hazardous materials
- Prepare studies on ecological performance and environmental regulation
- Develop economic, financial, tax and market instruments
- Provide technical and design support for environmental policy instruments
- Provide technical support for protected natural areas
- Develop a system of public service for scientific environmental information
- Jointly develop environmental protection instruments with academic and legal research institutions[519]

INE has four bureaus: Ecological Management Research and Ecosystem Conservation; Urban, Regional and Global Pollution Research; Environmental Policy and Economics Research; and the National Center for Environmental Research and Training. It has two executive units for legal affairs and administration.

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[518] 81 Univ. D. T. M. L R. 411, 414 (2004).

[519] Summary of Mexican Law § 2.

6. Economic and other reviews of proposed legislation or regulations

See section on standard setting.

7. Special programs such as compliance assistance for small and medium sized enterprises

Industrial equipment that prevents or controls pollution qualifies for accelerated depreciation under a 1995 amendment to Mexico's income tax law. Further, environmentally friendly equipment can be obtained through low-interest credits and zero-customs tariffs. However, these incentives have been rarely used historically due to lack of awareness and ambiguities in the law.

Under Mexico's recently releases regulation on self-audits, SEMARNAT is establishing regional support centers for small and medium enterprises.[520] SEMARNAT also has a strategic goal of reducing and consolidating regulatory requirements on industry. For example, it has a goal of consolidating the 258 separate regulatory processes currently in force as of 2009 into only 120 processes in 2012, and adding only five new processes.[521]

8. Approaches to critically polluted areas or new generation "area-based" pollution management for multiple sources to achieve ambient quality outcomes

Mexico does not have a centralized funding mechanism for site remediation, and funds are allocated on a site-specific basis according to the National Development Plan developed by the Executive Office of the President with approval from the Secretary for Finance and Public Credit (SHCP).[522]

With respect to basin-level watershed management, the CNA works with Watershed Councils (which Mexico describes as "auxiliary units"), which ostensibly do not exercise legal authority, but play a role in consensus-building and coordination.[523] They assist the CNA in managing water with users' participation, planning, programming, management, control, oversight, and evaluation of its activities. "The agreements they sign are binding only insofar as the authorities ratify them."[524] The regulation implementing the water law (RLAN) provides for watershed councils to coordinate with CNA on water use priorities and other instruments of water management planning, mechanisms and procedures to

[520] Reglamento de law Ley General del Equilibrio Ecológico y la Protección al Ambiente en Materia de Autorregulación y Auditorías Ambientales, Diario Oficial, art. 6.II (April 29, 2010).
[521] Presentation of Juan Rafael Elvira Quesada, SEMARNAT, to the 1st National Rotary Congress on Human Development, Principle Advances and Challenges of SEMARNAT (May 14, 2010), *available at* http://www.semarnat.gob.mx/informacionambiental/noticias/Presentaciones%20Secretario/Club%20Rotario%20mayo%202010.pdf.
[522] Summary of Mexican Environmental Law § 13.3.
[523] http://www.cec.org/Storage/73/6724_03-3-ADV_en.pdf at 12.
[524] http://www.cec.org/Storage/73/6724_03-3-ADV_en.pdf at12.

confront extreme or emergency situations, shortages, overexploitation, water pollution, or deterioration of assets in the custody of CNA.

9. Procedure for redressing grievances including establishment, operation, and effectiveness and use of conflict resolution methods

For those who believe themselves aggrieved by activities carried out by PROFEPA, three possible remedial steps are available: first an administrative appeal of revision carried out through the agency's hierarchy; second, a "nullity" trial (carried out in Specialized Administrative Courts (Federal Court of Administrative and Tax Justice), which can review the legality of PROFEPA's actions; and third, a protection trial or "amparo" under the federal courts' jurisdiction to deal with violations of fundamental individual guarantees provided in Mexico's Constitution.[525]

Amparos are based on Articles 103 and 107 of the Mexican Constitution, available as a last resort to parties who believe an act of government has violated their individual guaranteed rights. Generally, other judicial and administrative remedies must be exhausted before an *amparo* suite can be brought.[526] There are two primary types of amparos. An indirect amparo may be brought in district court to contest a local or federal law, an international treaty, executive or local state regulations, or other general regulations, decrees or accords, or acts that do not come from judicial administrative or labor tribunals. A direct amparo may be brought to challenge a definitive sentence or decision that imposes a final judgment, dictated by a tribunal. The efficacy of amparo actions in environmental cases may be limited by the necessity to demonstrate a clear, individual legal interest to be redressed. Diffuse or collective interests are generally not recognized, and class-action type proceedings are not available.[527]

In the case of conflicts between a state and the federal agency, in the first instance SEMARNAT is required to enter negotiations with the state government to resolve disagreements. These negotiations are moderated by a Director General appointed at the time SEMARNAT and the state or municipal government unit entered into the power-sharing agreement in dispute.[528] States without delegated power have less of an opportunity to resolve conflicts with a federal agency in the same way. Where negotiations fail, or are unavailable, states retain authority under Mexico's basic administrative procedure law to sue federal agencies in the "Federal Tribunal of Fiscal and Administrative Justice" based on the agency's decisions, actions, or failures to act.[529] The Act does not specify whether the plaintiff may be a sub-government, such as a state or municipality.

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[525] Cancino, *supra* note __, at 61.
[526] Summary of Mexican Envtl L. § 1.7 (role of the courts)
[527] Summary of Mexican Environmental Law § 6.2, http://www.cec.org/Page.asp?PageID=924&ContentID=2716 (last visited June 8, 2010).
[528] Acuerdo que establece las Reglas de Operación para el Otorgamiento de Subsidios del Programa de Desarrollo Institucional Ambiental. Diario official de Secretaria de Medio Ambiente y Recursos Naturales. December 29, 2009.
[529] Ley Federal de Procedimiento Contencioso Administrativo, DF, October 4, 2005.

However, the Act allows multiple parties and stockholders to be represented by one unit, which may very well be a sub-government representing its constituents.

10. Procedures to assure public outreach and transparency

Mexico's constitution guarantees a right of access to information.[530] Further, requests for information must be honored in a short period of time if the request is in writing and submitted in a "peaceful and respectful manner."[531]

Further, as mandated by Article 159 of LGEEPA the Mexican government has implemented the National System of Environmental and Natural Resources Information (NSENRI).[532] The system includes natural resources inventories; monitoring data on air, water, and soil quality; access to scientific and academic reports and technical papers. Under Article 159 bis created by the 2001 amendments to LGEEPA, state, municipalities, and the Federal District are now required to participate in NSENRI, which was previously solely the responsibility of SEMARNAT.[533] The system is complemented by the National Accounts System within the National Institute of Statistics, Geography and Information. NSENRI has been criticized in the past for developing information systems on different resources in isolation from one another, inhibiting greater coordination and facilitation of information exchange across sectors.[534]

Recently, SEMARNAT has begun holding national and regional environmental information fairs to engage different sectors of society, and participants have included universities, government departments, NGOs, private organizations, research centers and others.[535]

The Constitution obligates democratic planning processes, and the Planning Law guarantees public participation in the formulation of the National Development Plan. This was accomplished in 2001 through nine national citizen consultations dealing with issues including biodiversity, deforestation, pollution, and desertification, In addition to approximately 6200 in-person participants, citizens could also participate via surveys and the Internet. 117,040 questionnaires were received in this manner.[536]

There are three internal divisions related to outreach and transparency within SEMARNAT: the General Coordination for Social Communication, the Center for Education and Training on Sustainable Development, and the National Commission for the Understanding and Use of Biodiversity (an intersecretarial agency). Recently, the President

[530] Constitución Política de los Estados Unidos Mexicanos [Const.], *as amended*, Diario Oficial de la Federación [D.O.], art. 6, 5 de Febrero de 1917 (Mex.)
[531] *Id.* art. 8.
[532] *See* SEMARNAT, Sistema Nacional de Información Ambiental y de Recursos Naturales, http://www.semarnat.gob.mx/informacionambiental/Pages/sniarn.aspx.
[533] Summary of Mexican Environmental Law § 5.2.
[534] IISD, Mexico Case Study: Analysis of National Strategies for Sustainable Development 10 (June 2004).
[535] Summary of Mexican Environmental Law § 5.1.
[536] IISD, Mexico Case Study: Analysis of National Strategies for Sustainable Development 8 (June 2004).

of Mexico initiated a special program to raise awareness of water resources and waste management.

a. Public-private partnerships

Much of Mexico's water governance since passage of the Law of National Water in 1994 is premised on the hope of greater private public collaboration, with the law focused on creating transferable water rights and participation of the private sector, and setting up a system of water concessions available to private companies for 5 to 50 year periods.[537] The 1994 law, along with amendments to it in 2003 has had some success in normalizing and integrating water management. As of 2003, 330,000 private water users, including virtually all major users, were registered with the government. The registry of water users has been successful at exposing over-concessions and overexploitation of aquifers and has helped identify which users remain unregistered and do not pay for water rights. 104 of 653 aquifers remained under unsustainable exploitation as of 2007, and so the government continues to promote integrative and sustainable water management.[538]With the normalization process largely complete, the CNA is prioritizing modernization of irrigation and agricultural infrastructure to minimize losses and leakage.

Mexican water reform has been beset by a number of problems, stemming in part from the federal relationship and public-private relationships. Under the 1994 water law, municipalities are responsible for potable water management and provision, drainage, sewage systems, and wastewater treatment and disposition. With this devolution has come a wide disparity in management design and capacity. Some municipalities maintain total government control while others' water systems are a public-private partnership. This variation means that reforms originating from the central level are difficult to implement in practice. And because each municipality retains authority to set pricing for water tariffs, the national average is very low, at 2 pesos for 1000 liters as of 2007.[539]

The creation of water markets in Mexico, once considered a crowing achievement of the 1994 law, is no longer widely publicized by the government, with studies of water markets in urban Cancun and Mexico City showing that they resulted in higher tariffs without better service. Monterrey's water market produced better results, perhaps in part due to being under public administration.[540] Public suspicion and opposition to water markets remains

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[537] Andrea C. Zomosa-Signoret, *Mexican Water Reform: Paradoxes of Institutional Development, Integrative Management, and Modernization* 2 (November 2007), *available at* http://fletcher.tufts.edu/ierp/ideas/pdfs/issue3/ZomosaSignoretAndrea_MexicoWater.pdf.
[538] Andrea C. Zomosa-Signoret, *Mexican Water Reform: Paradoxes of Institutional Development, Integrative Management, and Modernization* 2 (November 2007), *available at* http://fletcher.tufts.edu/ierp/ideas/pdfs/issue3/ZomosaSignoretAndrea_MexicoWater.pdf.
[539] Andrea C. Zomosa-Signoret, *Mexican Water Reform: Paradoxes of Institutional Development, Integrative Management, and Modernization* 3 (November 2007), *available at* http://fletcher.tufts.edu/ierp/ideas/pdfs/issue3/ZomosaSignoretAndrea_MexicoWater.pdf.
[540] Andrea C. Zomosa-Signoret, *Mexican Water Reform: Paradoxes of Institutional Development, Integrative Management, and Modernization* 3 (November 2007), *available at* http://fletcher.tufts.edu/ierp/ideas/pdfs/issue3/ZomosaSignoretAndrea_MexicoWater.pdf.

high. Nonetheless, the cities of Cancun, Aguascalientes, Navajoa, and Nogales have fully privatized water services.[541]

11. Relationship with industry (and other regulated entities)

The head of PROFEPA has identified heightened oversight and regulation of the large parastatal corporations in Mexico such as PEMEX and the Federal Electricity Commission (CFE) as high priorities for his administration, noting that these has been too lax a relationship and not enough scrutiny of environmental performance of these operations in the past.[542]

Attempts at voluntary compliance and environmental management mechanisms to improve relationships with industry have had a mixed record in Mexico. The VEA method of voluntary self-auditing as part of the PVG program discussed above requires companies to prepare a voluntary instrument that identifies problems and preventive or corrective measures. Once those measures have been carried out, PROFEPA certifies the effectiveness of the compliance measures and awards the firm a "Green Shield" award (see infra p. 29). However, this method of voluntary compliance has not always been effective. According to allegations by citizen submitters to the CEC in Ex Hacienda El Hospital II & III (SEM-06-003 & -004) (December 2008), a private firm undertook its own audit in 1997 voluntarily, allowing it to avoid inspection and thus postponing enforcement measures. PROFEPA relied on the firm's own report and restoration plan in certifying the conclusion of restoration activities at the site in 2000. Among the flaws in the firm's self-reporting was failure to include a process wastewater discharge system in the remediation plans given to PROFEPA. In 2005, municipal authorities suspended the dismantlement program because of the inconsistencies and flaws in the system plans.[543]

As of June 2008, legal and administrative disputes with business were as follows:

- Appeals: 594 ongoing, 379 initiated between January 2007 and June 2008
- Nullity actions: 4758 ongoing, 71 initiated between January 2007 and June 2008
- Amparo actions: 1550 ongoing, 273 initiated between January 2007 and June 2008
- Criminal Trials: 14 ongoing, 53 initiated between January 2007 and June 2008 (47 resolved in same period)
- Civil Trials: 25 ongoing, 7 initiated between January 2007 and June 2008

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[541] *Id.* For an argument in favor of public-private partnerships on water management in Mexico, see Amanda K. Martin, *Attracting Private Sector Participation in the Mexico-US Border Region, in* THE MEXICO-U.S. BORDER ENVIRONMENT AND ECONOMY: A CALL TO ACTION TO MAKE THE MEXICO-U.S. BORDER REGION A MODEL OF BI-NATIONAL COOPERATION FOR SUSTAINABILITY 111 (The Aspen Institute 2000) (noting institutional constraints and necessary preconditions to greater private role in environmental management in Mexico).

[542] PROFEPA, El Procurador Habla Sobre La Nueva Responsabilidad que le Confirio El Presidente Calderon (Feb. 12, 2008), http://www.profepa.gob.mx/PROFEPA/OficinadelProcurador/Entrevistas/ (last visited June 9, 2010).

[543] Ex Hacienda El Hospital II & III (SEM-06-003 & -004) 4-5 (December 2008)

- Human Rights disputes: 50 ongoing, 39 initiated between January 2007 and June 2008
- Constitutional disputes: 14 ongoing, 15 initiated between January 2007 and June 2008.[544]

a. Mechanisms for sharing information on pollution prevention and compliance assistance, what conflicts arise and how are they resolved

Since acceding to NAFTA, Mexico has been a part of the North American Pollutant Release and Transfer Register (PRTR), which tracks and publishes information on amounts, sources, and handling of toxic chemicals, including best practices and strategies for managing such chemicals. In order to ensure it is complying with PRTR, Mexico has initiated the "Registry for Emissions and Transfer of Contaminants" (RETC). This regulation mandates that companies under federal jurisdiction must annually file an inventory of releases of wastewaters, hazardous materials, and other pollutants, with an emphasis on persistent, bioaccumulative, and toxic substances. Under the 2001 reform of LGEEPA, information is to be gathered by all levels of government from environmental authorizations, certificates, reports, licenses, permits, and concessions.[545] This programming is helping to create a support base of information, guidance, and "know-how" on environmental management in Mexico.[546]

12. Procedures for inspections, frequency of inspections, mechanisms for targeted inspections, self-monitoring and other means of assuring compliance

PROFEPA ensures compliance through two mechanisms: inspection visits and voluntary environmental audits. LGEEPA Article 38 gives PROFEPA the power of "methodological examination of operations, regarding the pollution and risk generated, as well as the degree of compliance with environmental law and with international parameters and good applicable operational and engineering practices, with the object of defining, preventing, and correcting measures necessary to protect the environment."[547]

Procedures must be consistent with the Federal Law of Administrative Procedure of 1995. Thus, first an order of inspection is issued, listing the reasons justifying an inspection, the specific objectives of the inspection, and any supportive legal precedent for the inspection. With this order in hand, officials may inspect facilities and observe activities. LGEEPA art. 170 gives PROFEPA the power to impose "security measures" when there is an "imminent risk of imbalance, or serious damage or deterioration to natural resources, in cases of pollution with hazardous impact on ecosystems, their components, or on public health."

[544] SEMARNAT, Second Report of Work § 6.1.5 (released Dec. 18, 2008).
[545] Summary of Mexican Environmental Law § 5.2 (Industry Reporting Requirements)
[546] Humberto Celis Aguilar Alvarez, *The North American Free Trade Agreement's Impact on the Development of Mexican Environmental Law*, 81 UNIV. DETROIT MERCY L. REV. 411, 417-18 (2004).
[547] LGEEPA quoted in Miguel Angel Cancino, *Reflections on the Mechanisms of Environmental Enforcement and Compliance in Mexico, in* ___ (2001?).

These powers include closing the facility, confiscation of goods and materials, and neutralization of waste.[548]

In the 2001-2007 period, SEMARNAT reports that PROFEPA carried out inspections and verifications at 100% of registered facilities processing hazardous waste and in the same period saw a 26% reduction in emergencies related to hazardous waste releases from 2001-2007. Also in the same period, under the Inspection Program for Federal Jurisdiction Pollution Sources, 7,583 inspection visits were carried out for high-pollutant establishments. 2,647 were found to be in full compliance; 4,669 had infractions and minor irregularities; 71 had serious infractions. This Inspection Program led to the initiation of 5,282 administrative procedures, 37 facility closures, 34 partial closures, and fines amounting to a total of 151.8 million pesos. 1,487 inspections were carried out at facilities considered to be high risk.[549]

Self-Monitoring Program

Since 1992, Mexico has been implementing the Environmental Audit Program (MPAA), which covers both regulated and non-regulated aspects of industrial environmental management systems. According to revised guidelines in 1997, PROFEPA will promote and conduct audits by approved auditors that will include aspects corresponding to ISO 14001, the European Union's Eco-management and Audit Scheme (EMAS) and other systems. This is now known as the Voluntary Program of Environmental Management (PVG) for businesses that agree to comply with safeguards and implement a an environmental management system. PVG participants are invited to submit a voluntary environmental audit (VEA) to PROFEPA to verify compliance with regulations, laws, and other standards, both international and domestic. If an audited company is in compliance, it is issued a "Clean Industry Certificate" or "Green Shield" that qualifies it for tax incentives and opportunities to market as an environmentally proactive company.[550]

A new regulation on self-audits was published April 29, 2010.[551] The regulation includes the following components:

- Strategic planning to identify which sectors have highest impact on environment and most compatible with self-auditing programs
- Regional support centers for small and medium enterprises
- Process for obtaining certificate through environmental auditing
- Review Mechanism using performance indicators
- System of awards and incentives for companies that voluntarily participate, graduated to the level of achievement

[548] Cacino supra note __ at 60
[549] All information in this paragraph from SEMARNAT, Second Report on Work § 2.7.3 (Dec. 18, 2008).
[550] Council for Environmental Cooperation, Guidance Document: Improving Environmental Performance and Compliance: 10 Elements of Effective Environmental Management Systems 5-6 (June 2000).
[551] Reglamento de law Ley General del Equilibrio Ecológico y la Protección al Ambiente en Materia de Autorregulación y Auditorías Ambientales, Diario Oficial 45 (April 29, 2010).

- Approval and assessment processes for Environmental Auditors, including procedures and requirements to be met, including expertise in the provisions of the Federal Law on Metrology and Standardization
- Operational tools including terms of reference formats, user manuals, seal certificates, and training programs.

The regulation calls on companies to bear their own costs so long as they voluntarily participate. PROFEPA retains the authority to verify compliance and monitoring and preventive measures and remedies. Environmental Audits are required to comply with the terms of reference in the regulation. The Terms, which will be further developed and issued through specific NOMs include

- Methodology for conducting audits and diagnostics
- Subjects to be verified by auditors tailored to the size and complexity of businesses and their processes
- Procedure and requirements for developing Environmental Performance Reports for companies
- Procedures to evaluate the performance of the auditors
- Parameters to evaluate the level of environmental performance, tailored to the following sectors:
    - Air and noise
    - Water
    - Soil and subsurface
    - Waste
    - Energy
    - Natural resources
    - Wildlife
    - Forest resources
    - Environmental risk
    - Environmental management
    - Environmental emergencies

PROFEPA may at any time use its own resource to very compliance with the self-audit regulation. (art. 9).

Obtaining a self-audit certificate involves the following stages: 1. application for Certificate; 2. Presentation of the Environmental Audit Report; 3. Developing a Plan of Action (if necessary); and 4. Certification.

If an EAR is determined to not satisfy the applicable Terms of Reference, the company is to attach an Action Plan, and a signed, legally binding commitment to implement the Action Plan. (art. 17) The Plan is to include specific actions that will be taken to address nonconformities, both preventive and corrective measures. (art. 18.I) PROFEPA will then review the Action Plan, verify congruence and consistency with the EAR, and make reservations to any aspect that require action, to which the applicant must reply within 15 days. (art. 19).

Once an Action Plan has been accepted, the Environmental Auditor must file updates on the status of the Plan. If at any point PROFEPA determines the company is not in compliance with the Plan, it may revoke Certification. (art. 23.) Additional compliance assurance comes at renewal points for the Certification. Under art. 26, PROFEPA has 20 days following submission of an EAR or renewal to check the veracity of the reporting, and issue warnings, which must then be remedied within 10 days, or certification will be discarded.

Certificates come in the following types: Clean Industry (industrial sector); Environmental Quality Tourism; and (other) (art. 29). A special certificate of Environmental Excellence may be awarded to companies that demonstrate high performance, have not been sanctioned in the year prior, have no liabilities under the General Law on the Integrated Prevention and Management of Waste, and no environmental emergencies (art. 31.)

Environmental auditors are accredited by the Technical Committee of Environmental Auditors under the Metrology and Standardization law. Among other requirements, applicants for auditor positions must certify that they have not been sanctioned for violations of environmental law or having committed environmental crimes (art. 33, 34). PROFEPA may carry out verification visits to evaluate the performance of Environmental Auditors. Criteria to be assessed include the technical competence of the auditor, the absence of conflicts of interest, and the ability of the auditor per specific terms of reference in the particular field (art. 37). Auditors are licensed for four year periods and must seek renewal. Art. 38.

Transparency and access to information in the self-audit program are generally governed by FLTAIGP and LGEEPA art. 159 (art. 40). However, disclosure of information on the development of preventive or remedial program appears to be limited to "those directly affected" by the company's activities, potentially limiting the availability of information to civil society and other interested stakeholders in self-auditing companies (art. 41).

Violations of any rules for auditors is grounds for cancellation of the auditor's license. Violations include the following:

- failing to follow the Federal Law on Metrology and Standardization
- Disclosure of confidential company information
- Being sanctioned for violations of environmental laws in other activities
- Being sanctioned by criminal law for environmental crimes.

When an auditor is sanctioned, the work they have performed auditing a company will not be recognized by PROFEPA, but the company will receive an extension of time to meet any deadlines of 30 days. (art. 43-44).

PROFEPA can annul a certificate when a company is found to have:

1. provided false or incomplete information
2. withheld information to auditor or PROFEPA
3. Misused its certification
4. Been sanctioned for environmental crimes

(Art. 45.)

13. Procedure for environmental monitoring and how data is shared with stakeholders

Article 133 of LGEEPA provides for monitoring of ambient water quality.

With respect to sustainable development goals, secretariats report yearly to president against objectives and targets. SEMARNAT publishes twice a year a Report on the Outlook Regarding the Ecological Balance and the Protection of the Environment and posts yearly achievements on its website; also, a data information management system is available to the public via the Internet.[552]

14. Measures or indicators of progress toward ambient quality goals and compliances with standards

SEMARNAT has developed environmental performance indicators to measure progress towards environmental sustainability goals. Several examples:

- Ecological GDP to measure progress toward sustainability
    - [Ecological GDP = (PINE – PIN)] where PIN = (GDP – depreciation of capital) and PINE = (PIN – depreciation of natural capital)
- Indicators on quantity and quality of water resources (see information about NWQMN below)
    - Shortage indicator = Number of overexploited aquifers / total number of aquifers
    - Quality Indicator = % of volume of treated waste water that complies 100% with environmental standards / collected water volume
- Indicators on forest resources
    - Number of recovered forest ha
    - Number lost forest ha
    - Number forest ha with sustainable management programs
    - Number forest ha unsustainably managed
- Indicators on hazardous waste
    - Tons of hazardous waste sustainably management / year
- Reintroduction and recovery of priority strange species, threatened species, or species in danger of extinction.
    - Number reintroduced species / year[553]

Since 1974, the CNA has operated the National Water Quality Monitoring Network (NWQMN) with the strategic objective of providing up-to-date, reliable water quality information about measurement, analysis, and assessment of water quality in water bodies

[552] IISD, Mexico Case Study: Analysis of National Strategies for Sustainable Development 15 (June 2004).
[553] IISD, Mexico Case Study: Analysis of National Strategies for Sustainable Development 10 (June 2004).

of national interest, and dissemination of information to public. This is made up of 912 monitoring sites. The Network is further broken down into a Primary Network of long-range descriptive information on Mexico's most important bodies and a Secondary Network to support pollution regulation and control.

Regarding progress on attaining environmental objectives, SEMARNAT's work is subject to oversight through the Annual Programme Evaluation operated by the National Council of Social Policy Evaluation (CONEVAL). This process involves an Outcomes Assessment to establish areas for improvement and corresponding recommendations. The relevant administrative unit then develops an integrated work program setting out steps by which the improvements will be made. CONEVAL and the relevant unit coordinate on the publishing and dissemination of reports.[554]

15. Procedures for addressing cross sectoral environmental issues with sectoral ministries/departments and how to address damage due to conflicts in policies

Under Article 20 of the Public Works Law, all agencies and entities that grant public works contracts must ensure that the underlying rpojects will not harm the environment. Contractors must comply with EIA requirements and public works projects must use technologies, equipment and facilities necessary to preserve or restore the environment. However, the Public Works Law does not lay out these requirements in detail and it does not require the government to give preference to environmentally high-performing companies.[555]

Cross-sectoral issues are handled differently under the variouc media-centric laws. Four federal agencies have jurisdiction over air issues: SEMARNAT, the Secretariat of Communication and Transport (SCT), the Secretariat of Health (SSA), and the Secretariat of the Economy (SE). SEMARNAT regulates stationary sources under federal jurisdiction, and is charged with issuing NOMs implementing the Air Protection Regulation, as well as all enforcement and oversight activities pertaining to the control of atmospheric pollution. SCT administer federal public transport emission verification centers, SSA issues NOMs on criteria for assessing air quality and SE works with SEMARNAT to set pollution limits for automobiles.

There is a split between sources under federal and state jurisdiction, and municipalities have jurisdiction over mercantile and services point sources such as restaurants. Federal air jurisdiction covers the following fixed-source industries: chemical, oil and petrochemical, paint and ink, automotive, metal works, glassworks, electric power, lime, cement and asbestos, and hazardous waste treatment. OECD recommended in 2003 that the federal government needed to extend air emissions regulation to additional industrial sectors, as this list does not cover all major polluting entities.[556]

[554] SEMARNAT, Third Report on Work, §6.7.10.2. (Oct. 1, 2009).
[555] Summary of Mexico's Environmental Laws § 24.6 (Government Procurement).
[556] OECD 2003 Summary at 4.

In the context of hazardous waste, LGEEPA as amended in 1996 similarly sets up a requirement for consultation across relevant ministries. Under Article 150, SEMARNAT is to manage hazardous wastes and materials through regulations and NOMs "on the advice of the Ministries of Trade and Industrial Development, Health, Energy, Communications and Transportation, the Marine, and the Interior."[557]

Finally, cross-sectoral issues and coordination are explicitly addressed in Mexico's EIA regulations as well. According to Article 35 of LGEEPA, projects for which an EIA is required must also conform to "the urban development programs, environmental land use plans, protected natural area declarations, and other applicable legal provisions" enacted by states and localities. Further under Article 24 of the Regulation on EIA, SEMARNAT may solicit the technical opinion of any department or entity of the Federal Public Administration.

At times, however, it appears SEMARNAT and its agencies may have acted in contravention of the activities or recommendations of other departments and the federal Congress itself. For example, in approving the EIA for an LNG terminal off the Coronado Islands, DGIRA was alleged to have ignored a determination by the National Biodiversity Commission that the islands are an "Important Area for the Conservation of Birds" and a "Priority Maritime Region." The approval also appeared to be at odds with a 2003 resolution of the Mexican Federal Congress mandating that relevant agencies develop a decree making the islands a protected natural area. In DGIRA's view, although the archipelago "is currently being studied for declaration as a Protected Natural Areas, this proposal does not yet have any legal validity. Therefore, in its decision, DGIRA has no valid basis on which to consider such a proposal as a factor that could limit the viability of the project."[558] In this instance, the project was abandoned by the proponent and the EIA voluntarily canceled.

16. Capacity building programs for state agencies

Within the Executive Office of the President, the Office for Strategic Planning and Regional Development was created to facilitate policymaking where the federal government is no longer the only actor as a result of decentralization and to facilitate interstate and intersectoral coordination. This has been accompanied with efforts to decentralize fiscal resources through greater subnational shares in tax revenues, and tools to build capacity, transparency and accountability at subnational levels.[559] SEMARNAP formed the *Coordinación General de Decentralización* (CGD) (Office of General Coordination of Decentralization) to assist in decentralization of environmental law. CGD's main purpose is to direct, promote, coordinate and evaluate the decentralization process to the state and local governments, social organizations and private parties in accordance with the provisions of LGEEPA. CGD has signed numerous agreements with a number of states

[557] ALCA-Iztapalapa at 21.
[558] Coronado Islands, at 25-27.
[559] IISD, Mexico Case Study: Analysis of National Strategies for Sustainable Development 9 (June 2004).

to promote decentralization.[560] Also of note are the efforts of the federal CNA to work with state congresses to enact legal frameworks for water management.[561]

III. Citizen Participation

The Coordination of Citizen Participation and Transparency is an internal division within SEMARNAT.

1. Procedures for citizen monitoring, stakeholder involvement, advisory committees, community engagement, inclusive decision making, and public participation

Under LGEEPA articles 157-58, SEMARNAT is to develop a close participatory relationship with civil society, non-profit private institutions and citizens to initiate joint activities in environmental protection and restoration. In addition, SEMARNAT is to set up Advisory Councils for implementation and monitoring of environmental policies with the participation of a wide range of social actors. SEMARNAT revises and analyzes the proposals of the Advisory Councils and must resolve in writing whether to accept or reject a council's proposal that explains its reasoning for doing so. Advisory Councils may issue any opinions and observations they deem appropriate in order to obtain SEMARNAT's views on pertinent environmental issues. The current SEMARNAT Councils are:

- Advisory Councils for Sustainable Development (currently hold sessions with five Regional Councils and a National Advisory Council for Sustainable Development)
- National Nongovernmental Advisory Council of the Cooperation Agreement (NACEC)
- National Forestry Technical Advisory Council
- National Water Advisory Council
- Basin Councils
- National Council on Protected Nature Areas
- Advisory Councils on Protected Nature Areas
- National Technical Advisory Council for the Recovery of Priority Species
- Wildlife Subcommittees
- National Standardization Advisory Committee for Environmental Protection

[560] George R. Gonzalez & Maria Elia Gastelum, Overview of the Environmental Laws of Mexico (1999), http://www.natlaw.com/pubs/spmxen13.htm.

[561] Amanda K. Martin, *Attracting Private Sector Participation in the Mexico-US Border Region*, *in* THE MEXICO-U.S. BORDER ENVIRONMENT AND ECONOMY: A CALL TO ACTION TO MAKE THE MEXICO-U.S. BORDER REGION A MODEL OF BI-NATIONAL COOPERATION FOR SUSTAINABILITY 111, 116 (The Aspen Institute 2000).

2. Rights of Action

Under thee Federal Administrative Procedure Law, the Appeal of Review can be used to challenge acts and resolutions issued by administrative authorities, including PROFEPA. It must be presented within 15 days of the date of the authority's action.

Under LGEEPA article 204, citizens may request a technical report from SEMARNAT when they have been injured by a violation of LGEEPA. The report can be used as evidence in civil suits for compensation by the citizen. Article 182 of LGEEPA provides that every person may file criminal complaints with the Federal Public Prosecutor for actions or omissions that may constitute federal environmental crimes under Federal Penal Code articles 414-423.

In what may be a typical process for handling citizen complaints, in the CEC case *Ex Hacienda II & III*, PROFEPA undertook the following steps in response to a citizen complaint against a paint pigment facility for improper toxic waste handling.

- Issued a status decision determining that the complaint was allowed
- Summoned the complainant to provide evidence in support of his complaint
- Informed complainant that processing would not affect the exercise of other rights or remedies
- Instructed the regional PROFEPA office to process the complaint in that office.
- Provided timely notice of the status of the complaint, the inspections of the facility in question, and administrative, civil, and other actions taken against the facility
- Under court order, requested complainant's participation as third party in administrative proceedings against the polluting facility
- Provided standing to complainant to present evidence in administrative proceedings against the facility.[562]

3. Other public participation provisions

Article 58 of LGEEPA provides that prior to designating protected areas, the opinions of private and public organizations, indigenous peoples, universities, research centers and other groups must be sought.

Article 78 of LGEEPA requires that SEMARNAT must promote the participation of owners, holders, public or private citizens organizations, indigenous peoples, and the interested parties in programs for ecological restoration of degraded areas.

Article 20 of LGEEPA calls for the participation of citizen and business groups and organizations, and academic and research institutions in the development of general ecological zoning.

[562] Sec. CEC, Article 15(1) Notification to Council that Developmetn of a Factual Record is Warranted, *Ex Hacienda El Hospital II and Ex Hacienda El Hospital III (consolidated)*, A14/SEM-06-003 & SEM-06-004/54/ADV, at 34 (May 12, 2008).

The Watershed Councils established by LAN present special problems for citizen participation and redressing of rights because they are quasi-administrative bodies, and yet Mexico has argued before the CEC that they do not have regulatory authority.[563] Despite this assertion, they make decisions on water management, including actions that affect water rights. But Mexico has denied water users' appeals with respect to Watershed Council activities, merely referring them back to the Council as the proper forum to seek relief.[564] The legal status and reviewability of watershed council activities is the focus on an ongoing dispute at the CEC.

