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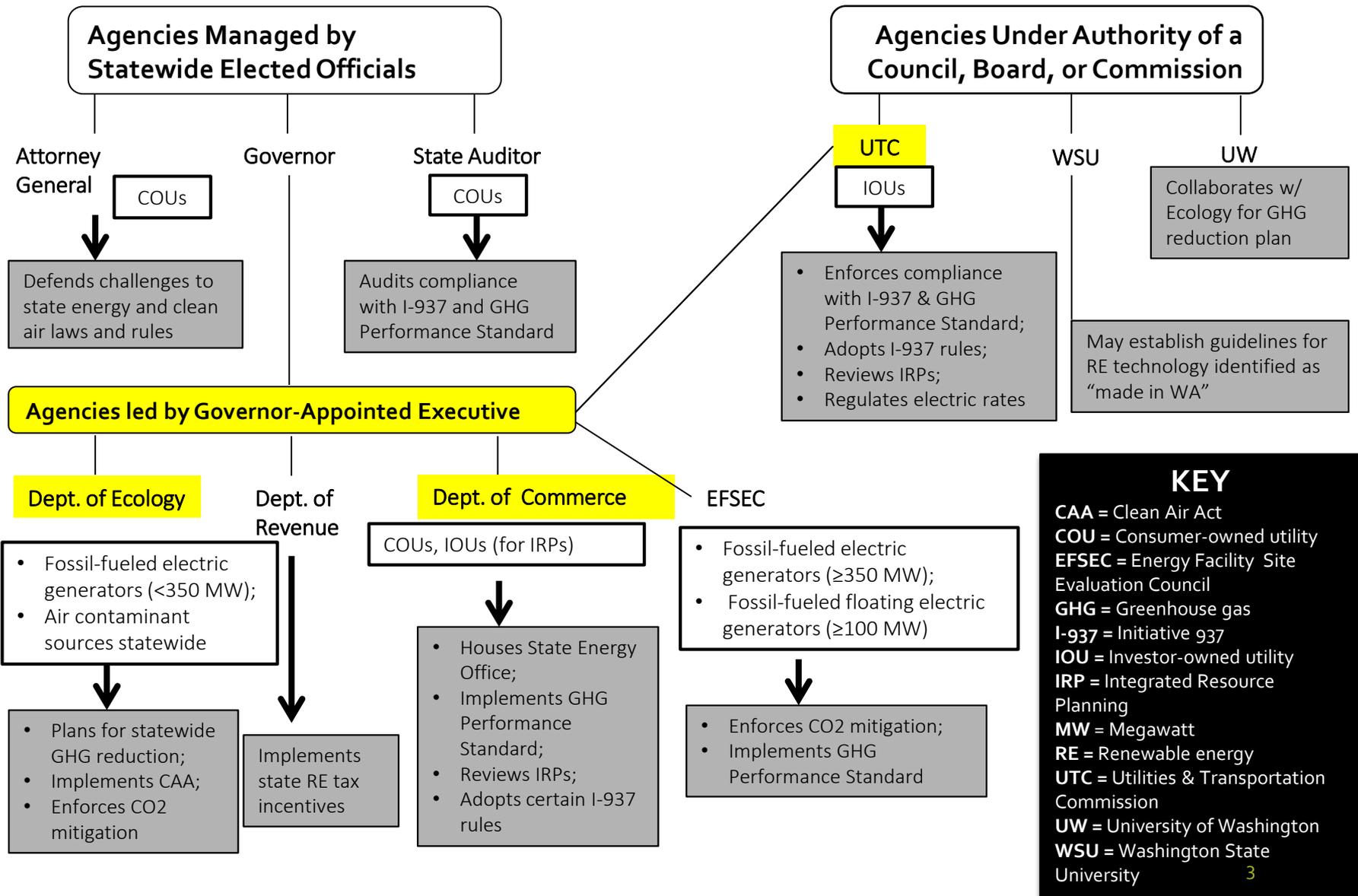
# **Regulating Power Sector Carbon Dioxide Emissions**

**Presentation by Jasmine Vasavada, Office of Program Research,  
to the Joint Committee on Energy Supply and Energy Conservation  
October 27, 2014**

# STATE REGULATORY STRUCTURE

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# Agencies involved in Washington State (Electricity Sector) Energy/GHG Policy



