GREAT LAKES ENVIRONMENTAL LAW CENTER

Great Lakes Energy Facility Siting

Environmental Laws and Regulations

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III. Energy Facility Siting

This section of the paper examines environmental laws, policies, and regulatory institutions that aim to protect water quantity, water quality, and wetlands and shoreline habitats. The focus of this section is on federal and state laws, with additional consideration of binational, regional and local policies. The topics covered do not represent the entirety of applicable laws and policies related to the energy-water nexus. They were selected because they are the most broadly applicable laws and implicate the most significant and widespread impacts on water quantity, water quality, and habitat protection.

Specifically, this paper will examine laws and policies related to water quantity, water quality, habitat and wetlands, aquatic life, and federal, state, and local energy facility siting regulations.

A. Water Quantity

(1) Great Lakes Compact, Riparian Law Principles, Implementing State Legislation, and Brief Consideration of Provincial Implementing Legislation

The five Great Lakes (Lake Michigan, Lake Huron, Lake Superior, Lake Erie and Lake Ontario), along with the St. Lawrence River and connecting channels, form the world's largest freshwater system, containing an estimated nine-tenths of the U.S. supply of fresh surface water and one-fifth of the world's (GLIN 2008). This mammoth water system covers portions of eight American states (the Great Lakes states) and two Canadian provinces: Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania, New York, Ontario, and Quebec. Consequently, management of Great Lakes water is necessarily an exercise in cooperation among multiple jurisdictions and levels of government, with many potentially overlapping regimes (Hall 2009).

In 2005, the Great Lakes states and Canadian provinces sought to create a more comprehensive and consistent water management system and entered into the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (the Agreement). Simultaneously, the Great Lakes states proposed the Great Lakes-St. Lawrence River Basin Water Resources Compact (the Compact) to implement the Agreement domestically and between the state signatories. *Id.* at 1-2. The two regimes work in tandem - the Agreement is a non-binding policy between the Great Lakes states and the Canadian provinces, implemented in Canada by the provinces and in the United States through the Great Lakes Compact. *Id.* at 2. The Compact became binding in 2008 after it was approved by the Great Lakes states, consented to by Congress, and signed by President Bush. S.J. Res. 45, 110th Cong (2008) (enacted).

In order to understand the difficulties faced in regional water management prior to the Compact, a recent Michigan case is illustrative. *See Michigan Citizens for Water Conservation v. Nestle Waters N. America Inc.*, 709 N.W.2d 174 (Mich. Ct. App. 2005). *Nestle* provides guidance regarding the key legal rules of riparian water use law. There are three underlying principles that govern the process of balancing competing water uses. *Id.* at 202. First, the law seeks to ensure a fair participation in the use of water for the greatest number of users. *Id.* Second, the law will only protect a use that is itself reasonable and not excessive or harmful. *Id.* Third, the law will only redress unreasonable harms. *Id.*

Using these three principles as guidance, courts weigh the following six factors: (1) the purpose of the use[1] – whether the water is used for natural or artificial purposes; (2) the

[1] Drinking water is an example of a natural use. Uses that merely increase ones comfort are considered to be superficial. *Nestle*, 709 N.W.2d at 204.

suitability of the use to the location[2] – whether the use is inappropriate considering the source; (3) the extent and amount of the harm[3]; (4) the benefits of the use; (5) the necessity of the amount and manner of the water use – if the amount or method of water use is excessive or unnecessary and harms another's use, it will be unreasonable; and (6) any other factor that may bear on the reasonableness of the use. *Id.* at 203. All riparians are of equal dignity such that owners of land bordering a waterway have equal right to use the water passing through or by their property. *Id.* at 194. But there also exists a common-law preference for domestic uses, which "are so favored that they will generally prevail over other uses." *Id.* at 195.

In addition to building upon the guidance provided by *Nestle* and similar rulings, both the Compact and the Agreement protect the waters of the Great Lakes by establishing minimum environmental protection standards, which are administered primarily under the authority of the individual states and provinces. Specifically, under the Compact, Great Lakes states must comply with several key requirements. *A Resolution Consenting to and Approving the Great Lakes-St. Lawrence River Basin Water Resources Compact: Hearing on S.J. Res. 45 Before the S. Comm. On the Judiciary*, 110th Cong. 5 (2008) (statement of Noah D. Hall, Professor, Wayne State University Law School). First, the states must manage their water withdrawals by employing common minimum standards for water conservation and sustainable use. Second, the Compact prohibits most diversions of water out of the Great Lakes basin in order to protect the total water supply. *Id*. Finally, the Compact requires that Great Lakes states pass implementing rules and regulations and collect and report data by specific deadlines. These deadlines are the following:

[2] For example, "a particularly large aquifer, stream, or lake may be unaffected even by extensive water withdrawals, whereas a marginal water resource may be unduly strained even by relatively modest withdrawals." *Id.*

[3] Not only will the court consider the economic harm and benefits to the parties, but it should also examine the social benefits and costs of the use, such as its effect on fishing, navigation, and conservation. *Id.* at 204.

- December 8, 2009: The Great Lakes states were required to, and did, submit a list of baseline volumes for existing withdrawals, consumptive uses and diversions. The two Great Lakes provinces, Ontario and Québec, are currently working on submitting a list as well (National Wildlife Federation 2010).
- December 8, 2010: By this date the Great Lakes states must develop and implement a water conservation and efficiency program in addition to concentrating on the promotion of water conservation in general. S.J. Res. 45, 110th Cong (2008), Section 4.2 (enacted), *hereinafter* Compact.
- December 8, 2013: By this date the Great Lakes states must develop a water management program to regulate both new or increased withdrawals as well as consumptive uses, and all withdrawals and diversions must be registered. *Id.* at Section 4.10.