4. Examples of public involvement that improved outcomes

The best English-language source of information on the effectiveness of citizen participation in Mexico is the database of citizen submissions maintained by the Commission for Environmental Cooperation (CEC) established by a side agreement to NAFTA.[565] CEC is mandated to investigate and report on allegations that authorities are failing to enforce environmental laws in the three NAFTA parties. Although CEC has no direct regulatory authority, its reports can have the effect of educating or even shaming environmental authorities, spurring regulatory action on specific problems.[566]

The Islas Coronado case involving a proposed liquid natural gas terminal in Baja California demonstrates how the domestic citizen participation process failed to produce an environmental outcome, but the CEC process initiated by citizen submitters after failing to obtain relief from Mexico's authorities ultimately terminated the proposed project. The submitters were a group of U.S. and Mexican environmental organizations. The Coronado Islands are home to a variety of rare and endangered wildlife, including the Xantu's murrelet. Chevron-Texaco proposed to build an LNG terminal and regasification center 600 meters offshore of the islands. DGIRA within SEMARNAT, the agency charged with carrying out the EIA law, approved the project with conditions.

Upon approval, various persons and organizations filed six administrative appeals under LGEEPA Article 176, and SEMARNAT consolidated them to a single docket. Among the flaws in the EIA process submitters asserted were multiple violations of LGEEPA Article 34 which sets out rules for public notification and participation in the EIA process. Under Article 176, administrative appeals are filed directly with the authority that made the decision at issue, and this authority is required to refer the appeal to its hierarchical superior for a final decision. The Federal Administrative Procedure Act (LFPA) supplements LGEEPA and provides that the authority must issue a decision within three months; failure to issue a decision within that time period means the appeal is deemed to be

[563] http://www.cec.org/Storage/73/6724_03-3-ADV_en.pdf at 21.
[564] http://www.cec.org/Storage/73/6724_03-3-ADV_en.pdf at 21.
[565] Full list of submissions against Mexico available at CEC, Mexico, http://www.cec.org/Page.asp?PageID=1226&ContentID=&SiteNodeID=547&BL_ExpandID=.
[566] Jonathan G. Dorn, *NAAEC Citizen Submissions Against Mexico: An Analysis of the Effectiveness of a participatory Approach to Environmental Law Enforcement*, 20 Geo. Int'l Envt'l L. Rev. 129, 129 (2007).

denied.[567] In the case of the Coronado Islands, SEMARNAT failed to take action on the appeals within the three month time frame, and thus the existence of those appeals did not function as a bar to CEC jurisdiction. Despite SEMARNAT's assertion that it was still reviewing the appeals, the CEC found that legally the appeals were already deemed denied, meaning there was no ongoing domestic review process that would block CEC's jurisdiction in the matter.[568]

The Secretariat of the CEC reviewed the existing record and found significant gaps that required the development of a fuller factual record to determine whether submitters' assertions that the EIA process was flawed in numerous respects was accurate. However, before this fact-finding function could begin, and possibly as a result of the CEC inquiry itself, Chevron-Texaco withdrew the project from consideration and SEMARNAT withdrew its prior authorization for the project.[569]

IV. Legal Assessment (to the extent not incorporated in individual topics above)

While judicial review of agency action is available in Mexico, it may be less effective at directing policy than in other systems because decisions are only binding on the parties, do not create precedent until there have been five similar rulings on the same issue, and cannot bind other branches of government.[570] Environmental groups are frequently kept out of court by a relatively high *locus standi* requirement to show direct and immediate legal interests in pollution cases or in requesting access to information.[571] Some have argued the courts are the weakest link in Mexican environmental enforcement, also due in part to low understanding of environmental law by Mexican judges.[572] For example, in the case of a shoe manufacturer accused of violating numerous air and water pollution laws over more than ten years, the Office of the Federal Prosecutor (MPF) pursued criminal prosecution on four occasions, and in all four cases, the request for arrest warrants was denied by the district judge for lack of evidence to substantiate the probable existence of an offense.[573]

1. National authorization and oversight of state programs

To the extent available, information provided in other sections.

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[567] LFPA art. 17.
[568] Secretariat of the Commission for Environmental Cooperation, Article 15(1) Notification to Council that Preparation of a Factual Record is Warranted, Islas Coronado, A14/SEM/05-002/73/ADV, at 13-14 (Jan. 18, 2007).
[569] Secretariat of the Commission for Environmental Cooperation, Notice of Withdrawal of Article 15(1) Notification and Termination of Submission, SEM-05-002 (Coronado Islands) (March 26, 2007).
[570] Manuel Gonzalez Oropeza, *Recent Problems and Developments on the Rule of Law in Mexico*, 40 TEX. INT'L L.J. 577, 583 (2005).
[571] Summary of Mexican Environmental Law § 6.2; Guillermo Acuna, *The Principle of Access to Information, Participation and Justice in Environmental Matters in Latin America: New Spaces, New Rights?, in* Proceedings of the Symposium of Judges and Prosecutors of Latin America: Environmental Enforcement and Compliance 73, 78 (Maria Eugenia Di Paola ed. 2003).
[572] JAN GILBREATH, ENVIRONMENT AND DEVELOPMENT IN MEXICO 86 (2003).
[573] CEC, Factual Record in ALCA-Iztapalapa II (SEM-03-004), at 11 (June 2, 2008).

a. Methods of assuring compliance and enforcement at the state level

To the extent available, information provided in other sections.

b. Methods used that are beyond command and control

In 1999, Mexico's state-owned oil and gas company, PEMEX, established a company-wide cap-and-trade program to reduce its greenhouse gas emissions.[574] Although emissions were calculated to have dropped 3.6% in the first three years, it is unclear whether the market mechanism was the cause.[575] Environmental Defense Fund, a non-governmental organization, has been assisting PEMEX in set-up and operation of the program.[576]

The Federal Fiscal Code, Article 39, contains provisions allowing the federal executive to direct national policy through fiscal incentives. Thus the President may establish indirect tax exemptions and reductions for specific sectors or regions in order to encourage environmental activities there. Further, LGEEPA Article 22 Bis establishes that a wide range of environmental activities "shall be considered priorities for the purpose of establishing tax incentives."

Under the revised CPF sections delineating environment crimes set out in 2002, preference is given to preventive and voluntary measures over criminal law enforcement, though the Statement of Reasons accompanying the change makes clear that criminal law enforcement remains an instrument of environmental policy.[577]

Mexico has instituted a system of user charges for public water, sewer, and wastewater treatment. These apply to only a quarter of the population and have been insufficient for cost-recovery. Because the pricing of water remains heavily subsidized, significant inefficiencies remain in place, with up to 60% of irrigation water wasted and 50% of the urban water supply.[578] Mexico is currently engaged in a pilot study to determine if waiver of water use and discharge fees for users who install clean technologies will be successful and whether such an incentive can be applied in other contexts.[579]

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[574] OECD, ENVIRONMENTAL PERFORMANCE REVIEWS: MEXICO 150 (2003).
[575] *Id.*
[576] Environmental Defense Fund, Press Release, PEMEX, Environmental Defense Team to Reduce Greenhouse Gases (June 4, 2001), http://www.edf.org/pressrelease.cfm?contentID=98 (last visited April 30, 2010).
[577] ALCA-Iztapalapa II at 29. *See also* Ramon Alvarez, *Harnessing the Power of the Private Sector to Improve Environmental Quality on the U.S.—Mexico Border, in* 101, 107 ("Studies show that a key motivator for firms to adopt eco-efficiency measures is a stringent regulation or enforcement action (EPA). The threat of enforcement fulfills an important role in creating 'outside pressure in overcoming organizational inertia and creative thinking'") (quoting Michael E. Porter & Class van der Linde, *Green and Competitive: Ending the Stalemate*, Harvard Business Review, Sept-Oct. 1995, pp. 120-34).
[578] Andrea C. Zomosa-Signoret, *Mexican Water Reform: Paradoxes of Institutional Development, Integrative Management, and Modernization* 3-4 (November 2007), *available at* http://fletcher.tufts.edu/ierp/ideas/pdfs/issue3/ZomosaSignoretAndrea_MexicoWater.pdf.
[579] Summary of Mexican Environmetnal Law § 24.5.

2. Allocation of enforcement between national and state agencies

Decentralization has made environmental enforcement more difficult because certain environmental aspects are under the jurisdiction of local governments. As of 2003, only about one-third of Mexican states had environmental laws strong enough to conform to federal standards, and other states are actively hostile against environmental enforcement.[580] Despite this, states are given substantial responsibilities for pollution control. For example, under Mexico's air regulation, SEMARNAT may only sanction violations that fall under federal jurisdiction, and state environmental agencies are responsible for enforcing regulations under their jurisdiction.[581] Under Article 188 of LGEEPA, every state must establish its own sanctions for environmental crimes committed under its own legislation. However, PROFEPA's presence in every state in Mexico is intended to provide federal backstop authority should states fail to fully enforce their own laws.[582]

3. Procedures for imposing penalties and fines for non-compliance

Non-compliance procedures can be initiated by citizen complaint, as occurred with the ALCA company. After a series of citizen complaints in 1994, and again in 1997, the PROFEPA General Bureau of Environmental Complaints and Public Participation reports that PROFEPA undertook site inspections and temporarily closed the pollution source, and in 1997 imposed fines and ordered corrective measures be taken.[583]

4. System for administrative penalties, hearings, and appeals

Administrative acts under Mexico's general law on administrative procedure must meet the following requirements: 1. be issued by a competent authority meeting the formalities of the law or decree at issue; 2. limited to determinable and precise circumstances of time and place; 3. comply with the public interest goals of the statute; 4. state in writing and signed by the issuing authority; 5. be rational and reasoned; 6. repealed; 7. issued subject to the provisions on administrative proceedings under the law; 8. issued without intervening errors on the object, cause or reason, or end of the act in question (?); 9. issued without intentional violence; 10. identification of the issuing body' 11. repealed; 12. properly identifies the documents, files, and individuals in question; 13. states the place and date of issue; 14. in the case of served administrative acts, note the location of the office where relevant records may be consulted; 15. disclosure of appeals and remedies available; 16. expressly decide all items proposed by the parties or established by law. (LFPA art. 3, last published in DOF 2000).

The following administrative penalties are available under LFPA: 1. reprimand with warning; 2. fine; additional fines per day of violation; detention for 36 hours; temporary or permanent, total or partial facilities closure; other penalties in laws or regulations. (LFPA

[580] JAN GILBREATH, ENVIRONMENT AND DEVELOPMENT IN MEXICO 86 (2003).
[581] Summary of Mexico's Environmental Laws § 8.4.
[582] Summary of Mexico's Environmental Laws § 4.2.
[583] http://www.cec.org/Storage/73/6745_03-4-ADV_en.pdf at 7.

art. 70). However, authorities must notify the offender 15 days in advance of assessing penalty in order to give the offender time to investigate and remediate. (LFPA art. 72). The authority must establish and justify its decision by considering: 1. the damage that will occur or has already occurred; 2. whether the act was intentional or by omission; 3. the seriousness of the offense; and 4. recidivism of the offender. (LFPA 73). After a hearing in which evidence is presented and the offender is present, the authority must within 10 days issue in writing the appropriate decision. (LFPA art. 74). Administrative authorities may engage the police to ensure implementation of sanctions and security measures (Art. 75). The statute of limitations on administrative penalties is 5 years continuous from the day on which the infringement occurred, the administrative offense was consummated, or since the cessation of the offense. (art. 79). If an offender attacks the validity of the administrative prescription, the administrative action can be set aside if the final decision by the collateral reviewing authority does not support the administrative action. (art. 80).

Appeals of review: Individuals affected by acts and decisions of administrative authorities may seek to end the procedure through filing an appeal for revision, or seeking judicial process (LFPA art. 80). Objections must be made in the course of the administrative proceeding, and will be considered in determining whether to end it; and failure to object may prejudice future claims. (art. 84). Complainants have 15 days to lodge an application for review from the day following that on which the decision being appealed takes affect. (art. 85). The notice of appeal must be submitted to the authority that issued the contested order and will be resolved by the supervisor, or in the case that the head of the unit issued the order, the appeal will de resolved by that person (art. 86). A letter of appeal must include: 1. administrative body to which it is addressed; 2. name of appellant, injured third-parties if any, and place of notification; 3. the act being appealed, and date on which party was notified or became aware of it; 4. the grievances caused; 5. a copy of the resolution or act in dispute and notification; 6. the evidence offered. (art. 86). Upon appeal, the measure to be implemented shall be suspended provided, 1. the appellant specifically requests it; 2. it will not cause damage to social interests or conflict with public policy; 3. there is no damage or injury to third parties; and 4. in the case of fines, the applicant ensures such can be paid through the federal tax code if necessary. (art. 87). Inadmissable appeals include acts subject to another action pending resolution; acts that do not affect the legal interests of the objector; acts that are irreparably consummated; acts pending before the courts or legal defenses brought by the petitioner. (art. 89). Appeals will be dismissed when the petitioner withdraws the appeal, dies, during the procedure grounds for inadmissibility arise, after the cessation of effects of the act in question, for lack of interest in the act in question, the act is proved not to exist. (art. 90). The agency may revoke or modify administrative acts contested by the appellant. (art. 93). It may also revoke an order or a penalty, ex officio or ex parte, in the case of manifest error or a particular show that had already complied with before. (art. 95).

5. Procedures for Criminal Prosecution

Regarding criminal matters, prior to February 2002, environmental crimes were provided in LGEEPA articles 183-187, but in 2002, these were consolidated into the CPF, now under

the title *Delitos contra el Ambiente* (Offenses against the environment), and an effort was made to create a more graduated criminal liability system.[584] Currently, Articles 414—423 of the Federal Penal Code (CPF) set out penalties for environmental crimes, including undertaking environmentally harmful activities without "applying prevention or safety measures." Penalties range from fines amounting up to 3000 times the minimum daily wage to jail terms of six months to ten years.

Under Article 21 of the Political Constitution of the United Mexican States, the Office of the Public Prosecutor (within Mexico's Department of Justice – MPF) is the sole entity with authority to request punitive action and redress before a judge in a criminal proceeding. The power is called *acción penal* --"criminal action." SEMARNAT, acting through PROFEPA, may participate in criminal investigations as a third-party intervener or assistant. The power of victims or witnesses of crime to play this role has been a part of Mexican criminal law since 1986, but was unclear with respect to SEMARNAT until LGEEPA article 182 was augmented in 2002.

Criminal investigations can be initiated on denunciations by a private party, and these can be carried out by the Office of the Attorney General of the Republic (PGR).[585] Under LGEEPA article 169, the relevant environmental authority has an affirmative obligation to notify the Office of the Public Prosecutor of acts that may constitute environmental offenses. Until 2002, however, PROFEPA "had no specialized administrative criminal law enforcement structure for pursuing, opening files on, gathering evidence on, or carrying out any other activity to substantiate the existence of environmental offenses."[586]

MPF lacked capacity to pursue difficult environmental prosecutions as well. In a 2004 human development report by UNDP on Mexico, it noted "the Office of the Public Prosecutor tends not to proceed with criminal prosecution in more complex cases, arguing, for example, lack of evidence."[587] The difficulty of proving an environmental crime may have eased to some extent after 1999 when Mexico changed the evidentiary standard for probably commission of an offense from an "elements of the offense" standard to a *corpus delicti* standard. The pertinent difference between these standards is that the former includes the latter *plus* proving the manner in which the offense was committed (either with criminal intent or negligence), whereas the latter only requires proof that the offense actually occurred (*materialidad del hecho*). The heightened standard used prior to 1999 may have played a role in the collapse of a series of criminal prosecutions against a shoe-manufacturing facility that was in chronic and severe violation of air and waste laws.[588]

In June 2001, SEMARNAT by internal regulation created the Federal Environmental Offenses and Litigation Branch. Cooperation between PGR, SEMARNAT and PROFEPA is now structured by a cooperation agreement published in the DOF in October 2004.

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[584] ALCA-Iztapalapa II, at 20.
[585] http://www.cec.org/Storage/71/6550_98-6-FR-E.pdf (Aquanova) at 10.
[586] ALCA-Iztapalapa II, at 31.
[587] United Nations Development Program, *Informe sobre desarrollo humano en Mexico 2004*, 2005, p. 150.
[588] ALCA-Iztapalapa II, at 32.

6. Compliance assurance mechanisms and their effectiveness

Mexico's efforts at environmental compliance have historically been limited by its low ability to collect and analyze date on pollution emissions, lack of modern laboratories, and understaffing (PROFEPA had around 3000 inspectors for the whole country as of 2003).[589]

7. Public disclosure of information

The Federal Transparency and Access to Public governmental Information Act (LFTAIPG) provides for public access to information across all branches of government; further, under LGEEPA, citizens have a right to environmental information within 20 days from state, federal, or municipal authorities.[590] However, Article 13 of LFTAIPG allows information to be classified as "reserved" when it may "cause serious harm to the activities to verify compliance with the law, the prevention or prosecution of crimes, administration of justice, collections from taxpayers, immigration control operations, and procedural strategies in judicial or administrative proceedings while rulings are pending." Article 26 of LFTAIPG's implementing regulation requires heads of administrative units of agencies and entities to classify information at the time the information is generated, obtained, acquired or processed; or an information access request is received (in cases where documents are not previously classified).

Information related to criminal investigations is frequently classified as reserved or restricted by the PGR; thus, even PROFEPA and SEMARNAT may be denied access to that information.[591] Requests for information can nonetheless be made through the Access to Information System of the Federal Access to Information Institute. Allegations of internal misconduct such as collusion between inspectors and regulated entities are handled by SEMARNAT's Internal Control Agency (ICA).[592] The ICA has on at least one occasion classified information related to such investigations as confidential under the LFTAIPG.[593]

8. Procedures for initiating legal actions

LGEEPA article 189 grants "any person, social group, non-governmental organization, association or corporation" the right to "file public accusations before PROFEPA or other authorities, in relation to facts, acts, or omissions that may produce an ecological imbalance or damage the environment or natural resources, or which contravene the provisions of the LGEEPA and other legislation that regulates subjects related to environmental protection, preservation, and restoration." At least one commentator has noted the effectiveness of this

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[589] JAN GILBREATH, ENVIRONMENT AND DEVELOPMENT IN MEXICO 99-102 (2003); OECD, ENVIRONMENTAL PERFORMANCE REVIEWS: MEXICO 148 (2003).
[590] Ley Federal del Transparencia y Acceso a la Información Pública Gubernamental [L.F.T.A.I.P.G.] [Federal Law of Transparency and Access to Governmental Public Information], *as amended* Diario Oficial de la Federación [D.O.], 11 de Junio de 2002 (Mex.); LGEEPA art. 159 bis 3, 159 bis 4.
[591] ALCA-Iztapalapa II, at 18.
[592] http://www.cec.org/Storage/73/6745_03-4-ADV_en.pdf at 4.
[593] http://www.cec.org/Storage/73/6745_03-4-ADV_en.pdf at 5.

provision in forcing PROFEPA to initiate investigations, especially in remote areas, and without the requirement that the complaining party satisfy traditional barriers to access to the legal system such as proving a legal interest in the case.[594]

Under Mexico's Civil Law, legal action to redress damages can be brought in three ways. The first comes under the concept of "subjective responsibility," related to the concept of injury, in Articles 1910, 1916, and 2110 of the Federal Civil Code.[595] This requires that damages caused by illicit acts or against accepted norms be redressed. However, environmental liabilities are difficult to prove under this standard because damages must be direct and an immediate consequence of the illicit act. The second method is under the concept of "objective responsibility" under Article 1913 of the Federal Civil Code. This is a form of strict liability associated with inherently hazardous materials and activities. The third is a form of nuisance under Articles 1931 and 1932 of the Civil Code, requiring property owners to redress damages caused by harmful objects, emissions or activities emanating from their property.

a. In-house prosecution capability, relationship to legal department

Coordinación General Jurídica (CGJ) unit within SEMARNAT is the office that coordinates and evaluates the legal affairs of SEMARNAT and its devolved bodies, promotes updating legal frameworks, and provides legal review and defense of decrees and NOMs.[596] Under SEMARNAT's internal regulation, CGJ has the following responsibilities:

- Direct the legal affairs of SEMARNAT, including coordination and evaluation of decentralized bodies
- Provice legal advice to Secretary and administrative units on the interpretation and application of legal frameworks, and represent them in court and administrative proceedings
- Assist in the organization and functioning of the various agencies
- Collect, systematize and publicize legislation and other regulatory legal provisions
- Promote upgrading legal frameworks for environmental protection and sustainable development from the perspective of scientific and technological advancements and legal and policy research
- Formulate and review drafts of laws, regulations, decrees, treaties, NOMs, and other legal provisions within the competence of SEMARNAT
- Validate the legality of actions taken by SEMARNAT
- Identify, systematize and disseminate the criteria for interpretation of legal provisions across all SEMARNAT units, including decentralized bodies

[594] Humberto Celis Aguilar Alvarez, *The North American Free Trade Agreement's Impact on the Development of Mexican Environmental Law*, 81 Univ. Detroit Mercy L. Rev. 411, 415-16 (2004).
[595] Summary of Mexico's Environmental Laws § 4.2. Código Civil para el Distrito Federal en Materia Común y para toda la República en Materia Federal
[596] SEMARNAT, Manual de Organizacion General de la Secretaria de Medio Ambiente y Recursos Naturales, miercoles 13 de agosto de 2003 D.O.F., at 50-51.

- Propose and carry out legal and technical studies and projects of the SEMARNAT and the various advisory committees where dictated by law or where appropriate by express determination of the Secretary
- Establish basis and criteria for instruments of legal enforcement available to administrative units of SEMARNAT
- Publish draft NOMs and their legal analysis in the Official Journal of the Federation, including legal instruments issued by SEMARNAT and its decentralized bodies
- Direct and manages expropriation cases carried out by SEMARNAT and manage and administer other properties held by SEMARNAT
- Attend court proceedings, administrative litigation, labor disputes and judgments and coordinate SEMARNAT's legal defense strategies
- Draft complaints and lawsuits necessary to assist the Attorney General of the Republic in investigation of federal crimes and assist in representing the same in criminal proceedings
- Issue resolutions as appropriate in administrative appeals
- Ensure integration of reporting and other requirements for the National Commission on Human Rights and similar bodies, and ensure with relevant units transparency and access to information
- Handle processing and termination of procurements and "conventions"
- Handle legal proceedings related to acquisition, regulation, and legal protection of properties
- Comment on appointments and removal of legal officers of decentralized bodies and the federal delegations of SEMARNAT
- Implement coordination mechanisms with legal units of federal delegations of SEMARNAT and decentralized bodies to improve performance of legal entities in the environmental and natural resources sector[597]

9. Procedures for alternative dispute resolution to achieve compliance

In the case of a shrimp aquaculture farm, Aquanova, PROFEPA initiated enforcement proceedings following a determination that the farm had destroyed 50 hectares of mangroves due to the obstruction (authorized by INE in an EIA) of a local creek. Rather than carry through enforcement actions, however, PROFEPA and Aquanova entered into an administrative agreement terminating the enforcement action and creating a committee of experts. The committee concluded that Aquanova was partially responsible for the harm to the mangroves and as a result of its report, Aquanova built hydraulic structures and initiated a Mangrove Restoration Program in 1999.[598]

[597] SEMARNAT, Manual de Organizacion General de la Secretaria de Medio Ambiente y Recursos Naturales, miercoles 13 de agosto de 2003 D.O.F., at 50-51.
[598] http://www.cec.org/Storage/71/6550_98-6-FR-E.pdf (Aquanova) at 9.

UNITED STATES

Overview: The United States is a federal republic organized by thirteen original sovereign states that came together to form a union governed by a constitution, which establishes the framework of government. The United States now comprises fifty states, the federally controlled District of Columbia, and several territories. Environmental protection and pollution control are shared responsibilities of the federal government and the states.

I. Status and Design

1. National Environmental Protection Authority

The US Environmental Protection Agency (US EPA) was established as an independent agency on December 2, 1970, by Executive Order signed by President Richard Nixon, as a response to growing concerns regarding pollution in the United States.[599] Its establishment involved the transfer of 15 units from existing agencies to the EPA, and was intended to support the stated goals of:

- "Establish[ing] and enforc[ing] environmental protection standards";
- "Conduct[ing] environmental research";
- "Provid[ing] assistance to others combatting environmental pollution";
- "Assisting the [Council on Environmental Quality] in developing and recommending to the President new policies for environmental protection."[600]

The establishment of the US EPA occurred in the same year the National Environmental Policy Act (NEPA) was enacted. NEPA was the first in a series of significant national environmental laws enacted in the 1970s that completely reshaped environmental law in the United States. US EPA is somewhat unusual as an agency of the federal government in that it was created by the President and does not have specific legislation providing its overall mission and authority. Numerous statutes enacted after the establishment of US EPA refer to it, authorize it to administer pollution control and other environmental statutes, and grant it specific powers and duties.

The National Environmental Policy Act (NEPA) was intended:

- "To declare a national policy which will encourage productive and enjoyable harmony between man and his environment";
- "To promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man";
- "To enrich our understanding of the ecological systems and natural resources important to the Nation."[601]

NEPA also created the Council on Environmental Quality which was designed to "give the President expert advice on environmental matters" and to review "Environmental Impact Statements, which were now required of all federal agencies planning projects with major

[599] Wisman, Phil (1985). "EPA History (1970-1985)." *US EnvironmentalProtection Agency*. http://www.epa.gov/history/topics/epa/15b.htm
[600] Lewis, Jack (1985). "The Birth of EPA." *US Environmental Protection Agency.* http://www.epa.gov/history/topics/epa/15c.htm
[601] Id.

environmental ramifications."[602] CEQ is in the Executive Office of the President, where its power and influence depend on the importance the President places on environmental issues. It is important to note that the requirement for an environmental impact statement (EIS) only applies to "major federal actions" having a significant impact on the environment.

In addition to US EPA and CEQ, legislation has provided a number of federal agencies with responsibilities related to the environment. The US Department of Transportation regulates some aspects of transportation of hazardous materials and fuel efficiency standards for vehicles; the Department of Energy regulates energy efficiency, the Nuclear Regulatory Commission regulates radioactive materials, and the Department of Interior regulates the environmental effects of coal mining.

a. Authorization

The Constitution of the United States establishes a framework for dividing and sharing governance responsibilities between the federal government and states. The constitution grants specific and limited powers to the federal government and reserves all powers not so specified for the states. When the federal government is authorized to act, national legislation is superior to state legislation. One of the powers granted to the federal government is the power to regulate commerce with other nations and between the states. It is this power to regulate interstate commerce that is the basis for virtually all federal legislation to control pollution. Federal statutes such as the Clean Air Act (CAA), Clean Water Act (CWA), Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) all regulate pollution because, and to the extent that, it affects interstate commerce.

Under the Constitution, the states have plenary power to protect the public health and welfare within their boundaries. Thus many states had statutes regulating pollution that pre-dated the federal pollution laws. The states retain their power to regulate pollution and their own environmental affairs in any subject area not regulated by federal statute. Among the areas that states retain authority with little or no involvement by the federal government are land use planning and control, mining other than coal, groundwater, allocation and regulation of water supply, and natural resources other than those on lands owned by the federal government.

Due to the limited but superior nature of federal legislation, most federal pollution statutes provide for shared responsibility between the federal and state governments. The Clean Air Act provided the model for this sharing of responsibility between the federal and state governments under the federal pollution laws. Under the CAA the federal government sets uniform standards for ambient air quality and emissions, but the states are allowed to implement these standards if they demonstrate to EPA that they have the authority and ability to enforce the national standards. This federalist approach recognizes that air

[602] Id.

pollution crosses state lines and clearly affects the nation as a whole while also having a particular impact in local areas.

The principal method of state involvement was through state implementation plans (SIPs). The states were given primary responsibility for designing and implementing plans to achieve the national minimum air quality standards within their boundaries. Thus they have wide latitude in choosing among the various control methods and technologies to achieve the ambient air quality standards. These could include transportation control plans (TCPs), new source performance standards, controls on existing stationary sources, and siting or zoning requirements for new sources. The SIP must be approved by the EPA and must include: enforceable emission limitations and other control measures and schedules and timetables for compliance; monitoring and modeling measures to assess ambient air quality; adequate funding, personnel, and authority for day-to-day implementation, including enforcement; provisions to ensure that in-state emissions do not interfere with another state's statutory compliance; provision for revising SIP and emergency response authority and contingency plans. When it is approved, a SIP has the force of state and federal law and is thus enforceable by the federal and state governments. In practice, these SIPs are so complex that they are in a nearly continual process of revision.

The Clean Water Act and Resource Conservation and Recovery Act use similar systems of national minimum standards established by EPA with state plans to implement those standards to control water pollution and disposal of solid and hazardous wastes. These pollution statutes also authorize the states to impose more stringent standards within their borders as long as those standards are not inconsistent with the national minimum standards. In limited instances the federal statutes preempt states from imposing more stringent standards when uniformity is considered to be an overriding national policy.

b. Governance structure

Federal agencies with primary responsibilities for NEPA are the Council on Environmental Quality (CEQ) and the US EPA.

Council on Environmental Quality.

The Council on Environmental Quality is in the Executive Office of the President, and its responsibilities include: ensuring the fulfillment of federal agency responsibilities under NEPA; the "issuance and interpretations of NEPA regulations that implement the procedural requirements of NEPA"; the review and approval of federal agency NEPA procedures; approval of "alternative arrangements for compliance with NEPA in case of emergencies," and assistance in resolving disputes "between federal agencies and with other governmental entities and members of the public."[603] The CEQ often deals with interagency conflicts.

US Environmental Protection Agency

[603] Id.

US EPA is the federal agency charged with implementing the principal federal pollution control statutes including those regulating air and water pollution; handling, treatment, and disposal of solid and hazardous wastes; pesticides and other toxic substances; and cleanup of releases of hazardous substances. US EPA promulgates national regulations establishing pollution standards, procedures and requirements for obtaining permits to release pollutants into the environment; and procedures for states to be approved by US EPA to take over implementation of most of the pollution control programs (the toxic substances control program and the hazardous substance cleanup program do not authorize states to administer those programs, although states have their own programs to clean up releases of hazardous substances within their borders).

The US EPA is involved in NEPA implementation through the review of environmental impact statements.[604] All federal agencies must submit an Environmental Impact Statement (EIS) to the US EPA for any "proposed Federal action [that] has the potential for causing significant environmental impacts."[605] This review process is known as a NEPA environmental review process, and the US EPA is typically involved as a consultant body during the development of an EIS by a federal agency.[606] Further, the US EPA serves as a collector and depository of EISs.

c. Funding (sources, oversight, monitoring)

The US EPA receives its funding from the federal government by means of submitting a budget request each fiscal year.[607] All requested funding supports the US EPA's overall mission of protecting human health and the environment, and might also be adjusted to achieve specific goals outlined that year. For example, the US EPA's budget request for FY 2011 included funding aimed towards reducing greenhouse gas emissions in permitting large sources through Clean Air Act programs. The budget request is organized by both goal and appropriation (e.g. science and technology, environmental programs and management, oil).

To receive funding from the federal government, the EPA submits its budget request to the White House Office of Management and Budget (OMB). Once approved, the OMB submits an annual President's Budget Request to the US Congress – which includes requests from all federal agencies, including the US EPA. Based on the recommendations it receives from agencies and subcommittees, US Congress then adjusts budgets for all federal agencies and releases an annual Appropriations Bill. This bill authorizes the distribution of funding for all federal agencies.

In terms of monitoring how funds are spent, several bodies are in place to ensure accountability and transparency. In the United States, there is a Government

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[604] Id.
[605] US Environmental Protection Agency (2010). "What is the National Environmental Policy Act." http://yosemite.epa.gov/r10/ecocomm.nsf/b9d67f6000e5b58888256e5900642421/e68df0446ae6daeb88256c3d006599fa!OpenDocument
[606] Id.
[607] US Environmental Protection Agency (2010). "FY 2011: Budget in Brief." http://www.epa.gov/budget/2011/2011bib.pdf

Accountability Office (GAO) is an independent, nonpartisan agency which works for Congress by serving as a watchdog. The head of the US GAO is the Comptroller General, who is appointed to a 15-year term by the President of the United States. The US GAO issues reports on the effectiveness of the implementation of various environmental statutes, and monitors all federal agencies to ensure that federal funds are "being spent efficiently and effectively."[608] US GAO US Congress also retains the power of oversight of federal agencies.

As is the case with all federal agencies in the US, the US EPA has an Office of Inspector General (OIG) whose intention is to ensure that costs claimed are acceptable and appropriate. The EPA OIG routinely "conducts financial audits of EPA grants and contracts" to "identify potentially fraudulent actions, determine the acceptability of costs claimed, and determine whether agreed-upon work was completed."[609]

The Office of the Inspector General allows employees, participants in EPA programs, and the general public to report "complaints of fraud, waste, and abuse in EPA programs and operations including mismanagement or violations of law, rules, or regulations" by mail, telephone, fax, or email.[610] These complaints are reviewed by auditors, evaluators and/or criminal investigators, and the following actions may be taken by the Office of the Inspector General in response:

1) open an OIG investigation or audit;
2) refer the matter to EPA management for appropriate review and action; or
3) refer the allegation to another Federal agency, including the Federal Bureau of Investigation.

Under the Whistleblower Protection Act, whistleblower protection is afforded to federal employees who report fraud, waste, abuse, or other illegal activities and to the general public in six of the federal environmental statutes: Clean Water Act; Clean Air Act; Safe Drinking Water Act; Toxic Substances Control Act; Solid Waste Disposal Act; and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Further, one may choose to remain anonymous when filing a complaint to the Office of the Inspector General.

