

**Rocky Mountain Land Use Institute**  
**Friday, March 8, 2019**

8:30-10:00 a.m.

**Resources for Local Land Use Sustainability—  
*Legal Pathways to Deep Decarbonization***

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Access articles at SSRN:

<http://ssrn.com/author=725005>



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DENVER

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STURM COLLEGE OF LAW  
125 YEARS OF LEGAL INNOVATION

**I. Deep Decarbonization Pathways Projects**

**II. Role of law and policy in promoting or inhibiting new technologies— *Legal Pathways to Deep Decarbonization in the United States* (2019).**

**III. Moving Forward With the Legal Pathways—Resources for Policymakers**



# I. Deep Decarbonization Pathways Projects

- National blueprints for limiting warming to 2°C.
- Incrementalism to transformation.
- 34 OECD countries + China, India, Brazil, South Africa, Mexico.

SCIENCE

## *A Path for Climate Change, Beyond Paris*

By JUSTIN GILLIS DEC. 1, 2015

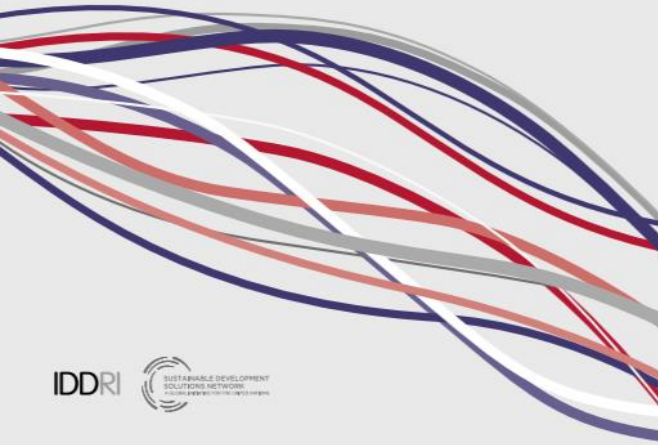


## UN issued with roadmap on how to avoid climate catastrophe

Report is the first of its kind to prescribe concrete actions that the biggest 15 economies must take to keep warming below 2C

- DDPP is a collaborative global initiative to explore how individual countries can reduce GHG emissions.
- 16 independent research teams from countries representing 75% of global GHG emissions, including the largest two: China & U.S.
- Starting in the fall of 2013, the research teams have developed potential high-level roadmaps or pathways for deep decarbonization of their countries.

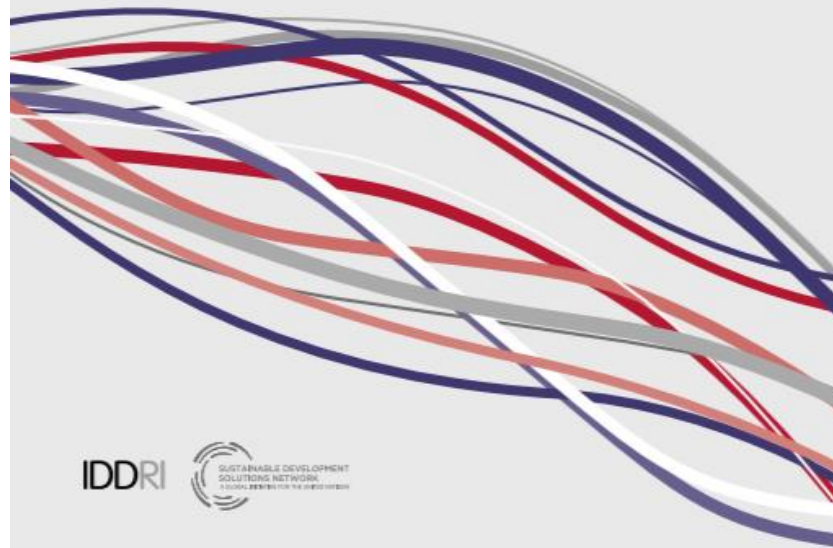
*pathways to*  
**deep decarbonization**  
*in the United States*



