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Legal Pathways to Deep Decarbonization in the United States

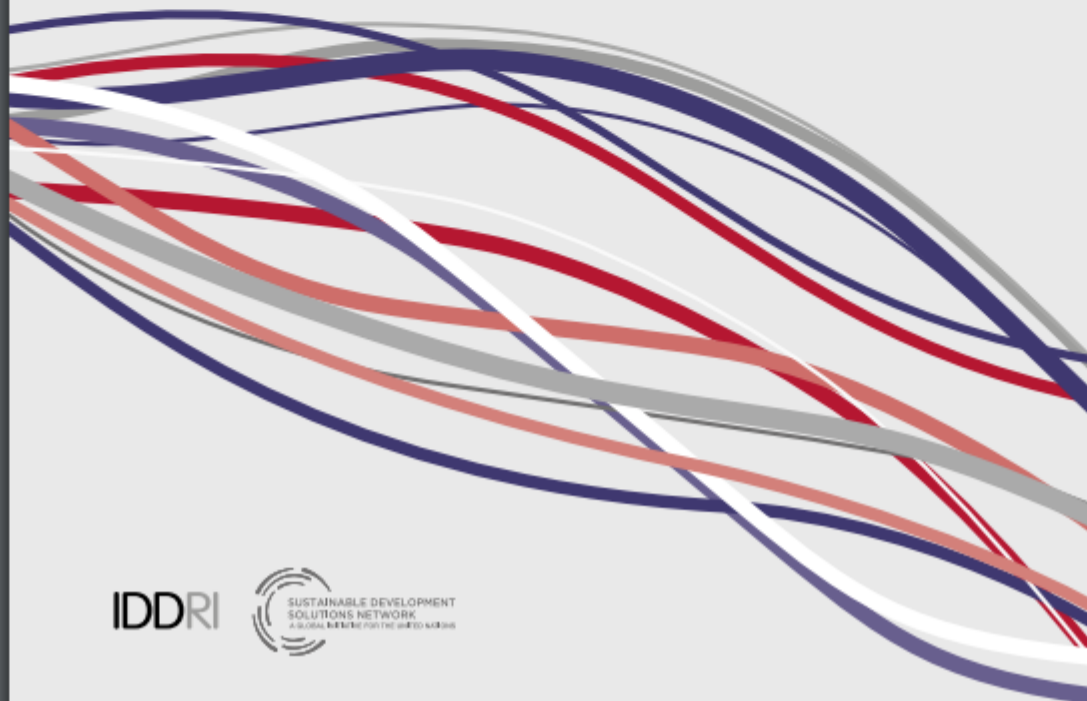
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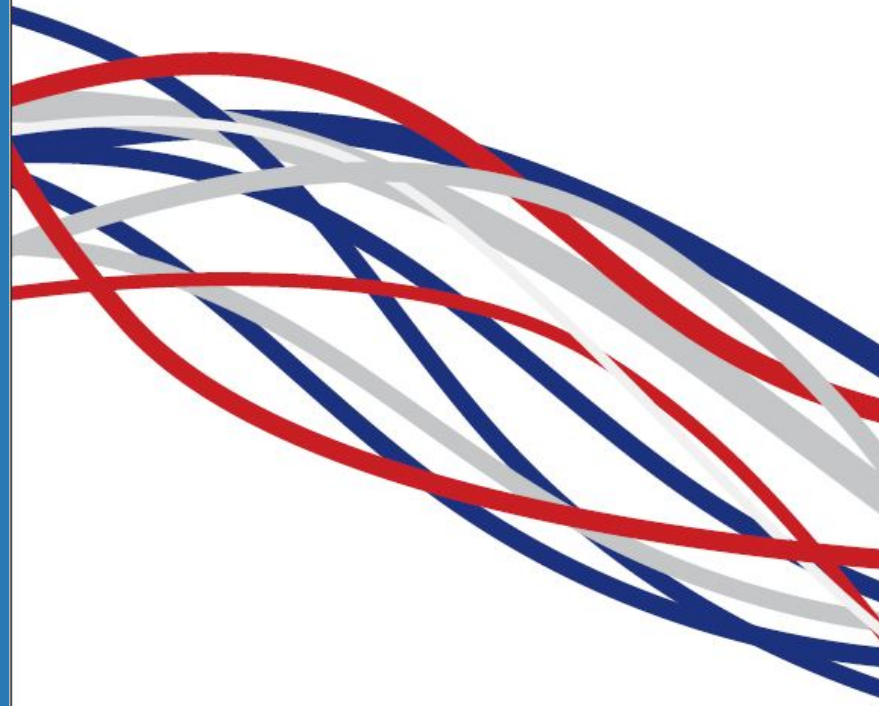