US Congress provides some funding to states in the form of loans through State Revolving Loan Fund programs. Particularly notable programs are the Clean Water State Revolving Fund programs, which help states and municipalities fund water projects relating to "…wastewater treatment, nonpoint source pollution control, and watershed and estuary management."[611] To date, Clean Water State Revolving Fund programs have provided over 22,700 low-interest loans amounting to more than $68 billion to states and municipalities. Recently, these programs have provided more than $5 billion per year. The

[608] US Government Accountability Office (2010). http://www.gao.gov/
[609] US Environmental Protection Agency (2010). "EPA Office of Inspector General, Office of Audit, Forensic Audit Division." http://www.epa.gov/oig/reports/2010/OIG_forensics_brochure.pdf
[610] US Environmental Protection Agency (2010). "Office of Inspector General: Hotline." http://www.epa.gov/oig/hotline.htm
[611] US Environmental Protection Agency (2010). "Clean Water State Revolving Fund." http://www.epa.gov/owm/cwfinance/cwsrf/

US EPA also has a Drinking Water State Revolving Loan Fund, which was established as part of the 1996 Safe Drinking Water Act Amendments. This is a mechanism which helps public and private water systems ensure safe drinking water for the public. Eligible uses for funding include "installation and replacement of failing treatment facilities, eligible storage facilities and transmission and distribution systems" as well as projects "to consolidate water supplies."[612] The funds received through State Revolving Loan Funds are managed by states and municipalities.

Under environmental statues such as the Clean Air Act, states – through EPA-authorized state enforcement programs – are permitted to collect penalties for violations and fees from permits for polluting facilities. The processes of collection for these fees and penalties are subject to both state and federal oversight. At the federal level, fees and penalties collected by the US EPA go into a fund at the US Treasury, to be used by the EPA for compliance and enforcement activities.

In 2006, the US EPA proposed a National Pollutant Discharge System (NPDES) Permit Fee Incentive for Clean Water Act Section 106 Grants. According to the US EPA, "a number of States still operate their permit programs with little or no reliance on permit fees" and the EPA believes that budget strains could be relieved "through the implementation of permit fee programs that collect funds to cover the cost of issuing and administering permits." The rule the US EPA proposed in 2006, which would go into effect in 2008, would "amend the State allotment formula to incorporate financial incentives for States to utilize an adequate fee program when implementing an authorized NPDES permit program."[613] There was significant opposition to the introduction of this proposed rule, as it was believed that states, municipalities, and other permittees would have an increased burden for implementing NPDES.

d. Organizational structure

The US EPA is an independent federal agency. Like all federal agencies in the US, its head (EPA Administrator) is appointed by the President of the United States. This appointee must be confirmed by a vote in the US Senate. The current EPA Administrator is Lisa P. Jackson, who was appointed by President Barack Obama. It is the responsibility of the EPA Administrator to oversee all of the programs of the US EPA. The President also appoints Assistant Administrators for all of the US EPA Offices. Historically, the overall agency and Administrator position was created by the US President, and additional pieces – such as the Assistant Administrator positions – were added by US Congress.

The US EPA is headquartered in Washington, D.C., with the following offices in the headquarters are:

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[612] US Environmental Protection Agency (2000). "The Drinking Water State Revolving Fund: Protecting the Public through Drinking Water Infrastructure Improvements." http://www.epa.gov/safewater/dwsrf/pdfs/dwfact.pdf

[613] US Environmental Protection Agency (2006). "Proposed NPDES Permit Fee Incentive for Clean Water Act Section 106 Grants; Allotment Formula." http://www.epa.gov/owm/cwfinance/permit-fee-fact-sheet.pdf

- Office of Administration and Resources Management
- Office of Air and Radiation
- Office of Chemical Safety and Pollution Prevention
- Office of the Chief Financial Officer
- Office of Enforcement and Compliance Assurance
- Office of Environmental Information
- Office of General Counsel
- Office of Inspector General
- Office of International and Tribal Affairs
- Office of Research and Development
- Office of Solid Waste and Emergency Response
- Office of Water[614]

To effectively delegate the responsibility of oversight, the EPA maintains 10 Regional Offices throughout the country, located in Boston, New York, Philadelphia, Atlanta, Chicago, Dallas, Kansas City, Denver, San Francisco, and Seattle. Each of these Regional Offices is responsible for the execution of the Agency's programs within the states under its auspices.[615]

Beneath the EPA Administrator there is a Deputy Administrator, who acts as the chief operating officer of the agency, and a number of Assistant Administrators who head most of the offices listed above. In total, the US EPA employs 17,000 professionals, including lawyers, scientists, policy analysts, and engineers.

e. Functions, responsibilities, and staff competencies

The US EPA's 17,000 employees are responsible for a range of functions, including environmental assessment, research, standard setting, enforcement, regulation writing, and education. Together with state and local governments, the US EPA is responsible for administering and enforcing federal environmental laws. Enforcement measures include fines and sanctions. Environmental protection includes pollution prevention, energy conservation, and environmental cleanup.

f. Relationship to state agencies including oversight and grants

In the United States, the US EPA establishes baseline standards regarding environmental regulation, and authorizes state environmental programs. The US EPA creates strategic five-year plans to explain how it intends to achieve its goals of protecting human health and the environment over the period of five years. Before submission of its final plan, the US EPA releases a draft for public review and comment. State environmental programs are

[614] US Environmental Protection Agency (2010). "EPA Organizational Structure." http://www.epa.gov/aboutepa/organization.html
[615] US Environmental Protection Agency (2010). "Regional Frequent Questions." http://www.epa.gov/epahome/faqlist.htm

generally responsible for the implementation and enforcement of the federal environmental statutes, and the US EPA is responsible for oversight. Still, the US EPA has less control over state environmental agencies than Governors and Legislatures of the states. If a state does not have a law covering a substance (e.g. mercury) or medium (e.g. air) that is covered by a federal environmental statute, then the federal environmental statute applies.

According to a 1995 report by the Environmental Law Institute,[616] oversight can be defined as a "system of reporting, evaluation, and response" with the purposes of 1) "ensur[ing] that federal statutory goals are being met," and 2) "ensur[ing] the state programs are improving environmental quality in each state, regionally, and nationally."[617] In various environmental statutes, Congress indicated its desire to have in existence a system for ensuring "a state's continuing ability to implement a program after the initial authorization process."[618] To the US EPA, this means ensuring that "state environmental programs had the administrative capacity and legal authority to carry out their responsibilities under the statutes." Policy revisions in the late 1980s established a differential oversight approach towards EPA review of state and local program implementation.[619] The various aspects of these approaches are based upon "policy, criteria or procedures which reflect the new criteria, established documentation and practice."[620]

To ensure that state programs were fulfilling their responsibilities under the statutes, the US EPA created "a series of detailed reporting requirements for authorized state programs through which EPA monitors the ability of the state program to continue to meet the federal statutory goals."[621] Information sources for comprehensive evaluation of state environmental programs include "environmental indicators, … data on state implementation and enforcement actions, public input and … the state agency's own priorities and the relationship of the authorized program to other state programs."[622]

The US EPA provides a wide range of grants to states for the purposes of environmental cleanup, education, research, and pollution reduction. These grant programs fall into the following categories:

- Brownfields;
- Community Action for a Renewed Environment (CARE);
- Environmental education;
- Environmental Information Exchange Network;
- Environmental Justice;
- Fellowships and student programs;

[616] Environmental Law Institute (1995). "Federal Oversight of Authorized State Environmental Programs: Reforming the System." Washington, D.C.
[617] Id.
[618] Id.
[619] Herman, Steven A. (1993). "Memorandum: Oversight of State and Local Penalty Assessments: Revisions to the Policy Framework for State/EPA Enforcement Agreements." http://www.epa.gov/compliance/resources/policies/State/oversgt-penal-mem.pdf
[620] Id.
[621] Id.
[622] Id.

- National Clean Diesel Campaign;
- Pollution Prevention;
- State Innovation Grant Program;
- Science to Achieve Results (STAR);
- Small Business Innovation Research (SBIR);
- Water grants[623]

These grants are accessible to states and non-governmental organizations through approval of a grant application/proposal.

2. State Environmental Protection Authorities

All states have environmental protection agencies, which allows for the implementation and enforcement of federal environmental statutes to occur at a more local level. Further, most of the implementation and enforcement burden is lifted from the federal EPA. The state environmental protection agencies are each created by their respective state governments and have varying authorities and responsibilities. Most states have their own environmental protection laws, some essentially mirroring the federal laws while others have integrated statutes covering the environment in a more comprehensive manner than the federal statutes. Some states provide the state agency broad authority to protect the environment, while others limit their agency to carrying out specific tasks. At least twenty states have a provision in one or more state environmental laws requiring their environmental agency to implement standards that are no more stringent than federal standards, but many other states authorize standards that are more stringent than federal standards.

a. Authorization including relationship to national EPA

The US EPA is accountable to the US Congress, but most federal environmental statutes allow the EPA to "authorize implementation and enforcement of the various federal programs by the state environmental authority," such as a state-level Department of Environmental Protection (DEP).[624] In order for a state program to be authorized, states must demonstrate that they have "adequate authority and capability to implement and enforce the federal statute" through a submission of a specific program plan.[625] Implementation responsibility is delegated to the states because Congress recognized that "implementation of national standards is best managed at a level of government closer to the affected community and region."[626] State authorization means the state is playing the direct role of implementing the environmental program in that state, and is preempted only "if it is inconsistent with federal law."[627]

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[623] US Environmental Protection Agency (2010). "Grants and Fellowship Information." http://www.epa.gov/epahome/grants.htm

[624] Environmental Law Institute (1995). "Federal Oversight of Authorized State Environmental Programs: Reforming the System." Washington, D.C.

[625] Id.

[626] Id.

[627] Id.

The Regional Offices of the US EPA also interact regularly with states and state environmental agencies. Regions have the flexibility to tailor agreements to each state through a process "intended to be based upon mutual understanding and expectations" that fit within the framework of national program policy and the overarching objectives of the US EPA.[628] These agreements should be clear, constructive, and supportive to the states.

b. Governance structure

In outlining its suggestions for best practices for compliance and enforcement on the part of state programs, the US EPA recommends that states clearly indicate how this program would connect to other state programs. The US EPA website indicates:

> a good compliance and enforcement program should have a clear scheme for how the operations of other related organizations, agencies and levels of government fit into the program, especially the State Attorneys General or other appropriate State legal organizations.[629]

Specific suggestions from the EPA include having the state agency ensure that "the State AG, internal legal counsel, or other appropriate government legal staff are consulted on the enforcement commitments the State is making to EPA" for the purpose on ensuring "legal enforcement support and associated resources" towards achieving the stated goals of the program.[630]

After the passage of NEPA, a number of states "enacted laws requiring the state to conduct review of the environmental impacts of proposed state actions."[631] This is viewed as a "spillover effect" of NEPA, and signifies the institutionalized consideration of environmental impact in the planning activities of state agencies relating to "federally aided or federally regulated projects."[632] These are commonly known as "little NEPAs" and "…have provided a basis for environmental considerations to be recognized and addressed in the decisionmaking process."[633] In six states, these little NEPAs have been adopted by Executive Order, fifteen states have enacted legislation of "broad, general applicability," and five have "enacted laws to require environmental impact analysis in specified, limited situations."[634,635] In total, twenty-six states have imposed some requirements "relating to

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[628] Barnes, James A. (1986). "Memorandum: Revised Policy Framework for State/EPA Enforcement Agreements." http://www.epa.gov/compliance/resources/policies/State/enforce-agree-mem.pdf
[629] Id.
[630] Id.
[631] Novick, Sheldon *et al*, Eds. (2009). *Law of Environmental Protection.* "§ 7:11 – State 'NEPAs'". Washington, D.C.: Environmental Law Institute.
[632] Grad, Frank P. (2001). *Treatise on Environmental Law*. "§ 9.08: "'Little NEPAs' – State Environmental Policy Laws Using NEPA Approach." Newark: Matthew Bender & Company, Inc.
[633] Novick, Sheldon *et al*, Eds. (2009). *Law of Environmental Protection.* "§ 7:11 – State 'NEPAs'". Washington, D.C.: Environmental Law Institute.
[634] Id.
[635] Grad, Frank P. (2001). *Treatise on Environmental Law*. "§ 9.08: "'Little NEPAs' – State Environmental Policy Laws Using NEPA Approach." Newark: Matthew Bender & Company, Inc.

the filing of environmental impact statements" and the environmental review of projects conducted by the state.[636]

c. Funding (including degree of reliance on national EPA)

According to data from the Environmental Council of the States (ECOS), a non-profit organization comprising the heads of the state environmental protection agencies, federal funds contributed an average of 23 percent of the source of state environmental agency funds during the period of 2005 to 2008. This is a lower percentage than in recent years.[637] Other non-federal sources of funding include: general state revenue, permit fees, bonds, state trust funds, and "funds that are not appropriated from general fund sources."[638] Additionally, as a result of a general trend of transferring environmental implementation from the federal to state level, there was an increase in state spending on the environment in the period of 2005 to 2008. It is important to note that this additional funding came from non-traditional sources of funding. Reductions in state environmental agency budgets in FY 2010 have resulted in staff cuts and cut-backs on programs.[639]

To cite an example, a 2002 report from the National Academy of Public Administration[640] discussed data from a survey on state funding for water quality programs. Its data indicated that the "federal share of states' water program funding ranges from less than 10 percent to more than 80 percent."[641] The significant range in federal funding for state water pollution programs is a response to information and analysis on state resource needs collected by states and the US EPA. State expenditures on water quality management programs can be broken down into the following categories:

- Permitting, Compliance & Enforcement;
- Septage;
- Non-point source (NPS), Coastal NPS;
- Total Maximum Daily Loads;
- Wetlands;
- Coastal & Marine;
- Monitoring;
- Standards;
- Reporting & Planning;
- Clean Water State Revolving Fund, Grant Management[642]

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[636] Id.
[637] The Environmental Council of the States (2010). "States: Spending." http://www.ecos.org/section/States/spending
[638] Id.
[639] The Environmental Council of the States (2010). "Impacts of Reductions in FY 2010 on State Environmental Agency Budgets." http://www.ecos.org/files/4011_file_March_2010_ECOS_Green_Report.pdf
[640] National Academy of Public Administration (2002). "Understanding What States Need to Protect Water Quality." Washington, D.C.
[641] Id.
[642] Id.

In general, sources of funding for water quality programs came from federal grants, state general funds, permit fees, bonds, special taxes, and other sources.[643]

d. Accountability and reporting to national EPA

Each state must have a program for implementing federal environmental statues within the state. If, however, it does not request authorization for a state program, the US EPA "must promulgate and administer a federal program for that state."[644] The US EPA is responsible for ensuring that states comply with their approved plans. In cases of noncompliance, it is within the US EPA's authority to "apply various sanctions, culminating with removing the authorization for the state program."[645] It is also the US EPA's responsibility to ensure that the states have the administrative and resource capacity to administer its authorization program.[646]

Many states have their own requirements for reporting compliance and enforcement with environmental standards to the state Governor and Legislature. High importance is also placed on reporting back to the US EPA, as this gives the federal agency a basis for evaluating state environmental programs. Every federal environmental law (e.g. The Comprehensive Environmental Response, Compensation And Liability Act; The Federal Insecticide, Fungicide And Rodenticide Act) has its own federal reporting requirements, which are specified in the statutes.

The US EPA has specific reporting and communication requirements to evaluate how well a state is meeting its programmatic goals.[647] The reporting requirements include "self-assessments and periodic reports on program activities."[648] Review activities include file audits, inspections, annual program reviews, information database reviews, and permit reviews – and the US EPA "retains the right to directly review different aspects of the State program."[649] Requirements also exist for communication between state environmental program staff and EPA regional staff.

In recent years, states have expressed frustration at the escalation of federal reporting requirements. These reporting requirements can be seemed as burdensome and redundant since states also must report back to their own Governors and Legislatures. In an effort to ease these burdens, in 2006, the US EPA and the Environmental Council of the States (ECOS) launched the Burden Reduction Initiative to "reduce states' low-value, high-burden reporting requirements, thus conserving both states' and EPA's valuable resources"

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[643] Id.
[644] Barnes, James A. (1986). "Memorandum: Revised Policy Framework for State/EPA Enforcement Agreements." http://www.epa.gov/compliance/resources/policies/State/enforce-agree-mem.pdf
[645] Id.
[646] Id.
[647] Environmental Law Institute (1995). "Federal Oversight of Authorized State Environmental Programs: Reforming the System." Washington, D.C.
[648] Environmental Law Institute (1995). "Federal Oversight of Authorized State Environmental Programs: Reforming the System." Washington, D.C.
[649] Id.

by asking for state input on where federal reporting requirements could be either streamlined or eliminated.[650]

The US EPA has additional efforts to streamline reporting as well, such as its 2006 publication "Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act," which helps states with the development of their biennial Integrated Reports and provides jurisdictions with "a recommended reporting format and suggested content to be used in developing a single document that integrates the reporting requirements of the Clean Water Act (CWA) section 303(d), section 305(b), and section 314." This is an attempt to elucidate the desired format and content for required reporting under the Clean Water Act.

The sections below on self-reporting and self-monitoring provide insight into how these mechanisms can help reduce the reporting burden for states.

e. Functions, responsibilities, and staff competencies

With regard to responsibilities, authorized state programs typically take the lead on direct compliance and enforcement activities.[651] Nevertheless, the US EPA maintains responsibilities including "setting and ensuring achievement of national goals, objectives, and standards" as well as "ensuring that the goals of the statute are met."[652] Therefore, the US EPA is not as directly involved in implementation and enforcement but is strongly involved in ensuring that state programs fit appropriately into the national framework of federal environmental statutes.

With regard to states' relationship to the federal EPA, the US EPA is involved in the development of a state program design during the approval phase. At this stage, the US EPA is able to approve a program on the basis of "…its assessment of a state's capability to carry out a specific environmental program." Specific program elements of state programs are specified in federal statutes, and these include: " 'adequate' personnel, funding, and legal authority, inspection and reporting capacity, and 'effective' implementation capacity."[653]

State environmental agencies employ professionals with a wide range of training, including science, law, policy, technology, and engineering.

II. Functions and Operations (including allocation with states)

[650] US Environmental Protection Agency (2009). "Burden Reduction Initiative." http://www.epa.gov/burdenreduction/bi.htm
[651] Environmental Law Institute (1995). "Federal Oversight of Authorized State Environmental Programs: Reforming the System." Washington, D.C.
[652] Id.
[653] Id.

1. Environmental impact Assessment (EIA)

An Environmental Assessment (EA) is the procedure undertaken to determine whether a federal agency must conduct an Environmental Impact Statement (EIS) under NEPA. A CEQ guide for understanding NEPA explains that an EA should cover: 1) "the need for the proposal"; 2) "alternative courses of action for any proposal which involves unresolved conflicts concerning alternative uses of available resources"; 3) "the environmental impacts of the proposed action and alternatives"; and 4) "a listing of agencies and persons consulted."[654] If this assessment shows that no significant environmental impact is likely to occur, the agency can release a Finding of No Significant Impact (FONSI) and proceed with the proposed action. If this is not the case, the agency must conduct an Environmental Impact Statement (EIS).

An EIS is part of the NEPA review process, and refers to the decision-making review process as well as the actual document that "…provides a systematic, reproducible, and interdisciplinary evaluation of the potential physical, biological, cultural, and socioeconomic effects of a proposed action and its practical alternatives."[655] These actions could refer to any number of proposals – including projects, programs, policies, or plans – by various federal agencies.[656] Draft EISs (DEIS) – often prepared by private consulting firms – are submitted to the US EPA, which rates them on criteria including "Environmental Concerns," "Environmental Objections," and the overall adequacy of the draft EIS. Comments are also received from other relevant state and federal agencies, affected parties and members of the public. The federal agency then submits a final EIS (FEIS) which it has modified in accordance with the comments it received, as well as a Record of Decision (ROD) that "summarizes the decision made, the alternatives rejected, and the steps taken to minimize environmental impacts."[657] EISs are published by the US EPA in the Federal Register. Agencies may also submit Supplemental EISs if environmental impacts emerge that were not considered in the original EIS.

It is important to note that NEPA only applies to major federal actions. As such, there are many projects with significant environmental impact but no federal involvement. These projects are not required to undergo NEPA review. At the state level, some state NEPAs (also known as "mini-NEPAs") require that state agencies proposing actions prepare EISs and consider alternatives.

a. Planning, sectoral and strategic EIA

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[654] Council on Environmental Quality (2007). "A Citizen's Guide to the NEPA: Having Your Voice Heard." http://ceq.hss.doe.gov/nepa/Citizens_Guide_Dec07.pdf

[655] US Environmental Protection Agency (2009). "International Environmental Impact Assessment (EIA)." http://www.epa.gov/compliance/international/international-eia.html

[656] Id.

[657] Gerrard, M. and M. Herz (2003). "Harnessing Information Technology to Improve the Environmental Impact Review Process." *NYU Environmental Law Journal 12(1).* http://www.eli.org/pdf/seminars/NEPA/Harnessing%20Information%20Technology%20to%20Improve.pdf

Certain sectors in the US have their own internal requirements for Environmental Impact Statements. For example, the US Forest Service requires their own Environmental Impact Statements through the National Forest Management Act of 1976. This exists through other agencies as well, and there is also some existence of regional EISs if an agency is planning a large, regional program.

2. Promulgation of regulations, interpretation, and establishing guidance

The US EPA creates regulatory standards as a means for implementing goals set in federal environmental legislation.[658] Typically it is US Congress that establishes the basic national goals, but federal statues "…may also prescribe specific requirements deemed important by Congress."[659] The US EPA also may issue federal regulations which "…operate to give specific content to the basic goals or to define how the requirements are to be met."[660] This could take the form of specific achievable objectives that fit within larger overarching goals. These regulations are:

> …developed and promulgated in accordance with procedures involving public notice and comment under the Administrative Procedure Act as well as specific procedures set forth in the underlying environmental statute.[661]

The regulations have the force of law at the federal level, and "operate directly in the States unless a State develops its own environmental program for federal approval."[662] Federal environmental standards apply where federal environmental statutes exist. States may have their own environmental laws, as long as they are consistent with federal laws and at least as stringent as federal laws. Where there is not a federal law, states do not have restraints on how they set their regulations. An important example of a state's setting of standards that are more stringent than federal standards would be California's controversial setting of stringent emission standards for new vehicles.

Under most of the federal environmental statutes, the US EPA authorizes state governments to "assume some or all of the responsibility for program implementation."[663] Implementation at the state level remains subject to federal oversight.

To provide an example of a standard in a federal regulation, a national goal set forth in the Clean Water Act is "to restore and maintain the chemical, physical, and biological integrity of the Nation's water."[664] Other national goals in the Clean Water Act include:

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[658] Environmental Law Institute (1996). "Federal Regulations and State Flexibility in Environmental Standard Setting." Washington, D.C.
[659] Id.
[660] Id.
[661] Id.
[662] Id.
[663] Id.
[664] Id.

- The elimination of the discharge of pollutants into the navigable waters by 1985;
- The prohibition of the discharge of toxic pollutants in toxic amounts;
- The expeditious development and implementation of programs for the control of nonpoint sources of pollution.[665]

One major reason for the development of these national goals is to provide some guidance on how to attain the overall objectives of the federal statutes.

3. Procedure for setting and revising standards

Performance standards, set forth by the federal government, establish the level of environmental protection required, but leave it "to the regulated entity to determine the means of achieving the required level of protection."[666] Performance standards focus on environmental objectives, whereas design standards "set out the specific means for achieving a required objective."[667] Because of their specificity, design standards tend to be easier to enforce.

State programs are given some flexibility for adjusting the standards to meet local conditions, and to have the ability to promote innovation in regulation and technology. Nevertheless, state programs must remain consistent with the federal program and state programs must reflect federal performance standards. State performance standards must be no less stringent than the federal standards.[668]

4. Permits and approvals

Under Title V of the Clean Air Act, all major stationary sources of air pollution must have a permit to operate. Most permits for polluting facilities are issued by individual state and local permitting authorities, but the regulations that govern individual state and local permitting must be approved by the federal EPA.[669] The process for approving a state or local authority's approval process under the Operating Permits Program of the Clean Air Act is as follows:

1. State or local agency submits a plan for issuing permits to operate facilities that emit air pollution.
2. EPA regional offices determine whether submittal iscomplete enough for review.
3. EPA notifies States of completeness status.
4. EPA proposes to approve or disapprove in Federal Register.
5. Public given opportunity to comment on submittal.

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[665] Id.
[666] Id.
[667] Id.
[668] Id.
[669] Environmental Health & Safety Online (2009). "EPA Clean Air Act: Operating Permits: Information, Regulations, Downloads, & Links." http://www.ehso.com/caapermit.htm

6. EPA publishes final approval or disapproval of State or local operating permits program.
7. Facilities submit permit applications to agencies.
8. Agencies review and approve applications, grant operating permits.[670]

The federal government has the power to revoke states' authority to grant permits.

A similar process is in place under the Clean Water Act, where states submit program proposals to the US EPA and the EPA determines whether states have the authority to issue permits. Through Section 404 of the Clean Water Act, the discharge of dredged or fill material into navigable waters of the United States is regulated through National Pollutant Discharge Elimination System permits for point sources of water pollution. Two states – Michigan and New Jersey – have taken over their own wetland permitting under Section 404 of the Clean Water Act. The US EPA can review and comment upon all permits through the Clean Water Act and Title V of the Clean Air Act.

Other federal agencies, such as the US Department of the Interior and US Army Corps of Engineers are also involved in permitting in certain capacities. Through the Clean Water Act, the US Army Corps of Engineers has several roles, such as "administering day-to-day programs, including individual and general permit decisions."[671] Under Title V of the Surface Mining Control and Reclamation Act (SMCRA), the Office of Surface Mining (OSM), a bureau of the US Department of the Interior, plays a similar permitting role as the US EPA. Many states have the primary responsibility to regulate surface coal mining, and OSM performs an oversight role.[672] OSM has the ability to review permits for surface coal-mining, though these are largely distributed by states.

5. Research

The US EPA's Office of Research and Development (ORD) is "the scientific research arm of EPA" and is charged with "providing the solid underpinning of science and technology for the Agency."[673] The mission of ORD is to:

- Perform research and development to identify, understand, and solve current and future environmental problems;
- Provide responsive technical support to EPA;
- Integrate the work of ORD's scientific partners (other agencies, nations, private sector organizations, and academia);
- Provide leadership in addressing emerging environmental issues and in advancing the science and technology of risk assessment and risk management.[674]

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[670] Id.
[671] US Environmental Protection Agency (2009). "Clean Water Act, Section 404." http://www.epa.gov/Wetlands/regs/sec404.html
[672] Office of Surface Mining (2010). "Regulating Coal Mines." http://www.osmre.gov/rcm/rcm.shtm
[673] US Environmental Protection Agency (2010). "Research & Development: Basic Information." http://epa.gov/ord/htm/aboutord.htm
[674] Id.

The topics of research from the Office of Research and Development include prevention of pollution, protection of human health, and reduction of risk, and is conducted in laboratories, research centers, offices, and field sites throughout the country.[675] More specifically, the program areas under which research is conducted are: air, computational toxicology, drinking water, ecology, global change, human health, land, pesticides and toxics, water quality, human health risk assessment, sustainability, and nanotechnology[676].

To support research around the country, the US EPA provides funding through its STAR grant program to "improve the scientific basis for decisions on national environmental issues" through research, graduate fellowships, and the establishment of research centers in environmental science and engineering disciplines."[677] Further, the US EPA ORD collaborates "with academic institutions and other scientific organizations to advance its science through the establishment of research centers and partnerships."[678] Findings are published in news releases, the EPA R&D website, and R&D publications.[679]

Other governmental structures for environmental research in the US include the National Institute of Environmental Health Sciences (NIEHS),[680] which is part of the National Institutes of Health (NIH) through the US Department of Health and Human Services (DHHS). Its mission is "to reduce the burden of human illness and disability by understanding how the environment influences the development and progression of human disease." The environmental influences that the NIEHS looks at include dioxins, endocrine disrupters, mold, pesticides, lead, and mercury. The NIEHS also funds research outside of the institute through its funding grants to various independent investigators, agencies, universities, and organizations.

Another relevant institution is the National Center for Environmental Health (NCEH)[681] through the Centers for Disease Control and Prevention. The NCEH "plans, directs, and coordinates a national program to maintain and improve the health of the American people by promoting a healthy environment and by preventing premature death and avoidable illness and disability caused by non-infectious, non-occupational environmental and related factors." In particular, the NCEH focuses on vulnerable populations such as children, the elderly, and people with disabilities, and works on research to connect environmental hazards and adverse health effects.

Additionally, one of the four organizations of the National Academies is the National Research Council,[682] which has a Division on Earth and Life Studies that "encompasses activities where policy meets the realm of science and the environment." The US EPA

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[675] Id.
[676] US Environmental Protection Agency (2010). "Research & Development: Basic Information – How We Conduct Research." http://epa.gov/ord/htm/aboutord-research.htm
[677] Id.
[678] Id.
[679] Id.
[680] National Institute of Environmental Health Sciences (2010). http://www.niehs.nih.gov/
[681] National Center for Environmental Health (2010). http://www.cdc.gov/nceh/
[682] National Research Council (2010). http://sites.nationalacademies.org/NRC/index.htm

may contract with the National Research Council to do research, and may conduct joint studies with the National Research Council.

6. Economic and other reviews of proposed legislation or regulations

Since 1983, with the issuance of Executive Order 12291, it has been mandatory for federal agencies to assess the costs, benefits, and economic analysis of major rules. This Executive Order was originally issued by US President Ronald Reagan, and has been renewed by every President since then. The Executive Order also created a formal review process by the Office of Management and Budget.[683] Following the issuance of this Executive Order, the EPA developed its own guidelines for conducting regulatory impact analysis to review the potential effects of a proposed rule. The US EPA has a valuable publication entitled "Guidelines for Preparing Economic Analysis," which provides a framework and guidance for "performing economic analyses of environmental regulations and policies."[684] Topics covered in the guidelines include:

- Treatment of uncertainty and non-monetary information
- Estimating the value of reducing fatal risks
- Defining baseline conditions (i.e., contrasting the state of the economy and environment with and without a proposed regulatory policy).
- Discounting and comparing differences in the timing of benefits and costs
- Examining environmental justice concerns in economic analyses
- Assessing who pays the costs and receives the benefits of regulations
- Locating available data sources for conducting economic analyses.[685]

These guidelines, and economic analysis more broadly, are viewed as a helpful way of ensuring environmental protection, high quality economic analyses, and "an overarching framework for economic analyses throughout the Agency and across EPA Program Offices."[686] Executive Order 12866 also requires economic analysis of regulatory actions.

Various statutes – including Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks" – also mandate economic analyses of policy actions.[687] Further, major federal environmental statutes have precise specifications on analysis. For example, the Clean Air Act has specific restrictions on the use of cost-benefit analyses. There are also a number of wide-reaching federal regulations that have specific requirements for federal agencies and their administrative procedures.

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[683] US Environmental Protection Agency (2000). "Guidelines for Preparing Economic Analyses." http://yosemite.epa.gov/EE/epa/eed.nsf/webpages/Guidelines.html/$file/Ch1-5.pdf
[684] US Environmental Protection Agency (2010). "National Center for Environmental Economics: Guidelines for Preparing Economic Analyses." http://yosemite.epa.gov/EE/epa/eed.nsf/webpages/Guidelines.html
[685] Id.
[686] Id.
[687] Id.

For example, the Paperwork Reduction Act of 1980 laid out a process for reducing the amount of paperwork handled by the US government and the general public. [688] Among other goals, the Paperwork Reduction Act is designed primarily to:

> Minimize the paperwork burden for individuals, small businesses, educational and nonprofit institutions, federal contractors, state, local and tribal governments, and other persons resulting from the collection of information by or for the federal government.[689]

It is also designed to effectively maximize the usefulness of information created, collected, and disseminated by or for the federal government, and to improve the quality of this information. The Paperwork Reduction Act also established the Office of Information and Regulatory Affairs within the Office of Management and Budget. It is the responsibility of this office to administer the functions of the Paperwork Reduction Act. As a part of the federal government, the US EPA is subject to this law.

The Data Quality Act of 2001, also known as the Information Quality Act, is another Act addressing government procedure. The Data Quality Act requires the Office of Management and Budget to provide "policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies." This Act has been viewed by some as an attempt by the business community to limit the release of information that could undermine their economic interests.

The Freedom of Information Act (FOIA) of 1966 establishes the public's right to obtain information from federal government agencies.[690] It is designed to improve government transparency, and "any person" – including US citizens, foreign nationals, organizations, associations, and universities have the right to file a FOIA request in writing. Each federal agency "is responsible for meeting its FOIA responsibilities for its own records."[691] Some records are protected from disclosure by certain FOIA exemptions, and FOIA "does not apply to records held by Congress, the courts, or by state and local government agencies."[692]

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[688] Department of Commerce (2005). "The Paperwork Reduction Act and Information Collections Policy." http://ocio.os.doc.gov/ITPolicyandPrograms/Information_Collection/dev01_003742
[689] Id.
[690] The National Security Archive (2009). "FOIA Basics." http://www.gwu.edu/~nsarchiv/nsa/foia/guide.html
[691] US Department of Justice (2010). "Freedom of Information Act (FOIA)." http://www.justice.gov/oip/
[692] Environmental Protection Agency (2010). "Freedom of Information Act (FOIA)." http://www.epa.gov/foia/

7. Special programs such as compliance assistance for small and medium sized enterprises

In the United States, there are a number of resources available to reduce the burden of regulations on small businesses. To outline the resources available to small businesses, the US EPA has a guide entitled "Environmental Assistance Services for Small Businesses: A Resource Guide."[693] This outlines the services, legislation, and assistance programs in place to help small businesses comply with environmental regulations. In terms of divisions and offices, the US EPA has a Small Business Division and Office of the Small Business Ombudsman – who acts as an advocate for small businesses. There is also legislation in place relating to small businesses, including the Small Business Regulatory Enforcement Fairness Act, and the Small Business Regulatory Flexibility Act.[694] Many states and the federal government also have measures for providing tax relief to small businesses, as is apparent through the introduction of the Small Business Tax Relief and Job Growth Act of 2010.

A number of assistance programs also exist with the intention of helping small businesses comply with environmental regulations. These include Compliance Assistance Centers, Industry Sector-based Performance Partnership Programs, and the State Small Business Assistance Program, which was "established to provide technical assistance to small businesses at the state level in response to requirements in the Clean Air Act Amendments of 1990."[695] The Small Business Assistance Program is a component of the state government.