<http://www.iddri.org/Projets/The-Deep-Decarbonization-Pathway-Project>

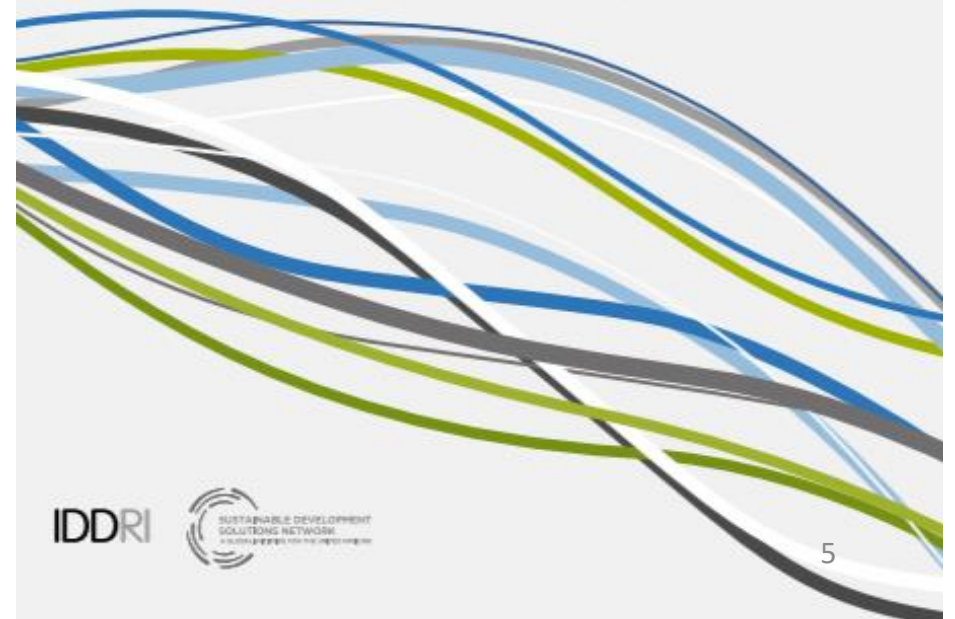
*policy implications of*  
**deep decarbonization**  
*in the United States*

Nov. 2015



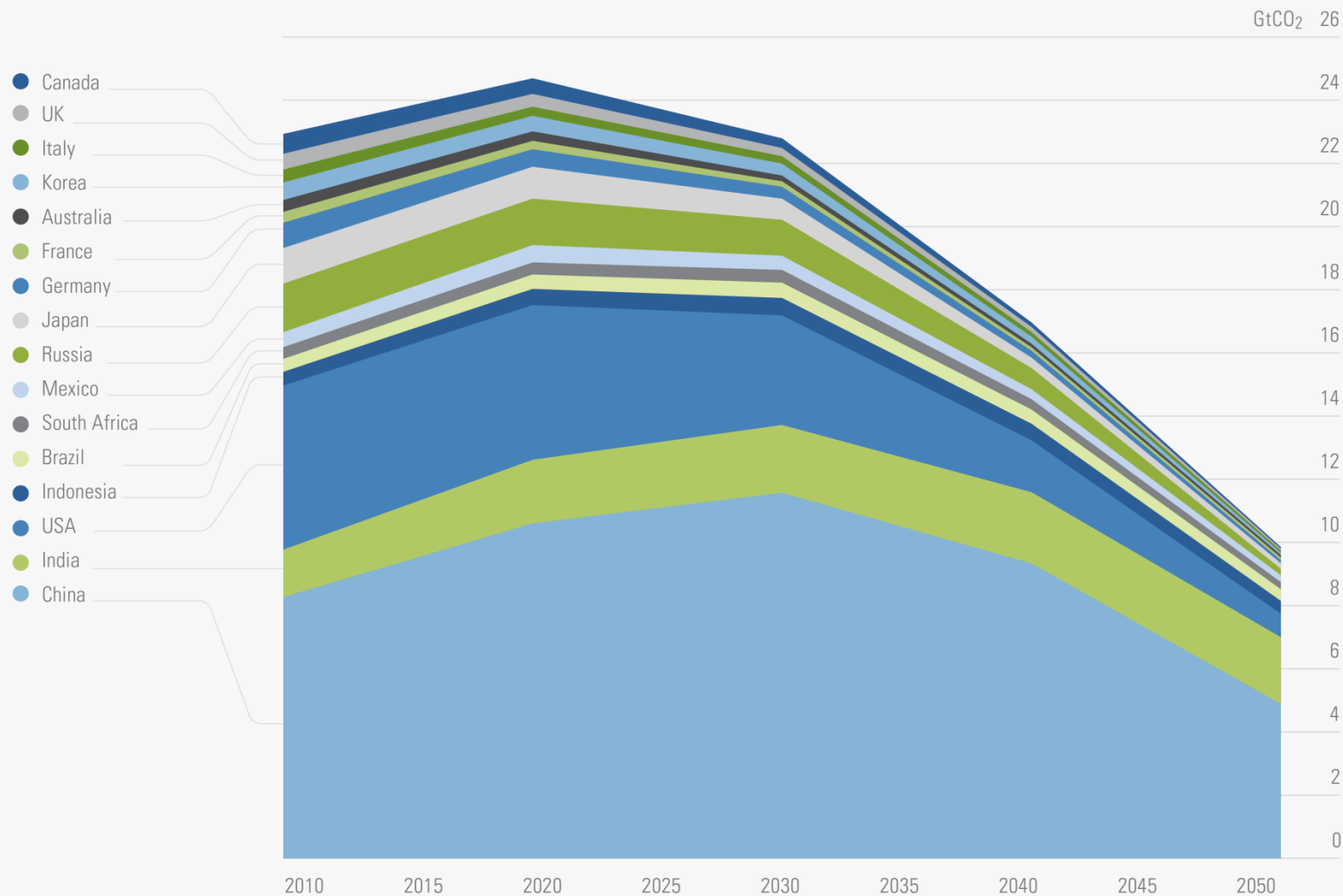
*pathways to*  
**deep decarbonization**