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LEGAL PATHWAYS TO DEEP DECARBONIZATION IN THE UNITED STATES

MICHAEL B. GERRARD AND JOHN C. DERNBACH, EDITORS



Legal Pathways

Energy efficiency, conservation, fuel switching

- Light duty vehicles
- Heavy duty vehicles and freight
- Transportation demand and mode shifting
- Aviation
- Shipping
- Lighting, appliances and other equipment
- Old buildings
- New buildings
- Industrial sector

Legal Pathways

Electricity decarbonization

- Utility-scale renewables
- Distributed renewables
- Transmission, distribution and storage
- Nuclear
- Hydropower
- Phasing out fossil fuels in electricity sector

Legal Pathways

Fuel decarbonization

- Bioenergy feedstock
- Production and delivery of low-carbon gaseous fuels
- Production and delivery of bioenergy fuels

Legal Pathways

Carbon capture and negative emissions

- Carbon capture, sequestration, utilization
- Direct air capture
- Agriculture
- Forestry

Legal Pathways

Non-CO2 climate pollutants

- Black carbon
- Methane
- Fluorinated gases
- Nitrous oxide

Legal Pathways

Cross-cutting approaches to reducing emissions

- Carbon pricing
- Behavior
- Technological innovation
- Financing large-scale projects
- Financing at the grid edge
- Materials consumption and solid waste
- International trade

Key Findings on Legal Pathways

- Legal tools are available to decarbonize U.S.
- More than 1,500 specific recommendations for federal, state, local and private action
- Wide variety of types of tools; some are regulatory, but most are not
- These tools would create economic, social, environmental, and security benefits in addition to reducing GHG emissions

Twelve types of legal tools

- Additional regulation
- Reduction or removal of legal barriers
- Market-leveraging approaches
- Removal of incentives for fossil fuel use
- Tradable permits or allowances
- Information/persuasion
- Facilities and operations
- Infrastructure development
- Research and development
- Insurance
- Property rights
- Social equity

Carbon pricing alone will not solve everything

Local opposition (e.g. Cape Wind)

Hard-to-measure emissions (e.g. natural gas leakage)

Principal-agent problem (e.g. builders don't pay occupants' energy bills)

Sectors with low price elasticity (e.g. some HFC uses)

Sectors with long lead times (e.g. passenger autos)

Public infrastructure construction

Non-carbon externalities (e.g. mining waste)

Different levels of government are key
to different tools

Federal

Carbon tax and tax incentives

But states could impose their own

Motor vehicle emissions/efficiency standards

But California waiver

National air pollution standards

But states may adopt stronger standards

Appliance energy efficiency standards

But states can impose standards for appliances not federally regulated

Aircraft

Nuclear

Hydropower

Natural gas pipelines

Wind, solar on federal lands and offshore

R&D funding

International trade

State

Utility-scale electricity generation (both fossil and renewables)

Siting of electric transmission lines

Electricity and natural gas distribution lines

Pricing of electricity, natural gas to consumers

HFC standards

Courts have limited the federal role

Regulation of oil, gas, coal extraction on private land

Subsurface property rights (CO₂ sequestration)

Forestry on private land

Insurance regulation

Municipal

Building and zoning codes

Urban transportation

Land use plans

Distributed energy generation

Electric vehicle charging stations

Solid waste management

Moving Forward With the Legal Pathways By Mobilizing Pro Bono Lawyers Through Coordinating Law Firms

Drafting federal and state statutes and regulations, model local laws, etc.

The logo for White & Case, featuring the text "WHITE & CASE" in white, uppercase letters on a dark blue rectangular background.

WHITE & CASE

Renewable Energy Legal Defense Initiative

The logo for Arnold & Porter, featuring the text "Arnold & Porter" in a dark blue serif font, with a vertical blue bar to the left of the text, all on a light gray rectangular background.

Arnold & Porter

Summary and key recommendations volume (160 pages) – free download:

<https://www.eli.org/legal-pathways-deep-decarbonization-united-states-summary-and-key-recommendations>

Full volume (1,200 pages) (\$64.95):

<https://www.eli.org/eli-press-books/legal-pathways-deep-decarbonization-united-states>

The Dozen Types of Legal Tools in the Deep Decarbonization Toolbox:

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247105

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