In addition to these specific deadlines, by December, 2013, Great Lakes states must determine the scope, water withdrawal threshold level, and standards to be applied in their water management programs and must also issue rules necessary to implement such programs, in order to achieve the objectives of the compact. *Id.* Directive III of the Compact provides a decision-making standard to be taken into account for new or increased withdrawals. *Id.* at Section 4.11. The Standard aims for minimal water loss, low adverse impact to water quality and quantity, compliance with applicable laws, and the improvement of water quality. *Id.* While the Compact provides a threshold of 100,000 gallons per day for withdrawals and 5,000,000 for consumptive uses, the states can also set their own thresholds. Tables 2 and 3 below provide a summary of thresholds for withdrawal and consumptive use among the eight Great Lakes states. *Id.* at Section 4.10. If a certain withdrawal or consumptive use will exceed the relevant threshold then the proposed withdrawal has to meet the criteria in the Compact's decision-making standard. *Id.* at Sections 4.10 - 4.11. The decision-making standard mandates that any regulatory program that will apply to the new or increased withdrawal or consumptive use must require that:

- Water be returned to the watershed less any allowance for consumptive use;
- Implementation will have no significant impacts within the Great Lakes Basin;

- A proposal includes environmentally sustainable and economically feasible water conservation measures;

- Water quality is maintained;

- A proposal must be reasonable considering the character and efficiency of the use; and

- There is a balance between economic, social, and environmental concerns, the supply potential of the source, and the degree and duration of adverse impacts. *Id.* at Section 4.11.

Each state has initiated the implementation process and continues to work towards maintaining the goals of the individual deadlines mentioned *supra*. The following table is a summary of each state's progress thus far:

Table 1: State Progress in Implementing the Great Lakes-St. Lawrence River Basin Water Resources Compact

	Statute or Regulation	Requirement
Illinois	Illinois water use is governed by the Supreme Court Consent decree on Chicago diversion. Therefore, their water management program is not applicable. *See* Water Withdrawal Threshold table *infra* for further information.	
Indiana	Indiana Code (IC) 14-25-15-7	A permit is required from the Department of Environmental Management for new or increased withdrawals within the Basin in excess of five million Gallons per day (mgd) on average over 90 days from specified salmonid streams and other watercourses set forth by the NRC; and one mgd on average over 90 days from any other source.
Michigan	Michigan Compiled Law (MCL) 324.32721(1)	A person is prohibited from making a new or increased large quantity withdrawal (one or more cumulative total withdrawals of over 100,000 gallons per day (gpd) average in any consecutive 30-day period that supply a common distribution system) from the waters of state if it causes an adverse resource impact.

	MCL 324.32706b(1), 324.32706b(2), 324.32701(1)	A property owner who intends to develop capacity to make a large quantity withdrawal from streams, rivers, or groundwater is required to use an internet-based assessment tool that calculates the effect of a stream flow reduction on fish populations to determine whether a specific withdrawal causes an adverse resource impact on river systems.
	MCL 324.32706c(4)-(6)	An owner may have to obtain a permit or self-certify implementation of water conservation measures that the owner considers to be reasonable, depending on the severity of the impact and the withdrawal capacity.
	MCL 324.32723(1)(a)-(b), 324.32723(6)	A permit is required for development of new or increased cumulative withdrawal capacity of more than two mgd from all waters of the state, and granting of the permit will depend on whether or not the withdrawal meets the Compact decision-making standards.
	MCL 324.32727	A number of exemptions to the above requirements are listed, including certain owners of non-commercial wells.
Minnesota	Minnesota Statute (Minn Stat) 103G.271 and Minnesota Rule (Minn R) 6115.0720	The state, a person, partnership, or association, private or public corporation, county, municipality, or other political subdivision of the state that appropriates or uses waters of the state, for any use that exceeds 10,000 gpd or one million gallons in a year, must obtain a permit from the Department of Natural Resources.
	Minn R 6115.0620	Exceptions include domestic uses serving less than 25 persons for general residential purposes and certain agricultural field tile or open ditch drainage systems.
	Minn R 6115. 0680	Notes specific requirements that apply to agricultural irrigation, public water supplies, water level maintenance, dewatering, and mining.
	Minn Stat 103G.265	A permit for consumptive use of more than two mgd average in a 30-day period, may only be approved if it is determined that the water remaining will be

		adequate to meet the basin's water resources needs during the specified life of the consumptive use, and approval is given by the legislature.
New York	The Great Lakes Basin Advisory Council, a statutory body that advises New York State officials regarding New York's role in water quality issues, released a draft report in 2009 that recommends that there be threshold levels for regulating new or increased water withdrawals (National Wildlife Federation 2010), (New York State Department of Environmental Conservation 2010). Currently, the Great Lakes Water Withdrawal Registration Program requires that private withdrawals from New York's portion of the Great Lakes Basin that exceed 100,000 gpd averaged over a 30 day period, be registered with New York State's Department of Environmental Conservation. Reports of annual water usage are also required. (ECL 15-1605 & NYCRR Part 675), (New York State Department of Environmental Conservation 2010, Michigan Department of Natural Resources and Environment 2010).	
	New York's Environmental Conservation Law (McKinney's ECL) 15-1607	Requires that the State consult with the other Great Lakes States and the Provinces of Ontario and Québec on any project that will result in a consumptive use of greater than five million gpd. Section 15-1613 requires that, after a hearing, the Governor and Legislature must approve or disapprove any diversion of water from the Great Lakes Basin that originates in New York State.
Ohio	Ohio Revised Code (ORC) 1501.33	Any new or increased consumptive use of more than an average of two mgd in any 30-day period must obtain a permit from Ohio's Department of Natural Resources (National Wildlife Federation 2010).

	ORC 1501.34	Permit requirements include maximum feasible conservation practices and no significant detrimental impacts. Within Ohio's Department of Natural Resources, the Ohio Great Lakes Compact Advisory Board was convened to develop recommendations to the Governor and the General Assembly concerning the implementation of commitments made in the Compact (Ohio Department of Natural Resources 2009). The Advisory Board completed their report in December, 2010, but did not make a final recommendation for water withdrawal threshold level which would trigger permitting requirements (Ohio Great Lakes Compact Advisory Board 2010). The competing proposals for threshold levels in the report ranged from 10,000 to 5,000,000 gpd and depended on the quality of the source water body. *Id.* at 17-18.
Pennsylvania	Regulations addressing criteria and procedures for review and approval of proposals regarding withdrawals and consumptive uses must be approved by the Environmental Quality Board using the decision-making standard in the Compact. (Council of Great Lakes Governors 2010)	
	Title 32, section 817.22 of Pennsylvania Statutes (Pa CS)	Threshold levels from the Great Lakes Basin are 100,000 gpd averaged over a 90-day period for new or increased withdrawals, or five mgd averaged over a 90-day period for new or increased consumptive use from the Basin.
Wisconsin	Wisconsin Statute (WS) 281.346 (4s)(b) and (5)(a)	As of December 8, 2011 a general permit is required for withdrawal that averages from 100,000 gpd to one mgd in any consecutive 30-day period. Additionally, an individual permit is required for withdrawals that average one mgd or greater for any 30 consecutive days. Withdrawals given prior to that date are automatically permitted.
	WS 281.346 (5)(e)(1)-(3)	A permit will be granted for a new or increased water withdrawal, subject to general permit requirements, if water regulation approvals are obtained by the Wisconsin Department of Natural Resources. The Department will grant a permit for new or increased withdrawals subject to the individual permit requirements, if withdrawals equaling at least ten mgd for any 30 consecutive days meets the Compact decision-making standard; except when the applicant demonstrates that the

