Rethinking the Energy-Environment Divide

Todd Aagaard
Professor of Law
Villanova University School of Law

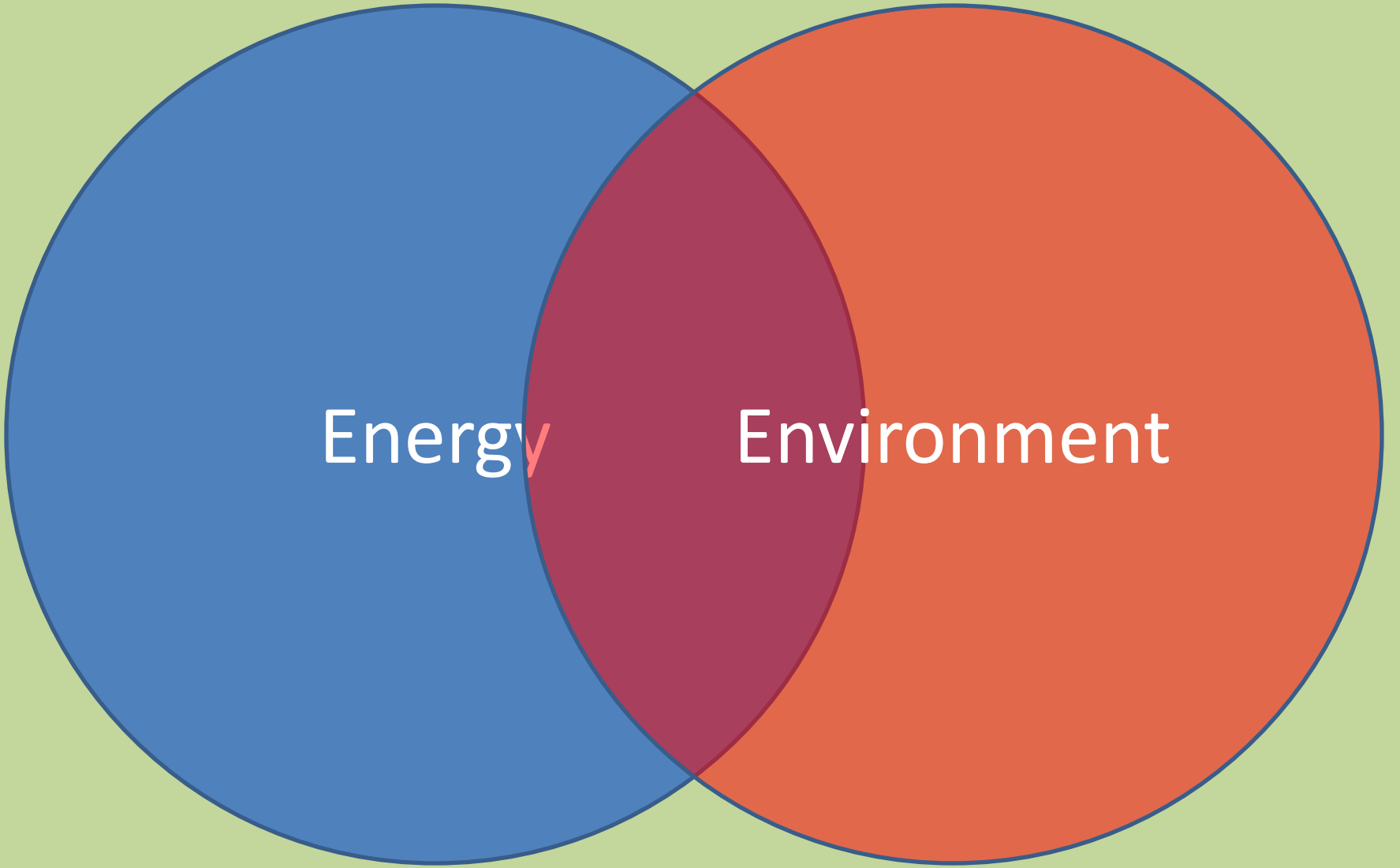
Energy-Environment Interrelationship

Energy production, energy markets, and energy use drive many environmental issues.

- Energy-related activities account for 84% of U.S. anthropogenic greenhouse gas emissions.
- Hydraulic fracturing and horizontal drilling have transformed the U.S. energy economy, with environmental implications.
- Developments in the electricity grid have ramifications for alternative energy sources and technologies.