# Key State Laws

- Washington Clean Air Act (Ch. 70.94 RCW) - 1967
- Carbon Dioxide Mitigation Rules for Power Plants (Ch. 80.70 RCW) - 2004
- Integrated Resource Planning (Ch. 19.280 RCW) - 2006
- Initiative 937 (Ch. 19.285 RCW) - 2007
- Greenhouse Gas Emissions Performance Standard (Ch. 80.80 RCW) - 2007
- Greenhouse Gas Emission Limits (Ch. 70.235 RCW) - 2008

# WASHINGTON STATE CLEAN AIR ACT

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RCW 70.94 (1967)

# WA Clean Air Act: Air Quality Authority

## RCW 70.94.331

(1) [Ecology] shall have all the powers as provided in **RCW 70.94.141**.

(2) [Ecology shall] . . .

(a) Adopt rules establishing air quality objectives and air quality standards;

(b) Adopt emission standards which shall constitute minimum emission standards throughout the state.

(c) Adopt by rule air quality standards and emission standards for the control or prohibition of emissions to the outdoor atmosphere of radionuclides, dust, fumes, mist, smoke, other particulate matter, vapor, gas, odorous substances, or any combination thereof.

- Such requirements may be based upon a system of classification by types of emissions or types of sources of emissions, or combinations thereof, which it determines most feasible for the purposes of this chapter.

# WA Clean Air Act: Definitions

RCW 70.94.030

(1) "Air contaminant" means dust, fumes, mist, smoke, other particulate matter, vapor, gas, odorous substance, or any combination thereof.

(2) "Air pollution" is presence in the outdoor atmosphere of one or more air contaminants in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interfere with enjoyment of life and property. For the purpose of this chapter, air pollution shall not include air contaminants emitted in compliance with chapter [17.21](#) RCW.

# WA Clean Air Act: Definitions

RCW 70.94.030

(5) “Best available control technology” (BACT) means an emission limitation:

- based on the maximum degree of reduction for each air pollutant subject to regulation under this chapter
- emitted from or that results from any new or modified stationary source,
- that the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such a source or modification
- through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such a pollutant.

# Washington's Clean Air Act: Implementing the Federal Clean Air Act

RCW 70.94.860

**The department of ecology may accept delegation of programs as provided for in the federal clean air act.** Subject to federal approval, the department may, in turn, delegate such programs to the local authority with jurisdiction in a given area.

# WA Clean Air Act: Local Authorities

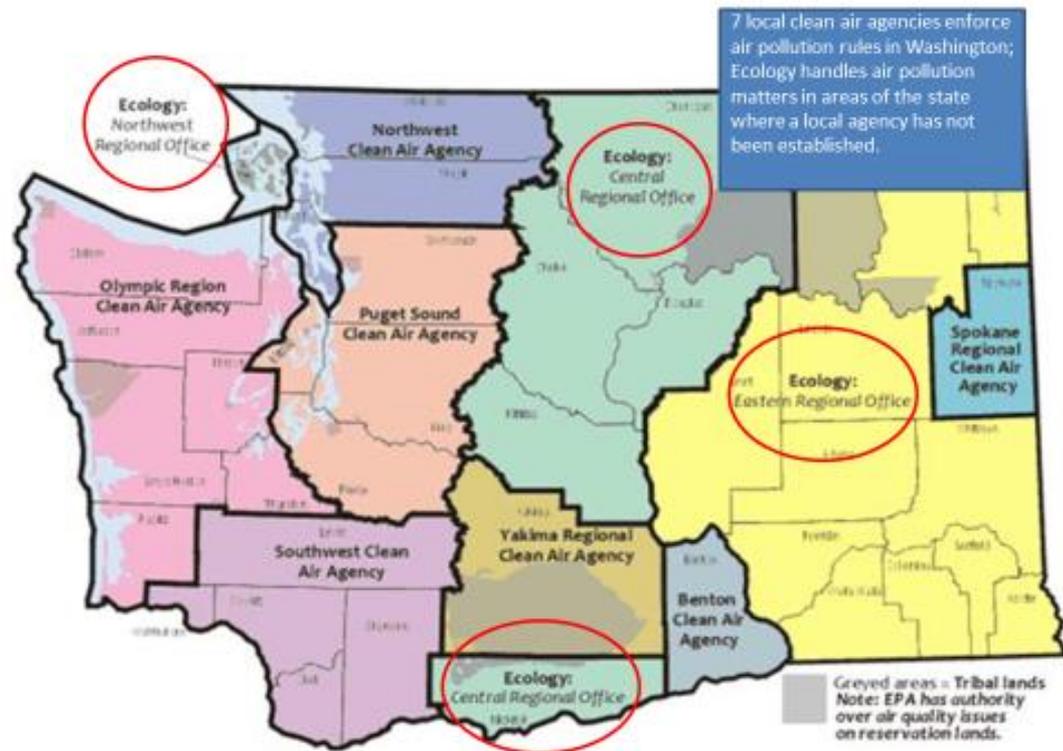
RCW 70.94.141

The board of any activated authority in addition to any other powers vested in them by law, shall have power to: . . . .