		withdrawal will have an average water loss of less than five mgd in every 90-day period, in which case, the withdrawal must meet a state decision making standard.
	WS 281.346 (5m)	Remaining withdrawals exceeding one mgd for any 30 consecutive days also must meet the state decision-making standard, which generally requires that the proposed use is needed and efficient; other sources have been assessed; and water approvals have been obtained or there is no significant adverse environmental impact.
	Wisconsin Proposed Administrative Rule: NR 856	Basin-specific standard that would further define the registration/reporting requirements for any diversion or large, inter-basin, withdraw of 100,000 gallons/day or more in any 30-day period.
	Wisconsin Proposed Administrative Rule: NR 850	Basin-specific standard that would establish fees for persons who withdraw >50,000,000 gallons/year. The more the withdrawal, the higher the fee. Revenue circulates directly to Great Lakes Compact related programs. Great Lakes Basin-specific fee would be capped at $9,500.00 per property/facility.
	Wisconsin Proposed Administrative Rule: NR 852	Categorizes certain large withdrawals into three tiers. The water conservation and efficiency requirements increase by tier.

States have adopted varying threshold levels for regulating water withdrawals and consumptive uses. The following tables delineate each state's threshold level for regulation as well as the Compact standards. The tables also list the enforcement mechanisms available for the registration, reporting, and permitting requirements.

Table 2. Water Withdrawal Threshold Levels				
State	**Threshold for Registration/Reporting (gallons per day)**	**Threshold for Permitting (gallons per day)**	**Applicable Law**	**Effect of Non-Compliance**
Illinois	Registration/reporting: 100,000gpd over any 24-hour period	Any allocation of the Lake Michigan diversion[4]	525 ILCS 45/5 (registration) 525 ILCS 45/5.3 (reporting) 615 ILCS 50/1.2 (allocation permit)	Registration: Violation is a petty offense; subsequent offenses are Class C misdemeanors (525 ILCS 45/7) Reporting: No statutory provision or rule currently sanctions non-compliance Allocation: Violation of DNR order is business offense, $1,000 - $10,000 fine (615 ILCS 50/8)
Indiana	Registration/reporting: Capacity to withdraw more than 100,000gpd in one day	2,000,000gpd over 90-day average from Lake Michigan 100,000gpd over 90-day average from a salmonoid stream 1,000,000gpd	IC 14-25-7-15 (registration and reporting) IC 14-25-15-7 (permit)	Registration/reporting: Failure to register or report is a Class B infraction (IC 14-25-7-17) Permitting: No statutory provision or rule currently sanctions non-compliance

[4] A United States Supreme Court decree limits Illinois' diversion of Lake Michigan water to an annual average of 2.1 billion gallons per day. *See* Water Mgmt. Program Review, State of Indiana, at 11 (2010), *available at* http://www.glslcompactcouncil.org/Docs/DOFs/Programs/2010/IL%20Declaration%20of%20Finding%201-7-10.pdf. The decree is in Wisconsin v. Illinois, 388 U.S. 426 (1967), *as modified*, 449 U.S. 48 (1980). The Compact expressly recognizes the validity of this decree and provides that water withdrawals and consumptive uses of basin water by the State of Illinois are subject to the decree, not the Compact. *See* Compact, Section 4.14.

State	Threshold for Registration/Reporting (gallons per day)	Threshold for Permitting (gallons per day)	Applicable Law	Effect of Non-Compliance
		over 90-day average from any other surface or groundwater source		
New York	Registration/reporting: More than100,000gpd over 30-day average	Permit required for withdrawal used for potable purposes	McKinney's ECL 15-1605 (registration and reporting) McKinney's ECL 15-1501 (permit)	Registration/reporting/permitting: AG may seek civil penalties of not more than $500 and of not more than $100 per day of a continuing violation; AG may also seek a criminal penalty of not more than $500 (6 NYCRR 675.15; Mckinney's ECL 71-1127, -1131)
Michigan	Registration: More than 100,000gpd over 30-day average	More than 100,000gpd over 90-day average that results in an intrabasin transfer More than 1,000,000gpd if a Zone C withdrawal (certain effect on fish populations)	MCL 324.32705 (registration) MCL 324.32723 (permit)	Registration: AG may seek injunctive relief in court and for knowing violation, potential court-ordered civil fine of not more than $1,000 per day (MCL 324.32713) Permit: AG may seek injunctive relief in court and for knowing violation, potential court-ordered civil fine of not more than $10,000 per day (MCL 324.32713)

State	Threshold for Registration/Reporting (gallons per day)	Threshold for Permitting (gallons per day)	Applicable Law	Effect of Non-Compliance
		More than 2,000,000gpd		
Minnesota		More than 10,000gpd or 1,000,000gpd per year	Minn Stat 103G.271; Minn. R. 6115.0620 (permit)	Commission may bring action for injunctive relief (Minn Stat 103G.135); Failure to obtain permit approval is also a misdemeanor (Minn Stat 103G.141)
Ohio		Only required for diversions out of the Lake Erie or Ohio River basins: More than 100,000gpd	ORC 1501.32	Fine of $10,000 per day of violation for failure to obtain or comply with permit (ORC 1501.99)
Pennsylvania	Registration/reporting: More than 10,000gpd over 30-day average	Threshold for regulation (no permit currently required) 100,000gpd over 90-day average	27 Pa CS 3118; 25 Pa Code 110.301 (registration/reporting) 32 Pa CS 817.26 (threshold for regulation)	Registration/reporting: Violation is a public nuisance (27 Pa CS 3132); PDEP may issue order for compliance, failure to follow order is punishable by contempt of court (27 Pa CS 3133); PDEP may assess civil penalty of not more than $1,000 per day of violation (27 Pa CS 3134) Permit: Permit not required, but violation of compact punishable by civil fine of not more than $5,000 per day of violation (32 PS 817.30)