Despite this energy-environment interrelationship, energy law and environmental law have maintained traditional divide.

Energy-Environment Interrelationship



Federal Energy Law

Agency	Areas	Statute(s)
Federal Energy Regulatory Commission	regulates interstate energy transactions	Federal Power Act
Department of Energy	energy conservation standards	Energy Policy & Conservation Act
Department of the Interior	leases federal lands for oil, gas, coal	Mineral Leasing Act
Nuclear Regulatory Commission	licenses nuclear power plants	Atomic Energy Act
Mining Safety & Health Admin.	protects miner health and safety	Mine Safety & Health Act

Federal Energy Law

Agency	Areas	Statute(s)
Federal Energy Regulatory Commission	**regulates interstate energy transactions**	**Federal Power Act**
Department of Energy	energy conservation standards	Energy Policy & Conservation Act
Department of the Interior	leases federal lands for oil, gas, coal	Mineral Leasing Act
Nuclear Regulatory Commission	licenses nuclear power plants	Atomic Energy Act
Mining Safety & Health Admin.	protects miner health and safety	Mine Safety & Health Act

Federal Environmental Law

Agency	Areas	Statute(s)
Environmental Protection Agency	pollutant emissions standards	Clean Air Act Clean Water Act RCRA
Forest Service	manages federal forest lands	National Forest Management Act
Fish & Wildlife Service	protects fish and wildlife	Endangered Species Act
Council on Environmental Quality	coordinates federal environmental policy	National Environmental Policy Act

Federal Environmental Law

Agency	Areas	Statute(s)
Environmental Protection Agency	**pollutant emissions standards**	**Clean Air Act Clean Water Act RCRA**
Forest Service	manages federal forest lands	National Forest Management Act
Fish & Wildlife Service	protects fish and wildlife	Endangered Species Act
Council on Environmental Quality	coordinates federal environmental policy	National Environmental Policy Act