(3) Issue such orders as may be necessary to effectuate the purposes of this chapter . . . .

6) Prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction.

. . . . .



# WA Clean Air Act: Delegation to EFSEC

RCW 70.94.422(2):

Permits for energy facilities subject to chapter [80.50](#) RCW shall be issued by the energy facility site evaluation council ["EFSEC"]. . . .

[EFSEC]. . .

- shall have all powers necessary to administer an operating permits program. . .
- consistent with applicable air quality standards established by [Ecology] or local air pollution control authorities, or both. . . .
- [EFSEC] and [Ecology] shall each establish procedures that provide maximum coordination and avoid duplication between the two agencies in carrying out the requirements of this chapter.

# EFSEC "Energy Facilities":

## RCW 80.50.020

(11) "Energy facility" means an energy plant or transmission facility as defined from the provisions of this chapter.

(a) Facilities for the extraction, conversion, transmission, or distribution of energy consumed or discharged by energy production or distribution.

(b) Facilities operated by and for the armed services of the state or for national defense.

(11) "Energy facility" means an energy plant or transmission facilities [exceptions omitted]

(12) "Energy plant" means the following facilities to be constructed:

(a) Any nuclear power plant, including the primary containment structure.

(b) Any nonnuclear stationary power plant with a capacity of one thousand kilowatts or more, measured using the net output at the generator terminals at average ambient temperature and pressure, or any power plant that is more suspended on the surface of water by means of a barge or other floating structure.

(c) Facilities which will have the capacity to receive and store more than one hundred million standard cubic feet of natural gas per day.

(d) Facilities which will have the capacity to receive and store more than one hundred million standard cubic feet of natural gas, refined petroleum or liquefied petroleum gas which is not used for the production of electricity that the provisions of this chapter shall not apply to until the completion of construction;

(e) Any underground reservoir for receipt and storage of natural gas, refined petroleum or liquefied petroleum gas, capable of delivering an average of more than one hundred million standard cubic feet per day.

(f) Facilities capable of processing more than two million standard cubic feet of natural gas into refined products except where such biofuel products are produced from agricultural waste.

"Energy plant" means:

- Nuclear power plant
- **Stationary thermal power plant > 350 MW**
- Marine LNG > 100 million cubic feet
- Petroleum > 50,000 barrels/day
- Underground natural gas storage reservoirs > 100 million cubic feet/day
- Petroleum/biofuel processors > 25,000 barrels/day

# Who is EFSEC?

RCW 80.50.030(3)(a)

The council shall consist of the directors, administrators, or their designees, of the following departments, agencies, commissions, and committees or their statutory successors:

- (i) Department of ecology;
- (ii) Department of fish and wildlife;
- (iii) Department of commerce;
- (iv) Utilities and transportation commission; and
- (v) Department of natural resources.

# EFSEC Powers:

RCW 80.50.040

The council [EFSEC] shall have the following powers:

. . . .

(12) To issue permits in compliance with applicable provisions of the federally approved state implementation plan adopted in accordance with the Federal Clean Air Act, as now existing or hereafter amended

- for the new construction, reconstruction, or enlargement or operation of energy facilities. . . . .

**(13) To serve as an interagency coordinating body for energy-related issues.**

# CARBON DIOXIDE MITIGATION RULES FOR POWER PLANTS

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RCW 80.70 (2004)

# Carbon Dioxide Mitigation: Ecology/Local air authority, EFSEC

- New fossil-fueled thermal generating facilities and existing facilities proposing to increase their capacity by 15%
- Are required to provide mitigation for 20% of the total carbon dioxide emissions produced by the facility. ([RCW 80.70.020](#))
- Depending on size and type of facility, EFSEC or ECOLOGY/Local Air Authority
  - Reviews applications for modifications that significantly increase generating capability/output of CO<sub>2</sub> emissions
  - Adopts rules for CO<sub>2</sub> mitigation from these facilities.