Dec. 2015



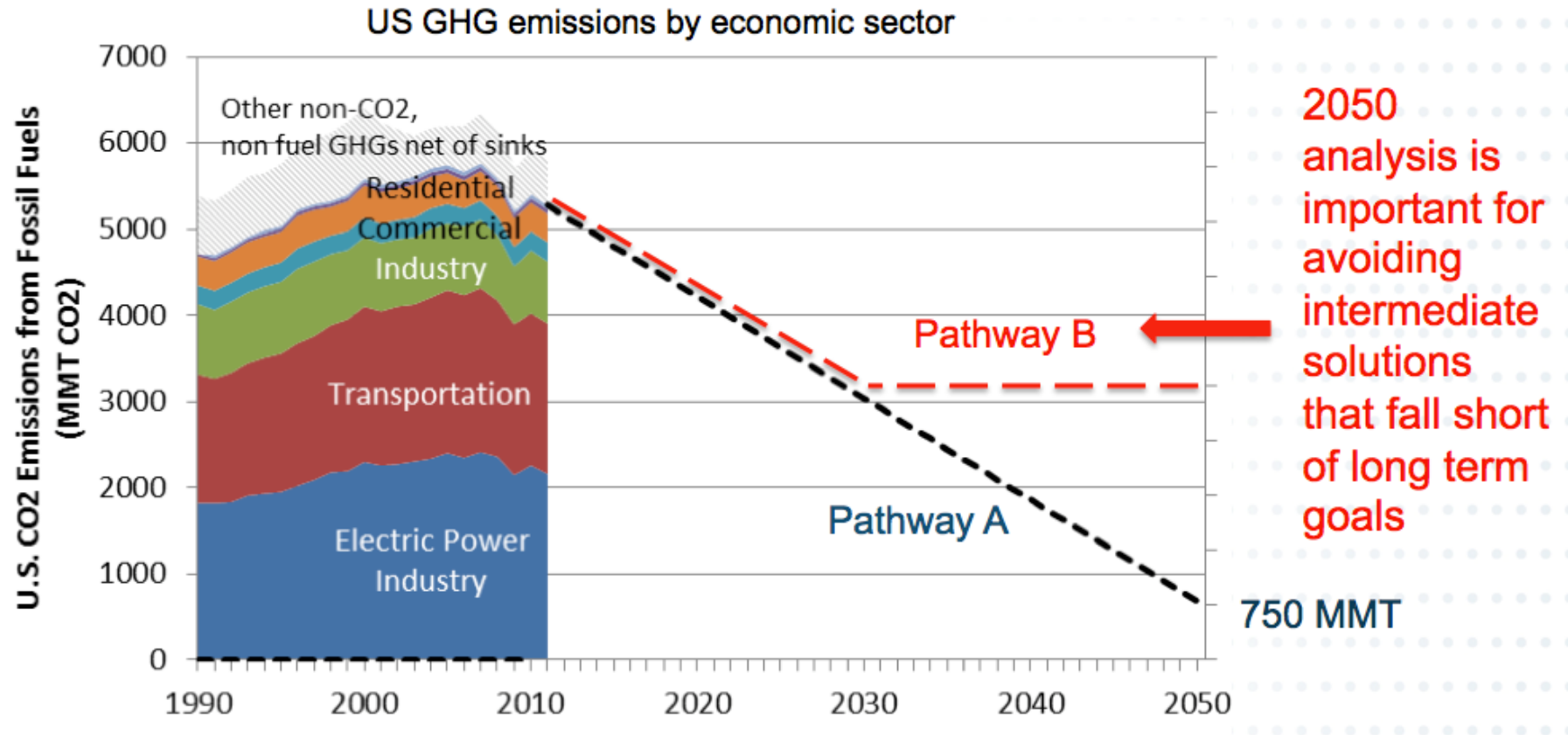
# DDPP Aggregate Emissions

**Figure 1. Emissions trajectories for energy CO<sub>2</sub>, 2010-2050, showing most ambitious reduction scenarios for all DDPP countries. 2050 aggregate emissions are 57% below 2010 levels.**