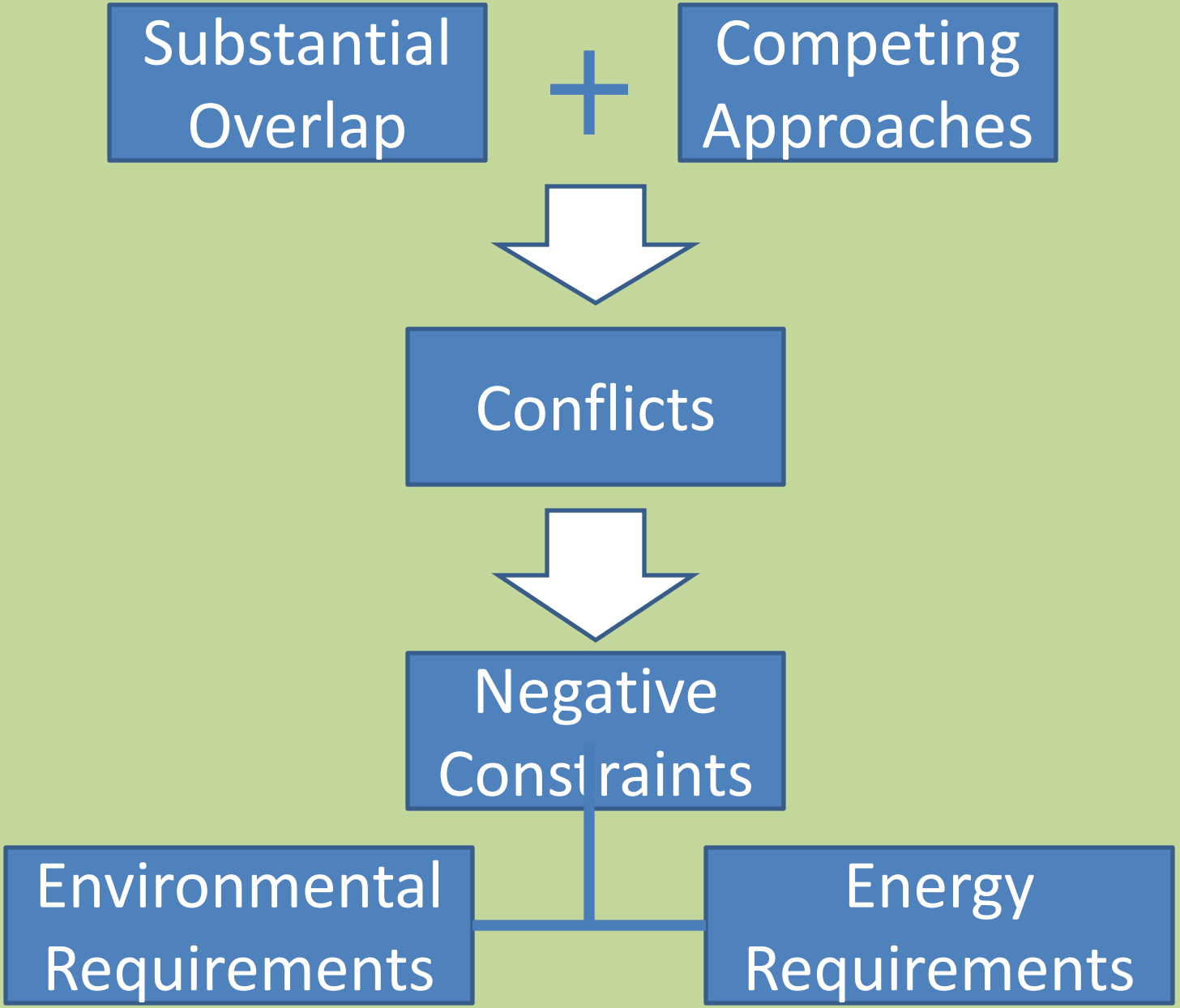
Energy Law	Environmental Law

Energy Law	Environmental Law
Traditional Goal	Traditional Goal
economic regulation of natural monopolies	environmental regulation of externalities

Energy Law	Environmental Law
Traditional Goal	Traditional Goal
economic regulation of natural monopolies	environmental regulation of externalities
Traditional Statutes	Traditional Statutes
Federal Power Act Natural Gas Act Interstate Commerce Act Energy Policy Acts	Clean Air Act Clean Water Act RCRA CERCLA
“Just and reasonable” rates	Limits on pollution

Energy Law	Environmental Law
Traditional Goal	Traditional Goal
economic regulation of natural monopolies	environmental regulation of externalities
Traditional Statutes	Traditional Statutes
Federal Power Act Natural Gas Act Interstate Commerce Act Energy Policy Acts	Clean Air Act Clean Water Act RCRA CERCLA
"Just and reasonable" rates	Limits on pollution
Suppresses prices ↓ Increases consumption (and externalities)	Internalizes externalities ↓ Increases prices

Energy-Environment Divide



Environmental Requirements in Energy Law

- Clean Air Act conformity requirement
- Clean Water Act water quality certification
- CZMA consistency certification
- ESA jeopardy determination
- NEPA environmental impact statement

Energy Requirements in Environmental Law

- Energy requirements in Clean Air Act control technologies
- Clean Water Act regional energy emergencies
- Energy requirements in Clean Water Act control technologies
- RCRA oil & gas waste exemption [Bentsen Amendment]
- CERCLA petroleum exemption
- SDWA fracking exemption

Energy Law	Environmental Law
Traditional Goal	Traditional Goal
economic regulation of natural monopolies	environmental regulation of externalities
Traditional Statutes	Traditional Statutes
Federal Power Act ⋮	Clean Air Act ⋮
Environmental Requirements	Energy Requirements
CAA conformity CWA certification ESA jeopardy NEPA environmental review CZMA consistency	"energy requirements" in CAA and CWA SDWA fracking exemption RCRA oil & gas waste exemption

Exacerbating the Energy-Environment Divide

Managing energy-environment relationships with energy requirements and environmental requirements exacerbates the energy-environment divide.

- Requirements treat the agency as a regulated entity.
- Requirements' goals have second-tier status within agency.
- Requirements have limited effectiveness.