# INTEGRATED RESOURCE PLANNING

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RCW 19.280 (2006)

# Integrated Resource Planning

## What is an IRP?

- Resource Plans are used by utilities to characterize their strategies for meeting customer electricity needs.
- Required every two years.
- Utilities plan the portfolio of generating and conservation and efficiency resources to be used to meet current and future loads of retail customers:
  - “at lowest reasonable cost” to the utility and its ratepayers
  - Applies to utilities with more than 25,000 retail customers
- Creates a long-term resource strategy, including
  - Types; Amounts; Timing.

# Integrated Resource Planning: Commerce

- Utilities must provide Commerce with data containing the core elements of their IRPs.
- Commerce then reviews plans of COUs and IOUs
  - Reports aggregated loads and resources to the legislature in December of each reporting year.
- Most recent utilities' reporting deadline was September 1, 2014

# Integrated Resource Planning: **Utilities and Transportation Commission**

- Reviews integrated resource plans (IRPs) from IOUs
- Adopts rules for preparation and submission of IRPs from IOUs
- May adopt rules to clarify the requirements of IRPs

## Other (found elsewhere in code)

- Oversight for demand-side management/efficiency programs
- Analyzes new pricing/cost recovery models

# ENERGY INDEPENDENCE ACT (I-937)

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RCW 19.285 (2007)

# Energy Independence Act (I-937)

RCW 19.285

- Sets energy conservation and renewable energy targets.
- Large utilities must acquire renewable resources like wind and solar to meet part of their electricity needs and must implement all cost-effective energy-efficiency measures. . . .
- Or achieve compliance through an alternative means, such as purchasing Renewable Energy Credits (RECs).

# Energy Independence Act: Utilities & Transportation Commission (UTC)

- Determines whether conservation programs are “cost-effective”
- Determines whether an IOU has complied with energy conservation and renewable energy targets
- Determines whether an IOU may recover administrative penalties for non-compliance from ratepayers
- Adopts rules for implementation and enforcement of I-937, as applied to IOUs
- May provide “positive incentives” for IOU exceeding annual renewable energy targets
- Addresses regulatory treatment of alternative compliance strategies/utility finance.

# Energy Independence Act: Commerce

- Issues advisory opinions, when requested by COUs or project developers ,on whether a project qualifies as an “eligible renewable resource” or conservation measure
- Processes annual reports from qualifying utilities
- **COUs Only:** Adopts rules concerning process, timelines, and documentation.

# GREENHOUSE GAS EMISSIONS PERFORMANCE STANDARD

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RCW 80.80 (2007)

# GHG Emissions Performance Standard: Ecology

- Ecology coordinates with EFSEC to adopt rules to implement and enforce the GHG emissions performance standard that applies for all baseload electric generation for which utilities enter into long-term financial commitments.
- The greenhouse gas emissions performance standard is the lower of: (A) 1,100 pounds of GHG per MWh; or (B) the average available GHG emissions output as determined by Commerce.
- Ecology reviews greenhouse gas sequestration plans.
- Ecology reviews the greenhouse gas emissions performance standard no less than every five years.

# Greenhouse Gas Emissions Performance Standard: Department of Commerce

- Adopts and implements the GHG emission performance standard
  - “In consultation with” UTC, Ecology, BPA, WECC, EFSEC, utilities, public interest representatives, and consumer representatives
  - Considers effects on system reliability and overall costs to electricity customers
  - Performs a 5-year survey to determine average emissions rate of new combined-cycle natural gas thermal electric generation turbines
  - Adopts by rule and reports to the Legislature

# Greenhouse Gas Emissions Performance Standard: Utilities and Transportation Commission

- Determines compliance for all baseload electric generation for which IOUs enter into long-term financial commitments
- Reviews compliance in a general rate case or other proceeding
- Consults with DOE to apply procedures to verify GHG emissions
- Adopts rules to enforce compliance

# GREENHOUSE GAS EMISSION LIMITS

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RCW 70.235 (2008)

# Limiting Greenhouse Gases: Ecology

- Ecology implements a system for monitoring and reporting greenhouse gas emissions in order to track the state's progress toward meeting the following reductions:
  - ❖ By 2020, reduce overall emissions of GHGs to 1990 levels;
  - ❖ By 2035, reduce overall emissions of GHGs to 25% below 1990 levels;
  - ❖ By 2050, reduce overall emissions of GHGs to 50% below 1990 levels, or 70% below the state's expected emissions for that year.
- Ecology develops the GHG reduction plan for the state.