8. Approaches to critically polluted areas or new generation "area-based" pollution management for multiple sources to achieve ambient quality outcomes

The EPA has a number of approaches for dealing with area-based pollution and critically polluted areas. In terms of air pollution, the Office of Air Quality Planning and Standards uses an area-based approach by managing "EPA programs to improve air quality in areas where the current quality is unacceptable and to prevent deterioration in areas where the air is relatively free of contamination."[696] The US EPA also has detailed annual data on pollution levels of six common air pollutants, which have safe levels established through

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[693] US Environmental Protection Agency (2001). "Environmental Assistance Services for Small Businesses: A Resource Guide." http://nepis.epa.gov/Exe/ZyNET.exe/2000E5S2.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=3&TocRestrict=n&Toc=&TocEntry=&QField=pubnumber^%22231B01001%22&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=pubnumber&IntQFieldOp=1&ExtQFieldOp=1&XmlQuery=&File=D%3A\zyfiles\Index%20Data\00thru05\Txt\00000004\2000E5S2.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h|-&MaximumDocuments=10&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p|f&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=xv

[694] Id.

[695] Id.

[696] US Environmental Protection Agency (2010). "Air Pollution Monitoring." http://www.epa.gov/oar/oaqps/montring.html#criteria

the National Ambient Air Quality Standard (NAAQS). The annual EPA publication "National Air Quality and Emissions Trends Report" provides data on local area trends as well.[697] The US EPA also uses an Air Quality Index to measure local air pollution.

A tool in place to address impaired waters is Section 303(d) of the Clean Water Act. This section requires states, territories, and authorized tribes to create lists within their borders that are considered impaired – that is, "too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes."[698] After a water segment is placed on the list, the state is required to develop a Total Maximum Daily Load (TMDL) calculation to determine a maximum amount of a specific pollutant (e.g. mercury) that "a waterbody can receive and still safely meet water quality standards."[699] For point sources, which are permitted through the National Pollutant Discharge Elimination System (NPDES), Wasteload Allocation (WLA) is the term given to "the portion of a receiving water's loading capacity" attributed to one of these sources.[700] For nonpoint sources and natural background sources, Load Allocation (LA) is the term for the portion of the loading capacity attributed to these inputs.[701] Margin of Safety (MOS) refers to "a required component of the TMDL that accounts for the uncertainty in the response of the waterbody to loading reductions."[702] While some states require the development of implementation plans for TMDLs, unfortunately the Clean Water Act does not explicitly require the implementation of the TMDLs. An emerging area around TMDLs is a more area-based, watershed approach, as this could potentially be a better way to address water pollution.

One area-based tool in the Clean Air Act is known as Prevention of Significant Deterioration (PSD), and applies to new major sources of pollutants or major modifications at existing sources "for pollutants where the area the source is located is in attainment or unclassifiable with the National Ambient Air Quality Standards (NAAQS)."[703] The requirements of Prevention of Significant Deterioration include: 1) installation of the "Best Available Control Technology (BACT)"; 2) an air quality analysis; 3) an additional impacts analysis; and 4) public involvement. The goals of PSD include ensuring that any decision to permit increased air pollution "…is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decision making process."[704] PSD has been found to work well in practice.

An example of successful area-based approaches to water management would take the form of regional river basin commissions under the authority of the US EPA. One

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[697] US Environmental Protection Agency (2010). "Air Trends." http://www.epa.gov/airtrends/
[698] US Environmental Protection Agency (2010). "Impaired Waters and Total Maximum Daily Loads." http://www.epa.gov/owow/tmdl/
[699] id
[700] US Environmental Protection Agency (2010). "Impaired Waters and Total Maximum Daily Loads: Glossary." http://www.epa.gov/owow/tmdl/glossary.html#w
[701] id
[702] id
[703] US Environmental Protection Agency (2010). "Prevention of Significant Deterioration (PSD) Basic Information." http://www.epa.gov/nsr/psd.html
[704] id

successful example is the Delaware River Basin Commission, which is a regional body comprised of the state Governors from the four states in the basin, and a Division Engineer from the US Army Corps of Engineers. The programs of this Commission include "water quality protection, water supply allocation, regulatory review (permitting), water conservation initiatives, watershed planning, drought management, flood loss reduction, and recreation."[705] This is viewed as a successful example of regional, watershed-based natural resource management.

9. Procedure for redressing grievances including establishment, operation, and effectiveness and use of conflict resolution methods

There are a number of procedures in place for redressing grievances with the US EPA. The US EPA has an Environmental Appeals Board through which permit applicants and members of the public can make appeals on permit decisions and civil penalty decisions. The US EPA also has an Office of Administrative Law Judges, which "conduct[s] hearings and render[s] decisions in proceedings between the EPA and persons, businesses, government entities, and other organizations which are or are alleged to be regulated under environmental laws."[706] The Administrative Law Judges mostly deal with enforcement and permit proceedings.

Environmental Conflict Resolution, or third-party assisted conflict resolution and collaborative problem solving, can be used to address conflicts and grievances between states, federal agencies, citizen groups, and other players. The different procedures which fall under the umbrella term "Environmental Conflict Resolution" are discussed later in this document.[707]

10. Procedures to assure public outreach and transparency

There are overarching transparency requirements with which all federal agencies, including the US EPA, must comply. These include:

- As mentioned above and later in the document, the **Administrative Procedure Act of 1946** is a federal law that governs the way in which federal agencies may propose and establish regulations. The Administrative Procedure Act includes numerous provisions for ensuring transparency and public involvement in the rulemaking process.

- The **Government in the Sunshine Act of 1976** also seeks greater openness and transparency in government agencies by requiring open meetings, public notice of meetings, making transcripts of closed meetings publicly available, and

[705] Delaware River Basin Commission (2010). "DRBC Overview." http://www.State.nj.us/drbc/over.htm
[706] US Environmental Protection Agency (2010). "Office of Administrative Law Judges." http://www.epa.gov/oalj/
[707] US Institute for Environmental Conflict Resolution (2010). "Types of ECR Processes." http://www.ecr.gov/Basics/SampleProcessOutline.aspx

publishing notice of regulations in the Federal Register. Agencies must report annually to Congress regarding their compliance with these requirements.

- The **Freedom of Information Act (FOIA) of 1966** improves government transparency by establishing the right of the public to obtain information from federal government agencies, through requests in writing.

- The **Emergency Planning & Community Right to Know Act (EPCRA) of 1986** establishes "requirements for Federal, state and local governments, Indian Tribes, and industry regarding emergency planning and 'Community Right-to-Know' reporting on hazardous and toxic chemicals."[708] This Act was in response to the disaster in Bhopal, India, among others, that raised concerns about insufficient public knowledge and access to information about chemicals at particular facilities.

These regulations are overarching and apply to all federal agencies.

In response to federal regulations, the EPA proactively provides information on a number of issues. Most federal environmental statutes have specifications regarding transparency; for example, reports required by the Clean Air Act are generally available to the public. Another example is that the Clean Water Act requires anyone holding a NPDES (National Pollutant Discharge Elimination System) permit to monitor discharge and report to the agency. The EPA also holds public meetings through which the public can provide comments on rulemaking, in compliance with the Administrative Procedure Act – which is discussed in more detail in the "Citizen Participation" section of this document. Additionally, all EPA decisions are entered into the Federal Register.

Various offices within the US EPA also conduct public outreach, particularly with regard to human health. For example, the US EPA issues advice and guidelines to women of child-bearing age, children, and the general public relating to the consumption of fish. The US EPA also releases a National Listing of Fish Advisories every year.[709] On the issue of mercury in fish, the US EPA collaborated with the US Food and Drug Administration (FDA) to produce consumption advice. For more localized outreach, the US EPA generally works with local governments to develop effective public outreach campaigns.[710]

a. Public private partnerships

The US EPA frequently uses public-private partnerships to enhance its effectiveness. These partnerships are strictly voluntary and "separate from the Agency's regulatory

[708] US Environmental Protection Agency (2009). "Emergency Planning and Community Right-to-Know Act Overview." http://www.epa.gov/emergencies/content/lawsregs/epcraover.htm
[709] US Environmental Protection Agency (2010). "Fish Advisories: Public Information." http://www.epa.gov/fishadvisories/publicinfo.html
[710] US Environmental Protection Agency (2010). "Getting in Step: A Guide for Conducting Watershed Outreach Campaigns." http://www.epa.gov/watertrain/gettinginstep/

responsibilities."[711] With regard to pesticide regulation, for example, the US EPA has "formed partnerships with a wide range of organizations to test pest control practices that reduce pesticide risk."[712] These partnerships can help the US EPA develop strategies which help farmers adopt new practices to control pests and to help them save money. According to the US EPA, these partnerships are "…built on a working relationship based on mutual trust, respect, and the sharing of information."[713] This can lead to enhanced environmental protection.

Another example of public-private partnership is with regard to the maintenance and operation of publicly-owned and -operated municipal wastewater facilities. The decision to incorporate private sector participation in public services is left up to the local government, and is usually motivated by a desire to "realize cost savings, utilize expertise, achieve efficiencies in construction and operation, access private capital, and improve the quality of water and wastewater services."[714] The role of the private sector can range from providing basic services or supplies (e.g. chemicals), or participating in the construction, operation, and ownership of the system under a contract.[715]

Another example of the use of public-private partnerships was the Performance Track, launched by the EPA in June 2000 under President George W. Bush. This program had two main components: the National Environmental Performance Track program, and the Performance Track Corporate Leader designation in 2004. To qualify for the Performance Track program, facilities would have to:

- Operate beyond regulatory requirements;
- Demonstrate commitment to continuous improvement;
- Successfully develop and implement an environmental management system (EMS) that has been through one complete cycle; and
- Be actively involved with their communities.[716]

The program "encouraged continuous environmental improvement through environmental management systems, community outreach, and measurable results."[717] Results from the partnership included reductions in water use, conservation of land, and reduced greenhouse gas emissions. The program was terminated by the EPA in May 2009 under President Barack Obama.

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[711] US Environmental Protection Agency (2010). "Pesticides: Grants and Partnerships – How Public-Private Partnerships Work." http://www.epa.gov/pesticides/grants/how.htm
[712] Id.
[713] Id.
[714] US Environmental Protection Agency (2008). "Clean Water Financing: Public-Private Partnerships (Privatization)." http://www.epa.gov/owm/cwfinance/privatization.htm
[715] Id.
[716] US Environmental Protection Agency (2004). "National Environmental Performance Track and the Clean Water State Revolving Fund." http://www.epa.gov/owm/cwfinance/cwsrf/performancetrack.pdf
[717] US Environmental Protection Agency (2009). "National Environmental Performance Track." http://www.epa.gov/perftrac/

11. Relationship with industry (and other regulated entities)

In dealing with industry, the US EPA must balance the need to gain industry's support and cooperation with the need to enforce the laws.[718] The US EPA has a history of consulting with affected industries during the process of developing environmental statutes, including the Clean Air Act, but it is worth noting that the US EPA's relationship with industry can vary considerably from one industry to the next – ranging from collaborative to confrontational.[719] There are also still areas where it is believed that the relationship between the EPA and industry could be improved. For example, US Congress recently considered amending the Toxic Substances Control Act (TSCA) to provide greater authority for US EPA to reevaluate existing chemicals. A range of industry views emerged in response to this, including some conceding that TSCA could be revised while others expressed concern that increased EPA authority through proposed amendments could negatively affect industry profits.

It is a generally-accepted principle that industry tends to value a certain and predictable regulatory environment, and the US EPA is responsive to this need with consistency in its regulatory programs. The US EPA also has policies which encourage compliance and provide benefits to industry. For example, through the Voluntary Audit Policy, regulated entities can enjoy reduced civil penalties for self-discovery, disclosure, correction, and preventions of violating regulations.

The US EPA also has some involvement in non-regulatory programs in which industries may voluntarily choose to participate. An example of one of these programs might be the EnergyStar program, operated jointly by the US EPA and US Department of Energy, which "offers incentives to manufacturers and businesses to utilize energy efficient products and practices."[720]

It is not uncommon for industry trade associations to create voluntary consensus standards. The extensive list of trade associations with voluntary consensus standards include: American Gas Association, American Petroleum Institute, International Organization for Standardization (which sets ISO 14001, giving requirements for environmental management systems) and International Civil Aviation Organization.[721] Industry standards are also set by the American National Standards Institute (ANSI) and ASTM International (formerly known as the American Society for Testing and Materials). For both bodies, membership is voluntary and is open to industries as well as government agencies, academic bodies, and more.

In terms of compliance with environmental regulations, the US EPA offers a significant amount of compliance assistance to regulated communities – businesses, federal facilities,

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[718] US Environmental Protection Agency (1993). "EPA's Relationship with Industry." http://www.epa.gov/history/publications/reilly/30.htm
[719] Id.
[720] American National Standards Institute (2010). "US Government Agencies." http://www.standardsportal.org/usa_en/USG/epa.aspx
[721] Id.

local governments and tribes.[722] The US EPA's Office of Enforcement and Compliance Assistance (OECA) offers assistance in the form of one-to-one counseling, online resource centers, fact sheets, guides and trainings. Information is organized on the US EPA's Compliance Assistance website in the following categories:

> 1) **Industry and Government Sectors** ("specific compliance information for industry and government sectors");
>
> 2) **Statute-specific assistance** ("assistance tools for specific statutes or regulations");
>
> 3) **Financing for Environmental Compliance** ("financial and technical assistance resources to help communities create a plan to finance environmental capital assets");
>
> 4) **Compliance Assistance Centers** ("provides easy-to understand compliance information targeted to specific industry and government sectors").[723]

According to the US EPA's Compliance Assistance website, providers of assistance include "EPA regional office staff; state, local, and tribal governments; federal and state small business and pollution prevention technical assistance extension agents, consultants, and trade associations." As mentioned above, the US EPA also has compliance incentives, such as voluntary self-disclosure, which encourage compliance.

> ***a. Mechanisms for sharing information on pollution prevention and compliance assistance, what conflicts arise and how are they resolved***

Many of the resources above which provide compliance assistance also provide resources for pollution prevention. For example, the Clean Air Act Compliance Assistance site[724] provides the following user-friendly resources for reducing pollution:

- **Leak Detection and Repair: A Best Practices Guide**, which is "intended for use by regulated entities as well as compliance inspectors" and which provides best practices to be used in implementing an effective/model LDAR program;
- **Compliance Assistance Tool for Clean Air Act Regulations: Subpart GGG of 40 CFR NESHAPS for Source Category Pharmaceutical Production** which "helps owners and operators of pharmaceutical manufactured operations understand and

[722] US Environmental Protection Agency (2010). "Compliance Assistance." http://www.epa.gov/compliance/assistance/index.html
[723] Id.
[724] US Environmental Protection Agency (2009). "Clean Air Act Compliance Assistance." http://www.epa.gov/compliance/assistance/bystatute/caa/index.html

comply with the air pollution regulations for the pharmaceutical industry";

- **Technology Transfer Network** which is "a collection of technical Web sites containing information about many areas of air pollution science, technology, regulation, measurement, and prevention." It is also noted that "the TTN serves as a public forum for the exchange of technical information and ideas among participants and EPA staff."[725]

These resources are just a few examples of the mechanisms in place for sharing information on pollution prevention and compliance assistance.

12. Procedures for inspections, frequency of inspections, mechanisms for targeted inspections, self-monitoring and other means of assuring compliance

Most US environmental statutes and regulations include the capacity for the US EPA and its regulatory partners to conduct inspections or evaluations. The frequency of inspection is specified by each individual statute, as is the procedure for providing notice of inspection and conducting the inspection. The US EPA also provides a lengthy inspection manual for each statute, covering topics including warrants, safety, and interviewing techniques. These manuals are online in their entirety, and are intended for use by "federal inspectors who conduct compliance monitoring activities" and also to orient and train state and tribal inspectors.[726]

EPA officials regularly conduct site visits to gather information to ensure that the facility is in compliance with federal regulations. Activities to be conducted during the on-site visit include:

- interviewing facility or site representatives,
- reviewing records and reports,
- taking photographs,
- collecting samples, and
- observing facility or site operations.[727]

The inspection process for sites under the Clean Air Act is slightly different, and Full Compliance Evaluations or Partial Compliance Evaluations are used to ensure compliance.

Every three years, the EPA sets national enforcement priorities, based on environmental impact, significance of noncompliance, and the appropriateness of federal action to address the noncompliance.[728] Once these priorities are selected, they serve as the basis for

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[725] Id.
[726] US Environmental Protection Agency (2009). "Federal Insecticide, Fungicide, and Rodenticide Act Inspection Manual." http://www.epa.gov/compliance/resources/publications/monitoring/fifra/manuals/fifra/index.html
[727] Id.
[728] Beveridge & Diamond PC (2010). "EPA Seeks Comment on Proposed National Enforcement Priorities for 2011-2013." http://www.bdlaw.com/news-765.html

"targeted inspections, compliance assistance, and enforcement actions nationwide."[729] This is an effective way to deal with particularly problematic issues. Some of the candidates for national enforcement priority for 2011 to 2013 are Concentrated Animal Feeding Operations (CAFOs), Mineral Processing, and community based approaches to Environmental Justice.

To lighten the burden on the US EPA, it is often permissible for industry, business, and government officials to conduct self-evaluations. Tools available for this include Audit Protocols, environmental screening checklists, and workbooks to help these parties ensure that they are in compliance with federal environmental regulations.[730] Each statute (e.g. Clean Water Act, Toxic Substances Control Act) has its own specifications for inspections.

Additionally, there is a division of inspection responsibility between states and the US EPA. The federal environmental statutes set out conditions under which states may receive primary enforcement responsibility for conducting inspections. If the EPA Administrator approves a state plan for inspections, a state can then enter into a cooperative agreement with the Administrator.[731] In the 2006 report entitled "State Environmental Agency Contributions to Enforcement and Compliance: 2000-2003" by the Environmental Council of the States, data is provided on the number of compliance inspections conducted by states for each statute.[732]

An ongoing challenge for enforcement of many of the federal environmental statutes is how to deal with non-registered and non-permitted sources of pollution. Non-permitted facilities are subject to some regulations – for example, inspection of non-permitted facilities is allowed under the Clean Water Act – but these regulations tend to be fairly limited. Therefore, it is generally viewed as preferable to have permitted facilities – as these can be regulated more efficiently. However, the use of civil enforcement and criminal enforcement can be used to deal with violators. More information on the use of these enforcement tools can be found in the "Procedures for imposing penalties and fines for non-compliance" section of this document.

13. Procedure for environmental monitoring and how data is shared with stakeholders

Environmental monitoring exists to ensure compliance with the environmental legislation. According to a revised "Policy Framework for State/EPA Enforcement Agreements," the four objectives of compliance monitoring are:

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[729] Id.
[730] US Environmental Protection Agency (2009). "Compliance Monitoring: Inspections and Evaluations." http://www.epa.gov/compliance/monitoring/inspections/
[731] US Enviromental Protection Agency (1981). *FIFRA Inspection Manual* – Chapter 4: Federal/State Cooperation. http://www.epa.gov/compliance/resources/publications/monitoring/fifra/manuals/fifra/fiframanch_04.pdf
[732] The Environmental Council of the States (2006). "State Environmental Agency Contributions to Enforcement and Compliance: 2000-2003." http://www.ecos.org/files/3895_file_ENF_Report_2006_Final_Doc.pdf

1) "Reviewing source compliance status to identify potential violations";
2) "Helping to establish an enforcement presence";
3) "Collecting evidence necessary to support enforcement actions regarding identified violations"; and
4) "Developing an understanding of compliance patterns of the regulated community to aid in targeting activity, establishing compliance/enforcement priorities, evaluating strategies, and communicating information to the public."[733]

The strategy for different compliance monitoring programs is intended to reflect a balance between broad and targeted coverage. Broad coverage is desired "…to substantiate the reliability of compliance statistics and establish an enforcement presence."[734] Targeted coverage is specifically intended for dealing with "…those sources most likely to be out of compliance or those violations presenting the most serious environmental or public health risk."[735]

Through amendments to the Clean Air Act, the EPA set National Ambient Air Quality Standards mandated by law for pollutants considered harmful to public health and the environment. Methods for achieving these goals include using national standards and strategies to control air emissions from stationary and mobile sources.[736] A major component of monitoring efforts is the Ambient Air Monitoring Program, through which air quality samples are collected to observe pollution trends and provide information for a research database. Thousands of air quality monitoring stations exist throughout the country to measure air pollutant levels. There are several categories of air monitoring stations: State and Local Monitoring Stations (4,000 monitoring stations), National Air Monitoring Stations (1,080 monitoring stations), Special Purpose Monitoring Stations, and Photochemical Assessment Monitoring Stations. The Clean Water Act does not have permanent water quality monitors, though the US Geological Survey and US EPA do monitor water pollution. A number of questions and areas for improvement include determining how to address pollution from non-point sources that do not require permits.

The US EPA is also responsible for developing mechanisms for sharing information, which usually must be accompanied by good systems of information management. A preferred mechanism in place for sharing information is the National Environmental Information Exchange Network, which receives funding from US Congress and has participation from the US EPA, states, and many tribes and territories.[737] The network allows states and municipalities to view data and success stories from other parts of the country relating to air quality, groundwater resources, water quality, and more. Below the national level, there

[733] Barnes, James A. (1986). "Memorandum: Revised Policy Framework for State/EPA Enforcement Agreements." http://www.epa.gov/compliance/resources/policies/State/enforce-agree-mem.pdf
[734] Id.
[735] Id.
[736] US Environmental Protection Agency (2010). "Ambient Air Monitoring QA Program." http://epa.gov/airquality/qa/monprog.html
[737] The Environmental Council of the States (2009). "State/EPA Commitment to the Full Implementation of the National Environmental Information Exchange Network." http://www.ecos.org/content/policy/detail/3539/

are also regional systems for sharing information at a more local level. Examples of regional information sharing networks include:

- **Great Lakes Information Network (GLIN)** amongst eight US states (Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, and New York); Ontario, Canada; federal agencies; and other public and private groups in the US and Canada.[738]

- **Gulf of Maine Environmental Data and Information Management System (EDIMS)** among three US states (Massachusetts, New Hampshire, and Maine) and two Canadian provinces (New Brunswick and Nova Scotia).[739]

- **Northwest Environmental Database** with the states and tribes of the Pacific Northwest (Montana, Idaho, Washington, and Oregon) who worked together to build two region-wide rivers information systems with data on fisheries and wildlife.[740]

In general, information sharing is viewed as an important and valuable practice, and the US EPA seeks to promote the sharing of information amongst various actors and between public and private sectors.[741] In some cases, specific organizations such as the Water Information Sharing and Analysis Center (WaterISAC) exist to facilitate the sharing of information.[742]

14. Measures or indicators of progress toward ambient quality goals and compliances with standards

The US EPA has specific requirements for measuring progress under the 1993 Government Performance and Results Act (GPRA), which "holds federal agencies accountable for using resources wisely and achieving program results."[743] Some of the specific requirements under GPRA are for agencies to create five-year Strategic Plans, Annual Performance Plans, and Annual Performance and Accountability Reports. This applies to all government agencies, which must come up with their own goals and measures. However, in general, GPRA has proved somewhat difficult to implement across the whole government.

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[738] Evans, John D. (1997). "Infrastructure for Sharing Geographic Information Among Environmental Agenices." PhD Dissertation. http://web.mit.edu/jdevans/thesis.html
[739] Id.
[740] Id.
[741] US Environmental Protection Agency (2004). "Water Security: Information Sharing." http://cfpub.epa.gov/safewater/watersecurity/infosharing.cfm
[742] Id.
[743] US Environmental Protection Agency (2009). "Government Performance and Results Act." http://www.epa.gov/ocfo/planning/gpra.htm

In the US EPA in recent years, there has been a consistent use of performance measurement "in the Agency's strategic planning, indicator, and performance management arenas."[744] The EPA*Stat* Quarterly Report (EQR) is an important compilation of performance data. EPA*Stat* is a quarterly report is linked to the outcome-oriented goals outlined in EPA's 2006-2011 strategic plan, and includes both national and regional information.[745] Marcus Peacock, former Deputy Administrator of the US EPA from 2005 to 2009, had a strong interest in accountability and performance management.

Specific environmental statutes and programs within the US EPA also develop their own performance measures to help them track their progress toward their stated goals. For example, performance measures under the Superfund program include:

- Sitewide Ready for Anticipated Use (SWRAU) measure;
- Human Exposure Under Control (HEUC) measure;
- Groundwater Migration Under Control (GMUC) measure;
- Final Assessment Decision (FAD) measure;
- Construction Completed (CC) measure;[746]

For progress on air and water pollution, the US EPA publishes annual data on pollution levels to provide a basis for measuring trends over years. For air, goals are set for levels of six particular air pollutants, and the National Ambient Air Quality Standard is also used to measure air quality.[747] For water, states are generally the ones to set water quality standards, but water quality in the United States has not been monitored as well as air quality.

15. Procedures for addressing cross sectoral environmental issues with sectoral ministries/departments and how to address damage due to conflicts in policies

Conflicts between two or more federal agencies in a development plan or environmental project can be addressed by the final decision-maker in the Record of Decision. Cross-sectoral issues and conflicts between agencies are also dealt with through the President's Council on Environmental Quality. If a conflict cannot be resolved at a lower level, a letter can be submitted to CEQ in consultation with the Department's Office of Environmental Policy and Compliance. CEQ could then review the matter, and provide a recommendation to the agencies informally or formally.[748]

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[744] US Environmental Protection Agency (2009). "President's Quality Award." http://www.epa.gov/pqa/
[745] US Environmental Protection Agency (2009). "EPAStat Quarterly Report." http://www.epa.gov/ocfo/eqr/index-archive.htm
[746] US Environmental Protection Agency (2010). "Superfund: Accomplishments and Performance Measures." http://www.epa.gov/superfund/accomplishments.htm
[747] US Environmental Protection Agency (2010). "US Makes Progress Toward Cleaner Air: National trends show improvements in the nation's air quality." http://yosemite.epa.gov/opa/admpress.nsf/e51aa292bac25b0b85257359003d925f/fce9ac2ade9accb6852576e20064e20c!OpenDocument
[748] Fish and Wildlife Service (1994). "505 FW2 NEPA Assistance." http://www.fws.gov/policy/505fw2.html

More frequently, however, the Office of Management and Budget works on the resolution of inter-agency conflicts if there is any kind of budget issue. Sometimes issues are resolved just by who gets the funding, which is determined by the Office of Management and Budget, but larger disputes can go to the President.

Sometimes conflicts between agencies occur because of particular environmental statutes. For example §7 of the Endangered Species Act requires all federal agencies to conserve threatened and endangered species whenever a proposed action could affect a species listed on the Endangered Species List maintained by the US Fish and Wildlife Service, or threaten its habitat. For these federal actions, federal agencies must consult with the Fish and Wildlife Service. An interesting body relating to the Endangered Species Act is the "God Squad," which is composed of seven Cabinet-level members: the Administrator of the US Environmental Protection Agency, the Administrator of the National Oceanic and Atmospheric Administration, the Chairman of the Council of Economic Advisers, the Secretary of Agriculture, the Secretary of the Army, the Secretary of the Interior, and a representative from the affected state. This committee has the authority to exempt a federal agency from requirements under §7 of the Endangered Species Act.

Workable solutions to conflicts between agency policies can sometimes be found through processes of Environmental Conflict Resolution.[749] A 2005 policy memorandum from the Office of Management and Budget and the President's Council on Environmental Quality set forth "Basic Principles for Agency Engagement in Environmental Conflict Resolution and Collaborative Problem Solving."[750] This was produced in consultation with the Departments of Agriculture, Army, Commerce, Defense, Energy, Homeland Security, Interior, Justice, Navy, Transportation, the Office of Management and Budget, the Environmental Protection Agency, the Federal Energy Regulatory Commission, and the Council on Environmental Quality.[751] The goals of this policy memorandum were to:

- Share responsibility for environmental quality and resource management across agencies with divergent missions, with state, local and tribal governments, and in partnership with the private sector.

- Create management operations that will improve environmental decision-making processes and the quality of decisions within the context of existing regulatory frameworks and consistent with governmental missions and mandates.

[749] US Institute for Environmental Conflict Resolution (2010). "Federal ECR Policy." http://www.ecr.gov/Resources/FederalECRPolicy/FederalECRPolicy.aspx
[750] Id.
[751] Id.

- Strengthen compliance with environmental laws by using more effective information and data sharing tools to achieve objectives and reduce enforcement challenges.[752]

Alternative Dispute Resolution processes, and collaborative approaches more generally, are often preferred over litigation, because of litigation's costly nature. The 2005 memorandum provides examples of conflicts resolved through Environmental Conflict Resolution processes.

16. Capacity building programs for state agencies

The US EPA is committed to helping state agency programs build the capacity needed to fulfill their responsibilities of enforcement and implementation. Program development grants used to be very common through the US EPA, but are now less common because most states have their programs sufficiently developed. Efforts are still in place, however, to support these programs and there are grants to help states establish comprehensive programs where additional development is required. An example of a grant with this intended purpose would be the Wetland Program Development Grants.[753]

State, territorial, and tribal organizations can apply for these grants, and their equivalent counterparts in other topics. For example, federal grants are also available for these parties to build capacity to address children's environmental health, pollution prevention, and underground storage tanks. The EPA also has a National Enforcement Training Institute (NETI) which aims to provide needed skills and training to ensure compliance with federal environmental laws.[754]

III. Citizen Participation

1. Procedures for citizen monitoring, stakeholder involvement, advisory committees, community engagement, inclusive decision making, and public participation

The regulatory system for environmental protection in the US offers opportunities for public participation at several critical junctures in rulemaking, compliance, and enforcement processes. With regard to compliance, the US EPA emphasizes the importance of both self-monitoring and self-reporting by individuals and permitted industries. Citizen monitoring is promoted as an effective way to foster widespread compliance and participation in enforcement, and it also shifts some of the regulatory burden away from federal agencies. The US EPA also provides opportunities for citizens

[752] US Institute for Environmental Conflict Resolution (2005). "Interagency Initiative to Foster Collaborative Problem Solving and Environmental Conflict Resolution: Briefing Report for Federal Department Leadership." http://www.ecr.gov/pdf/BR.pdf
[753] US Environmental Protection Agency (2010). "Wetlands." http://www.epa.gov/owow/wetlands/
[754] US Environmental Protection Agency (2010). "National Enforcement Training Institute." http://www.epa.gov/compliance/training/neti/

to report environmental violations and emergencies through hotlines, online forms, and local government offices.[755]

Most federal environmental laws have routine self-reporting requirements, and "…industries can be required to monitor routinely their own emissions or discharges, and report these to the government."[756] A well-known self-reporting requirement is found in the Clean Water Act, through which "…all persons holding a water pollution discharge (NPDES) permit must file periodic Discharge Monitoring Reports with the federal or state government."[757] A US EPA Audit Policy called "Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations" establishes federal agency incentives for voluntary compliance with environmental laws. This policy encourages regulated entities to "voluntarily discover, disclose, and correct violations of environmental requirements."[758] Incentives for self-policing include up to 75 percent mitigation in penalties and "a recommendation for no criminal prosecution of the violations against [the] entity."[759] The US EPA specifies activities which render an entity eligible for penalty mitigation, which include:

- **Systematic discovery** of the violation through an environmental audit or the implementation of a compliance management system;
- **Voluntary discovery** of the violation was not detected as a result of a legally required monitoring, sampling or auditing procedure;
- **Prompt disclosure** in writing to EPA within 21 days of discovery or such shorter time as may be required by law. Discovery occurs when any officer, director, employee or agent of the facility has an objectively reasonable basis for believing that a violation has or may have occurred;
- **Independent discovery and disclosure** before EPA or another regulator would likely have identified the violation through its own investigation or based on information provided by a third-party;
- **Correction and remediation** within 60 calendar days, in most cases, from the date of discovery;
- **Prevent recurrence** of the violation;
- **Repeat violations are ineligible**, that is, the specific (or closely related) violations have occurred at the same facility within the past 3 years or those that have occurred as part of a pattern at multiple facilities owned or operated by the same entity within the past 5 years; if the facility has been newly acquired, the existence of a

[755] US Environmental Protection Agency Region 10 (2010). "Environmental Violations and Complaints." http://yosemite.epa.gov/R10/enforce.nsf/dfc74aae099c57048825650f0070cb1e/b20d9627ee9d5337882569050052a267?OpenDocument
[756] US Environmental Protection Agency Region 10 (2010). "Introduction to Enforcement." http://yosemite.epa.gov/r10/enforce.NSF/Our+Office/Introduction+to+Enforcement
[757] Id.
[758] US Environmental Protection Agency (2010). "Mid-Atlantic Federal Facilities: Self-Monitoring." http://www.epa.gov/region03/federal_facilities/selfmonitoring.htm
[759] US Environmental Protection Agency (2010). "Compliance Incentives and Auditing: EPA's Audit Policy." http://www.epa.gov/compliance/incentives/auditing/auditpolicy.html

violation prior to acquisition does not trigger the repeat violations exclusion;
- **Certain types of violations are ineligible** such as those that result in serious actual harm, those that may have presented an imminent and substantial endangerment, and those that violate the specific terms of an administrative or judicial order or consent agreement;
- **Cooperation** by the disclosing entity is required.[760]

To safeguard against failure to monitor or report accurately, it is recommended that self-reporting requirements be "combined with a program of field audits by government personnel."[761]

An important piece of legislation relating to transparency and public participation is the Administrative Procedure Act,[762] which specifies means for ensuring transparency and public participation in rulemaking. According to the Administrative Procedure Act, information that must be made available to the public includes: 1) descriptions of each agency's central and field organization, 2) statements of each agency's general course and method, 3) rules of procedure, 4) substantive rules of general applicability.[763] For the purposes of public inspection and copying, each agency also must make available all final opinions and court orders, "those statements of policy and interpretations which have been adopted by the agency and are not published in the Federal Register," and other information is deemed relevant to the public.[764] Under the Freedom of Information Act (FOIA), individuals also have the right to request any records held by a federal agency.