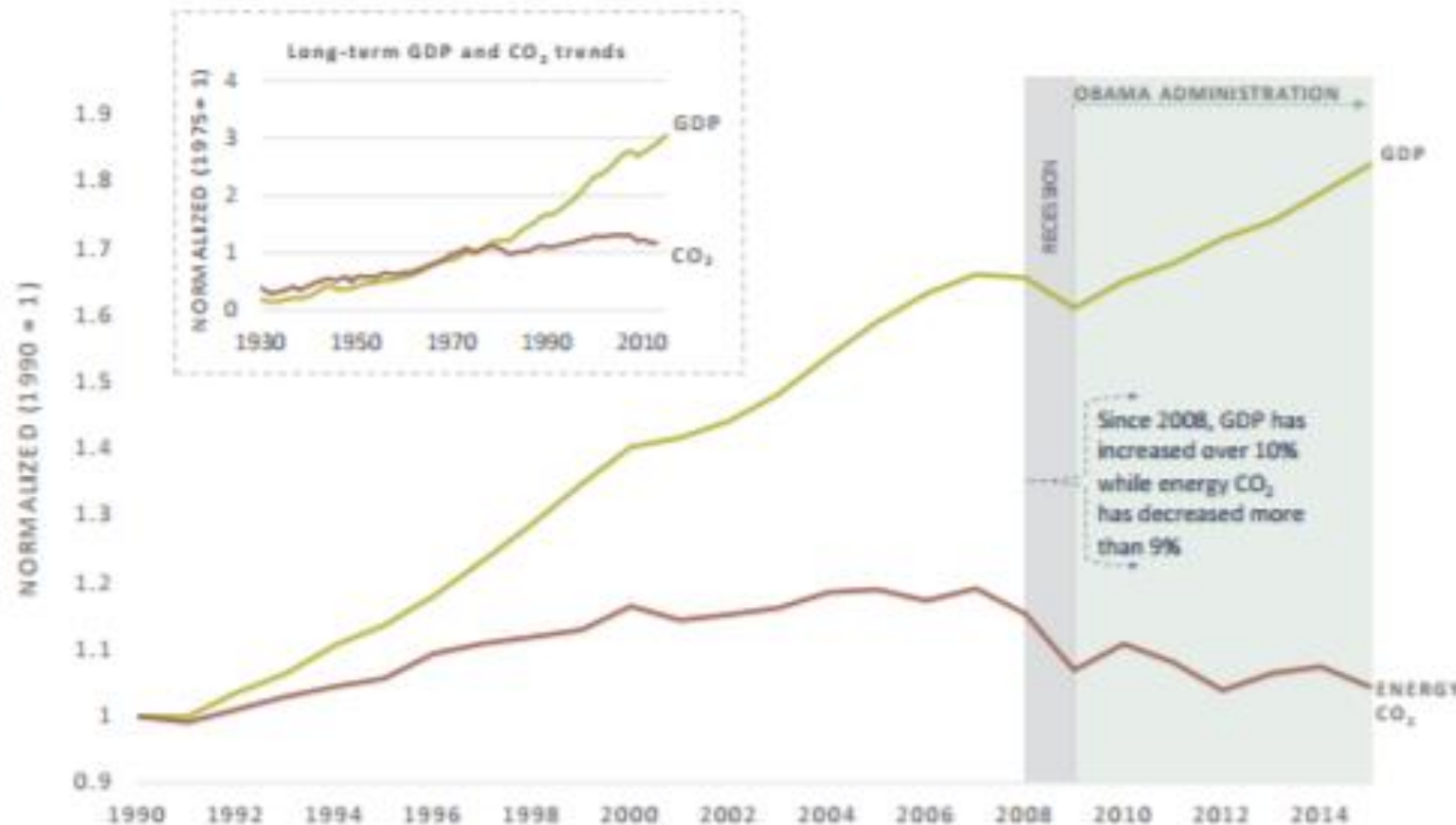
# Avoiding emissions dead-ends



Todd Stern: "It's all about the transformation."