State	Threshold for Registration/Reporting (gallons per day)	Threshold for Permitting (gallons per day)	Applicable Law	Effect of Non-Compliance
Wisconsin	Registration/reporting: Capacity to withdraw 100,000gpd over 30-day average	100,000gpd over 30-day average	WS 281.346(3) (registration/reporting) WS 281.346(4m) (permit)	Registration/reporting/permit: Fine of $10 - $10,000 per day of violation, and a court may order abatement of any nuisance or restoration of a natural resource, or take any other action necessary to eliminate or minimize any environmental damage (WS 281.346(14)); a court may award costs and attorney fees to the DOJ for prosecution of a violation (WS 281.98) Registration/reporting only: Violator subject to liability for damages to any person adversely affected (WS 281.95)
Compact	Registration/reporting: 100,000gpd over 30-day average		Compact, Section 4.1 (registration/reporting)	Possibility of an aggrieved person bringing a civil action (see generally Compact, Section 7.3)

Table 3: Consumptive Use Threshold Levels			
State	**Threshold Amount (gallons per day)**	**Applicable Law**	**Effect of Non-Compliance**
Illinois	Permit: More than 2,000,000gpd over 30-day average	615 ILCS 50/14	Permit: Failure to comply with DNR order is a business offense, $1,000 - $10,000 fine (615 ILCS 50/8)
Indiana	None		
New York	Additional registration documentation: More than 2,000,000gpd over 30-day average	McKinney's ECL 15-1605	Registration: AG may seek civil penalties of not more than $500 and of not more than $100 per day of a continuing violation; AG may also seek a criminal penalty of not more than $500 (6 NYCRR 675.15; Mckinney's ECL 71-1127, -1131)
Michigan	None		
Minnesota	Additional approval for permit: More than 2,000,000gpd over 30-day average	Minn Stat 103G.265	Commission may bring action for injunctive relief (Minn Stat 103G.135); Failure to obtain approval is also a misdemeanor (Minn Stat 103G.141)
Ohio	Permit: More than 2,000,000gpd over 30-day average	ORC 1501.33	Failure to obtain permit or follow permit is a misdemeanor of the fourth degree (ORC 1501.99)
Pennsylvania	Threshold for regulation (no permit currently required) 5,000,000gpd over 90-day average	32 PS 817.26	Permit not required, but violation of compact punishable by civil fine of not more than $5,000 per day of violation (32 PS 817.30)
Wisconsin	Permit: More than 2,000,000gpd over 30-day average	WS 281.35	Violator subject to liability for damages to any person adversely affected and to injunctive relief (WS 281.95); Fine of $10 - $5,000 per day of violation, a court may award costs and attorney fees to the DOJ for prosecution of a violation, and court may order abatement of any nuisance or restoration of a natural resource, or take any other action necessary to eliminate or minimize any environmental damage (WS 281.98)

State	Threshold Amount (gallons per day)	Applicable Law	Effect of Non-Compliance
Compact	Regional review: 5,000,000gpd over 90-day average (Regional approval required if intrabasin transfer)	Compact, Section 4.6 (regional review) Section 4.9 (regional approval)	Possibility of an aggrieved person bringing a civil action (see generally Compact, Section 7.3)

(2) Riparian Water Use Law

Riparian water use law is a product of common law and varies by state, but two basic doctrines guide all state riparian water use law. First, property owners whose land abuts a water body (such as a lake, river, or stream) have a right of use (known as a "usufructory right") for that water body. Second, when rights of competing land owners (or "riparians") conflict, courts rely on the equitable doctrine of "reasonable use" to resolve disputes. Under the doctrine of reasonable use, whether one riparian land owner is allowed to interfere with another's use of a water source generally depends on whether, under the circumstances, the use of the water by one, is reasonable and consistent with a correspondent enjoyment of right by another (Tarlock 2009). For a plaintiff claiming violation of their riparian rights, the plaintiff must be able to demonstrate not only that the defendant's use of the water has interfered with the plaintiff's own reasonable use, but also that the interference was substantial. *See Nestle*, 709 N.W.2d at 203. In determining whether one's use of the water is "reasonable," courts balance a number of factors as applied to the specific facts of the dispute (Tarlock 2009).

The reasonable use balancing test is grounded on the premise that the right to enjoyment of water is not absolute and that virtually every use will have some adverse effect on the availability of the water source. *Nestle*, 709 N.W.2d at 202. For this reason, the test is used to determine whether under all the circumstances of the case, the use of the water by one is reasonable and consistent with a corresponding enjoyment of right by the other. *Id.* The reasonable use doctrine generally allows water to be transported and used on nonriparian lands; however, such uses may be disfavored when compared to other uses on riparian land. *Id.* at 204.

It is impossible to predict whether one use will be protected over another using the reasonable use balancing test because determining what the reasonableness of competing water uses is an ad hoc inquiry (Tarlock 2009). Practically all uses of water are potentially reasonable including all water-dependent elements of energy generation, such as oil and gas extraction and other fossil fuel mining, hydropower, using water for cooling thermoelectric power plants, and use of bottomlands for energy development. But competing needs of other riparians or the method of use of the water may make the specific use unreasonable when conflicts arise with other riparians. *Id.* This legal uncertainty is one of the primary reasons that the Great Lakes states are implementing new administrative permit systems to regulate water use pursuant to the Great Lakes Compact.

B. Water Quality

Thermoelectric power generation requires massive daily freshwater withdrawals. Some of the main impacts that thermoelectric power generation can have on water quality include thermal water discharge, the discharge of pollutants from power plants to bodies of water, the deposition of air pollutants into water systems and adverse impacts on aquatic organisms caused by cooling water intake structures. Regulating water quality is necessary due to the fact that these impacts are significant and potentially harmful. The Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), establishes the National Pollutant Discharge Elimination System (NPDES), a permit scheme which applies to major point sources including the energy sector (Black and Kohler 2004). The program attempts to control the discharge of pollutants into surface waters by imposing effluent limitations. *Id.* The U.S. Environmental Protection Agency (EPA) delegated administration of the NPDES program to states, and state

agencies administer the programs based on minimum federal guidelines and water quality standards. *Id.*

(1) Point Source Regulation of Wastewater Discharge Pursuant to the Clean Water Act

The EPA has publicly stated its intent to revise the current effluent guidelines for the steam electric power generating industry (United States Environmental Protection Agency June, 2010). The "EPA's decision to revise the current effluent guidelines is largely driven by the high level of toxic-weighted pollutant discharges from coal fired power plants and the expectation that these discharges will increase significantly in the next few years as new air pollution controls are installed. Over the course of the study, the EPA identified technologies that can significantly reduce these pollutant discharges" (National Wildlife Federation 2010). Federal regulations define steam electric power generating point sources as "those plants 'primarily engaged in the generation of electricity for distribution and sale which results primarily from a process utilizing fossil-type fuel (coal, oil or gas) or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium.'" 40 C.F.R. § 423.