The Administrative Procedure Act also requires a certain degree of openness in agency meetings, where a "meeting" is defined as "…the deliberations of at least the number of individual agency members required to take action on behalf of the agency where such deliberations determine or result in the joint conduct or disposition of official agency business…."[765] There exist specific procedures through which portions of such meetings can be closed to the public, including instances where "any person whose interests may be directly affected by a portion of the meeting requests that the agency close such portion to the public" for reasons including situations where openness could involve:

- …accusing any person of a crime, or formally censuring any person;
- disclos[ing] information of a personal nature where disclosure would constitute a clearly unwarranted invasion of personal privacy;

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[760] Id.
[761] US Environmental Protection Agency Region 10 (2010). "Introduction to Enforcement." http://yosemite.epa.gov/r10/enforce.NSF/Our+Office/Introduction+to+Enforcement
[762] US National Archives and Records Administration (2010). "Administrative Procedure Act (5 U.S.C. Subchapter II)." http://www.archives.gov/federal-register/laws/administrative-procedure/
[763] US National Archives and Records Administration (2010). "Administrative Procedure Act: The Freedom of Information Act." http://www.archives.gov/federal-register/laws/administrative-procedure/552.html
[764] Id.
[765] US National Archives and Records Administration (2010). "Administrative Procedure Act: United States Code." http://www.archives.gov/federal-register/laws/administrative-procedure/552b.html

- disclos[ing] investigatory records compiled for law enforcement purposes, or information which if written would be contained in such records…[766]

Under such circumstances, agency members must vote to decide whether to close a portion of the meeting to the public. Within one day of such a vote, the agency "shall make publicly available a written copy of such a vote reflecting the vote of each member on the question."[767]

Significantly, during the rulemaking process there is a requirement that agencies must provide general notice of proposed rule making in the Federal Register.[768] This notice should include:

> (1) "a statement of the time, place, and nature of public rule making proceedings";
> (2) "reference to the legal authority under which the rule is proposed"; and
> (3) "either the terms or substance of the proposed rule or a description of the subjects and issues involved"[769]

After the required notice has been provided, the agency hosting the public rule making proceedings must "…give interested persons an opportunity to participate in the rulemaking through submission of written data, views, or arguments with or without opportunity for oral presentation." This opportunity for public commenting is a critical component of public participation during rulemaking proceedings.

The Federal Advisory Committee Act of 1972 also places an emphasis on open meetings, chartering, public involvement, and reporting. One of the requirements of FACA is that, when an agency creates an advisory committee, meetings must be announced and open to the public.

In the United States, there is the existence of *qui tam*, which allows private individuals who assists in a prosecution to receive a portion of the penalty imposed. This is most often used in the context of oil and gas royalties.

Under the Resource Conservation and Recovery Act (RCRA), and other statutes, private actors can receive injunctive relief – though not damages. Citizens are able to bring suit to the same extent that the government can. Further, even if a state initiates proceedings and the agency takes administrative action, a citizen suit can still continue parallel to the government suit. Under Section 505(a) of the Clean Water Act, private citizens can "commence a civil action for injunctive relief and/or the imposition of civil penalties in federal district court against any person 'alleged to be in violation' of the conditions of a National Pollutant Discharge Elimination System (NPDES) permit."[770]

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[766] Id.
[767] Id.
[768] US National Archives and Records Administration (2010). "Administrative Procedure Act: United States Code." http://www.archives.gov/federal-register/laws/administrative-procedure/553.html
[769] Id.
[770] US Supreme Court Center (2010). "Gwaltney v. Chesapeake Bay Found., 484 U.S. 49 (1987)." http://supreme.justia.com/us/484/49/

2. Examples of public involvement that improved outcomes will be provided

There are many examples of public involvement in citizen suits that have been successful in the United States. One frequently-cited example is Chesapeake Bay Foundation and Natural Resources Defense Council v. Gwaltney of Smithfield, Ltd. in 1986. The Chesapeake Bay Foundation and Natural Resources Defense Council filed a citizen suit under Section 505 of the Clean Water Act against Gwaltney of Smithfield, Inc. "alleging violations of the pollutant effluent limits contained in Gwaltney's National Pollutant Discharge Elimination System (NPDES) permit."[771] In this case, the district court found violations and awarded civil penalties. This case then went to the Supreme Court, which rejected the lower court's ruling. However, a payment was still made to the US Treasury and affected citizens.

Non-profit organizations in the United States such as the Natural Resources Defense Council, Environmental Defense Fund, and Earthjustice frequently bring citizen suits against corporations, industries, and government bodies for violations of environmental laws.

III. Legal Assessment (to the extent not incorporated in individual topics above)

1. National authorization and oversight of state programs

As discussed above, most of the major federal environmental statutes allow the US EPA to authorize state environmental authorities to implement and enforce various federal programs. In order to receive this authorization states must submit their plan for a specific program, which the US EPA will decides whether or not to approve. Authorization of a state program suspends the direct federal role of implementing the environmental program in that state.[772]

a. Methods of assuring compliance and enforcement at the state level

There are a number of mechanisms in place to assure compliance and enforcement at the state level. For the most part, agreements between state and federal governments are produced in a format such as: grant agreements, State/EPA Agreements, and Memoranda

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[771] Open Jurist. "791 F2d 304 Chesapeake Bay Foundation Inc v. Gwaltney of Smithfield Ltd." http://openjurist.org/791/f2d/304/chesapeake-bay-foundation-inc-v-gwaltney-of-smithfield-ltd

[772] Environmental Law Institute (1995). "Federal Oversight of Authorized State Environmental Programs: Reforming the System." Washington, D.C.

of Agreement or Understanding.[773] These documents may translate directly to "specific output commitments and formal reporting requirements" and the various EPA Regions should conduct an annual review with the States to determine whether revisions or additions are needed.[774] In most cases, the written agreements should generally be considered multi-year, which "[minimizes] the need to renegotiate the agreements each year."[775]

During the creation of these processes, the US EPA recommends early involvement of state personnel (e.g. state program staff, those overseeing field operations, staff attorneys, the state Attorneys General) and regional personnel (e.g. operating level program staff, Regional Counsel staff, and top management). Additionally, the US EPA recommends effective communication and coordination with other relevant parties, including the state Attorney General and state legal staff.[776]

As discussed above, the US has a strong system of compliance and enforcement. In addition to compliance and enforcement at the state level, the EPA reviews every permit under the Clean Water Act, and can review every permit under the Clean Air Act.

b. Methods used that are beyond command and control

An example of a method used beyond command and control would be a provision within the "Acid Rain Program" of the Clean Air Act Amendments of 1990. This provision, approved by Congress, set-up a cap and trade program for sulfur dioxide (SO_2). This program was mainly directed toward US electric utilities, and allowances were distributed without cost to participants.[777]

Another interesting partnership is the National Environmental Performance Partnership System (NEPPS), through which the US EPA and states together build results-based environmental management systems "in which goals, priorities, and strategies are based on information about environmental conditions."[778] The use of performance measures is critical to the implementation of performance partnerships. To implement performance partnerships on the ground, EPA and state officials can develop Performance Partnership Agreements (PPAs), and states can also combine their environmental program grants in Performance Partnership Grants (PPGs). State participation in performance partnerships is voluntary.

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[773] Barnes, James A. (1986). "Memorandum: Revised Policy Framework for State/EPA Enforcement Agreements." http://www.epa.gov/compliance/resources/policies/State/enforce-agree-mem.pdf
[774] Id.
[775] Id.
[776] Id.
[777] Haites, Erik *et al* (2002). *An emerging market for the environment: A Guide to Emissions Trading.* Denmark: UNEP Division of Technology, Industry and Economics; UNEP Collaborating Centre on Energy and Environment; UNCTAD/Earth Council Carbon Market Programme. *(Joint Publication)*
[778] US Environmental Protection Agency (2010). "About Performance Partnerships." http://www.epa.gov/ocirpage/nepps/about.htm

Under the Resources and Conservation Recovery Act (RCRA), the US EPA has outlined requirements for financial responsibility. The US EPA has promulgated regulations requiring "owners/operators of hazardous waste management facilities to perform closure in response to the general mandate in the Resource Conservation and Recovery Act (RCRA) of 1976." RCRA requires operators to provide evidence of closing the facility.[779]

The US EPA also has a Clean Air Interstate Rule (CAIR) which was issued in 2005 under George W. Bush. This rule seeks to "achieve the largest reduction in air pollution in more than a decade."[780] This rule seeks to permanently cap emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x) across 28 eastern states and the District of Columbia. Expected success is measured in health benefits and visibility benefits. Also related to CAIR is the Ozone Transport Assessment Group (OTAG), through which the EPA worked with the 37 eastern-most states and the District of Columbia to address ozone transport over a two-year period.[781]

Permit trading exists for a number of environmental programs. The Clean Water Act has a trading program for trading permits under the National Pollutant Discharge Elimination System (NPDES). These water quality trading programs "allow facilities facing higher pollution control costs to meet their regulatory obligations by purchasing environmentally equivalent (or superior) pollution reductions from another source at lower cost, thus achieving the same water quality improvement at lower overall cost."[782] This is seen as an effective tool, because it allows for pollutant reductions to be achieved faster and at lower cost.

It is important to note that the past decade has seen an emergence of regional emissions trading programs to reduce greenhouse gases. One of the most well-known regional emissions trading programs in the US is the Regional Greenhouse Gas Initiative (RGGI) program, which is "the first mandatory, market-based effort in the United States to reduce greenhouse gas emissions."[783] Ten northeastern and mid-Atlantic states in RGGI are aiming to cap and reduce CO_2 emissions from the power sector by 10 percent by 2018. Another regional emissions trading program is the Western Climate Initiative, which consists of seven Western US states and four Canadian provinces. The US also has the Midwestern Greenhouse Gas Reduction Accord, which is a regional emissions trading program consisting of 6 mid-Western US states and 1 Canadian province.

Information on the former Performance Track Program of the US EPA, another method used beyond command and control, can be found above in the section on "Public-private partnerships."

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[779] US Department of Energy (1995). "RCRA Corrective Action and Closure." http://homer.ornl.gov/nuclearsafety/env/guidance/rcra/closur.pdf

[780] US Environmental Protection Agency (2010). "Clean Air Interstate Rule." http://www.epa.gov/interstateairquality/

[781] US Environmental Protection Agency (2008). "Information on Rules for Reducing Regional Transport of Ground-Level Ozone (Smog)." http://www.epa.gov/ttncaaa1/otagsip.html

[782] US Environmental Protection Agency (2010). "Water Quality Trading." http://www.epa.gov/OWOW/watershed/trading.htm

[783] RGGI, Inc. (2010). "Regional Greenhouse Gas Initiative." http://www.rggi.org/home

2. Allocation of enforcement between national and state agencies

As described above, most enforcement responsibilities with regard to environmental laws are delegated to state environmental programs. However, the US EPA retains its authority to enforce its requirements against violators.[784]

According to the US EPA, high quality programs for enforcement help to ensure that the "timely and appropriate enforcement response to violations."[785] Standards for what constitutes "timely and appropriate action" are based upon national program guidance through benchmarks and milestones. These expectations should then be tailored to procedures and authorities in particular states, and the particular circumstances surrounding the violation.[786]

a. Methods of resolving conflicts

Environmental Conflict Resolution (ECR) can be used in a broad range of conflict types, including those relating to: management of public lands; disputes over the rights to use natural resources; siting of facilities; disagreements over protected areas; and Federal and Tribal government relations.[787] Other conflict types could be administrative adjudicatory disputes, civil judicial disputes, policy/rule disputes, intra- and interagency disputes, and disputes with non-federal persons/entities.[788] According to the US Institute for Environmental Conflict Resolution:

> ECR processes can be applied during a policy development or planning process, or in the context of rulemaking, administrative decision making, enforcement, or litigation and can include conflicts between federal, state, local, tribal, public interest organizations, citizens groups and business and industry where a federal agency has ultimate responsibility for decision-making.[789]

Because of the frequency with which environmental conflicts may occur, it is important to have a comprehensive toolbox of methods for resolving such conflicts.

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[784] Environmental Law Institute (1995). "Comparison of Federal-State Allocation of Responsibility in Five Environmental Statutes." Washington, D.C.
[785] Herman, Steven A. (1993). "Memorandum: Oversight of State and Local Penalty Assessments: Revisions to the Policy Framework for State/EPA Enforcement Agreements." http://www.epa.gov/compliance/resources/policies/State/oversgt-penal-mem.pdf
[786] Id.
[787] US Institute for Environmental Conflict Resolution (2010). "The Basics of ECR." http://www.ecr.gov/Basics/Basics.aspx
[788] US Institute for Environmental Conflict Resolution (2010). "Types of ECR Processes." http://www.ecr.gov/Basics/SampleProcessOutline.aspx
[789] Id.

3. Procedures for prosecuting criminal violations

Tools available for prosecuting criminal violations include criminal sanctions such as fines, penalties, and/or incarceration; and cash penalties, which amount to, "…at a minimum, […] recovery of the economic benefit of non-compliance plus some appreciable portion reflecting the gravity of the violation."[790] The recovery of economic benefit gained from non-compliance is very important, and relatively unique.

The in-house prosecution capability of the US EPA is through its criminal enforcement program, which uses "stringent sanctions, including jail sentences, to promote deterrence and help ensure compliance in order to protect human health and the environment."[791] The criminal enforcement program of the US EPA was established in 1982 to combat environmental crime. Then, in 1988, the US EPA was granted full law enforcement authority by US Congress, and the program was expanded in 1990 with the Pollution Prosecution Act.[792]

The US EPA does have a criminal investigation team, but crimes are typically prosecuted by the Department of Justice. Through the program, there has been successful prosecution of "significant violations across all major environmental statutes" and has a staff of fully designated federal law enforcement agents, environmental forensic scientists and engineers, attorneys and training specialists.[793] According to its website, the program:

> works closely with other federal, state, tribal and local law enforcement authorities, both to investigate and successfully prosecute criminal violations and to build the criminal enforcement capacity of other units of government.[794]

The program has more than 40 Area and Resident offices nationwide, as well as a forensics laboratory and multiple training facilities.

4. Procedures for imposing penalties and fines for non-compliance

Between state and federal agencies, there are numerous mechanisms in place to impose penalties and fines for non-compliance with environmental regulations. These tools are seen as a significant part of the US EPA's federal enforcement program, and are viewed as

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[790] Id.
[791] US Environmental Protection Agency (2010). "Criminal Enforcement." http://www.epa.gov/compliance/criminal/index.html
[792] US Environmental Protection Agency (2010). "Criminal Enforcement: Basic Information." http://www.epa.gov/compliance/basics/criminal.html
[793] Id.
[794] Id.

"a critical ingredient to creating the deterrence we need to encourage the regulated community to anticipate, identify and correct violations."[795]

Tools which can be used by the US EPA to enforce federal requirements against individual sources include: Notice, Administrative Compliance Order, Administrative Penalty Order, Civil Action, as well as criminal penalties, recordkeeping and monitoring, and noncompliance penalties.[796] The ability to enforce penalties in instances of violation is seen as "some assurance of equity between those who choose to comply with requirements and those who violate requirements." Further, the existence of enforceable consequences lends credibility to institutions such as the US EPA.[797]

The US Department of Justice, Environment and Natural Resources Division, is often involved in coordinating environmental law enforcement efforts between states. The US DOJ works with state Attorney Generals to guide decisions on whether multiple states should pursue joint enforcement of laws. Joint approaches are particularly useful when a case "is large and complex, involves multi-state facilities or national issues, or involves claims under several environmental statutes when federal and state resources and authority can complement each other." Joint approaches are also useful for conflicts.[798] Issues between states often relate involve management of water resources that are shared by two or more states.

5. System for administrative penalties, hearings, and appeals

Those in violation of the regulations of the US EPA are subject to administrative penalties. Statutes including the Toxic Substances Control Act (TSCA); Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); and the Resource Conservation and Recovery Act (RCRA) tend to heavily use administrative enforcement cases.[799] Penalties can be civil, judicial, or administrative, and criminal enforcement can include jail sentences.

Each environmental statute has its own regulatory requirements, and under each environmental statute the enforcement programs are divided up depending on the source.

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[795] Herman, Steven A. (1993). "Memorandum: Oversight of State and Local Penalty Assessments: Revisions to the Policy Framework for State/EPA Enforcement Agreements." http://www.epa.gov/compliance/resources/policies/State/oversgt-penal-mem.pdf

[796] Id.

[797] Id.

[798] National Association of Attorneys General; United States Department of Justice, Environment & Natural Resources Division (2003). "Guidelines for Joint State/Federal Civil Environmental Enforcement Litigation."

[799] US Environmental Protection Act (1989). "Overview of EPA Federal Penalty Practices: FY 1988." http://nepis.epa.gov/Exe/ZyNET.exe/20014EL2.txt?ZyActionD=ZyDocument&Client=EPA&Index=1986%20Thru%201990&Docs=&Query=&Time=&EndTime=&SearchMethod=3&TocRestrict=n&Toc=&TocEntry=&QField=pubnumber^%22906R88101%22&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=pubnumber&IntQFieldOp=1&ExtQFieldOp=1&XmlQuery=&File=D%3A\ZYFILES\INDEX%20DATA\86THRU90\TXT\00000015\20014EL2.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h|-&MaximumDocuments=10&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p|f&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=6

With the Clean Air Act, there are different programs for dealing with stationary sources (e.g. factories) and mobile sources (e.g. cars). The US EPA has different enforcement priorities at different times; for example, coal-fired power plants are currently an enforcement priority under the Clean Air Act.[800] Additionally, the US EPA has National Enforcement Initiatives, which are set to focus resources toward the most significant environmental problems of a three year time period.[801]

The US EPA creates an "EPA Annual Hearings Report," which includes details on all of the EPA Testimony Statements which took place in Congressional Hearings before the US House of Representatives and US Senate. The Office of Congressional and Intergovernmental Relations also maintains these records through its website for "Legislative Hearings and Testimony."[802]

The Environmental Appeals Board of the US EPA offers an opportunity for members of the public and permit applicants to make appeals to permit decisions and civil penalty decisions. Cases sometimes relate to petitions for "reimbursement of costs incurred in complying with cleanup orders issued under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)." This body is the final Agency decision-maker on administrative appeals under the major environmental statutes administered by the US EPA.[803]

6. Compliance assurance mechanisms and their effectiveness

Mechanisms for assuring compliance with regulations include self-monitoring and self-reporting, inspections and/or compliance evaluations, penalties, and fines. In most cases, it is the responsibility of states to "address significant noncompliance and major sources of concern."[804] Nevertheless, the Regional Offices also have some responsibility. The US EPA indicates:

> Regions should be sensitive to the broad concerns of State Programs including minor sources and the need to be responsive to citizen complaints. Regions should discuss the State's perspective on both its own and national priorities, and take into account State priorities to the extent possible.[805]

While responsibility is often delegated to state authorities, this does not imply that states gain federal power. Instead, "…the federal government relies on the states' own inherent

[800] US Environmental Protection Agency (2010). "Civil Enforcement." http://www.epa.gov/compliance/civil/index.html
[801] US Environmental Protection Agency (2010). "National Enforcement Initiatives for Fiscal Years 2008-2010." http://www.epa.gov/compliance/data/planning/priorities/index.html
[802] US Environmental Protection Agency (2010). "Frequently Asked Questions About Congressional Transcripts and Testimony Statements of EPA Officials." http://www.epa.gov/ocir/hearings/faq.htm
[803] US Environmental Protection Agency (2010). "Environmental Appeals Board." http://www.epa.gov/eab/
[804] Id.
[805] Id.

and constitutional powers to carry out environmental implementation responsibilities."[806] Further, the US EPA retains residual enforcement authority and is entitled to take direct enforcement action when a state is either unwilling or unable to establish a strong enforcement presence.[807]

a. Self monitoring and reporting and public disclosure of information

Information on self monitoring and reporting and public disclosure of information can be found in the "Procedures for citizen monitoring, stakeholder involvement, advisory committees, community engagement, inclusive decision making, and public participation" section earlier in this document.

7. Procedures for initiating legal actions

The US EPA may initiate legal action if a state is unable or unwilling to carry out enforcement action. In general, however, it is useful for states to have the capacity to carry out enforcement actions, and the Region "may focus its resources on helping the state develop a state-specific compliance and enforcement program…."[808] Specific procedures for initiating legal actions can vary from one environmental statute to the next, and can depend upon the severity of the violation. Tools that can be used include: information requests, Warning Letter/Notice of Violation, Administrative Compliance Orders, Judicial Actions, Corrective Action Orders, Corrective Action Letters, and Compliance Orders.[809] Lawyers from the Environmental Protection Agency are typically involved in the initiation of legal action, as is the US Department of Justice.

a. In-house prosecution capability, relationship to legal department

Within the US EPA, the Civil Enforcement program brings polluters into compliance with federal environmental regulations and does not require the use of criminal sanctions. The Cleanup Enforcement also ensures remediation or cleanup of a waste site or facility.

The US EPA also has an Office of General Counsel, which is the chief legal advisor to the US EPA and provides "legal support for Agency rules and policies, case-by-case decisions (such as permits and response actions), and legislation."[810] The Office of Enforcement and Compliance Assistance – which is separate from the Office of General Counsel – can bring civil and administrative enforcement actions, but not criminal enforcement actions. In courts, civil enforcement is typically carried out by the US Department of Justice.

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[806] Environmental Law Institute (1995). "Federal Oversight of Authorized State Environmental Programs: Reforming the System." Washington, D.C.
[807] Id.
[808] US Environmental Protection Agency (2009). "UST/LUST Enforcement Procedures Guidance Manual OSWER Directive 9610.11 May 1990." http://www.epa.gov/oust/directiv/od961011.htm#sec2-1
[809] Id.
[810] US Environmental Protection Agency (2010). "Office of General Counsel." http://www.epa.gov/ogc/

For information on criminal enforcement through the US EPA, refer to "Procedures for prosecuting criminal violations" above.

8. Procedures for alternative dispute resolution to achieve compliance

A broad category of methods for conflict resolution is Alternative Dispute Resolution (ADR), which "refers to the resolution of disputes through non-adversarial processes with the assistance of an impartial third party."[811] These "non-adversarial processes" include arbitration and mediation. Other Environmental Conflict Resolution processes include:

- Case Evaluation/Neutral Evaluation
- Collaborative Monitoring
- Conflict Assessment
- Conflict Resolution
- Consensus Building
- Dispute Systems Design
- Facilitation
- Joint Fact-Finding
- Mediation
- Negotiated Rulemaking
- Policy Dialogue
- Process Design[812]

Litigation is also used as a means for resolving conflicts, but ADR is often preferred because of the amount of resources needed for litigation – and because of the broad range of alternative methods available.

[811] US Institute for Environmental Conflict Resolution (2010). "Types of ECR Processes." http://www.ecr.gov/Basics/SampleProcessOutline.aspx
[812] Id.

ADDITIONAL INFORMATION FROM SELECTED COUNTRIES

AUSTRALIA

THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS AND INSTITUTIONS UNDER AUSTRALIAN LAW

Environmental impact assessment (EIA) in Australia is carried out at the federal ("Commonwealth") level under the Environmental Protection and Biodiversity Conservation Act of 1999 (EPBC Act). The EPBC Act requires EIA for projects impacting the following eight matters of "national environmental significance": world heritage sites; national heritage sites; wetlands of international importance; listed threatened species and communities; listed migratory species; nuclear activities; the marine environment; and the Great Barrier Reef Marine Park.[813] EIA is also required for actions taken on Commonwealth land or that will affect the environment of Commonwealth land, and actions taken by the Commonwealth or its agencies that have an impact on the environment inside or outside Australian jurisdiction.[814] The Act provides a procedure for adding to this list by legislative amendment or regulation, with the process for accomplishing this to be done through mandated consultation with state and territorial governments.[815] However, this authority has not been used to date. Actors required to comply with the act include private parties, state, local, and territory governments and the Commonwealth itself.

I. Basic Process

The practice of seeking project approval under EPBC Act has evolved into a fairly standard practice of "routine due diligence" in which proponents almost always seek a referral to the Minister for Environment Protection, Heritage and the Arts (the Minister) for whether an EIA is required for a proposed activity. The Minister (or his delegated representative) then makes a determination about whether the activity falls within the scope of the Act.[816] If the referral process leads to a determination that an assessment is required, that assessment may be performed by the state or territorial government if that government has an accredited process under a bilateral agreement with the Commonwealth. Currently all state and territory governments have such agreements.[817] (For more on state roles in EIA see below.)

For actions that cannot be assessed under a bilateral agreement, the Commonwealth provides five methods of assessment: (1) accredited third-parties; (2) using referral information only; (3) using preliminary documentation; (4) using a full Environmental Impact Statement (EIS); or (5) using a public inquiry.[818] The trend has been to use the

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[813] EPBC Act §§ 12-24C.
[814] *Id.* §§ 26 & 28.
[815] *Id.* § 25.
[816] Lee Godden & Jacqueline Peel, *The Environmental Protection and Biodiversity Conservation Act 1999 (Cth): Dark Sides of Virtue*, 31 MELBOURNE UNIV. L. REV. 106, 118-19 (2007).
[817] Flow chart.
[818] Environmental Assessment Process – Referral, assessment/decision whether to approve flowchart (February 2010), *available at* http://www.environment.gov.au/epbc/assessments/pubs/flow-chart.pdf.

"preliminary documentation" method in the vast majority of assessments, thus avoiding the more rigorous review required by other methods.[819]

In terms of the scope of analysis required, EPBC Act requirements call for an assessment of "likely significant impacts," a malleable concept that has been interpreted by Australian courts to require a relatively expansive assessment. This has led to guidance by the Department of the Environment and Water Resources in 2006 that calls on project proponents to take the broadest view of possible impacts including indirect, offsite, downstream, upstream, or "facilitated" impacts.[820] Amendments to the EPBC Act in 2006 that sought to narrow the scope of the impacts analysis are now being interpreted in the courts. It is unclear whether they have had their intended effect of scaling back impacts analysis. (See more on the scope of analysis under "Role of Courts" below.)

II. Federal - State Relationships in EIA

Since an inter-governmental agreement signed in 1992, Australia has made "cooperative federalism" the official implementation policy for environmental issues, meaning that the Commonwealth plays a largely supervisory role and provides financial incentives for the states to carry out actual environmental permitting, compliance, and enforcement activities.[821] This is somewhat true under EIA, though the Commonwealth-level agencies have retained a fairly prominent regulatory role under the EPBC Act. As of June 2009, the Commonwealth had 104 assessments in progress while the states had 110 going forward.[822]

States can be accredited to perform EIA under an "assessment" bilateral agreement or an "approval" bilateral agreement. If the former type, then proposed activities are assessed under the state process, but requires final approval from the Commonwealth Minister under the EPBC Act. If the state has an approval bilateral, however, then an action can be both assessed and approved through the state process without further approval from the Commonwealth Minister. It appears, however, that no state currently has an approval bilateral. Thus, once a state has undertaken an assessment, it refers the matter back to the Commonwealth with recommendations for decision.

Under the bilateral agreements, the Commonwealth is obligated to reimburse states for "implementation costs" defined as costs "incurred by the [state] in implementing the agreement [that] would not, in the absence of this agreement, have been incurred by [the state] in carrying out an adequate assessment of each action to which [the state EIA process] applies."[823] In Fiscal Year 2009 DEWHA distributed approximately $9,000,000 in grants and transfers to state, local, and territory governments.[824] It is unclear how much

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[819] http://www.environment.gov.au/about/publications/annual-report/08-09/epbc-appendix-a.html.
[820] Department of the Environment and Water Resources, Commonwealth of Australia, EPBC Act *Policy Statement 1.1: Significant Impact Guidelines: Matters of National Environmental Significance* (May 2006).
[821] Lee Godden & Jacqueline Peel, *The Environmental Protection and Biodiversity Conservation Act 1999 (Cth): Dark Sides of Virtue*, 31 Melbourne Univ. L. Rev. 106, 117 (2007).
[822] http://www.environment.gov.au/about/publications/annual-report/08-09/epbc-appendix-a.html.
[823] Victoria Agreement, *supra* note X, §§ 33-34.
[824] Department of the Environment, Water, Heritage and the Arts, Financial Statements for the Period ended 30 June 2009, at 362.

money the Commonwealth provides states and territories to support carrying out EIA under EPBC Act.

III. Institutional Roles and Responsibilities

Ultimate decision making authority on EIA under EPBC Act rests with the Minister for Environment Protection, Heritage and the Arts. The Minister acts through the organs of the Department of the Environment, Water, Heritage and the Arts (DEWHA). The Minister, as with all state ministers in Australia, is appointed from the elected members of Parliament following the Westminster tradition, and serves at the pleasure of the Prime Minister.[825] The DEWHA has four ministers (in addition to the environmental minister, there is also a Parliamentary Secretary for Water, an Minister for Climate Change, Energy Efficiency and Water, and a Minister assisting the Minister for Climate Change). Because the Minister in charge of ultimately making decisions on EIA is drawn from the legislative branch, some commentators have criticized the overtly political nature of decision making at the ministerial level.[826] The implementation of the EPBC Act has been criticized as an "ongoing failure," with key recommendations for reform including more rigid decision guidelines and "transferring decision-making powers from the Minister to an independent statutory authority."[827] Chronic underfunding and lack of resources was also identified in 2006 as a major cause of shortcomings.[828]

The executive head of DEWHA is the Secretary. The Secretary need not be a member of Parliament. She serves as administrator for the DEWHA. (The current Secretary came to the position after serving as a public administrator in a state-level department.) Within the Department, EIA is processed by the Approvals and Wildlife Division (AWD), headed by a "first assistant secretary." This division is within the Biodiversity Group (headed by a "deputy secretary"). Within the AWD are six divisions, three of which directly handle EIA: Environment Assessment B1; Environment Assessment B2; Environment Assessment B3; Strategic Approvals and Legislation; Wildlife; and Compliance and Enforcement. Thus three offices have concurrent responsibilities for EIA. In this arrangement, the "assistant secretaries" at the office level answer to the "first assistant secretary" at the head of AWD. The Secretary of DEWHA and all civil servants below her are considered part of the Australia Public Service (APS), organized under the Public Service Act of 1999.[829] The Secretary of the Department is the highest level position under the Act, charged with overseeing the administration of the department and advising agency ministers.[830] The Secretary is appointed by the Prime Minister for 5 year terms, and may be terminated by

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[825] Const. art. 64 (1900) (Aust.); *see also* Parliament of Australia, Senate, The Australian Constitution, http://www.aph.gov.au/senate/general/constitution/index.htm (last visited June 24, 2010).
[826] Lee Godden & Jacqueline Peel, *The Environmental Protection and Biodiversity Conservation Act 1999 (Cth): Dark Sides of Virtue*, 31 Melbourne Univ. L. Rev. 106, 143 (2007).
[827] Australia Institute, Andrew Macintosh, *Environment Protection and Biodiversity Conservation Act: An Ongoing Failure* (July 2006), *available at* https://www.tai.org.au/documents/downloads/WP91.pdf.
[828] Lee Godden & Jacqueline Peel, *The Environmental Protection and Biodiversity Conservation Act 1999 (Cth): Dark Sides of Virtue*, 31 Melbourne Univ. L. Rev. 106, 136 (2007).
[829] http://www.answers.com/topic/australian-public-service.
[830] Public Service Act § 57 (1999).

the Prime Minister at any time, subject to minimal procedural safeguards.[831] All other ongoing public-service employees may only be terminated "for cause" on the basis of eight enumerated grounds.[832]

Public service employees are obligated to comply with a "Code of Conduct" that includes a prohibition on making "improper use of inside information or the employee's duties, status, power or authority in order to gain, or seek to gain, a benefit or advantage for the employee or for any other person."[833] There is also a prohibition on patronage and favouritism.[834] A Merit Protection Commissioner has cross-cutting responsibilities to monitor personnel issues in all government agencies, ensure the Code of Conduct is upheld and generally oversees government integrity issues. The DEWHA also maintains a Fraud Liaison Officer and contact information for members of the public who "suspect or have knowledge of fraudulent activity relating to the department's business."[835]

IV. Role of Courts and NGOs in Improving Enforcement, Reducing Corruption

Despite attempts to weaken the EPBC Act by Australia's Parliament through amendments passed in 2006, such as tying the scope of impacts to be analyzed to standards of causation drawn from traditional common law torts, the Act remains fairly broadly applicable.[836] This has been "attributed principally to the willingness of [NGOs] acting in the public interest to test the bounds of [EIA] under the legislation in litigation, and the preparedness of courts to adopt expansive understanding of key terms like 'significant impact.'"[837] Other accountability mechanisms in the Act and other administrative law help reduce rent-seeking behavior as well. First, he EPBC Act incorporates a broad standing requirement that defines "interested persons" as those "engaged in a series of activities for protection or conservation of, or research into, the environment" and for organizations, having (1) "objects or purposes [that include] the protection or conservation of, or research into, the environment" and (2) "engaged in a series of activities related to the protection or conservation of, or research into, the environment."[838] Second, under the Administrative Decisions Review Act of 1977, private persons can request a Minister to "furnish reasons" why a particular decision is taken, allowing private citizens to use information released in this manner as evidence in having decisions taken on EIAs overturned later in court. For example, a university professor obtained a ruling from a court in *Mees v Roads Corporation* that the Victorian government's referral documentation on a controversial highway project was "misleading and deceptive" because it failed to include information that the highway was intended to be only one part of a much larger highway construction program.[839]

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[831] *Id.* §§ 58-59.
[832] *Id.* § 29.
[833] *Id.* § 13.
[834] *Id.* § 17.
[835] DEWHA Service Charter 2009-2012, at 4, at http://www.environment.gov.au/about/publications/pubs/dewha-service-charter-2009-12.pdf.
[836] Godden & Peel, *supra* note X, at 122-23.
[837] *Id.* at 125.
[838] EPBC Act § 475(6)-(7) & § 487
[839] Godden & Peel, *supra* note X, at 132.