# United States Mid-Century Strategy (MCS) for Deep Decarbonization (November 2016)

**FIGURE E10:**  
**U.S. ENERGY CO<sub>2</sub>**  
**EMISSIONS AND GROSS**  
**DOMESTIC PRODUCT**



**Lays out  
strategy to  
deeply  
decarbonize  
the U.S.  
economy by  
2050.**

Sources: GDP data per U.S. Bureau of Economic Analysis; emissions data per Carbon Dioxide Information Analysis Center and U.S. Energy Information Administration.



## II. Role of law and policy in promoting or inhibiting new technologies.



- 1835 - Highways Act prohibits riding on footpaths, introduces dangerous driving.
- 1865 - Locomotive Act (amended 1878) - restricted the speed of horse-less vehicles to 4mph in open country and 2 mph in towns. Act required three drivers for each vehicle - 2 to travel in the vehicle and one to walk ahead carrying a red flag... the Red Flag Act.
- 1872 - Licensing Act - introduces offence of drinking whilst in charge of carriage, horse or cattle
- 1875 - 1589 people killed in road accidents
- 1896 - Repeal of 1865 'Red Flag Act' after nearly two decades of strong support from horse interests. Horse-less vehicles now free to travel faster than walking pace! Royal Automobile Club founded. First RAC London to Brighton run held to celebrate the new era of speed.
- 1905 - Automobile Association founded - fights to support members caught by police speed traps.
- 1930 - Road Traffic Act - introduced minimum age for driving and requirement of all vehicles to be insured. Required the Ministry of Transport to prepare guidance for road users - the first Highway Code.
- 1934 - Road Traffic Act - introduced 30mph speed limit in built up areas, pedestrian crossings (marked by the 'Belisha' beacon), required cycles to carry rear reflectors. First driving tests introduced.



<http://pazhayathu.blogspot.com/2015/08/1896-cars-maximum-road-speed-by-law-was.html>

<https://www.pinterest.com/jwooddusty/cars-1900-1910/>







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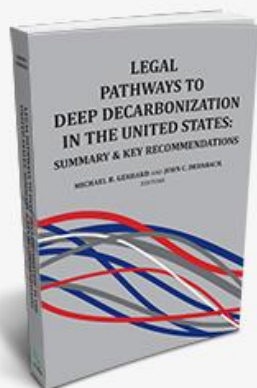
WHO WE ARE

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You are here &gt; Home » Legal Pathways to Deep Decarbonization in the United States: Summary and Key Recommendations

# Legal Pathways to Deep Decarbonization in the United States: Summary and Key Recommendations

## LIMITED OFFER FROM ELI PRESS



ELI Press is offering a **free pdf** download of *Legal Pathways to Deep Decarbonization in the United States: Summary & Key Recommendations*, edited by Michael B. Gerrard and John C. Dernbach. The book contains key information and recommendations for federal, state, local, and private action from a longer volume, *Legal Pathways to Deep Decarbonization in the United States* (forthcoming March 2019), which identifies well over 1,000 legal options for transitioning away from fossil fuels. The longer volume (1,200 pages) has detailed legal analysis of each recommendation. The shorter edition grows out of a desire to get the main messages to the broadest possible audience. And while both the scale and complexity of deep decarbonization are enormous, both books have a simple message: deep decarbonization is achievable in the United States using laws that exist or could be enacted.

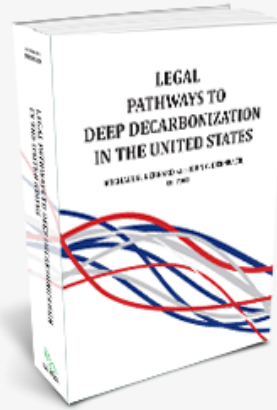
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# Legal Pathways to Deep Decarbonization in the United States



Authors: Michael B. Gerrard and John C. Dernbach, Editors

Price: \$64.95

Release Date: March 2019

ISBN: 978-1-58576-197-5

Pages: 1200

RESERVE NOW

Coming in late March 2019

## About





















*Legal Pathways to Deep Decarbonization in the United States* provides a “legal playbook” for deep decarbonization in the United States, identifying well over 1,000 legal options for enabling the United States to address one of the greatest problems facing this country and the rest of humanity.











The book is based on two reports by the Deep Decarbonization Pathways Project (DDPP) that explain technical and policy pathways for reducing U.S. greenhouse gas emissions by at least 80% from 1990 levels by 2050. This 80x50 target and similarly aggressive carbon abatement goals are often referred to as deep decarbonization, distinguished because it requires systemic changes to the energy economy.