Steam electric generating facilities must include effluent limitations based upon the EPA's effluent guidelines in order to obtain a NPDES permit. *See* 40 C.F.R. § 423.10-423.14. These guidelines set the maximum levels that a generating facility may discharge and the minimum technology a facility must use to reach stated effluent limitations. *Id.* The federal regulations provide the following three technology levels facilities must implement to achieve effluent limitations: (1) best practicable technology currently available (BPT), (2) the best available technology economically achievable (BAT) and (3) new source performance standards and pretreatment standards for new and existing generating stations. *Id.*

State Water Quality Regulations

NPDES programs vary slightly from state to state but all must conform to the federal CWA. The Michigan program is typical and a good general example:

Michigan's Department of Environmental Quality (DEQ) is the state agency that promulgates standards that are designed to protect designated uses of the receiving waters. The "permit processor, together with aquatic biologists and stream modelers, decides which parameters require limits. Sometimes a limit is not necessary, but further monitoring is required to gain more information about the quality of the facility's effluent" (Michigan Department of Natural Resources and Environment 2010). The permit processor compares the water quality based effluent limit to the minimum treatment technology based effluent limit for each regulated water quality parameter (Black and Kohler 2004). The processor uses the more stringent limit as the effluent discharge limit in the NPDES permit. *Id.*

(2) Indirect and Non-Point Water Pollution

Under Section 303(c) of the Clean Water Act, states are required to set water quality standards for all waters within their boundaries. The standards must consider pollution entering state waters from both point sources (i.e. facilities that discharge into water) and non-point sources (i.e. storm water runoff or construction drainage) (Riesel, Civil Enforcement Under the Clean Water Act § 9.06 Nonpoint Source Control 2009). If the EPA determines that a state's standards fail to meet the requirements of the Act, or a state fails to establish water quality standards, the EPA promulgates standards for the state. 33 U.S.C. § 1313. States must identify those waters within their boundaries that, in the absence of nonpoint source control, would have no reasonable expectation of attaining or maintaining applicable water quality standards. 33 U.S.C. § 1329(a)(1). For such waters the states must establish the "total maximum daily load"

(TMDL) for pollutants identified by EPA. *Id*. If EPA disapproves of any of the TMDLs established by a state, or the state's list of waters contains insufficient controls, the EPA is required to establish its own list and TMDLs. *Id.*

C. Habitat and Wetlands

The siting of power plants can have significant impacts on wildlife habitat and wetlands. To limit negative impacts to surrounding habitats and wetlands, a suite of regulations have been developed. Considerations include the location of seasonal wetlands, the effects of a power plant's emission of air pollutants on local plants and animals, and the contents and/or temperature of the discharge from power plants.

(1) Federal and State Wetland Regulation Pursuant to Section 404 of the Clean Water Act and Relevant State Law

Wetlands generally include swamps, marshes, bogs and similar areas, and are defined for regulatory purposes as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (United States Environmental Protection Agency 2009). The U.S. Army Corps of Engineers (the Corps) and the EPA are the two federal agencies that regulate wetlands under the authority of Section 404 of the CWA (Want 2010). Together, the EPA and the Corps establish environmental standards for reviewing permits for discharges that affect wetlands (United States Environmental Protection Agency 2009). A January 1989 Memorandum of Agreement on Enforcement allocates enforcement responsibilities to the Corps in cases that involve permit violations, while the EPA concentrates on unpermitted discharges and special cases (Riesel, Civil Enforcement Under the Clean Water Act § 9.07 Wetlands 2009). A decision by one agency not to enforce a wetlands

violation does not preclude the other from moving forward, nor does the enforcement of the Memorandum of Understanding provide potential defendants rights or defenses. *Id.*

Under Section 401 of the CWA, facilities whose operations result in any discharge of pollutants into the navigable waters of the U.S. are required to obtain certification, from the appropriate state or federal agency that any such discharge will comply with other substantive provisions of the CWA (Michael A. Rosenhouse 2010). Section 404 of the CWA regulates the discharge of dredged or fill material into navigable waters and the permits required to comply with Section 404 have been the subject of extensive controversy (Riesel, Civil Enforcement Under the Clean Water Act § 9.07 Wetlands 2009). The EPA and the Corps share regulatory responsibility of discharges into wetlands. This shared responsibility led to a broad interpretation of jurisdiction over wetlands under the CWA and courts have supported that interpretation until recently. *Id.*

In 2001, the United States Supreme Court ruled that federal agencies lack the authority to regulate non-navigable, wholly intrastate wetlands, even where migratory birds are present. *Solid Waste Agency of N. Cook County v. United States Army Corps of Eng'rs*, 531 U.S. 159, 174 (2001). In 2006, a plurality of the Supreme Court held that a federal agency does not have jurisdiction over a wetland unless the wetland has a clear surface connection with a "water of the United States," defined as "a relatively permanent body of water connected to traditional interstate navigable waters." *Rapanos v. United States*, 547 U.S. 715, 742 (2006). Most circuit courts that have addressed the issue, however, look to Justice Kennedy's concurring opinion in *Rapanos* because it presented the narrowest grounds on which to overturn the Corps' assertion of jurisdiction. *See, e.g., N. Cal. River Watch v. City of Healdsburg*, 496 F.3d 993, 995 (9th Cir. 2007); *U.S. v. Robinson*, 505 F.3d 1208, 1222 (11th Cir. 2007). Justice Kennedy's test would

find jurisdiction over a wetland only where the wetlands "either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.'" *Rapanos*, 547 U.S. at 780. This holding is ambiguous and leaves little guidance as to what signifies a "significant nexus" between the wetland and the quality of downstream navigable waters.