State-level courts have also played a significant role in ensuring full enforcement of EIA. Following a federal court precedent that established a very broad interpretation of the term "impacts," state courts have held this term to include assessment of impacts on climate change of new coal projects—perhaps the broadest possible application of the term as the chain of causation is somewhat attenuated and the environmental effects are diffuse both temporally and spatially.[840]

A major weakness introduced by the 2006 amendments to the EPBC Act included at the behest of development interests to streamline the EIA process, was the removal of financial protections for NGOs seeking judicial review of EIA decisions. Community groups and NGOs often lack the financial resources to bring citizen suits now, because they may be slapped with attorneys' fees if they lose the case. Even if they are willing to take the financial risks associated with losing a case, federal courts in Australia frequently require litigants to post a surety to cover costs if they fail on their claims, and many community groups are unable to meet that requirement.[841]

V. Fees

There are apparently no fees associated with filing a referral to the Ministry, or at any other stage in the EIA process at the Commonwealth level. (There may be fees under state and territorial EIA laws.) The referral guidance, however, notes that the Great Barrier Reef Marine Park Authority has unique processes for EIA associated with its authority under the Great Barrier Reef Marine Park Act of 1975, and this permitting process may include associated fees.[842]

Fees are also assessed as a component of permits issued for activities affecting various types of biodiversity under Part 17 of the Regulations implementing the EPBC Act. These provisions do not relate to EIA but to other types of permitting with respect to biodiversity. The fee amount is comprised of three parts: (1) an administrative component for the cost of processing the application; (2) an assessment component for the cost of assessing whether a permit may issue or whether the application needs to be redirected as a referral or a different type of permit; and (3) a management component for the costs of providing supervision or monitoring compliance with permit conditions.[843] The first two components must accompany a permit application while the third must be paid before a permit is issued.[844] Fees are exempted for (1) charitable organizations holding public gathering or collections; (2) permits for audio or visual recording; (3) traditional owners of indigenous people's land where the activity will take place; (4) modifications of permits that "helps to achieve the objectives of the Act; (5) activities subject to a pre-existing permit scheme in

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[840] *Id.* at 133-34.
[841] Lee Godden & Jacqueline Peel, *The Environmental Protection and Biodiversity Conservation Act 1999 (Cth): Dark Sides of Virtue*, 31 Melbourne Univ. L. Rev. 106, 138-39 (2007).
[842] Aust. Gov't, Dep't of the Envt., Water, Heritage, and the Arts, Referral of Proposed Action 2 (November 2009), *available at* http://www.environment.gov.au/epbc/assessments/referral-form.html.
[843] Environment Protection and Biodiversity Conservation Regulations 2000, Statutory Rules 2000 No. 181 as amended § 18.01 (compiled Dec. 22, 2009) (Aust.).
[844] *Id.* § 18.03.

effect immediately prior to enactment of the Act for which all necessary fees are paid; or (5) permits for delineated types of scientific or research activity and the applicant is a government body.[845] Actual fee amounts by type of permit and fee component are set forth in Schedule 11 accompanying the regulations. However, that Schedule establishes that the Assessment Component and Management Component for all types of activities is set at "nil."[846]

VI. Analysis

One of the models India is looking at is creating a separate autonomous authority for environmental permitting and coastal management. Though a special set of offices are charged with implementing EIA in Australia, these cannot properly be characterized as an independent or autonomous body. Ultimate decision making authority on EIA applications resides with the Commonwealth's environmental minister, who in turn is a member of Parliament. This reality has imparted a strongly political character to the EIA process in Australia, has led to arbitrary decision making, and a tendency to ignore key sectors (e.g., agriculture, fisheries, and forestry have very low referral numbers for EIA despite the fact that many activities in these sectors probably require EIA),[847] and should not be classified as a best practice or an ideal model.

An additional concern of note is that in Australia, the division charged with EIA is also in charge of biodiversity and wildlife issues. The coupling of the EIA process with another sector of environmental management is thus not unprecedented. (India proposes to couple environmental permitting with coastal management.) The administrative coupling of EIA with a particular sector (such as biodiversity) in Australia may flow from the nature of the authorizing statute, the Environmental Protection *and Biodiversity Conservation* Act of 1999, which, though a national framework environmental law, puts a heavy emphasis on biodiversity protection. This combination might be the result of real or perceived national priorities; the product of a societal association by Australian policymakers between EIA and biodiversity; or simply a question of administrative organization. Whatever the reason, this administrative structure raises at least an intuitive concern that EIA, which is intended to be general enough to cover all possible types of impacts, becomes associated with analysis of impacts on one particular component of the environment, such as biodiversity (rather than, e.g., hydrological issues, human health impacts; energy consumption; etc.). Indeed, one expert on Australian EIA has suggested that the determination whether an activity is "controlled" and thus requires permitting, such be based on a more objective and predictable test or set of factors than, as currently, an assessment of the nature and extent of the potential impacts. This could be done through use of zoning, delineating the list of activities that require EIA; or some other more predictable test.

[845] *Id.* § 18.04.
[846] *Id.* Schedule 11.
[847] *See* Ongoing Failure, *supra* note 16.

CANADA

CANADA'S ENVIRONMENTAL IMPACT ASSESSMENT PROCESS AND INSTITUTIONS

EIA in Canada is guided and supported by the Canadian Environmental Assessment Agency (CEAA). However, actual responsibility for carrying out EA is in the hands of the relevant federal department overseeing, funding, or authorizing a given project, known as a responsible federal authority (RFA). Most of the actual preparation of EA handled by project proponents themselves. CEAA is headed by a President, and is answerable to the Minister of the Environment. The Minister is a member of Parliament and appointed by the Prime Minister in the Westminster tradition. The Minister of the Environment heads Environment Canada (EC), Canada's lead environmental protection agency.

CEAA implements the Environmental Assessment Act of 1992 (EAA), with significant amendments in 2003. Under the President of the CEAA, there are three main branches (in addition to legal services): Operations (comprised of the Panel Secretariat, National Support Programs, Project Reviews, and six Regional Offices); Policy Development (comprised of Policy Analysis, Legislative and Regulatory Affairs, and Operational Support); and Corporate Services (comprised of Communications, Finance and Administration, Human Resources, and Information Services).[848]

I. Basic Process

The EAA obligates "responsible federal authorities" (RFA), defined to include Ministers of the Crown, and certain other government agencies, departments or bodies, to oversee the direct implementation of EA.[849] EAA procedures are triggered generally where the federal authority (i) is the proponent of a project; (ii) lends or contributes financial assistance for a project to proceed; (iii) provides an interest on federal lands to enable a project to proceed; or (iv) issues a permit or other authorization specifically identified by regulation to trigger EAA.[850] Other, less commonly used, triggers are when the federal Environment Minister orders an EA for projects that have significant adverse effects on another province, projects carried out on federal lands or elsewhere in Canada that may have significant adverse environmental effects outside of federal lands or outside Canada,[851] or where public concerns are sufficient to justify an EA.[852]

The process of EA under EAA is characterized as a "self-assessment process" because project proponents conduct the EA themselves and then present them to the RFA for approval. CEAA does not have a significant oversight role in this process. An attempt was

[848] CEAA, Organization, http://www.ceaa.gc.ca/default.asp?lang=En&n=8541A4D1-1 (last visited June 29, 2010).
[849] EAA § 2.
[850] EAA § 5.
[851] *Id.* § 48.
[852] *Id.* § 28.

blocked in 2003 to give CEAA the authority to "ensure that proponents and federal authorities, including responsible authorities, comply with the provisions of this Act and its regulations," but this was removed from the amendments finally enacted.[853] Canada's EAA contemplates situations in which more than one federal agency or department will be an RFA and thus provides authorities for coordination including the appointment of a federal EA coordinator to facilitate and streamline a unified process.[854]

There are four basic levels of assessment, from lowest to highest in intensity of requirements: screenings (or, at the lowest level, screenings for "classes" of activities); comprehensive studies; mediations; and panel reviews.

1. Screenings

Screenings use pre-formatted reporting documents that need only be filled in by the applicant. As of April 2008, screenings were being used in 3120 ongoing cases, comprehensive studies were being used in 50 ongoing cases, and review panels were being used in 20 cases, across the Canadian federal government.[855] The 2003 amendments to the EAA essentially removed public notification safeguards with respect to screenings on the basis that such procedures are unnecessary for such small projects. But this apparently ignored the fact that the cumulative impacts are required to be assessed under EAA (section 21), and that the amendment thus has the effect of removing from meaningful public engaged no less than 98% of all EA processes at the federal level.[856]

2. Comprehensive Studies

Larger projects such as oil and gas development, those that affect national parks or protected areas, or affect migratory birds (this is a non-exclusive list), require a "comprehensive study." This process involves determining whether the project is appropriate for mediation or panel review; mandatory public consultation; a full consideration by the Minister of the purposes of, alternatives to, and need for the project, the project's impacts on natural resources (including the needs of future generations); and mitigation measures in a follow-up program.[857]

3. Mediation

The mediation provisions under CEAA have never been used,[858] and indeed, according to many observers, remain "too dangerous to use" because they provide governmental departments too much discretion over an ambiguous process that provides for private

[853] Hugh J. Benevides, *Real Reform Deferred: Analysis of Recent Amendments to the Canadian Environmental Assessment Act*, 13 J. ENVTL. L. & PRACTICE 195, 217 (2004).
[854] EAA § 12.
[855] http://www.ceaa.gc.ca/default.asp?lang=En&n=99304C3B-1
[856] *See* Hugh J. Benevides, *Real Reform Deferred: Analysis of Recent Amendments to the Canadian Environmental Assessment Act*, 13 J. ENVTL. L. & PRACTICE 195, 206-08 (2004).
[857] *Id.* §§ 16, 21-23.
[858] EAA § 29.

resolution of public matters, in which underrepresentation of environmental interests, private analysis of public risks, and unaccountability in settlements would likely produce significant power imbalances.[859]

4. Review Panels

The final method of assessment in Canada is by a "review panel" composed of experts appointed by the Minister (rather than the RFA). The panels are intended to be used to encourage greater public discussion and exchange of view, and involve large groups of stakeholders through public hearings.[860] For projects that require authorization under both federal and provincial EA, there are special rules for join review panels, often operated under harmonization agreements between the province and federal government.[861]

Review panels tend to be supported by public interest organizations as the most rigorous form of EA, and are understood to require the most open and transparent processes of approval. Prior to the 2003 amendments, they had only been used 11 times. A provision in the EAA gave the government discretion to move an EA on a comprehensive study track into a review panel track if significant environmental issues were later identified or if it turned out there was a high degree of public interest or opposition. The 2003 amendments eliminated this discretionary authority, requiring that the decision to subject a project proposal to a review panel could only be made prior to initiating a comprehensive study process. This was done under the assumption that it would increase certainty and reduce delays in EA processing for industry. Environmental groups opposed the amendment.[862] But CEAA officials testified that the discretionary authority had never actually been used, and further, if the discretionary authority were removed, it would likely have the effect of increasing the use of review panels.[863] This has in fact come to pass: as of April 2008 there were 20 ongoing review panels with six more initiated in the 2008-09 fiscal year.[864]

A 2004 survey of groups participating in panel reviews determined that such participation has been somewhat effective by allowing the public to:

- Personally communicate to a panel what values the community holds for the resource or area, and how the project will impact upon those values
- Provide to the panel independent scientific research or traditional knowledge, regarding project impacts, wildlife species, habitat, ecology, etc.
- Become education about the process and the issues surrounding the project and the EA; and as a result of that education become more effective participants in the public consultation process; and

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[859] Tyson Dyck, *Standing on the Shoulders of Rio: Greening Mediations under the Canadian Environmental Assessment Act*, 13 J. ENVTL. L. & PRACTICE 335, 335-337 (2004).
[860] http://www.ceaa.gc.ca/default.asp?lang=En&n=B053F859-1#1 (last visited June 29, 2010).
[861]

[862] *See* Susan Rutherford & Karen Campbell, *Time Well Spent? A Survey of Public Participation in Federal Environmental Assessment Panels*, 15 J. ENVTL. L. & PRACTICE 71, at 74 (2004) (the change "may result in even fewer panel hearings by which the public can participate in major decision making").
[863] Hugh J. Benevides, *Real Reform Deferred: Analysis of Recent Amendments to the Canadian Environmental Assessment Act*, 13 J. ENVTL. L. & PRACTICE 195, 208 (2004).
[864] http://www.ceaa.gc.ca/default.asp?lang=En&n=99304C3B-1 (Table 3) (last visited June 30, 2010).

- Be physically present and so bring pressure to bear upon the panels to ask the hard questions and to seek out any further or missing necessary information, research or evidence.[865]

The survey also determined effective review panel processes to include:

- Flexible consultation methodologies that are inclusive, educative, and accessible to lay public;
- Full disclosure of materials and information related to the assessment;
- Effective processes for gathering information and input;
- Adequate participant funding; and
- Public input and feedback regarding the development and improvement of the process.[866]

Obstacles to effective participation that were identified included:

- No or inadequate funding for hearing participants
- Poor advertising of available funding
- Unrealistic time limits
- Public and First Nation consultations being initiated too late in the process or without due care to cultural differences, precluding appropriate issue definition and resulting in alternatives being rejected before they have even been considered
- A general lack of engagement of the public in the scoping process, and lack of funding for the scoping process
- An overly-narrow definition of the project
- An overly-formal hearing process; and
- A panel that appears predisposed to a particular outcome.[867]

II. Federal-Provincial Relationship

All Canadian provinces have their own EA authorities. In general, however, joint EA processes are rare, as there are relatively few projects that will trigger both provincial and federal authorities (e.g., by one estimate, 98% of projects subject to federal EA do not require provincial EA, and only around 7-8% of projects subject to provincial EA also trigger federal EA).[868] This has led some commentators to argue that industry concern over "duplicative" EA processes are misplaced.

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[865] Susan Rutherford & Karen Campbell, *Time Well Spent? A Survey of Public Participation in Federal Environmental Assessment Panels*, 15 J. ENVTL. L. & PRACTICE 71, at 78 (2004).
[866] Susan Rutherford & Karen Campbell, *Time Well Spent? A Survey of Public Participation in Federal Environmental Assessment Panels*, 15 J. ENVTL. L. & PRACTICE 71, 80 (2004).
[867] Susan Rutherford & Karen Campbell, *Time Well Spent? A Survey of Public Participation in Federal Environmental Assessment Panels*, 15 J. ENVTL. L. & PRACTICE 71, 80-81 (2004).
[868] Arlene Kwasniak, *Environmental Assessment, Overlap, Duplication, Harmonization, Equivalency, and Substitution: Interpretation, Misinterpretation, and a Path Forward*, 20 J. ENVTL. L. & PRACTICE 1, 10 (2009).

One source of disconnect between federal and provincial EA is that all but one province uses a "list approach" to EA triggering, whereas the EAA uses a "category" trigger based in part on the relationship of the type of environmental impact to matters within the constitutional jurisdiction of the federal Canadian government.[869] Thus efforts at streamlining and harmonization of EA requirements between the state and federal levels may run into an irreducible obstacle in this regard. The federal government under Canada's constitution cannot use a specified list of project types as the basis for determining what projects require an EA because it does not have automatic jurisdiction over all of the activities that would probably be included on that list. For any given project, it is thus necessary to perform two separate threshold analyses: one to determine if the project falls under province-level EA regulations, and another to determine if the project also falls under the federal-level EAA law.

Nonetheless, Canada has taken a number of steps and continues to encourage cooperation, coordination, and harmonization through bilateral and multilateral agreements among the provinces and federal government. The federal Canadian government and all provincial governments except Quebec, acting through the Canadian Council of Ministers of the Environment, have entered into "A Canada-Wide Accord on Environmental Harmonization" and a "Sub-Agreement on Environmental Assessment."[870] The latter contains sections on objectives; scope; principles; EA content; implementation; and accountability, management and administration.[871] Implementation of the Sub-Agreement on EA for individual projects takes place through bilateral agreements, which Environment Canada has entered into with eight provinces.[872]

Though industry and government have frequently complained of "duplication" and "inefficiency" in cases where there is overlapping jurisdiction with respect to EA, some commentators have questioned the reality behind this rhetoric.[873] As noted above, instances in which a project triggers both province and federal EA are actually quite rare. Further, the process of using "coordination agreements," in which a province and the federal CEAA share jurisdiction over an EA process, while possibly speeding the process, pose other risks. In practice, the state agency is often given "Lead Agency" role while the federal authorities are reduced to a consultative role—potentially leading to a loss of federal

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[869] *See* Arlene Kwasniak, *Environmental Assessment, Overlap, Duplication, Harmonization, Equivalency, and Substitution: Interpretation, Misinterpretation, and a Path Forward*, 20 J. ENVTL. L. & PRACTICE 1, 8-9 (2009).
[870] CEAA, Environmental Assessment Agreements, http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=CA03020B-1#1 (last visited June 29, 2010).
[871] *Available at* http://www.ccme.ca/assets/pdf/envtlassesssubagr_e.pdf.
[872] CEAA, Environmental Assessment Agreements, http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=CA03020B-1#1 (last visited June 29, 2010).
[873] *See* Arlene Kwasniak, *Environmental Assessment, Overlap, Duplication, Harmonization, Equivalency, and Substitution: Interpretation, Misinterpretation, and a Path Forward*, 20 J. ENVTL. L. & PRACTICE 1, 25 (2009) (noting that "harmonization" of EA standards can be good "when it does not interfere with constitutional jurisdiction or unduly affect autonomy," and "equivalency can work if legislative provisions of two jurisdictions are the same and there are no issues of loss of jurisdiction or, in the case of the federal government loss of national approach and concerns," but "[i]t is unlikely that full substitution can ever be good in a federalist state" because it will produce "loss of jurisdiction or national perspective.").

jurisdiction or full treatment and analysis of environmental issues that are of national but not provincial concern.[874]

The Canadian Council of Ministers of the Environment (CCME), not content with current efforts to streamline and harmonize EA, has formed four sub-committees to examine: short term streamlining actions that can be implemented within existing legislative frameworks and bi-lateral agreements; options to streamline consistent with a "one project one assessment" approach; exploring regional strategic environmental assessment to streamline EA processes; and coordinating Aboriginal consultation in joint assessments.[875] However, this process is perceived to be driven by industry and interested provincial-level officials, and, given other weaknesses in Canadian EA identified by environmental groups and federal officials, may not reflect actual priority areas to improve coordination and cooperation. Alternatives might include:

- CEAA currently plays a weak role in EA, with primary responsibility in the hands of the RFA. CEAA could play a more active, and earlier role in the process. Late triggering of EA requirements due to lack of clear processes within RFAs may be a real cause of uncertainty and delays in EA.
- Updating and strengthening the coordination regulation that governs federal interagency cooperation on EA by imposing enforceable timelines for decisions, and backstop authorities so that CEAA as an independent agency can step in where an RFA's process is deficient.
- Complete a federal quality assurance program designed to pinpoint actual systemic weaknesses in EA processes using empirical methods, rather than assume the problem is associated with inefficiencies from duplication of efforts.
- Utilize a provision of the 2003 amendments to the EAA making the CEAA the official interagency "coordinator"—RFAs need support and guidance from CEAA that it currently isn't providing, despite efforts to move in this direction.
- Utilize a Major Projects Management Office established within Canada's Natural Resources department designed to facilitate a "one-stop-shop" approach to permitting for major resources projects.
- Encourage project proponents to initiate EA process early in the planning stage rather than plan the project in full, using a series of mitigation measures to produce a "no significant outcome" determination. The EAA law specifically calls for EA to be begun early in the process, but industry practice in many sectors is to delay EA, which is a major source of delays, redundancy of efforts, and inefficient use of resources.[876]

[874] *Id.* at 27.
[875] *Id.* at n.91.
[876] *See* Arlene Kwasniak, *Environmental Assessment, Overlap, Duplication, Harmonization, Equivalency, and Substitution: Interpretation, Misinterpretation, and a Path Forward*, 20 J. ENVTL. L. & PRACTICE 1, 31-34 (2009).

III. CEAA Funding

Financially, CEAA divides its work into two programs: EA Support and EA Development.[877] (Recall CEAA lacks direct regulatory authority over EA.) In 2009, CEAA had total operating expenses of $ 37,677,617 (Can.), while brining in $3,3665,290 in revenue, almost all attributable to fees associated with "environmental assessment and training services."[878] In 2009, CEAA made transfer payments of $828,237 to non-profit organizations, $607,166 to First Nations (indigenous government units); $145,500 to "other levels of government"; $16,628 to "other countries and international organizations"; and $15,000 to "industry." In 2008, those numbers were, respectively, $630,111, $144,105, $195,500, $10,269, and $50,000.[879] This reflects a relatively low amount of funding made available to provinces within the CEAA budget, but RFAs actually carrying out EA may provide a more financially supportive role.

The relatively large amount of funding to non-profit groups is attributable to a program to provide financial support to groups interested in participating in either comprehensive study processes and panel review processes.[880] The amount of funding to this purpose had decreased steadily until the 2003 amendments to the EAA, which expanded the availability of funding to include funding for participation in comprehensive study processes. The CEAA maintains web resources for organizations and groups interested in receiving funding to support their participation in the EA process.[881]

IV. Analysis

It is incorrect to label CEAA an independent or autonomous agency for carrying out EIA. First, it mostly plays a support and development role for EA that is carried out in the first instance by RFAs or state agencies, or both working jointly together. Second, CEAA is directly answerable to the Minister of the Environment, a political appointment position. Regarding the effectiveness of EIA and the CEAA in Canada, many regard the process as being much weaker than it should be, though some examples of best practices might be identified with respect to the public participation funding associated with comprehensive studies and review panels, and the efforts of the provinces and federal government to coordinate and systematize the EA process across multiple agencies and levels of government. Ultimately, however, as one Canadian observer has stated:

> EA scholars and critics have consistently pointed out the "deep-rooted systemic problems" of federal EA law and policy in achieving sustainability goals. For example, Rees described "the largely discretionary nature of the

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[877] http://www.ceaa.gc.ca/default.asp?lang=En&n=0418839B-1 (last visited June 29, 2010).
[878] *Id.*
[879] *Id.*
[880] Hugh J. Benevides, *Real Reform Deferred: Analysis of Recent Amendments to the Canadian Environmental Assessment Act*, 13 J. ENVTL. L. & PRACTICE 195, 211-12 (2004).
[881] CEAA, Participant Funding Program, http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=E33AE9FB-1 (last visited June 30, 2010).

process as it is based essentially on voluntary self-assessment, the predominantly growth-oriented ideology of successive federal governments, the generally low political status of environmental issues, and an institutional framework that seems designed to circumvent political accountability." While the Agency is responsible for the federal government's environmental assessment policy development and for higher-level administrative aspects of CEAA, federal EA is otherwise decentralized and based on the self-assessment principle.[882]

[882] Hugh J. Benevides, *Real Reform Deferred: Analysis of Recent Amendments to the Canadian Environmental Assessment Act*, 13 J. ENVTL. L. & PRACTICE 195, 225 (2004).

GERMANY

I. Status and Design

1. National Environmental Protection Authority

a. Authorization

The German government is legally responsible for the protection of the environment. Article 20a of its constitution, known as the Grundgesetz, assigns to the government the "protection of the natural foundations of life and animals."[883] This clause, which did not originally mention wildlife, was amended on August 1, 2002 to also include animals.[884]

Areas of exclusive Federal power are listed in Article 73. By virtue of Article 70 (1), the sixteen German states, collectively know as Länder, can legislate in areas not reserved for the federal government. Additionally, when authorized by federal law, states can legislate in sectors originally exclusive to the national government (Article 71). Article 74 lists areas covered by concurrent legislative powers. For matters encompassed by concurrent legislative powers, Länder can legislate if the Federation has not (Article 72(1)). Article 72(2) determines that the Federal state has a right to legislate on particular areas (found in Article 74(1); those relevant to the environment are: "the transfer of land, natural resources and means of production to public ownership or other forms of public enterprise" (15), and "the protection of plants against diseases and pests, as well as the protection of animals" (20). According to Article 72(3), however, the federal government only has exclusive power over these areas if legislation is required to ensure equality across the country in the standard of living or "maintenance of legal or economic unity."

Even if the Federation has enacted legislation regarding concurrent areas, Länder can still enact varying laws concerning certain matters (Article 72(3)). Relevant to the environment are:

- Article 72(3) 2: "protection of nature and landscape management (except for the general principles governing the protection of nature, the law on protection of plant and animal species or the law on protection of marine life)" and
- Article 72(3) 5: "management of water resources (except for regulations related to materials or facilities)"

Prior to 2006, Article 75 empowered the federal government to enact framework legislation in areas including nature conservation, and water and regional planning.[885] Constitutional

[883] http://www.umweltbundesamt.de/umweltrecht-e/environmental-protection-as-a-state-objective.htm, Umweltbundesamt, 'Environmental Protection as a State Objective', Last updated 11th May 1998
[884] http://lexetius.com/GG/20a
[885] Neumann.M.T, (1996, Fall) 'The Environmental Law System of the Federal Republic of Germany', Annual Survey of International and Comparative Law.

reform in 2006, however, repealed Article 75, which means that Federal legislation covers water resources, landscape and nature. Federal legislators can exert control over these areas without the justification of ensuring national equality. Still, Länder can enact differing legislation on these areas. Nonetheless, the Federation also has power over waste management, noise and air quality.[886]

As a result of inconsistencies in the definitions of key terms in a series of Germany's environmental laws, an attempt was made in 2009 to create a uniform environmental code; efforts to do so, however, failed.[887] Instead, new bills were introduced on natural conservation, radiation, and water, while some older environmental statutes no longer in use were deleted.[888] The aim was to unify these laws; for example, water law was previously federal framework legislation, which meant that Länder had to fill in the details independently. As a result, states could enact varying laws in this area, which could yield economic ramifications by forcing companies to adjust to regulations that differed by Länder. The Bills were put before Parliament.[889]

The result was the Federal Natural Conservation Act and Federal Water Act, which became effective in March 2010. Previous statutes in these areas are null. Among other things, the Water Act standardizes water management across the country. Länder must legislate themselves since this is an area where they have competence (due to the constitutional reforms mentioned above), however it is the objective of the legislation to have standardization for these two areas, so when enacting or amending their provisions Länder should not go against this objective.[890]

In 2006 there was constitutional reform regarding federalism and the relationship between the federation and Länder. The Federation also had to justify why they should be taking the environmental action in regards to concurrent powers. Article 72(2) contained the requirement of necessity in this regard and these used to include for the areas of noise and air pollution and waste, but these were removed from the reforms. The requirement of necessity had had the negative effect of not enabling harmonized regulation for these environmental areas by the Federation to occur. Since these do not come within this necessity requirement; the Federal government has greater freedom of regulation for these areas. Now, greater consideration is said to be given to the environment.[891]

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[886] Umweltbundesamt, 'Project Environmental Code', Last Updated April 7th 2010 http://www.umweltbundesamt.de/umweltrecht-e/umweltgesetzbuch.htm
[887] *Ibid*
[888] N.4 supra
[889] BMU, STATT UMWELTGESETZBUCH: KABINETT BESCHLIEßT VIER GESETZENTWÜRFE ZUR NEUORDNUNG DES UMWELTRECHTS, LAST UPDATED MARCH 11TH 2009, HTTP://WWW.BMU.DE/PRESSEARCHIV/16_LEGISLATURPERIODE/PM/43413.PHP
[890] BMU, 'Reform of environmental law takes effect: new Acts enter into force on 1 March 2010', Last updated February 26 2010; http://www.bmu.de/english/current_press_releases/pm/45821.php
[891] UBA, 'State goal Environmental Protection', http://www.umweltbundesamt.de/umweltrecht/umweltverfassungsrecht.htm, Last updated: January 14 2009

b. Governance structure

When the Federation enacts a law it also establishes administrative rules in relation to that law, as well as creates relevant agencies, unless the law states otherwise (Article 86 German Grundgesetz). The Federation owns all federal waterways (Article 89 (1) German Grundgesetz) and has administrative power over them (Article 89 (2)). The Federation can give this power to a Land, however, if the waterway falls fully within the boundaries of that area. If the waterway passes through many Länder, then the Federation can determine which Land should administer it (Article 89 (2) German Grundgesetz). In addition, Article 89 (3) determines that the "development and new construction of waterways, the requirements of land improvement and of water management shall be assured in agreement with the Länder."

The Federal Constitutional Court resolves questions of whether federal law or Länder law is compatible with the constitution and the congruency of Länder law with federal law (Article 93(1) 2). German Grundgesetz). Furthermore, it resolves questions surrounding rights and duties of the Federation and Länder in relation to how the Länder implement Federal law and how the Federation supervises Länder in their actions (Article 93 (1) 3. German Grundgesetz).

The overarching ministry for environmental issues is the federal Ministry for Environment, Protection of Nature, and Reactor Safety (BMU). As a highest-ranking institution of the federal government, the Ministry sets the framework for environmental policy and agenda. Three agencies operate underneath the BMU: the Federal Office for Radiation Protection, the Federal Agency for Nature Conservation, and the Federal Environmental Agency. Of the three, the Federal Environmental Agency – established in 1974 and commonly known as "Umweltbundesamt" (UBA) – specifically deals with establishing and enforcing environmental law at the federal level.[892] As the primary national enforcement and implementation agency, UBA implements environmental laws, provides scientific support to relevant federal Ministries, handles environmental impact assessments, monitors environmental quality, conducts environmental research, and dispenses environmental information to the public.[893]

c. Funding (sources, oversight, monitoring)

The budget of the BMU is € 1,590 million. Other departments across the government also set aside budget for environmental issues. The Ministry of Defense, for example, has budgeted € 426 million for environmental issues. Including all the departments, federal funding for environmental protection in 2010 stands at €6,318 million. In addition to this amount there are environmental protection loans of €15 million from ERP special funds and €2,500 million from KfW-Bankengruppe.[894]

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[892] http://www.bmu.de/english/the_ministry/subordinate_authorities/federal_environmental_agency/doc/3097.php

[893] http://www.umweltbundesamt.de/uba-info-e/index.htm

[894] BMU, 'Government billions for environmental protection', http://www.bmu.de/english/the_ministry/tasks_organisation_financing/budget/doc/3109.php

d. Organizational structure

Jochen Flasbarth has served as president of UBA since September 2009,[895] and Dr. Thomas Holzmann as vice president.[896] The UBA has five divisions and one central administrative body. The five divisions are: Environmental Planning and Sustainability Strategies; Environmental Health and Protection of Ecosystems; Sustainable Production and Products, Waste Management; Chemical and Biological Safety; and German Emissions Trading Authority.[897]

The functions and responsibilities of the divisions include:

- **Central:** administrative functions, including legal and budgetary.[898]
- **Environmental Planning and Sustainability Strategies:** handles sustainable development, climate protection, noise, and transport and energy. For climate protection, work includes promoting alternative energy sources and processing German energy and emissions figures.[899]
- **Environmental Health and Protection of Ecosystems:** focuses on the composition of water, soil and air. Monitors how they change and the effect on both nature and humans.[900]
- **Sustainable Production and Products, Waste Management:** works on legislation and economic regulatory provisions related to waste, as well as eco-labeling.[901]
- **Chemical and Biological Safety:** works to safeguard humans and the environment from hazardous chemicals. Their legal functions include instigating and amending various acts and putting EU requirements into practice.[902]
- **German Emissions Trading Authority:** implements climate change measures in accordance with the Kyoto Protocol, including EU emissions trading requirements. Determines and administers how much can be emitted by operators.[903]

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[895] UBA, 'The President of the Federal Environment Agency', http://www.umweltbundesamt.de/uba-info-e/e-praesi.htm Last updated 3rd September 2009
[896] UBA, 'The Vice-President of the Federal Environment Agency', http://www.umweltbundesamt.de/uba-info-e/e-v-praesi.htm Last updated 31st July 2009
[897] UBA, 'Organisational structure of the Federal Environment Agency/ Tasks of its divisions', http://www.umweltbundesamt.de/uba-info-e/index.htm Last update 20th August 2009
[898] UBA, 'Division Z: Administration', http://www.umweltbundesamt.de/uba-info-e/e-zentral.htm Last updated 21st January 2010
[899] UBA, 'Division I: Environmental Planning and Sustainability Strategies', http://www.umweltbundesamt.de/uba-info-e/e-fach1.htm, Last updated 24th September 2009
[900] UBA, 'Division II: Environmental Health and Protection of Ecosystems', http://www.umweltbundesamt.de/uba-info-e/e-fach2.htm, Last updated 27th January 2010
[901] UBA, 'Division III: Sustainable Production and Products, Waste Management', http://www.umweltbundesamt.de/uba-info-e/e-fach3.htm Last updated 20th March 2009
[902] UBA, 'Division IV: Chemical and Biological Safety', http://www.umweltbundesamt.de/uba-info-e/e-fach4.htm, Last updated 31st July 2009
[903] UBA, 'Division E: Emissions Trading – German Emissions Trading Authority (DEHST)', http://www.umweltbundesamt.de/uba-info-e/e-fache.htm Last updated 26th March 2008

e. Functions, responsibilities, and staff competencies

The UBA has its own set of environmental guidelines under which it sets its objectives, such as making contributions to protecting the environment and making improvements through target setting and evaluation. These guidelines also outline staff objectives. These are: to "protect and maintain natural resources," "promote sustainable development," and "to firmly root environmental protection as a matter of course in everyone's thinking and actions."[904]

2. State Environmental Protection Authorities

Germany is divided into sixteen Länder. Each state has its own constitution and most have environmental provisions. Bavaria is recognized as having an especially high level of constitutional protection for the environment.[905] It was the first Länd to place the protection of the environment within its constitution and enact state level conservation legislation.[906] Therefore, it will be used as the basis for this section.

a. Authorization including relationship to national EPA

German federalism is unique in that state governments are fully involved in decisions at the federal level through representation by the Bundesrat.[907] Article 83 of the Constitution states: "Länder shall execute federal laws in their own right insofar as this Basic Law does not otherwise provide or permit." Thus, environmental protection is a concern to Länder in the implementation of federal legislation. Länder carry out environmental protection across three administrative levels. The Ministry of Land is the highest level, the Upper Administrative Authority is the district level; and the Lower Administrative is the lowest level. Lower Administrative implements policies and carries out directives as determined by the levels above them. At the lower level, "administrative circulars" are commonly used to implement environmental legislation.[908]

The discussion above shows the power that Länder have over environmental legislation. While the Federation enacts a framework, Länder fill in the implementation details. Nonetheless, there is an issue concerning the influence of EU legislation on state power