*Legal Pathways* explains the DDPP reports and then addresses in detail 35 different topics in as many chapters. These 35 chapters cover energy efficiency, conservation, and fuel switching; electricity decarbonization; fuel decarbonization; carbon capture and negative emissions; non-carbon dioxide climate pollutants; and a variety of cross-cutting issues. The legal options involve federal, state, and local law, as well as private governance. Authors were asked to include all options, even if they do not now seem politically realistic or likely, giving *Legal Pathways* not just immediate value, but also value over time.

While both the scale and complexity of deep decarbonization are enormous, this book has a simple message: deep decarbonization is achievable in the United States using laws that exist or could be enacted. These legal tools can be used with significant economic, social, environmental, and national security benefits.

# *Table of Contents for LEGAL PATHWAYS TO DEEP DECARBONIZATION IN THE UNITED STATES*

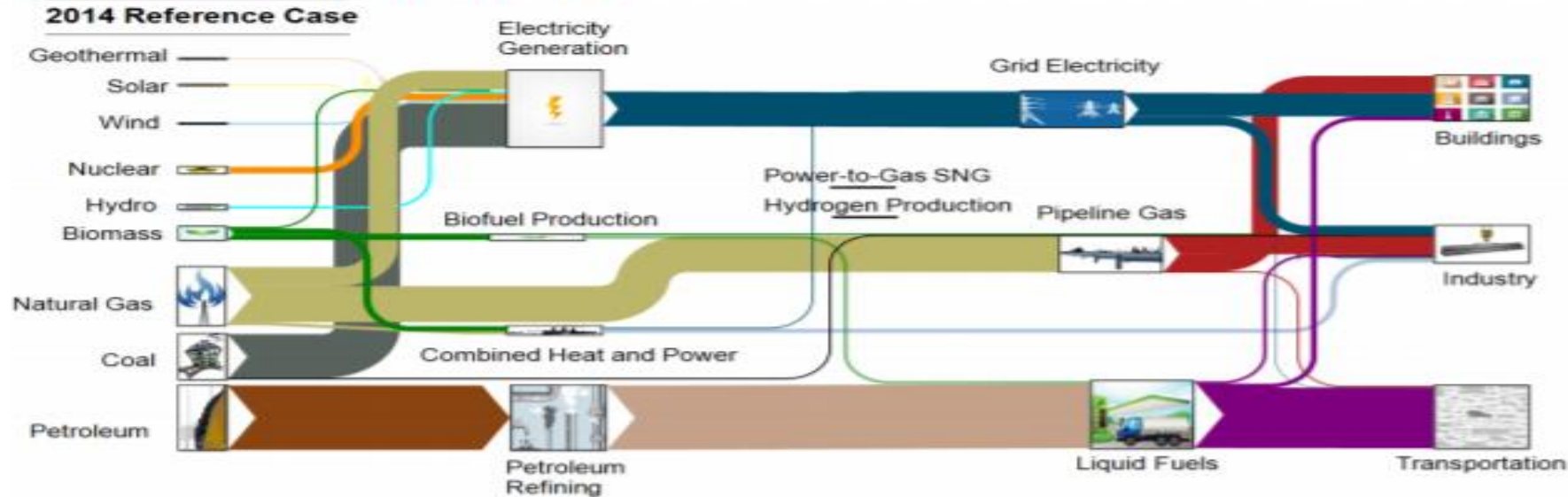
-  Ch 2 Technical & Policy Aspects
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**Environmental Law Institute  
(ELI 2019)**