D. Aquatic Life

(1) Regulation of Water Intake to Protect Fish and Other Aquatic Life Pursuant to Section 316(b) of the Clean Water Act

Section 316(b) of the CWA authorizes the EPA to establish national performance standards for cooling water intake structures (CWIS). These structures are used to hold water that cools heat generating power mechanisms (Parenteau 2010). During this process, fish and other aquatic organisms are adversely affected. The technology standard under Section 316(b), best technology available (BTA), allows regulators to minimize adverse environmental impacts while considering site-specific circumstances. *Id.*

In 1995, the EPA set standards for CWIS used in power plants through three phases. *Id.* Phase I is applicable to facilities constructed after January 17, 2002 and the EPA essentially adopted closed-cycle (also called wet recirculating systems, which pump water through a cooling tower or a cooling pond) or equivalent technologies as BTA. *Id.* Phase II applies to existing facilities, defined as any facility that is not a new facility and whose water-intake flow is more than 50 million gpd, at least 25% of which is used for cooling purposes. *Id.* Phase II rules did not specify closed-cycle cooling as a national performance standard for existing facilities. In fact, Phase II allowed permitting agencies to use cost-benefit analysis, and the EPA concluded that in some cases, the costs of a closed-cycle system outweighed the benefits, as measured by the

market value of the organisms killed. *Id.* The Phase III rule was designed to apply to smaller existing facilities, including power plants and manufacturing facilities, with design flows less than 50 million gpd as well as new offshore oil and gas extraction facilities (Prugh 2010). The existing facilities were not subject to national requirements under the rule, but would be regulated by federal permit writers on a case-by-case basis using "best professional judgment." *Id.* New offshore oil and gas extraction facilities were subject to national categorical requirements. *Id.* Phase II and Phase III rules were challenged in the courts by both environmental and industry groups. As a result the EPA is now in the process of developing a new proposal to regulate the existing facilities that were originally addressed in both phases. *Id.*

(2) Regulation of Thermal Discharges to Protect Fish and Aquatic Life Pursuant to Section 316(a) of the Clean Water Act

After power plants use intake water to cool heat generating components, the heated water is generally discharged back into the source water body (Thermal Pollution). The heated water can cause a variety of adverse ecological effects, including "thermal shock, changes in dissolved oxygen, and the redistribution of organisms in the local community." *Id.* For this reason, the EPA or a state with delegated authority may establish effluent limitations to control the thermal component of effluent. *See* 33 U.S.C. § 1311. The CWA provides, however, that any owner or operator of a point source has the opportunity for a hearing in order to determine if the thermal discharge components of an effluent limitation are more strict than necessary to properly regulate the specified source. 33 U.S.C. § 1326. If the EPA or delegated state determines that the effluent limitation is too stringent, then it may implement a different limitation, provided that any limitation insures the indigenous wildlife a sustainable and protected body of water. *See* 33 U.S.C. § 1326(a); *Riesel,* Civil Enforcement Under the Clean Water Act § 9.10.

As discussed above, heat added to wastewater is within the definition of a pollutant under the Clean Water Act, and therefore, noncontact cooling water is often regulated by permit. *Id.* A power plant may obtain a variance from best available technology standards to avoid having to build cooling towers. *Id.* The EPA or state agency may grant the variance if the discharger can show that the applicable effluent limitation "is more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made." *Id*.

E. State and Local Regulation of Power Plant and Transmission Infrastructure Siting

This section will give a brief overview of laws and regulations that apply to siting, beginning with the siting of electric transmission lines. Historically, the Federal Energy Regulatory Commission (FERC) did not exercise authority over the siting of electric transmission lines, leaving regulation to the states (Swanstrom & Jolivert 2009), (Levin, Surette and Van Arsdale 2010). State regulatory powers over electric companies may extend to: the provision of reasonably adequate service, installation and repair of electrical wires and equipment, and insulation of wires (Levin, Surette and Van Arsdale 2010). The ability of a municipality to regulate transmission lines, however, remains unclear. In 1959 the Supreme Court of Ohio upheld a municipal ordinance which provided that certain electric power lines installed within or through the municipality's territorial limits must be installed underground because the ordinance was a reasonable regulation related to the health, safety, and welfare of the inhabitants of the municipality. *State ex rel. Cleveland Elec. Illuminating Co. v. City of Euclid*, 159 N.E.2d 756, 760 (Ohio 1959); *affirmed on reconsideration*, 162 N.E.2d 125 (Ohio 1959). By contrast, the Commonwealth Court of Pennsylvania held that the placement of an electric transmission line is not a matter of local concern, but within the jurisdiction of the public utility

commission. *Pennsylvania Power Co. v. Twp. of Pine*, 926 A.2d 1241, 1251-52 (2007). Therefore the court held that a locality did not have the authority to order the underground installation of an electric distribution line. *Id.*

With respect to the transmission of electricity in interstate commerce, the Energy Policy Act of 2005 requires the formal creation of Electric Reliability Organizations responsible for developing and implementing mandatory reliability standards that are subject to FERC oversight and approval (Jolivert 2009); Energy Policy Act of 2005, H.R. 6 109th Cong. (2005). The FERC has the authority to issue permits to site interstate electric transmission facilities in certain geographic areas of national importance determined by the Secretary of the Department of Energy to be experiencing transmission capacity constraints or congestion that adversely affect consumers. *Id.*

State Regulation

While there is some diversity in state and local siting law, policies, and regulations, many policies are typical and are often similar throughout a region. Following is a discussion of applicable laws and policies in Minnesota, New York, Ohio and Wisconsin.

Minnesota:

In Minnesota, the Minnesota Public Utilities Commission (MPUC) has the authority for the siting of power plants and other power transmission infrastructure. (State of Minnesota Public Utilities Commission 2010). Minn. Stat. § 216A. Specifically, the MPUC has the responsibility for siting "large electric power facilities," defined as "high voltage transmission lines" and "large electric power generating plants." Minn. Stat. § 216E.01. A high voltage transmission line is further defined as, "a conductor of electric energy designed for and capable of operation at a nominal voltage of 100 kilovolts or more and greater than 1,500 feet in length," and a large electric power generating plant is further defined as, "electric power generating

equipment designed for or capable of operation at a capacity of 50,000 kilowatts or more." *Id.* In selecting sites for these large electric power facilities, the MPUC must:

> locate large electric power facilities in an orderly manner compatible with environmental preservation and the efficient use of resources […] [and] minimize adverse human and environmental impact while insuring continuing electric power system reliability and integrity and insuring that electric energy needs are met and fulfilled in an orderly and timely fashion.

Minn. Stat. § 216E.02. To further the environmental mandate, Minnesota law requires that an environmental impact statement be prepared for a proposed power plant and that a contested case hearing be conducted on the matter by an administrative law judge before a permit is granted. Minn. Stat. § 216E.03. Small power plants may qualify, however, for an alternative permitting process, which does not require the drafting of an environmental impact statement or a hearing by an administrative law judge. Minn. Stat. § 216E.04. Additionally, select projects may be able to bypass the authority of the MPUC altogether and instead seek a permit from local governmental bodies. Minn. Stat. § 216E.05.