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[904] UBA, 'The UBA's Environmental Guidelines', http://www.umweltbundesamt.de/uba-info-e/guidelines.htm Last updated 19th May 2009

[905] p.9 Brandl.E, Bungert.H, 'Constitutional Entrenchment of Environmental Protection: A Comparative Analysis of Experiences Abroad', 16 (1) Harvard Environmental Law Review, 1992

[906] Bavaria State Government, 'Responsibility for Nature and the Environment', http://www.bayern.de/Responsibility-for-Nature-and-the-Environment-.605.htm, Last accessed 19th May 2010

[907] Bundesrat, 'A constitutional body within a federal system', http://www.bundesrat.de/cln_161/nn_10940/EN/funktionen-en/funktionen-en-node.html?__nnn=true As at 17th May 2010

[908] All from Neumann.M.T, 'The Environmental Law System of the Federal Republic of Germany', Annual Survey of International and Comparative Law, Fall 1996

over environmental legislation and policy.[909] Länder were once considered to have sole competency over environmental issues. But the EU's institutional competency has expanded and now reaches deep in these areas.[910] Since EU law, regulations, and acts are binding on Germany, they supersede any enactment at Länder level.[911] Further, since the German federal government negotiates policies at the EU Council of Ministers, the Federation possesses an extra influence not bestowed upon it by the German constitution.[912] In response, Länder have protested and insist that the EU subsidiarity principle must be strictly adhered to (that is, that the EU will not legislate unless it believes Member States are incapable of doing so).[913] Länder claim a right to participation in German decision making at the EU level through Bundesrat representation under Article 23 (2) of the German Constitution.[914]

b. Governance structure

In Germany, implementation of environmental law is given to states, while federal statutes, regulations and guidelines form the framework for regulation. Some environmental issues fall only under federal statutes; otherwise states have a lot of freedom regarding environmental law making. Criticism of the German structure focuses on the notion that it is *too decentralized*. However, in some areas, such as recycling, there is arguably too much federal control. Under the constitution Länder are required to implement the federal regulation statutes. On the other hand they have discretion in the implementation of regulations and can therefore ensure that enacted legislation best suits their own aims. They have power because, while there is some control over the Länder, the federal government must use framework statutes rather than directly impose regulatory standards. Apparent inconsistencies between levels of enforcement of environmental issues by Länder have spurred claims that certain Länder are too lenient in their enforcement while others are too stringent.[915]

Article 84 (1) of the constitution states that, if Länder implement laws on their own then they should provide the institutional capacity to administer these procedures, unless federal law states otherwise. The degree to which this is actually the case, however, depends on the specific regulation at issue. Article 84 (3) makes clear that, with regard to oversight, the Federation will make "sure that the *Länder* execute federal laws in accordance with the law." This may be through commissioners who, with permission of the Land, visit their highest authority to observe state implementation of federal statues. Should any issues

[909] Deeg.R, 'Contemporary Challenges to German Federalism: From the European Union to the Global Economy', Fall, Law and Policy in International Business, February 28 2001
[910] Suszycka-Jasch.M and Hans-Christian Jasch.H-C, 'The Participation of the German Länder in formulating German EU-Policy', September 1st 2009, German Law Journal
[911] Deeg.R, 'Contemporary Challenges to German Federalism: From the European Union to the Global Economy', Fall, Law and Policy in International Business, February 28 2001
[912] *Ibid*
[913] n.28 supra
[914]Suszycka-Jasch.M and Hans-Christian Jasch.H-C, 'The Participation of the German Länder in formulating German EU-Policy', September 1st 2009, German Law Journal
[915] Whole paragraph: Rose-Ackerman.S, Environmental Policy and Federal Structure: A Comparison of the United States and Germany', October, Vanderbilt Law Review 1994 Symposium: Federalism's Future

arise, the Land will be asked to make the necessary changes. If this does not occur, then the Bundesrat will determine whether there is a violation of the law, with appeal of this decision available to the Constitutional court (Article 84 (4)). According to Article 85 (1), if the federation requires that laws are implemented by the Länder, administration is left to the Länder, unless the laws provide differently. If the Federal government has consent from the Bundesrat then it can administer general administrative rules (Article 85 (2)). In addition, authorities at higher federal levels give direction to the highest Land authorities that implement such directions. Federal oversight considers whether implementation by Länder is both legal and appropriate. Article 86 makes clear that, provided there is no condition to the contrary, if the Federation implements laws then it will also create the administrative rules.

c. Funding (including degree of reliance on national EPA)

The EU funds many specific projects. For example, brownfield site redevelopment, which is within the Bavarian Operational Program (based on "competitiveness and employment"), receives money from the European Regional Development Fund.[916] Over the period of 2007-2013 the program has a budget of €1,767 million and will receive €576 million from the fund.[917] EU funding depends on the nature of the site. For example, with soil protection measures, if protection is more than is minimally required under the Federal Soil Protection Act, co-financing from the EU will account for as much as 50% of procedural costs.[918]

II. Functions, responsibilities, and staff competencies

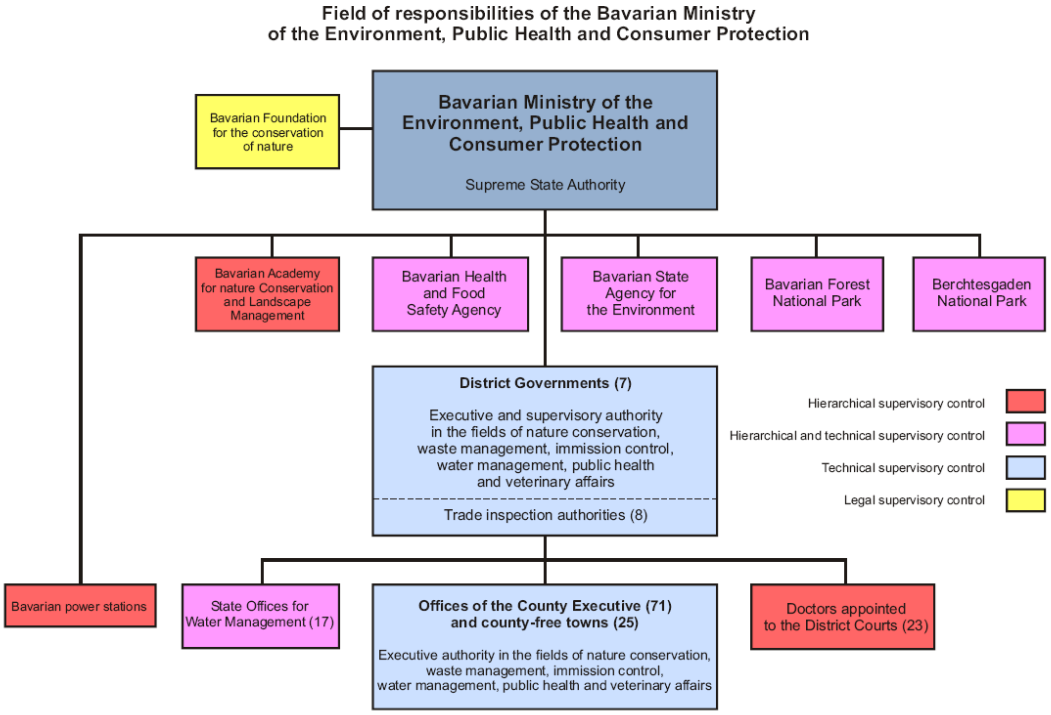
Bavaria takes an approach of cooperation, focusing not just on legal regulation but also voluntary agreements with operators. In line with this is the "Umweltpakt Bayern," or the Bavarian Environmental Pact. Already over 3500 companies in Bavaria have signed onto this agreement outlining environmental measures.[919]

The Bavarian State Office for the Environment (LfU) was established in 2005 through the merger of three offices (the Land Office for Water Management, Geology and Environmental Protection). The LfU collates data regarding environmental issues in Bavaria and after analysis decides upon environmental strategies and procedures. Its work

[916] Bavarian State Ministry for Health and Environment, ''Brownfields, contaminated site remediation and research' in the EU funding period 2007-2013', http://www.stmug.bayern.de/umwelt/boden/altlasten/eu_fonds.htm, Last accessed May 19th 2010
[917] EUROPA, 'Operational Programme 'Bavaria', http://ec.europa.eu/regional_policy/country/prordn/details_new.cfm?gv_PAY=DE&gv_reg=1063&gv_PGM=1098&LAN=7&gv_PER=2&gv_defL=7, Last accessed May 19th 2010
[918] Bavarian State Ministry for Health and Environment, ''Brownfields, contaminated site remediation and research' in the EU funding period 2007-2013', http://www.stmug.bayern.de/umwelt/boden/altlasten/eu_fonds.htm, Last accessed May 19th 2010
[919] Bavaria State Government, 'Responsibility for Nature and the Environment', http://www.bayern.de/Responsibility-for-Nature-and-the-Environment-.605.htm Last accessed May 19th 2010

covers a wide variety of environmental topics.[920] The LfU is the "central technical authority" and conducts research and evaluations of environmental matters.[921]

Overarching state authority lies with the Bavarian Ministry for the Environment, Public Health and Consumer Protection (StMUG), which was established on October 30th 2008. It bears responsibility for the protection of the environment and human health.[922] LfU is one agency that gives technical assistance on environmental matters, for example. The organization of other agencies in relation to StMUG can be seen below:[923]



1. Environmental Impact Assessment (EIA)

The legislation relevant to EIA is the Gesetz uber die Umweltvertraglichkeitsprufung 1990 (UVPG). Section 3 (1) of the UVPG determines that with Bundesrat consent, the federation can make alterations to EIA provisions such as: standards and what activities in Annex 1 require an EIA. According to Section 3(2), the Federal Ministry of Defense, in agreement with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety,

[920] All from: Bavarian State Office for the Environment, 'Bavarian Environment Agency', http://www.lfu.bayern.de/doc/profil_englisch.pdf 2009
[921] Bavarian State Office for the Environment, 'About Us', http://www.lfu.bayern.de/wir/index.htm, Last accessed May 20th 2010
[922] Bavarian Ministry for the Environment, Public Health and Consumer Protection, 'The Ministry for Man and the Environment', http://www.stmug.bayern.de/english/ministry/index.htm, Last accessed May 20th 2010
[923] http://www.stmug.bayern.de/english/ministry/authorities/doc/org_english.pdf

can require through regulatory order that a defense project be exempted from the EIA provisions provided that there are pertinent security reasons or international requirements. The Bundesrat does not have a role in this determination and its approval is not required.

By Article 4 UVPG, EIA legislation applies so long as Federal or Länder legislation does not necessitate more detailed requirements regarding EIA. An EIA is not needed if their provisions do not reach the level of assessment provided for under the UVPG. If the environmental ambit of an authority is affected by a proposed project then the competent authority must make them aware of the proposal (Article 7 UVPG). If a project may impact considerably on "protected a ssets" (defined in Article 2(1) and (2) to include for example persons, animals, landscapes, etc.) in another Land, or if another Land makes a request, then the competent authority must make them aware of the project and provide any relevant information so that they can determine whether they wish to participate in the EIA process and be involved in any consultations (Article 8 UVPG).

When several Land authorities are involved in an EIA one state serves as the main authority responsible for the provisions in Articles 3a, 5, 8, 9a and 11 (Article 14 UVPG). Extra conditions can still be attached even if a project has been approved after the EIA has been carried out (Article 21(2) UVPG). The federal government itself can implement specific requirements such as information provision, but in enacting these requirements must listen to the involved parties and must receive consent from the Bundesrat (Article 21(4)) Concerning project procedure and authorization, Articles 72-78 of the Administrative Procedure give the Federal government authority to enact statutory ordinances, with Bundesrat consent, regarding "further details of the plan approval process, particularly the extent and nature of the application documents."

The government levies fines under three circumstances: if a project is implemented without EIA approval, if additional requirements added under Article 21(2) are not followed, or if a statutory ordinance is ignored (Article 23). Most offences draw a €20,000 fine, though the cost can be as high as €50,000 if certain ordinances are not followed. With Bundesrat consent, the Federal government is required to enact administrative guidelines detailing criteria and methods to be used in the EIA assessment, and any information required in EIA documents.

In order to streamline the EIA process, the Federal Government has written documents that offer direction on EIA provisions and requirements.[924]

a. Planning, sectoral and strategic EIA

Following EC Directive 2001/42/EC,[925] Germany incorporated Strategic Environmental Assessment in to Part 3 of the UVPG, which lays out EIA procedures. The BMU recently

[924] UBA, 'Environmental Assessment (EIA/SEA)', http://www.umweltbundesamt.de/umweltrecht-e/uvp.htm, Last updated September 3rd 2007

[925] On the assessment of the effects of certain plans and programmes on the environment

published guidance on SEA in light of legislation changes at the start of March 2010.[926] As to the specific provisions; Section 14e notes that the SEA requirements in the UVPG will override any other Federal or Länder SEA legislation, unless these require additional requirements on top of that provided for in the UVPG. The draft plan for the plan or program should be submitted to the relevant environment and health ministry (Article 14h UVPG). The public have the same participation opportunities as provided for EIA under Article 9 (Article 14i UVPG).

2. Procedure for setting and revising standards

Through directives such as the EC Water Framework Directive, the EU creates the overarching legal framework for water standards in member states. There are also a number of federal water acts in Germany, such as the Water Management Act. These frameworks are then expanded in scope at the Länder level (who can enact obligations in accordance with for example distinctive requirements in that state).[927]

Municipal waste water standards demonstrate an example of standards setting in practice. These standards are created at the lowest municipal level. The municipality must follow district level requirements. This district government must, in turn, follow Länder and Federal Government conditions, and finally the Länder and Federal Government are obligated to comply with the relevant EU Directive concerning municipal waste water. District or state governments can also increase standards for particular areas, for example if a river is particularly susceptible to environmental damage. Other bodies are also involved in this web of standard setting, for example scientific organizations and they can influence decision in consultations held on *inter alia* new legislative proposals. The extensive interaction among different government levels, as well as with independent organizations helps to create cohesion in standards setting. As time has passed more organizations have been established to help with regulating water as opposed to leaving this solely to municipalities.[928]

Another example is the Wastewater Ordinance, or *Abwasserverordnung*, which sets a Federal framework of technical minimum standards regarding waste levels in water discharges. These standards vary by industry—particular standards are used specifically for water that will be used domestically. Länder and their water authorities can make those minimum standards stricter at the local level for "protection of the common good" or again if an area is particularly susceptible to damage. [929]

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[926] BMU, 'Guidance on Strategic Environmental Assessment', http://www.bmu.de/umweltvertraeglichkeitspruefung/downloads/doc/43950.php, Last accessed: May 19th 2010. To view the guidance in German see: http://www.bmu.de/files/pdfs/allgemein/application/pdf/sup_leitfaden_lang_bf.pdf

[927] Whole paragraph: UBA, 'The German Water Sector: Policies and Experiences', http://www.umweltdaten.de/publikationen/fpdf-l/2752.pdf Last accessed May 18th 2010

[928] Whole paragraph: UBA, 'The German Water Sector: Policies and Experiences', http://www.umweltdaten.de/publikationen/fpdf-l/2752.pdf Last accessed May 18th 2010

[929] Whole paragraph: UBA, 'The German Water Sector: Policies and Experiences', http://www.umweltdaten.de/publikationen/fpdf-l/2752.pdf Last accessed May 18th 2010

Constant monitoring is carried out to regulate standards, both through operator self-monitor and water authority spot checks. In addition tests are carried out to determine whether self-monitoring is effective. Exceeding legal limits brings about fiscal consequences and additional punishments for operators. In order to ensure compliance even further, stating that "it is in the dischargers" own interest to meet the nationwide uniform, state-of-art standards, since the wastewater charge increases by a multiple if the standards are not met.'[930]

3. Special programs such as compliance assistance for small and medium sized enterprises

The Environmental Pact of Bavaria is discussed in detail below. Specific provisions within the Pact that give assistance to small and medium sized enterprises (SMEs). For example, SMEs receive support for voluntarily implementing Eco Management and Audit Schemes (EMAS). The regional government provides subsidies for this if the SMEs have 250 employees or less and an annual turnover lower than €15.3 million. There is also up to 50% reduction in the cost of an environmental audit with a maximum of €900 reduction. The audit covers issues such as the extent of the SME's environmental impact and advice on how they can improve these and also the costs they will save if they improve these environmental practices. If a SME incorporates an environmental management system then they can receive subsidies with regards to having to employ extra personnel and charges for certifications. SMEs that implement EMAS also receive 30% reduction in costs of permitting procedures and are not subject to certain inspections and monitoring requirement by different environmental laws. SMEs still face a cost, however, for being part of the agreement. At least 50% of the costs for the EMAS in other parts of the agreement they and large companies will have to pay fully in order to carry out their obligations.[931]

4. Relationship with industry (and other regulated entities)

Bavaria has an Environmental Pact with companies in the region. The first pact was established in 1995 and has been renewed since then. This voluntary pact aims to ensure protection of the environment is through collaboration that does not require coercion or endless paperwork and can enable better communication between key actors. For example, better environmental performance can reduce costs for businesses. There are also eight discussion groups on key topics such as renewable energy and emissions. All members of the pact contribute to these groups, which form the basis then for policy decision making. There are incentives for joining the pact, especially for SMEs. For example, they can receive funding from the Bavarian Environmental Advisory and Audit Program to create an environmental management system and have access to the Information Center Environmental Economics, which provides guidance on legal requirements, technical

[930]Whole paragraph: UBA, 'The German Water Sector: Policies and Experiences', http://www.umweltdaten.de/publikationen/fpdf-l/2752.pdf Last accessed May 18th 2010

[931] Whole paragraph: Environmental Compliance Assistance Programme for SMEs, 'Case 11: Bavarian Environmental Agreement, Germany'http://ec.europa.eu/environment/sme/pdf/environmental_agreement_en.pdf, Access page last updated May 28th 2009

mechanisms for improving environmental performance, and important contacts. Bavaria has found the pact to be successful overall in better environmental protection and energy use by companies. There was agreement in 2000 to maintain the pact, and a similar accord in 2005, which ends in October this year. Overall they have taken the success as proof that the environment and the economy can beneficially work together.[932] Cost sharing between Bavarian government and industry is a major part of the environmental agreement. It is reported that about €5 million a year is spent on duties under the agreement by the government.[933]

Bavaria also has a specific scheme open to all organizations. This is the 'Eco Management and Audit Scheme' (EMAS), which has been implemented under direction of an EU regulation (No 1221/2009) which allows organizations to voluntarily be part of EMASs. As part of the scheme organizations must provide environmental protection that goes further than the minimum legal protection. They must also have an environmental management system, have to show commitment to continually advancing their environmental performance and publicly make a statement regarding the environmentally beneficial procedures they are undertaking. With regards to inducements to ensure organizations voluntarily become part of this scheme; a number are offered by the Bavarian government. For example; water charges are discounted by 50% and a 30% discount applies to fees for pollution control licenses.[934]

a. Mechanisms for sharing information on pollution prevention and compliance assistance, what conflicts arise and how are they resolved

The "German Environmental Information Portal (PortalU)," a database for environmental information developed by the federal government, became active in 2006 and serves as a collaborative project for information sharing between Länder and the Federal Government. Information includes monitoring data, environmental news and environmental information and this is all accessible online. Five Federal Environmental Agency databases are also attached to PortalU and include the "UBA Environmental Data Catalog" and "Joint Substance Data Pool of Federation and *Länder*"[935].

[932] Whole paragraph Bavarian State Ministry for Environment and Health, 'Environmental Pact of Bavaria', http://www.stmug.bayern.de/umwelt/wirtschaft/umweltpakt/index.htm Last accessed: May 19th 2010

[933] Environmental Compliance Assistance Programme for SMEs, 'Case 11: Bavarian Environmental Agreement, Germany'http://ec.europa.eu/environment/sme/pdf/environmental_agreement_en.pdf, Access page last updated May 28th 2009

[934] Whole paragraph: Bavarian State Ministry for Environment and Health, 'Breaks for companies with environmental management system', http://www.stmug.bayern.de/umwelt/wirtschaft/entlastung/index.htm Last accessed: May 4th 2010

[935] Whole paragraph: UBA, 'German Environmental Information Portal Portal U and the Environmental Data Catalog', http://www.umweltbundesamt.de/service-e/portalu.htm, Last updated: April 9th 2008

5. Measures or indicators of progress toward ambient quality goals and compliances with standards

The Federal Environmental Agency contains an environmental monitoring section. There are nearly 650 monitoring stations across Germany for measuring air quality that in particular record particulate matter, ozone and nitrogen dioxide levels.[936] One trial project with Bavaria, Hesse and Thuringia entailed collaboration of monitoring and creation of hypotheses to assess climate change.[937] The trial project was carried out from 1997-2001 and covered a "biosphere reserve" in Rhön. It was pertinent that monitoring systems could be incorporated for analysis and it was seen as an addition to the recording already taking place by sector areas. It was also important that an appropriate appraisal was planned for the data, which required hypothesizes to be established. The results of this program were then published online. Other regions have adopted this approach to their monitoring, for example in Baden-Württemberg there are reports that their "integrated environmental monitoring system is working."[938]

In addition, there is also an environmental specimen bank. This has been collecting and storing samples since 1985.[939] Samples are taken from various ecosystems across Germany and include samples from the bottom to the top of the food chain as well as blood and urine samples from humans.[940] An analysis is made of the presence of chemical substances in the samples and changes in data can be measured against previous samples taken.[941]

III. Citizen Participation

Article 9 (1) of the UVPG entitles the public at a hearing to put forward their opinion on the environmental impacts of a project in light of the information provided for the EIA. As to the role of the public within EIA, they are involved through: being made aware of the project, enabling pertinent documents from the EIA process to be open to public inspection, being able to give their opinion on the issue and being made aware of the decision and the reasons behind the EIA decision (Article 9 (3)). According to Section 9a UVPG, if a project requiring EIA can impact another Land, local citizens in the other affected state can also participate in the process. In addition the relevant Land authority must also make the other Land aware of the project and *inter alia* communicate clearly with the public what the decision is with reasons and the availability of an appeal. Article 9a (3) possibly limits participation as it seems to rule out objections not founded on special titles under private law "upon expiration of the objection period."

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[936] UBA, 'Trends in Air Quality in Germany', http://www.umweltdaten.de/publikationen/fpdf-l/3943.pdf, October 2009

[937] UBA, 'Environmental Monitoring', http://www.umweltbundesamt.de/umweltbeobachtung/umweltbeobachtungsmethoden.htm, Last updated: February 18th 2008

[938] Last five sentences: UBA, 'Research project on environmental monitoring in the biosphere reserve Rhön', http://www.umweltbundesamt.de/umweltbeobachtung/oeub/rhoen.htm, Last updated January 23rd 2009

[939] Umweltprobenbank, 'Search data', http://www.umweltprobenbank.de/de/documents/10027, Last accessed May 20th 2010

[940] Umweltprobenbank, 'Introduction' http://www.umweltprobenbank.de/de/documents/10018, Last accessed May 20th 2010

[941] *Ibid*

1. Methods used that are beyond command and control

Germany also has an eco-labeling program called the Blue Angel, which is awarded to products or processes with demonstrated low environmental impacts.[942] Founded in 1978, Blue Angel is the first eco-labeling program.
Germany has an eco-tax known as "Environmental Tax Reform." It was introduced in April 1999 and the tax was placed on energy resources. Since labor is expensive in Germany the tax on workers was reduced and instead increased on energy resources. The money that is garnered from these higher taxes by the Federation is then put towards reducing the pension contributions of employers and employees as well as creating investment funds for renewable energy development. Labor then reduces in costs meaning greater job security as well as the creation of new employment, especially in alternative energy sectors. The tax was then increased every year from 1999 to 2003, however there are certain industries that have a reduction in the tax they must pay for resources for reasons such as ensuring they remain competitive. For example, those operating public transport only have to pay 50% of the tax.[943]Interestingly, in 2003 when the Federal government tried to introduce legislation to impose tax on international flights and reduced tax on railways the Lander rejected it.[944]

2. Procedures for initiating legal actions

Environmental Appeals Act (UmweltRechtsbehelfsgesetz- UmwRG) became legally enforceable at the end of 2006. It was enacted in accordance with EC Directive 2003/25/EC.[945] Previously environmental associations could only bring legal actions if their rights had been infringed. Now they can bring action if they believe that an official decision infringes upon environmental legislation. Areas covered are found in Article 1(1) UmwRG and include building industrial plants, waste incinerators and water decisions. However, this apparent contravention of environmental laws must also infringe a recognized citizen right that is legally protected. This includes the right to health, for example, but not environmental right.[946] This means that they can bring action if citizens would be permitted to as well, rather than having to prove that the association itself suffered harm because of the decision.[947]

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[942] http://www.blauer-engel.de/en/index.php
[943] All from: Green Budget Germany, 'The German Ecotax', http://www.foes.de/themen/oekologische-steuerreform/ Last accessed: May 20th 2010
[944] Green Budget Germany, 'Ecotaxes and Emissions Trading in Germany and Europe: Market-based Instruments for the Environment', http://www.foes.de/pdf/Study_Market_Based_Instruments24.pdf, October 2006
[945] Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice.
[946] Whole paragraph: UBA, 'Greater rights on the part of environmental associations to file collective legal actions', http://www.umweltbundesamt.de/umweltrecht-e/verbandsklage/index.htm, Last updated: October 15th 2009
[947] UBA, 'Helping the environment gain its rights', http://www.umweltbundesamt.de/uba-info-presse-e/2009/pe09-048_helping_the_environment_gain_its_rights.htm, Last updated: July 13th 2009

In order to bring a legal action, the association must be legally recognized, which requires a number of factors to be fulfilled, including *inter alia* that the basis of their work is environmental, they have open membership and have been established for at least three years at the time they seek official recognition (see Article 3(1) UmwRG).[948] There are arguments that this insistence that a substantive right has been violated in order for claims to be brought is overly restrictive and all that the new legislation has done is increase the ambit of representation.[949] UBA is considering whether to increase the scope of environmental decisions that are covered by the act by also covering regulations that cover solely environmental issues.[950]

3. Procedures for alternative dispute resolution to achieve compliance

ADR is used in Germany for public or administrative law disputes, in particular for environmental issues. It is also used for regional planning cases. Overall the aim for ADR in these contexts is to facilitate collaboration between parties. There is no legal requirement in Germany that parties must try and settle their disagreements before coming to court, although Section 15a of Act Introducing the Code of Civil Procedure does state that a Länder can legislate provisions requiring that the parties at least try and settle extra-judicially at an established reconciliation organization before bringing their case to court. However, areas covered by this legislation do not include environmental concerns, rather it is more targeted towards defamation claims and disagreements between neighbors. As to the legal effect of solutions using ADR; the settlement is usually recorded and takes a contractual form. This therefore binds parties involved in the disagreement. It also usually conforms to 'settlement' as found in Section 779 German Civil Code.[951]

4. Mechanisms that the environment agency uses to discourage rent seeking behavior by those seeking permits

The example of carbon emissions

This area is governed by the EU by the Emissions Trading Directive (ETD). Most Member State allowances are freely allocated as opposed to auctioning.[952] The ETD came into effect on October 25th 2003 and Article 9 of the ETD required an Allocation Plan to be produced

[948] UBA, 'Greater rights on the part of environmental associations to file collective legal actions', http://www.umweltbundesamt.de/umweltrecht-e/verbandsklage/index.htm, Last updated: October 15th 2009
[949] Schaffrin.D and Mehling.M, 'Public Interest Litigation in Environmental Matters: A German Perspective', Number 2, 2007, Environmental Law Network International Review
[950] UBA, 'Helping the environment gain its rights', http://www.umweltbundesamt.de/uba-info-presse-e/2009/pe09-048_helping_the_environment_gain_its_rights.htm, Last updated: July 13th 2009
[951] Whole paragraph: European Judicial Network in Civil and Commercial Matters, 'Alternative dispute resolution – Germany', http://ec.europa.eu/civiljustice/adr/adr_ger_en.htm, Last updated: April 7th 2006
[952] Europa, 'Emission Trading System (EU ETS)', http://ec.europa.eu/environment/climat/emission/auctioning_en.htm, Last updated: 6th May 2010

by each Member State by March 31st 2004.[953] In addition, Article 10 required that during the first phase at least 95% of allowances were allocated for free; Germany elected for 100%.[954] Germany has the highest number of EU emission allowances out of all Member States.[955]

The second phase of allocation in now in place, and the German Allocation Act 2012 (ZuG 2012) section 19 stipulates that 40 million allowances are to be allocated by auction between 2008-2012. This is 9% of the total emissions allowances for Germany. There is a certain allocation every week and trading takes place on a stock market using European Energy Exchange (EEX). A closed system is used to bidders cannot see any other bid apart from their own. The same price is paid for every allowance unit. In the spot market the minimum bid is 500 allowances, on the derivatives market it is 1000. The highest bid (i.e., the highest number of allowances being bid for) wins and allocation takes place from this number down to the lowest bid, or until allowances run out (which ever comes first). If two operators bid the same amount, then who ever bids first in time is ranked first.[956] Regarding the third phase; the EU foresees than from 2013 100% of allowances will no longer to be allocated for free for electricity (with only very limited exceptions to this) and that the majority are expected to follow the auction system.[957]

Free allocation of allowances follows procedures in the National Allocation Plan. There are two parts to this; the 'Macroplan', which covers for example how much as a whole for the country the allowance to be allocated will be and the 'Microplan'; includes for example *how* these allowances are allocated. Under the Microplan, the methods used are as follows; 'grandfathering' where allocation is determined by what emissions by an installation has been during a particular time and 'benchmarking' where allocation is determined by the specific product and what, on average for that product is emitted. To calculate individual allocation emissions during 2000-2002 are looked at along with any allowances to be given; for example if it is a new operator.[958] In particular industrial installations have 98.75% of their allowances allocated in light of what their emissions in the past have been

[953] Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, http://www.bmu.de/files/pdfs/allgemein/application/pdf/nap_kabi_en.pdf 'National Allocation Plan for the Federal Republic of Germany 2005-2007', 31 March 2004 (Translation 7th May 2004)
[954] Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, http://www.bmu.de/files/pdfs/allgemein/application/pdf/nap_kabi_en.pdf 'National Allocation Plan for the Federal Republic of Germany 2005-2007', 31 March 2004 (Translation 7th May 2004)
[955] ICIS Heren, 'German registry briefly delays 2010 issuance', http://www.icis.com/heren/articles/2010/02/15/9334901/german-registry-briefly-delays-2010-issuance.html, 15th February 2010
[956] Whole paragraph: DEHST, 'Auctioning of EU Allowances in the emissions trading period 2008 to 2012' http://www.dehst.de/cln_153/nn_484538/EN/EmissionsTrading/Auctioning/Auctioning.html Last updated: May 5th 2010
[957] EUROPA, 'Emission trading System (EU ETS)', http://ec.europa.eu/environment/climat/emission/auctioning_en.htm, Accessed: 18th May 2010
[958] Whole paragraph: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, http://www.bmu.de/files/pdfs/allgemein/application/pdf/nap_kabi_en.pdf 'National Allocation Plan for the Federal Republic of Germany 2005-2007', 31 March 2004 (Translation 7th May 2004)

and if emissions are annually less than 25,000 tonnes of carbon dioxide then 100% of their allocations are free.[959]

In terms of the process for free allocation, the operator completes application form and sends it to verifying agency. Information includes for example current emission levels. Verifying agency then looks over application and sends allocation details to operator in the application back with their signature to the operator through Virtual Post Office (VPS) Operator then uses VPS to send application to DEHSt who then allocates the allowances by calculating total number to be allocated. Allocation notice via VPS to operator is then sent.[960] Länder take more a role of coordinator role. While the DEHSt at Federal level decides allocations of allowances, the Länder look at operator reports and report to DEHSt.[961] The Länder were involved in data collection for the National Allocation Plan to enable allowance to be calculated.[962]

There are methods in place to combat rent seeking. Of relevance is the Ordinance on the Auctioning of Emission Allowances in accordance with the Allocation Act 2012 (Emissions Trading Auctioning Ordinance 2012 – EHVV 2012). Section 5(2) states that the operator of the trading market must monitor the activities of bidders all the time; if there is evidence that they are trying to negatively interfere with action prices then they shall take measures required and then allocation will go ahead following the usual process. The measures they can invoke are listed in Section 5(3), which includes limiting allowance to 100,000 or other common measures. Within the interpretation section, more information is given as to what measures can be taken. This includes legal power to exclude the operator from trading.[963]

Normal stock market regulations can be invoked, and DEHSt has this extra power on top of those provisions.[964] In addition to these provisions; the most recent proposed EU revision to the ETD stipulates "that auctions must be conducted in an open, transparent, harmonized and non-discriminatory manner and the process should be predictable."[965] As of April 30, 2010, operators must transfer unused allowances to the national account at the German

[959] DEHSt, 'Ten Questions on Emissions Trading', 25th November 2009, http://www.dehst.de/cln_162/SharedDocs/Downloads/Publikationen__EN/Ten__Questions__on__ET,templateId=raw,property=publicationFile.pdf/Ten_Questions_on_ET.pdf

[960] DEHst, Allocation of Emission Allowances for the Allocation Period 2008-2012 http://www.dehst.de/cln_153/nn_682852/EN/Operators/Allocation__2008-2012/Allocation__2008-2012__node.html?__nnn=true#doc682856bodyText2, Last Updated:10th August 2007

[961] Both sentences: DEHSt, 'Emissions Trading in Germany', January 2007 http://www.dehst.de/SharedDocs/Downloads/Publikationen__EN/Emissions__Trading__in__Germany,templateId=raw,property=publicationFile.pdf/Emissions_Trading_in_Germany.pdf

[962] Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, http://www.bmu.de/files/pdfs/allgemein/application/pdf/nap_kabi_en.pdf 'National Allocation Plan for the Federal Republic of Germany 2005-2007', 31 March 2004 (Translation 7th May 2004)

[963] Whole paragraph: BMU, http://www.bmu.de/files/english/pdf/application/pdf/ets_auctioning_ordinace_bf.pdf