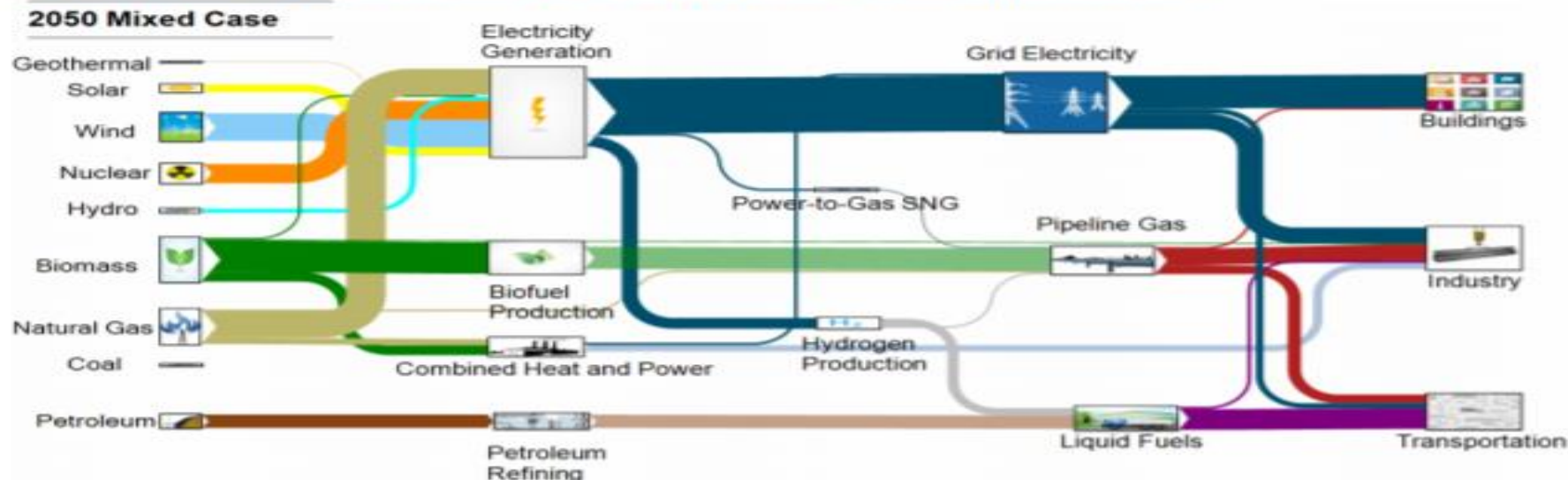


**Figure 2. U.S. Energy System in 2014**



Source: (DOE, 2013) [http://deepdecarbonization.org/wp-content/uploads/2015/11/US\\_Deep\\_Decarbonization\\_Policy\\_Report.pdf](http://deepdecarbonization.org/wp-content/uploads/2015/11/US_Deep_Decarbonization_Policy_Report.pdf) p. 21