New York:

Electric generation and transmission in New York is governed by the New York Public Service Commission (PSC). N.Y. Public Service Law § 5(1)(b) (McKinney 1917). No person may commence construction of a "major utility transmission facility" without first obtaining a "certificate of environmental compatibility and public need" (CECPN) from the PSC. N.Y. Public Service Law § 121(1) (McKinney 1917). A "major utility transmission facility" is defined as, (a) an electric transmission line 125 kilovolts or more which extends a distance of one mile or more or, an electric transmission line between 100 kilovolts and 125 kilovolts which

extends a distance of ten miles or more, or (b) a fuel gas transmission line extending 1,000 feet or more and which transports fuel gas at pressures of 125 pounds per square inch or more. N.Y. Public Service Law § 120(2) (McKinney 1917). In order to obtain a CEPCN, a person seeking to construct a major utility transmission facility must submit an application to the PSC that contains: (a) the location of the site for the facility, (b) a description of the facility, (c) a summary of any environmental studies made on the project, (d) a statement explaining the need for the facility, (e) a possible alternate location for the facility, and (f) any other relevant information. N.Y. Public Service Law § 122(1) (McKinney 1917). Not more than 90 days after the submission of a complete application for a CECPN, the commission must schedule a public hearing on the project. N.Y. Public Service Law § 123(1) (McKinney 1917). Once all these steps have been taken the PSC will render a final decision granting, denying or modifying the CECPN application. N.Y. Public Service Law § 126(1) (McKinney 1917). In most situations, in order to grant a certificate for construction, the PSC must find and determine:

(a) the basis of need for the facility;
(b) the nature of the probable environmental impact;
(c) that the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives […];
(d) in the case of an electric transmission line, (1) what part, if any, of the line shall be located underground; (2) that such facility conforms to a long-range plan for expansion of the electric power grid[…], which will serve the interests of electric system economy and reliability;
(e) in the case of a gas transmission line, that the location of the line will not pose an undue hazard to persons or property along the area traversed by the line;
(f) that the location of the facility as proposed conforms to applicable state and local laws and regulations […];
(g) that the facility will serve the public interest, convenience, and necessity […].

N.Y. Public Service Law § 126(1) a-g (McKinney 1917). However, in some instances involving electric transmission lines constructed by the power authority of New York, the PSC makes only the findings and determinations required by (b), (c) and (f). N.Y. Public Service Law § 126(2)

(McKinney 1917). No CECPN is required for any facility already constructed or in operation on or before July 1, 1970. N.Y. Public Service Law § 121(4)(a) (McKinney 1917).

Ohio:

Ohio power plant and transmission infrastructure siting is controlled by the Ohio Power Siting Board (OPSB), a separate entity within the Public Utilities Commission of Ohio. (Ohio Power Siting Board 2010). The OPSB was created on November 15, 1981 and is authorized by Chapter 4906 of the Ohio Revised Code (ORC). (Ohio Power Siting Board 2010). The OPSB retains the authority to issue certificates of "environmental compatibility and public need" for the construction, operation, maintenance and modification of "major utility facilities." (Ohio Power Siting Board 2010). "Major utility facilities" include:

> Electric generating plant[s] and associated facilities designed for, or capable of, operation at a capacity of fifty megawatts or more, [a]n electric transmission line and associated facilities of a design capacity of one hundred twenty-five kilovolts or more, and [a] gas or natural gas transmission line and associated facilities designed for, or capable of, transporting gas or natural gas at pressures in excess of one hundred twenty-five pounds per square inch.

O.R.C. Ann. § 4906.01. The OPSB also has jurisdiction over "economically significant" wind farms. O.R.C. Ann. § 4906.20. An economically significant wind farm is defined as, "wind turbines and associated facilities with a single interconnection to the electrical grid and designed for, or capable of, operation at an aggregate capacity of five or more megawatts but less than fifty megawatts." O.R.C. Ann. § 4906.13. Before granting a certificate for the construction, operation, maintenance, or modification of a major utility facility, or an economically significant wind farm, the OPSB must find and determine the eight following factors:

1. The probable environmental impact of the proposed facility;

2. Whether the facility represents the minimum adverse environmental impact, considering available technology and the nature and economics of alternatives;

3. The need for any transmission facility;

4. That the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving Ohio and interconnected systems and that the facility will serve the interests of electric system economy and reliability;

5. That the facility will comply with all air and water pollution and solid waste disposal laws and regulations;

6. The facility will serve the public interest, convenience, and necessity;

7. The facility's impact on the continued agricultural viability of any land in an existing agricultural district; and

8. The facility incorporates maximum feasible water conservation practices considering available technology and the nature and economics of various alternatives.

O.R.C. Ann. § 4906.10. No certificate is required for a major utility facility on which construction had already commenced on October 23, 1972, or within two years thereafter, or for any facility already in operation as of the abovementioned date. O.R.C. Ann. § 4906.05.

Wisconsin:

In Wisconsin, power plant and electric transmission line siting is largely controlled by the Public Service Commission (PSC). The PSC must issue a Certificate of Public Convenience and Necessity (CPCN) to build and operate large plants and lines. W.S. 196.491(3). All power plants over 100 MW and transmission lines longer than one mile and over 100 kV are subject to PSC CPCN approval. *Id.* The CPCN requirements apply both to public utilities and to non-utility owners. *Id.* The PSC reviews need, engineering, economic, reliability, safety, environmental and socioeconomic aspects of the proposed facility. *Id.* An environmental impact statement (EIS) is prepared in many instances. *Id.* Public hearings are held on all CPCN applications. After this hearing, the PSC will issue an order approving, rejecting, or modifying the proposed project. The state's policy is for new transmission lines to follow existing linear corridors to the extent economically and technologically feasible. A priority ranking of new generation technologies is also considered for new power plants, again to the extent economically and technologically feasible. W.S. 1.12, 196.025. Power plants and transmission lines not large enough to trigger the CPCN requirement must receive a PSC Certificate of Authority (CA) if constructed by a public utility. W.S. 196.49. Power plants and lines smaller than the CPCN threshold developed by non-utilities are not subject to any PSC regulation.