# Greenhouse Gas Emissions Inventory and Reporting: Ecology

- A single facility, source, or site that emits at least 10,000 metric tons of greenhouse gases annually in Washington must report to Ecology (RCW 70.94.151)
- Ecology, by December 31st of each even-numbered year beginning in 2010, must report to the governor and the appropriate committees of the senate and house of representatives the total emissions of greenhouse gases for the preceding two years, and totals in each major source sector. (RCW 70.235.020)

# EPA'S CLEAN AIR ACT 111(D) AUTHORITY

A sampler of issues relating to EPA's "Clean Power Plan"

# Section 111

EPA must

- promulgate a list of categories of stationary sources
- that the Administrator, in his or her judgment,
- finds “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare”

# Section 111(d)

Section 111(d)

EPA may “establish a procedure”

For states to adopt “**standards of performance**” for existing sources of air pollutants:

- That are not new sources, subject to NSPS and
  - That are not regulated under other existing source regulations

The “standard of performance” is to be established and implemented through application of a “best-system of emissions reduction” (BSER)

# Developing carbon pollution standards under the Clean Air Act

“EPA is using its authority under section 111 of the Clean Air Act to issue standards, regulations or guidelines, as appropriate that address carbon pollution from new and existing power plants, including modifications of those plants. This section of the Act establishes a mechanism for controlling air pollution from stationary sources.

- Section 111 (b) is the federal program to address new, modified and reconstructed sources by establishing standards.
- Section 111 (d) is a state-based program for existing sources. The EPA establishes guidelines. The states then design programs that fit in those guidelines and get the needed reductions.”

U.S. EPA, “Carbon Pollution Standards”

downloaded Oct. 20, 2014

# Policy questions:

Electric reliability (per se) not mentioned in the CAA:

- How to ensure that 111(d) compliance does not compromise reliability?
- States can take reliability into account as they design SIP and timetable/schedule for compliance, but must meet overall emission reduction by the deadline

Interagency coordination?

- Where environmental and energy regulations intersect, who is in the driver's seat?

## Clean Power Plan Compliance Pathways



Heat rate reduction



Cleaner power sources



More renewables



Investments in efficiency

# Theories of “Flexibility”

Unit-specific steps, i.e. fuel switching, heat-rate improvements

Bubbling of emissions at a generating station

----- Property line -----

Inter-station trading

- within a fleet, across units within a state, across states.
- Emission averaging among multiple power plants

Actions not occurring at a covered generating unit

- Changes in dispatch
- State carbon budgets
- Demand-side reductions
- Transmission upgrades to access low-carbon facilities

**Least flexible** (potentially least stringent)

Source-based approach

System-based approach

**Most flexible** (potentially most stringent)

# Legal issues:

- Does EPA have statutory authority to regulate existing power plants' carbon dioxide emissions under 111(d)?
- Can EPA set the numerical "guidelines" for states, instead of leaving it to the state?
- Can compliance pathways include measures "beyond the fenceline"?
- Can EPA consider availability of "beyond the fenceline" measures in setting the stringency of the state guideline?
- Can renewables be treated as a "source category" of emissions?
- Are the proposed rules subject to legal challenge now? Or is it too late or too early?

# First Clean Power Plan Lawsuit: *In re: Murray Energy Corp.*

No. 14-1112

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**In the  
United States Court of Appeals  
for the  
District of Columbia Circuit**

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MURRAY ENERGY CORPORATION  
*Petitioner,*

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY and REGINA A.  
MCCARTHY, Administrator, United States Environmental Protection Agency  
*Respondents.*

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On Petition for Extraordinary Writ to the  
United States Environmental Protection Agency

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**PETITION FOR EXTRAORDINARY WRIT  
(Prohibition of Ultra Vires Rulemaking)**

Filed June 18, 2014  
9 states file amicus brief

Procedural hurdle: Rule  
hasn't been finalized yet.