[964] DEHST, 'Auctioning of EU Allowances in the emissions trading period 2008 to 2012' http://www.dehst.de/cln_153/nn_484538/EN/EmissionsTrading/Auctioning/Auctioning.html Last updated: May 5th 2010

[965] EUROPA, 'Emission trading System (EU ETS)', http://ec.europa.eu/environment/climat/emission/auctioning_en.htm, Accessed: 18th May 2010

Emissions Trading Registry. If they do not do this then they are fined €100 for every ton of carbon dioxide that they have not emitted but have the allowance to emit. They also will have to surrender these in the next year and therefore will not be entitled to these extra allowances. If this does not occur then when the free allowance is next given, then this will only be from what they did not use and did not transfer to the registry as originally requested.[966]

Verification is part of compliance that occurs after allocation has been made; a verification agency verifies the emissions data from an operator who then passes an emissions report to the Länder and the Länder then pass this to the DEHSt. The verifying agency enters the data in the "Verified Emissions Table."[967] This then can lead to unused allowances that are not used having to be transferred to the national account as described above. Dr Jürgen Landgrebe, who works for DEHSt notes that while verification has improved over the years, there are still deficiencies.[968] One example is that it is possible for operators to give false statements about their emission levels and these are not found by the verifiers.[969] Landgrebe suggests that there needs to be worse sanctions imposed in order to stop misstatements in the verification reports by operators.[970] With regards to the auction system, hackers got into the German system and transferred 250,000 allowances away from operators, which amounted to about €3 million. As a result the DEHSt delayed the allocation of EU allowances in February.[971]

[966] DEHSt, 'Ten Questions on Emissions Trading', 25th November 2009, http://www.dehst.de/cln_162/SharedDocs/Downloads/Publikationen__EN/Ten__Questions__on__ET,templateId=raw,property=publicationFile.pdf/Ten_Questions_on_ET.pdf
[967] DEHSt, 'Emissions Trading in Germany', January 2007 http://www.dehst.de/SharedDocs/Downloads/Publikationen__EN/Emissions__Trading__in__Germany,templateId=raw,property=publicationFile.pdf/Emissions_Trading_in_Germany.pdf
[968] Dr Jürgen Landgrebe 'Verification in the EU ETS: German Perspective' ICAP China Conference Beijing 12-13 Oct 2009 http://www.icapcarbonaction.com/phocadownload/china_conference/Presentations191009/icap_china_conf_plenary4_landgrebe.pdf
[969] *Ibid*.
[970] *Ibid.*
[971] Both sentences: ICIS Heren, 'German registry briefly delays 2010 issuance', http://www.icis.com/heren/articles/2010/02/15/9334901/german-registry-briefly-delays-2010-issuance.html, 15th February 2010

SWITZERLAND

Overview: Switzerland contains twenty-six separate territorial districts called cantons, each of which is governed by its own constitution, legislature, government, and court system.[972] The cantons are united under one federated system, but simultaneously retain a significant degree of sovereignty. The Federal Constitution of the Swiss Confederation dictates that "[c]antons are sovereign, except as limited by the Constitution. They exercise all rights not vested in the Confederation."[973] The Federal Assembly, Switzerland's bicameral legislative body, is composed of the National Council and Council of States.[974] The Swiss executive branch is governed by the Federal Council, which is a seven-member panel that collectively serves as the head of state.[975] "The Confederation only takes on that which the Cantons are unable to perform or which require uniform regulation by the Confederation."[976]

I. History of the Federal Office for the Environment

Switzerland's first environmental agency, the Federal Office for Environmental Protection (FOEP), was created in 1971 when interest in environmental issues was beginning to emerge world-wide.[977] In 1989, FOEP merged with the Federal Office for Forests and Landscape Protection to form the new Swiss Agency for the Environment, Forests and Landscape (SAEFL).[978] Most recently, SAEFL merged with large sections of the Federal Office of Water and Geology in 2006 to form the modern Federal Office for the Environment (FOEN).[979] This agency is part of the Federal Department of the Environment, Transport, Energy and Communication (DETEC).[980]

In accordance with DETEC's sustainability strategy, the FOEN is charged with the following goals: "long-term preservation and sustainable use of natural resources…and elimination of existing damage," "protection of the public against excessive pollution…," and "protection of people and significant assets against hydrological and geological

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[972] Environmental Protection Online, *available at* http://eponline.com/articles/2004/0/01/sustainable-switzerland.aspx (last viewed Apr. 1, 2010); *The World Factbook*, Central Intelligence Agency, *available at* https://www.cia.gov/library/publications/the-world-factbook/geos/sz.html (last viewed Apr. 19, 2010).
[973] Bundesverfassung der Schweizerischen Eidenossenchaft [BV], Constitution fédérale de la Confédération Suisse [Cst] [Constitution] April 18, 1999, art. 3 (Switz.).
[974] *The World Factbook*, Central Intelligence Agency, *available at* https://www.cia.gov/library/publications/the-world-factbook/geos/sz.html (last viewed Apr. 19, 2010).
[975] *Id*.
[976] Bundesverfassung der Schweizerischen Eidenossenchaft [BV], Constitution fédérale de la Confédération Suisse [Cst] [Constitution] April 18, 1999, art. 43a, ¶ 1 (Switz.).
[977] *The FOEN in Brief, available at* http://www.bafu.admin.ch/org/09606/index.html?lang=en (last updated Marl 8, 2010).
[978] *Id*.
[979] *Id*.
[980] *The FOEN, available at* http://www.bafu.admin.ch/or/index.html?lang=en (last updated Jan. 6, 2010).

hazards…."[981] Achieving these goals requires a staff of three hundred seventy staff members and budget of seven hundred million Swiss francs.[982]

1. National Environmental Protection Authority

a. Authorization

Both the cantons and Confederation's authority to create environmental protection agencies was established by the 1966 Federal Act on the Protection of Nature and Cultural Heritage. The statute states that "[t]he cantons shall set up a specialist agency to consider environmental questions or designate existing public agencies to carry out this task."[983] Similarly, the statute designates the Federal Office as "the specialist agency of the Confederation."[984]

b. Funding

One of Switzerland's several environmental statutes requires that the cantons report to FOEN annually regarding their use of global financial assistance.985 The FOEN must take random samples to determine whether "individual measures have been implemented in accordance with the program agreement, ruling or contract" and "the use of the subsidies paid."[986]

c. Organizational Structure

Currently, the directorate consists of Dr. Bruno Oberle (Director), and Vice Directors Willy Geiger, Andreas Götz, Christine Hoffman and Gérard Poffet.[987]

The FOEN is composed of fifteen divisions, each of which contains a number of specialized substantive sections. The following divisions are subject to FOEN's jurisdiction: Air Pollution Control & NIR Division, Climate Division, Communication Division, Economic & Environmental Monitoring Division, Forest Division, Hazard Protection Division, Hydrology Division, International Affairs Division, Legal Division, Nature and Landscape Division, Noise Abatement Division, Soil Division, Species Management Division, Waste Management, Chemicals, and Biotechnology Division, and Water Division. The responsibilities each division will be discussed in turn below.

Vice Director Geiger oversees the Hydrology Division, Water Division, Species Management Division, and Nature and Landscape Division.[988] Vice Director Götz oversees

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[981] *Goals and Responsibilities*, *available at* http://bafu.admin.ch/org/ziele/index.html?lang=en (last updated Jan. 6, 2010).
[982] *EPA Network*, Network of the Heads of Environmental Protection Agencies (last updated Apr. 8, 2010).
[983] Federal Act on the Protection of Nature and Cultural Heritage, art. 4, § 1 (July 1, 1966).
[984] *Id*. at § 2.
[985] Ordinance on the Protection of Nature and Cultural Heritage, art. 10a, § 1 (July 16, 1991).
[986] *Id*. at art. 10a, § 2.
[987] *EPA Network*, Network of the Heads of Environmental Protection Agencies (last updated Apr. 8, 2010).

the Hazard Prevention Division, Climate Division, and Forest Division.[989] Vice Director Hoffman oversees the Economic and Environmental Monitoring Division, Legal Division, and Political Affairs Section.[990] Vice Director Poffet oversees the Soil Division, Noise Abatement Division, Air Pollution Control & NIR Division, and Waste Management, Chemicals, and Biotechnology Division.[991] The International Affairs and Communications Divisions are overseen directly by Director Oberle (who also oversees the four Vice Directors).[992] Each division or section is headed by its own manager.

The Air Pollution & NIR Division contains the following sections: Air Quality Management Section, Traffic Section, Industry & Combustion Section, Non-Ionizing Radiation Section, National Air Pollution Monitoring Network (NABEL), and Federal Commission for Air Hygiene.[993] It is responsible for developing scientific and policy-based foundations for the regulation of air pollutants produced by both stationary and mobile sources.[994] It also protects against the non-ionizing radiation that fixed installations produce.[995]

The Climate Division is composed of the Climate Reporting and Adaptation Section, Climate Policy Section, and Carbon Dioxide Act Implementation Section.[996] This division creates long-term political strategies involving CO_2 tax, emission trading, and climate reporting.[997] It is also responsible for the analyzing the impacts of climate change throughout Switzerland and evaluating the effectiveness of CO_2 reduction mechanisms.[998]

The Communication Division contains the following sections: Media Section, Communication Consulting, Publications, and Internet Section, Environmental Education

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[988] FOEN Organizational Chart, *available at* http://www.bafu.admin.ch/org/organisation/index.html?lang=en (last updated Jan. 1, 2010).
[989] *Id*.
[990] *Id*.
[991] *Id*.
[992] *Id*.
[993] *Air Pollution Control and NIR Division*, *available at* http://www.bafu.admin.ch/org/organisation/00268/index.html?lang=en (last updated Jan. 8, 2010).

[994] *Air Quality Management* Section, *available at* http://www.bafu.admin.ch/org/organisation/00268/00278/index.html?lang=en (last updated Mar. 20, 2009); *Traffic Section*, *available at* http://www.bafu.admin.ch/org/organisation/00268/00280/index.html?lang=en (last updated Mar. 20, 2009); *Industry and Combustion Section*, *available at* http://www.bafu.admin.ch/org/organisation/00268/00282/index.html?lang=en (last updated Nov. 27, 2009).
[995] *Non-Ionising Radiation*, *available at* http://www.bafu.admin.ch/org/organisation/00268/00284/index.html?lang=en (last updated Dec. 22, 2008).
[996] *Climate Division*, available at http://www.bafu.admin.ch/org/organisation/09477/index.html?lang=en (last updated Jan. 8, 2010).
[997] *Id.; Climate Policy Section*, *available at* http://www.bafu.admin.ch/org/organisation/09477/09481/index.html?lang=en (last updated Dec. 29, 2009).
[998] *Climate and Reporting Section*, *available at* http://www.bafu.admin.ch/org/organisation/09477/09479/index.html?lang=en (last updated Dec. 29, 2009); *CO2 Act Implementation Section*, *available at* http://www.bafu.admin.ch/org/organisation/09477/09483/index.html?lang=en (last updated Dec. 29, 2009).

Section, Information Center, and Language Services.[999] It is responsible for publishing enforcement aids, educational materials, and technical publications, as well as overseeing FOEN's website and magazine.[1000]

The Economic & Environmental Monitoring Division is composed of the Economics Section, Consumption & Products Section, Innovation Section, and Environmental Monitoring Section.[1001] The division's two primary tasks are to "act as the FOEN competence centre for [] natural resource economics," and to provide information to both the public and policymakers on the state of Switzerland's environment.[1002] More specifically it oversees volatile organic compounds, consumption, innovation, and environmental monitoring.[1003]

The Forest Division includes the following sections: Divisional Management Section, Secretariat, Forest and Timber Industry, Fundamentals and Forestry Professionals Section, Forest and Policy and Conservation Section, and Forest Products and Services and Forest Quality Section.[1004] Collectively, this division is responsible for the formulation and implementation of sustainable forest policies, the coordination of forestry education and training, and monitoring the impact of climate change on the nation's forests.[1005]

The Hazard Protection Division is composed of the Prevention of Major Accidents and Earthquake Mitigation Section, Risk Management Section, Flood Protection Section, and Landslides, Avalanches, and Protection Forest Section.[1006] It aims to minimize "the risks for people, the environment and property resulting from natural hazards such as avalanches, flooding, torrents, debris flows, erosion, landslides, rockfall, rockslides, debris avalanches, earthquakes, and major accidents…."[1007]

FOEN's Hydrology Division contains the following sections: Hydrometry Section, Instruments and Laboratory Section, Data Processing and Information Section, Analyses and Forecasts Section, and Hydrogeology Section.[1008] This division conducts hydrological

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[999] *Communication Division, available at* http://www.bafu.admin.ch/org/organisation/00024/index.html?lang=en (last updated Jan. 8, 2010).
[1000] *Id*.
[1001] *Economics and Environmental Monitoring Division, available at* http://www.bafu.admin.ch/org/organisation/00325/index.html?lang=en (last updated Jan. 8, 2010).
[1002] *Id*.
[1003] *Id*.
[1004] *Forest Division, available at* http://www.bafu.admin.ch/org/organisation/00389/index.html?lang=en (Jan. 8, 2010).
[1005] *Divisional Management, available at* http://www.bafu.admin.ch/org/organisation/00389/00392/index.html?lang=en (last updated Dec. 29, 2009); *Fundamentals and Forestry Professionals Section, available at* http://www.bafu.admin.ch/org/organisation/00389/00400/index.html?lang=en (last updated Apr. 20, 2009); *Forest Policy and Conservation Section, available at* http://www.bafu.admin.ch/org/organisation/00389/00406/index.html?lang=en (last updated Dec. 22, 2009).
[1006] *Hazardous Protection Division*, available at http://www.bafu.admin.ch/org/organisation/00180/index.html?lang=en (last updated Jan. 8, 2010).
[1007] *Id*.
[1008] *Hydrology Division, available at* http://www.bafu.admin.ch/org/organisation/00196/index.html?lang=en (last updated Jan. 8, 2010).

surveys, compiles data series to provide a reliable basis for water management, and evaluates changes in Switzerland's water resources.[1009]

The International Affairs Division contains the Global Affairs Section, Europe, Trade and Cooperation on Development Section, and Rio Conventions Section.[1010] Each of these sections is responsible for managing Switzerland's obligations under international environmental agreements.

The Legal Division contains a Divisional Management Section, and Legal Service Sections 1, 2, and 3.[1011] Legal Service 1 addresses landscape, forestry, biotopes, species, management, biotechnology, and organisms.[1012] Legal Service 2 is responsible for legal issues that arise regarding air, noise, electrosmog, climate, environmental impact assessments, the right of collective appeals, economics, information, and European Union law.[1013] Legal Service 3 addresses waste, contaminated sites, soil, chemicals, natural hazards, and incidents.[1014]

The Nature and Landscape Division includes the Natural Heritage Section, Landscape and Land Use Section, Landscape and Infrastructure Section, and Federal Commission for the Protection of Nature and Cultural Heritage.[1015] The division's priority concerns include sustainable landscape use, sport and tourism, "keeping landscape interventions to a minimum," and "landscapes of national importance."[1016]

The FOEN's Noise Abatement Division is composed of the Air Traffic, Military and Public Health Section, Railways and Spatial Planning Section, Roads and Vehicle Section, and Federal Noise Abatement Commission.[1017] The division prepares technical and legislative

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[1009] *Hydrometry Section, available at* http://www.bafu.admin.ch/org/organisation/00196/00200/index.html?lang=en (last updated Mar. 19, 2009); *Data Processing, and Information Section, available at* http://www.bafu.admin.ch/org/organisation/00196/00204/index.html?lang=en (last updated Dec. 29, 2009); *Analyses and Forecasts Section, available at* http://www.bafu.admin.ch/org/organisation/00196/00223/index.html?lang=en (last updated Mar. 19, 2009).
[1010] *International Affairs Division, available at* http://www.bafu.admin.ch/org/organisation/00240/index.html?lang=en (last updated Jan., 8.2010).
[1011] *Legal Division, available at* http://www.bafu.admin.ch/org/organisation/00350/index.html?lang=en (last updated Jan. 8, 2010).
[1012] *Legal Service 1, available at* http://www.bafu.admin.ch/org/organisation/00350/00357/index.html?lang=en (last updated Mar. 19, 2009).
[1013] *Legal Service 2, available at* http://www.bafu.admin.ch/org/organisation/00350/00359/index.html?lang=en (last updated (Mar. 19, 2009).
[1014] *Legal Service 3, available at* http://www.bafu.admin.ch/org/organisation/00350/00361/index.html?lang=en (last updated Oct. 5, 2009).
[1015] *Nature and Landscape Division, available at* http://www.bafu.admin.ch/org/organisation/00297/index.html?lang=en (last updated Jan. 8, 2010).
[1016] *Id*.
[1017] *Noise Abatement Division, available at* http://www.bafu.admin.ch/org/organisation/00124/index.html?lang=en (last updated Jan. 8, 2010).

documentation regarding noise generated by military installations, railways, and vehicles, and also analyzes the impact of noise on human populations and the environment.[1018]

The Soil Division contains the Soil Protection Section, Soil Use Section, Contaminated Sites Section, and EIA and Spatial Planning Section.[1019] Among other tasks, this division is responsible for ensuring the sustainable use of soil, protecting against soil pollutants and physical pressure, revitalizing brownfields, and monitoring changes in national soil conditions.[1020]

The Species Management Division contains the following sections: Wildlife and Forest Biodiversity Management Section, Fisheries and Aquatic Fauna Section, Species and Biotopes Section, and Project Strategy Biodiversity Strategy.[1021] "The Species Management Division is the federal authority responsible for the conservation and management of species, habitats, and biotopes."[1022]

The Waste Management, Chemicals, and Biotechnology Division is comprised of the Waste Recovery and Treatment Section, Industrial Chemicals Section, Biocides and Plant Protection Products Section, Biotechnology Section, Federal Ethics Committee on Non-Human Biotechnology, and Federal Expert Commission for Biosafety .[1023] This division is responsible for developing and enforcing safety standards for chemicals, waste management, and biotechnology.[1024] I

Lastly, the Water Division contains the Morphology and Residual Flows of Surface Waters Section, Groundwater Protection Section, Quality of Surface Waters Section, and River Basin Management Section.[1025] Its responsibilities include protecting drinking water, developing strategies for the maintenance of residual flows, and coordinating data management initiatives.[1026]

[1018] *Air Traffic, Military and Public Health Section, available at* http://www.bafu.admin.ch/org/organisation/00124/00130/index.html?lang=en (last updated Dec. 29, 2009); *Railways and Spatial Planning Section, available at* http://www.bafu.admin.ch/org/organisation/00124/00132/index.html?lang=en (last updated Dec. 29, 2009); *Roads and Vehicle Section, available at http://www.bafu.admin.ch/org/organisation/00124/00134/index.html?lang=en* (last updated Dec. 23, 2009).
[1019] *Soil Division, available at* http://www.bafu.admin.ch/org/organisation/00151/index.html?lang=en (last updated Jan. 8, 2010).
[1020] *Id*.
[1021] *Species Management Division, available at* http://www.bafu.admin.ch/org/organisation/00156/index.html?lang=en (Jan. 8, 2009).
[1022] *Id*.
[1023] *Waste Management, Chemicals, and Biotechnology Division, available at* http://www.bafu.admin.ch/org/organisation/00366/index.html?lang=en (last updated Jan. 8, 2010).
[1024] *Id*.
[1025] *Water Division, available at* http://www.bafu.admin.ch/org/organisation/00412/index.html?lang=en (Jan. 8, 2010).
[1026] *Morphology and Residual Flows of Surface Waters Section, available at* http://www.bafu.admin.ch/org/organisation/00412/00418/index.html?lang=en (last updated Dec. 23, 2009); *Groundwater Protection Section, available at* http://www.bafu.admin.ch/org/organisation/00412/00420/index.html?lang=en (last updated July 10, 2010);

d. Relationship to state agencies

The Federal Constitution of the Swiss Confederation mandates that the "Confederation & Cantons will help each other in the fulfillment of their duties and will generally cooperate with each other. They owe each other the duty of consideration and support."[1027] This principle governs all of the interactions between the Cantons and Confederation, including those that address environmental protection. The cantons also have the additional burden of implementing federal laws within their territory in accordance with the national Constitution and legislation of the Federal Assembly.[1028] In many instances the Confederation supervises the enforcement of federal legislation, such as the Federal Act on the Protection of the Environment.[1029]

Cantonal governments have the authority to enact their own regulations under the 1966 Federal Act on the Protection of Nature and Cultural Heritage in consultation with DETEC if the Federal Council fails to exercise its power to promulgate ordinances.[1030] Cantons must notify the FOEN when they legislate in the areas of nature protection, cultural heritage protection, or monument preservation.[1031] The following cantons currently have offices dedicated to environmental protection or some specific aspect of environmental protection: Canton Basle-City, Canton Berne Fribourg, Republic and Canton of Geneva, Canton of Graubünden, Canton Solothurn, and Canton Vaud.[1032]

The Federal Constitution designates certain environmental protections as the joint responsibility of the cantons and Confederation or as the sole responsibility of one of these parties. For example, cantons and the Confederation share the responsibility of achieving a balanced relationship between nature and human populations,[1033] and ensuring a safe and environmentally sustainable energy supply.[1034] Those environmental responsibilities assigned solely to the Confederation include legislating against damage or nuisance to the natural environment,[1035] conducting a national land survey,[1036] ensuring economic use and protection of water resources,[1037] ensuring that forests are protected and able fulfill commercial functions,[1038] legislating on the protection of endangered species,[1039] regulating

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River Basin Management Section, available at http://www.bafu.admin.ch/org/organisation/00412/00424/index.html?lang=en (last updated Sept. 29, 2009).

[1027] Bundesverfassung der Schweizerischen Eidenossenchaft [BV], Constitution fédérale de la Confédération Suisse [Cst] [Constitution] April 18, 1999, art. 45, ¶ 1-2 (Switz.).

[1028] *Id*. at art. 48a, ¶ 1.

[1029] *See* Federal Act on the Protection of Nature and Cultural Heritage, art. 38, § 1 (July 1, 1966).

[1030] *Id*. at art. 65, § 1.

[1031] Federal Act on the Protection of Nature and Cultural Heritage, art. 27 (July 16, 1991).

[1032] *Governments of the WWW: Switzerland*, *available at* http://www.gksoft.com/govt/en/ch.html (last viewed Apr. 16, 2010).

[1033] Bundesverfassung der Schweizerischen Eidenossenchaft [BV], Constitution fédérale de la Confédération Suisse [Cst] [Constitution] April 18, 1999, art. 73 (Switz.).

[1034] *Id*. at art. 89, ¶ 1.

[1035] *Id*. at art. 74, ¶ 1.

[1036] *Id*. at art. 75a, ¶ 1-2.

[1037] *Id*. at art. 76, ¶ 1.

[1038] *Id*. at art. 78, ¶ 12.

the use of nuclear energy,[1040] and ensuring that the agricultural sector contributes to the protection of natural resources.[1041] Responsibilities reserved solely for the cantons include regulating energy use in buildings,[1042] and protecting natural and cultural heritage.[1043]

2. State Environmental Protection Authorities

a. Authorization and accountability to national EPA

The Swiss Constitution authorizes any "Council member, canton, faction, or parliamentary committee…to submit an initiative to the Federal Assembly."[1044] In addition, it provides that the "Confederation & Cantons may together agree that Cantons should achieve specific goals in the implementation of federal law; and to this end may develop programs to receive federal funds from the Confederation."[1045]

b. Funding (including degree of reliance on national EPA)

The Swiss Confederation must leave the cantons with sufficient financial resources and "contribute towards ensuring that they have the funds required to fulfill their tasks."[1046] The FOEN's budget constitutes 2.9 percent of the entire nation's annual expenditure.[1047] At least ninety-three percent of these monies are given to cantonal authorities and the Swiss public.[1048] The cantonal authorities receive thirty percent of this designation in form of subsidies, while the Swiss public receives the remaining sixty-three percent in the redistribution of incentive tax revenues.[1049]

Two provisions of the 1966 Federal Act on the Protection of Nature and Cultural Heritage govern financial support to the cantons for environmental protection initiatives. The first states that "[t]he Confederation shall provide the cantons with global compensatory payments within the scope of the authorized credits on the basis of programme agreements for the protection and upkeep of biotopes of national, regional, and local importance and for ecological compensation."[1050] The second provision allows the Confederation to support cantonal initiatives to protect nature, cultural heritage, and monuments by providing global financial assistance.[1051] The amount of financial assistance is determined

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[1039] *Id*. at art. 78, ¶ 4.
[1040] *Id*. at art. 90.
[1041] *Id*. at art. 104, ¶ 1.
[1042] *Id*. at art. 89, ¶ 14.
[1043] *Id*. at art. 78, ¶ 1.
[1044] *Id*. at art. 160, ¶ 1.
[1045] *Id*. at art. 146, ¶ 2.
[1046] Bundesverfassung der Schweizerischen Eidenossenchaft [BV], Constitution fédérale de la Confédération Suisse [Cst] [Constitution] April 18, 1999, art. 47, ¶ 2 (Switz.).
[1047] *The FOEN in Brief*, available at http://www.bafu.admin.ch/org/09606/index.html?lang=en (last updated Mar. 8, 2010).
[1048] *Id*.
[1049] *Id*.
[1050] Federal Act on the Protection of Nature and Cultural Heritage, art. 14 (July 1, 1966).
[1051] *Id*. at art. 13, § 1.

by the importance of the site in question and is only provided for cost-effective measures that are carried out in a professional manner.[1052]

The 1991 Ordinance on the Protection of Nature and Cultural Heritage also addresses financial arrangements between the Confederation and the cantons. Under this statute, cantons seeking financial assistance must submit an application to the FOEN detailing program objectives, measures required to achieve objectives, and the probable effectiveness of those measures.[1053] The criteria for determining the amount of funding includes importance of the site to be protected, complexity of protection measures, level of threat to site in question, and quality of services to be provided.[1054] If the FOEN finds during the term of the program that a canton has failed to comply with its reporting duty or culpably causes disruption to its services, the agency must withhold all or part of the global financial assistance installment payments.[1055]As a result of substandard cantonal services, the FOEN must require the canton to correct defects.[1056]

II. Functions and Operations

1. Environmental Impact Assessment (EIA)

The 2008 Federal Act on the Protection of the Environment governs the use of environmental impact assessments (EIAs) and reports. Authorities planning to construct or modify an installation must assess the project's impact on the environment at the earliest possible stage.[1057] EIAs are mandatory for those installations "that could cause substantial pollution to environmental areas to the extent that it is probable that compliance with regulations on environmental protection can only be ensured through measures specific to the project site."[1058] It is the responsibility of the Federal Council to designate the type of installations that are subject to EIAs.[1059] The Council also has the discretion to determine "threshold values above which the assessment must be carried out."[1060]

An environmental impact report must be submitted to a competent authority by any person planning to construct or modify an installation in a manner that subjects the project to an EIA.[1061] "This forms the basis for the environment impact assessment."[1062] Such reports must contain all information needed to assess the project including existing conditions, proposed environmental remediation in the event of a disaster, and "the foreseeable residual environmental impact."[1063] A preliminary investigation must be conducted in order

[1052] *Id*. at art. 13, §§ 3-4.
[1053] Ordinance on the Protection of Nature and Cultural Heritage, art. 4b (July 16, 1991).
[1054] *Id*. at art. 5.
[1055] *Id*. at art. 11, § 1.
[1056] *Id*. at art. 11, § 2.
[1057] Federal Act on the Protection of the Environment, art. 10a, § 1(Aug. 1, 2008).
[1058] *Id*. at art. 10a, § 2.
[1059] *Id*. at art. 10a, § 2.
[1060] *Id*.
[1061] *Id*. at art. 10b, § 1.
[1062] *Id*.
[1063] *Id*. at art. 10b, § 2.

to prepare the environmental impact report.[1064] "If the preliminary investigation conclusively ascertains the effects on the environment and the environmental protection measures required, the results of the preliminary investigation are deemed to be the report."[1065] A competent authority may seek expert reports, but before doing so it must provide interested parties an opportunity to be heard.[1066]

Environmental protection agencies are responsible for assessing the results of the report and preliminary investigation prior to proposing measures to the competent decision-making authority.[1067]

2. Procedures to ensure outreach and transparency

The Swiss government fosters transparency by allowing anyone to inspect the environmental impact report and results of the EIA, so long as no overriding need for secrecy exists.[1068]

3. Procedure for environmental monitoring

Monitoring and data collection laws arise in the context of biological diversity and industrial installations. First, the 1991 Federal Act on the Protection of Nature and Cultural Heritage places the responsibility for monitoring biodiversity upon FOEN.[1069] It requires that FOEN's actions supplement measures taken by the cantons.[1070] FOEN has the burden of conducting successive evaluations to ensure that both the legally mandated measures have been taken, and that these measures are suitable for assessing the nation's biodiversity.[1071]

Similarly, the 2005 Federal Act on the Consultation Process gives the Federal Council the discretion to conduct regular inspections of installations "such as oil-fired furnaces, waste disposal installations and construction machinery."[1072] All persons are obligated to provide the authorities with the information needed to enforce the statute.[1073] In addition, the Federal Council or cantons may require that installation operations keep registers regarding air pollution, noise and vibrations, or waste disposal and that such registers be produced at the request of competent authorities.[1074]

4. Capacity building programs for state agencies

[1064] *Id*. at art. 10b, § 3.
[1065] *Id*.
[1066] *Id*. at art. 10b, § 4.
[1067] *Id*. at art. 10c, § 1.
[1068] *Id*. at art. 10d, § 1.
[1069] Federal Act on the Protection of Nature and Cultural Heritage, art. 27a (July 16, 1991).
[1070] *Id*. at art. 27a, § 1.
[1071] *Id*. at art. 27a, § 2.
[1072] Federal Act on the Consultation Process, art. 45 (Mar. 18, 2005).
[1073] *Id*. at art. 46, § 1.
[1074] *Id*. at art. 46, § 2.

With regard to the national consultation process, "[t]he Confederation may promote the basic and advanced training of personnel entrusted with duties in the terms of this Act."[1075]

III. Citizen Participation

The Swiss Constitution fosters public participation by giving everyone the right to petition the authorities.[1076] In addition, any canton, political party, or national umbrella organization for the communes, economic sector, or any interest group may participate in consultation procedures by submitting an opinion.[1077] Such consultation procedures are "carried out if the project is of major political, financial, economic, ecological, social or cultural significance or if its enforcement will to a substantial extent be the responsibility of bodies outside the Federal Administration."[1078]

The Organization for Economic Cooperation and Development has commented that public involvement in Switzerland is quite developed.[1079] For example, "[c]itizens may intervene in the preparation of legislation, propose subjects for referendums and vote directly on major policy issues."[1080] The OECD also notes that many of these referendums have been influential in improving environmental protections.[1081] In addition to public participation, Switzerland has also extended right of redress to prominent NGOs and other stakeholders.[1082]

III. Legal assessment

The Federal Constitution of the Swiss Confederation dictates that the Federal Supreme Court decides disputes between a canton and the Confederation or between two or more cantons.[1083]

The Constitution states that the "federal Council shall ensure compliance with federal law, cantonal treaties & constitutions and take measures required to fulfill duties."[1084]

1. System and operation of administrative penalties, administrative hearings and appeals

Appeal proceedings filed under the 1966 Federal Act on the Protection of Nature and Cultural Heritage are governed by "the general provisions on the administration of federal

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[1075] *Id*. at art. 49, § 1.
[1076] Bundesverfassung der Schweizerischen Eidenossenchaft [BV], Constitution fédérale de la Confédération Suisse [Cst] [Constitution] April 18, 1999, art. 33 (Switz.).
[1077] Federal Act on the Consultation Process, art. 4 (Mar. 18, 2005).
[1078] *Id*. at art. 3, § 2.
[1079] *Switzerland*, OECD Report, *available at* http://www.oecd.org/dataoecd/8/31/2451893.pdf (last viewed Apr. 16, 2010).
[1080] *Id*.
[1081] *Id*.
[1082] *Id*.
[1083] Bundesverfassung der Schweizerischen Eidenossenchaft [BV], Constitution fédérale de la Confédération Suisse [Cst] [Constitution] April 18, 1999, art. 189, ¶ 2 (Switz.).
[1084] *Id*. at art. 80, ¶ 1-2.

justice."[1085] The statute guarantees a right of appeal against rulings of cantonal and federal authorities to communes and organizations dedicated to nature, cultural heritage, or monument protection, so long as the organization is active throughout Switzerland and pursue non-profit making objectives.[1086] It is the responsibility of the Federal Council to designate which organizations are entitled to appeal.[1087]

More specifically, those organizations dedicated to environmental protection may appeal the ruling of cantonal and federal authorities regarding "the planning, construction or modification of installations for which an[] environmental impact assessment…is required."[1088] The organization's supreme executive body is responsible for filing the appeal.[1089]

2. Compliance assurance mechanisms and their effectiveness

The Federal Council is authorized by statute to promulgate regulations for a voluntary environmental label system and "a voluntary system for the evaluation and improvement of environmental protection in establishments."[1090] If the Council chooses to issue such regulations it must consider both international laws and technical standards.[1091]

3. Procedures for alternative dispute resolution to achieve compliance

The Federal Constitution of the Swiss Confederation indicates that any disputes arising between cantons or cantons and the Confederation shall be resolved by mediation and negotiation whenever possible.[1092]

[1085] Federal Act on the Protection of Nature and Cultural Heritage, art. 54 (July 1, 1966).
[1086] *Id*. at 12, § 1.
[1087] *Id*. at 12, § 3.
[1088] *Id*. at 55, § 1.
[1089] *Id*. at 55, § 4.
[1090] *Id*. at 43a, § 1.
[1091] *Id*. at 43a, § 2.
[1092] Bundesverfassung der Schweizerischen Eidenossenchaft [BV], Constitution fédérale de la Confédération Suisse [Cst] [Constitution] April 18, 1999, art. 44, ¶ 3 (Switz.).

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Environmental Law Institute

2000 L Street, N.W., Suite 620

Washington, D.C. 20036

Telephone: (202) 939-3800

Fax: (202) 939-3868

www.eli.org