F. Gaps and Opportunities for Improvement

(1) Water Quantity

Existing regulation of water withdrawals must be strengthened to assure the sustainability of water resources. As mentioned earlier in this document, electric generation facilities require large water intakes in order to cool plant components. Regulation of these intakes will fall to the states because even where power plants are sited on navigable waters, federal law does not regulate the quantity of water withdrawn.

The common law of groundwater and riparian use rights will unlikely be adequate to safeguard water quantity. The doctrine of reasonable use does not create a presumption against the use of water for power plants. Since power plants use water on-site for electricity generation, their use is accorded the same basic standard of reasonableness as a domestic, on-site user. *See Nestle*, 709 N.W.2d at 194. The common law of water rights requires that a court balance the competing uses of water and make a determination as to how much water is "reasonable" and should be accorded to each user. This vague standard introduces uncertainty for both the energy facility planner as well as competing water users and does not represent a comprehensive approach to water supply management.

The Compact signaled an important first step in state-wide supervision over water withdrawals affecting the Great Lakes basin, but it left many regulatory gaps. First, the Compact's 100,000 gpd threshold only applies to registration and reporting. *See* Compact 4.1. All state signatories should implement legislation requiring not only registration and reporting, but also prior approval, conditioned on an environmental review. It should be emphasized that a permitting requirement simply subjects an energy facility's water use to environmental review; it does not prevent water intake.

Second, the 100,000 gpd threshold may be too high. States should consider setting lower thresholds or authorizing their respective environmental agencies to regulate water withdrawals that pose a substantial threat to the sustainability of water resources. This would allow agencies to take remedial action, even where a given water withdrawal falls below the statutory withdrawal threshold.

Third, the Compact fails to require that states establish consumptive use thresholds. *See* Compact 4.10. Although most intake water will likely be returned to the source watershed, a statutory ceiling on allowable consumptive use for a given water withdrawal should be implemented as a legislative backstop. States that have implemented a consumptive use threshold have set the threshold at either 2,000,000 or 5,000,000gpd. Given that state registration, reporting, and permitting requirements have been set at much lower thresholds for water withdrawals – typically 100,000gpd – the consumptive use for a proposed facility should be subject to review in an application for a water withdrawal permit. Otherwise the consumptive use of many proposals, which will fall well beneath the 2,000,000 or 5,000,000gpd threshold, will not be regulated.

State implementation of the Compact's goals is varied, as are the penalties for non-compliance. While states should be able to implement the Compact with the flexibility that the Compact provides, without sufficiently strong implementing legislation across the Great Lakes region, the goals of the Compact will not be met. Michigan law presents a useful example of how state implementing legislation may depart from Compact goals. The Michigan Water Withdrawal Act is Michigan's implementing legislation of the Compact's required program for the management and regulation of new or increased withdrawals and consumptive uses. *See* MCL § 324.32701 et seq.; Compact 4.10. The permitting system established by the Withdrawal Act ensures a permitee's compliance with the Compact's required decision-making standard. *See* MCL § 324.32723(9). As part of the permitting process, the state agency must determine that the proposal will not cause an adverse resource impact, mirroring the Compact language. Compact 4.11. But the Withdrawal Act defines "adverse resource impact" generally as an effect on a source water body's ability to support characteristic fish populations. MCL § 324.32701. This

narrow definition is insufficiently protective of a source water body. State implementing legislation should define "adverse resource impact" in broad terms that encompass (1) impacts to existing uses of a water body, (2) impacts on the ability of the water body to support future public and private uses, and (3) impacts to the water body's ecosystem and ecosystems that depend on the water body.

The sanctions for non-compliance should be strengthened in order to prevent ecological harm as well as to provide for remediation where harm has already occurred. Wisconsin's current sanctions should be a base model for other states. Where a water user has failed to obtain a permit, the user is subject to a fine and a court may order abatement of a public nuisance, or take any other action necessary to eliminate or minimize any environmental damage. WS 281.346(14). In addition to these sanctions, states should explicitly provide for the availability of injunctive relief, which many states already do provide. More uniform and stringent sanctions will encourage compliance and prevent a compliant energy facility from being placed at a competitive disadvantage as to other non-compliant facilities.

(2) Water Quality and Siting Concerns

As discussed above, the EPA is currently in the process of creating new effluent limitations for steam electric power generating sources. The new effluent limitations should incorporate the most protective technology available.

The EPA is also currently formulating a new cooling water intake structure (CWIS) and is conducting a cost-benefit analysis to determine how much society values preventing the destruction of fish populations. In conducting this analysis, EPA should consider not only the value of the aquatic organisms immediately impacted by CWISs, but also the value society

places on the wider ecological impacts caused by CWISs. This type of information is difficult to quantify and suggests that the agency should develop a rule that incorporates some sort of precautionary principle that safeguards important, invaluable ecological benefits.

Wetlands regulation under the CWA is currently in a very uncertain state after the Supreme Court's fractured ruling in *Rapanos*. Although the EPA and the Corps have issued a joint guidance for district offices, clarifying that the agencies will use the "significant nexus" test for jurisdictional purposes, this guidance should be embodied in a formal rule. States that have not already passed wetlands legislation should do so in order to supplement federal regulation of wetlands. For example, Section 404 of the CWA does not regulate the destruction of a wetland caused by draining the wetland. The daily water intake of energy facilities may drain a nearby wetland, so state legislation must address such a possibility and subject those intakes to prior review and approval.

It is unclear how adequate existing energy facility siting regulation is. While the state regulations discussed in this document provide for environmental review of major transmission and generation facilities, the quality of these reviews depends on the scope of the environmental impacts addressed, the weight given those environmental impacts vis-à-vis the economic and other benefits of siting a facility in a certain area, and the quality of the reviewers and the reviewing process. Environmental review should incorporate input from all stakeholders and consider the full environmental impacts of a new power plant – including the impacts on local air quality and on climate change. Alternatives analysis should be a key component of any siting decision and consideration should be given not only of alternative locations for a particular facility, but also of alternatives to building the type and size of the facility under review. Regulators with authority over siting decisions should consider the need for a particular facility,

in terms of electricity demand, and consider how that demand can be met through alternative means, such as through conservation and efficiency measures.

Although most energy facilities will fall under the siting jurisdiction of a particular state's public service commission, smaller facilities will likely fall under the jurisdiction of localities and will thus be subject to local zoning regulation. The same rigorous review should be required of smaller energy facilities and where possible, local planning boards should seek the input of the state department with jurisdiction over environmental protection.

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