No. 14-1112

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**IN THE UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

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**IN RE: MURRAY ENERGY CORPORATION**

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**BRIEF OF THE STATES OF WEST VIRGINIA, ALABAMA, ALASKA,  
KENTUCKY, NEBRASKA, OHIO, OKLAHOMA, SOUTH CAROLINA,  
AND WYOMING AS *AMICI CURIAE* IN SUPPORT OF THE PETITIONER**

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PATRICK MORRISEY  
ATTORNEY GENERAL OF  
WEST VIRGINIA

# Second Clean Power Plan Lawsuit: *West Virginia v. US EPA*

- Twelve states challenge voluntary settlement, approved March 2, 2011, between the EPA, states, and environmental groups
- Twelve *other* states (including WA) have sought to intervene in support of EPA
- Procedural hurdle :
  - Is it too late to challenge?
  - Or did EPA's Clean Power Plan Proposal, announced June 18, 2014, reopen window for challenging the standard, making claim "ripe for judicial resolution"?

The states asking the court to uphold the regulations are California, Connecticut, Delaware, Maine, New Mexico, New York, Oregon, Rhode Island, Vermont, Massachusetts, the District of Columbia, and Washington

# Underlying substantive argument

Can EPA regulate sources under Sec. 111(d) if they are already regulated under Sec. 112 (addressing Hazardous Air Pollutants)?

What is the relevant statutory language?

Congress enacted competing amendments in 1990:

- House: EPA may not regulate under §111(d) any industrial source already regulated under §112.
- Senate: EPA may not use its authority under §111(d) to regulate the pollutants listed under §112(b); adopted “conforming” amendment to harmonize prior language with 1990 amendments
- Conference committee: Adopted House amendment, along with Senate’s conforming amendment. This language is reflected in Statutes at Large
- U.S. Code contains only the House version, stating that Senate’s conforming amendment “could not be executed.”

# Both Lawsuits: Underlying substantive argument

- Argument: Based on unambiguous terms of 111(d) as it appears in the U.S. Code, states cannot “double” regulate power plants.
- Argument: EPA’s proposed rule violates “specific prohibitions” found in the Clean Air Act.
- Argument: EPA is relying on a “drafting error” to find ambiguity where none exists
- EPA’s argument: Section 111(d) is actually ambiguous because of conflicting versions of 111(d) that appear in the Statutes at Large.
- *Chevron v. NRDC*, 467 U.S. 837 (1984)

# Federal Administrative Law: Court deference to agency's interpretation

Where expressed intent of Congress is ambiguous:

- If “permissible construction of the statute”
- Deferential standard of review
- Court will reverse EPA’s interpretation only if the determination is “arbitrary, capricious, and manifestly contrary to the statute”

For factual findings (i.e. assumptions about achievability of guideline. . . )

- Must be a sufficient factual basis in the record, sufficient analysis, and reasoned explanation

# Diving deeper into the legal issues

## Regulation of CO<sub>2</sub> Emissions From Existing Power Plants Under §111(d) of the Clean Air Act: Program Design and Statutory Authority

by Robert R. Nordhaus and Ilan W. Gutherz

[44 ELR 10366](#), May 2014

## Review of EPA Authority for Upcoming Rules for Greenhouse Gas Emissions From Electric Power Plants

Jones Day [White Paper](#), February 2014

# APPENDIX

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Text of Section 111(d)

42 U.S. Code Section 7411

# Appendix: Text of Section 111(d)

## **d) Standards of performance for existing sources; remaining useful life of source**

**(1)** The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section [7410](#) of this title under which each State shall submit to the Administrator a plan which

**(A)** establishes standards of performance for any existing source for any air pollutant

**(i)** for which air quality criteria have not been issued or which is not included on a list published under section [7408 \(a\)](#) of this title or emitted from a source category which is regulated under section [7412](#) of this title but

**(ii)** to which a standard of performance under this section would apply if such existing source were a new source, and

# Text of Section 111(d) (cont'd)

**(B)** provides for the implementation and enforcement of such standards of performance. Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies.

# Text of Section 111(d) (cont'd)

**(2)** The Administrator shall have the same authority—

**(A)** to prescribe a plan for a State in cases where the State fails to submit a satisfactory plan as he would have under section [7410 \(c\)](#) of this title in the case of failure to submit an implementation plan, and

**(B)** to enforce the provisions of such plan in cases where the State fails to enforce them as he would have under sections [7413](#) and [7414](#) of this title with respect to an implementation plan.

In promulgating a standard of performance under a plan prescribed under this paragraph, the Administrator shall take into consideration, among other factors, remaining useful lives of the sources in the category of sources to which such standard applies.