Energy-Environment Convergence

- Alternatives to negative constraints
- Merger
  - Unification
  - Requires dramatic changes
- Policy Alignments
  - Compatibility
  - Works within existing frameworks

Energy-Environment Policy Alignments

- Energy Policies
  - Demand Response
  - Energy Storage
  - Standard Interconnection Agreements
  - Transmission Planning and Cost Allocation
- Environmental Policies
  - Acid Rain Program Conservation and Renewable Energy Credits
  - Clean Power Plan

Demand Response

- Demand response: reductions in electric energy usage in response to increase in price or incentive payment.
- FERC Order 719 & 745 regulate demand response in wholesale electricity markets.
- FERC relied on Federal Power Act authority to regulate matters affecting wholesale electricity rates.
- Demand response has significant, albeit unclear, environmental effects.
- EPA regulates diesel generators to limit use as demand response resources.
- D.C. Circuit invalidated Order 745; Supreme Court just granted cert.

Energy Storage

- Energy storage: storing previously generated electricity and then releasing it at a later time when it is more valuable.
- FERC Order 755 increases the incentives for energy storage.
- FERC Orders 784 and 792 attempt to give energy storage access to power markets under comparable terms.
- FERC relied on Federal Power Act authority to regulate matters affecting wholesale electricity rates.

Standard Interconnection Agreements

- FERC Order 2003 requires standard generator interconnection procedures and agreements.
- FERC Orders 2006 and 792 extend standard generator interconnection procedures and agreements to small generators.
- Orders facilitate small-scale, grid-connected renewable energy generation.
- FERC relied on Federal Power Act authority to regulate matters affecting wholesale electricity rates.

Transmission Planning and Cost Allocation

- FERC Order 890 requires transmission providers to develop a transmission planning process.
- Order 1000 strengthens transmission planning and cost allocation, including consideration of Public Policy Requirements and non-transmission alternatives.
- FERC relied on Federal Power Act authority to regulate matters affecting transmission rates.
- Order 1000 does not mandate environmental policies, but supports state environmental policies.
- D.C. Circuit upheld Order 1000.

Energy-Environment Policy Alignments

- Energy Policies
  - Demand Response
  - Energy Storage
  - Standard Interconnection Agreements
  - Transmission Planning and Cost Allocation
- Environmental Policies
  - Acid Rain Program Conservation and Renewable Energy Credits
  - Clean Power Plan

Acid Rain Program Bonus Allowances

- 1990 Clean Air Act Amendments created cap-and-trade system to reduce sulfur dioxide emissions.
- Program included bonus allowances for energy conservation and renewable energy employed earlier than required.
- Requirements for allowances include both energy and environmental objectives.
  - Actual emissions reductions
  - Lowest system cost

Clean Power Plan

- Clean Air Act § 111(d) directs EPA to establish standards of performance for certain existing sources of air pollution.
- Clean Power Plan establishes state-specific emissions goals for existing fossil fuel-fired power plants.
- Available emissions-reducing measures include demand-side strategies such as improved energy efficiency and demand response.
- EPA is attempting to address concerns about energy impacts, including reliability.

Energy Law	Environmental Law
Traditional Goal	Traditional Goal
economic regulation of natural monopolies	environmental regulation of externalities
Traditional Statutes	Traditional Statutes
Federal Power Act ⋮	Clean Air Act ⋮
Environmental Requirements	Energy Requirements
CAA conformity ⋮	CAA “energy requirements” ⋮
Energy-Environment Alignment	Energy-Environment Alignment
Demand Response Energy Storage Standard Interconnection Transmission Planning	Acid Rain Bonus Allowances Clean Power Plan

Policy Alignments: Key Features

1. Simultaneous support for policy objectives in multiple interacting fields, thereby creating synergies
2. Created under existing statutory authorities
3. Challenge traditional legal categories
4. Do not necessarily require active interagency collaboration

Policy Alignments: Advantages

1. Environmental and energy requirements perpetuate the energy-environment divide by assuming conflicts.

Negative Model

2. Policy alignments, by contrast, undermine the energy-environment divide by aligning the two fields, thereby preventing conflicts.

Positive Model

Policy Alignments: Disadvantages and Limits

1. Not everything can align
2. Requirements may still be necessary
3. Fragile
   - Relatively easy to undo
   - Susceptible to legal challenges
4. Complexity
5. Pretextual justifications

Policy Alignments: Implications

1. Seek opportunities to create policy alignments, including federal-state interactions
   - Natural gas?
2. Analyses of the energy-environment divide should take into account policy alignments.
   - Potential policy option
   - Baseline
3. Redefine energy law and environmental law