**Figure 3. Deeply Decarbonized U.S. Energy System in 2050 (Mixed Case)**

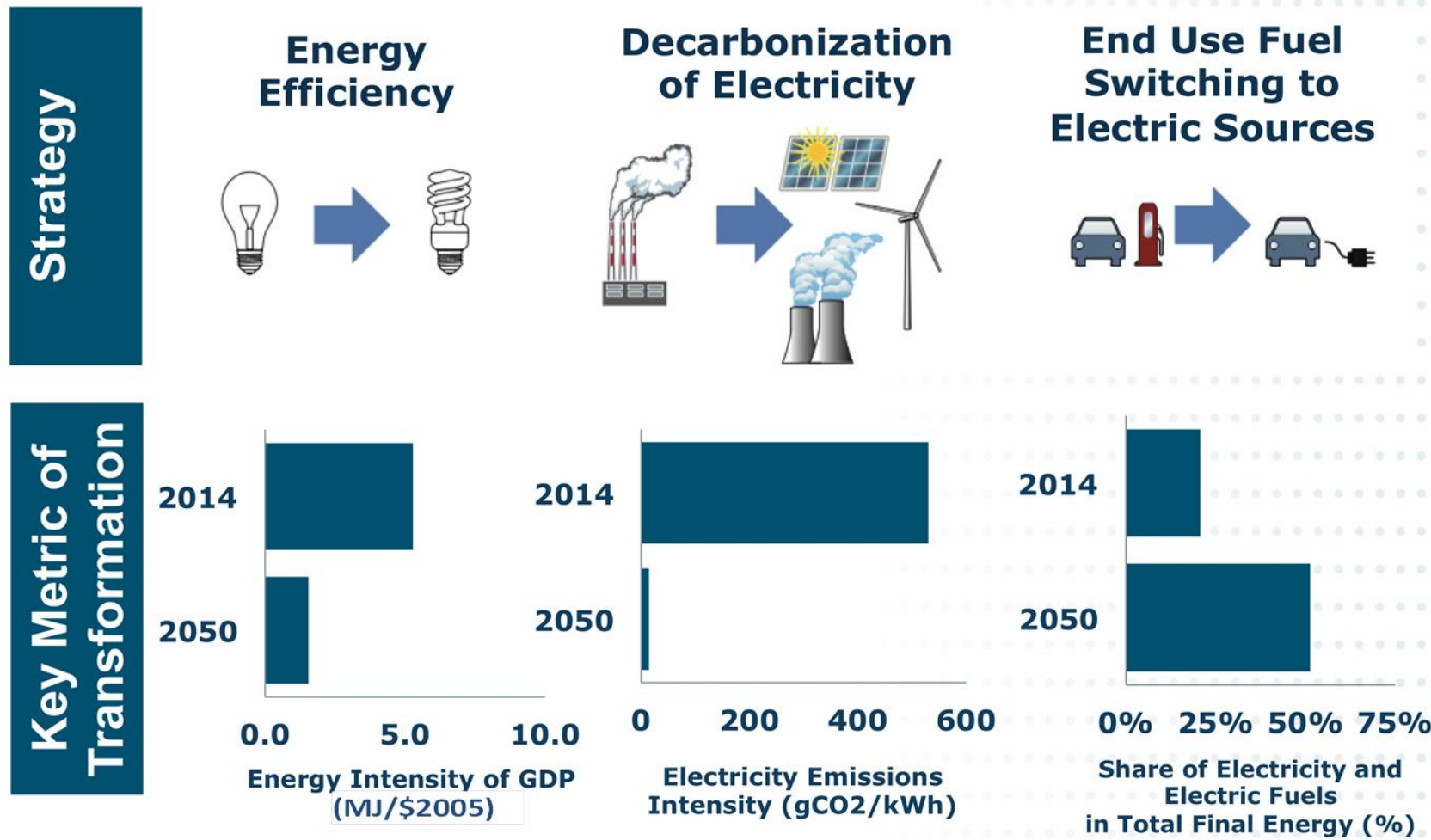


1) Highly efficient end use of energy in buildings, transportation, and industry.

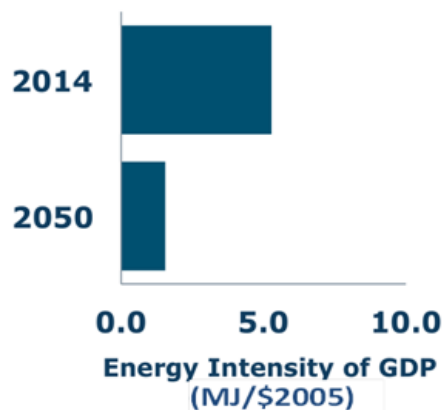
2) Decarbonization of electricity and reduced carbon in other kinds of fuels.

3) Electrification where possible and switching to lower-carbon fuels otherwise.

# Three Pillars of Deep Decarbonization



Pathways to Deep Decarbonization in the United States, Mixed case results

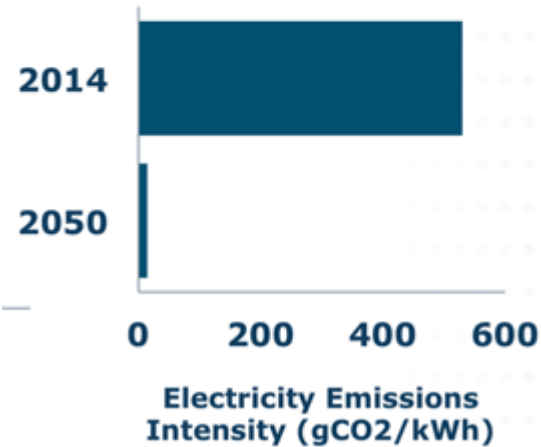
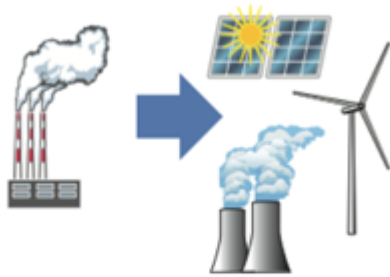
Energy  
Efficiency

# Legal Pathways—Pillar 1

## 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

## Decarbonization of Electricity



## Legal Pathways—Pillar 2

### Electricity decarbonization

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

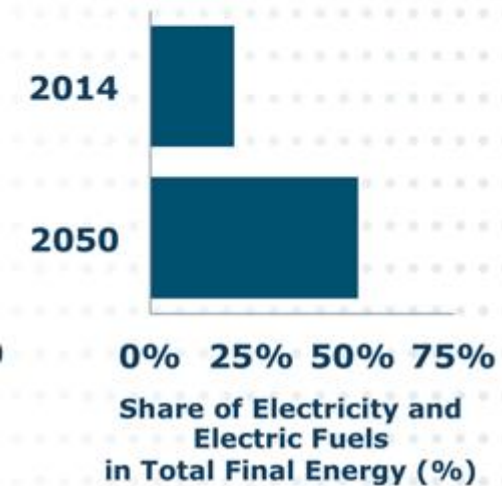
## End Use Fuel Switching to Electric Sources



# Legal Pathways—Pillar 3

## Fuel decarbonization

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



# Twelve types of legal tools

- 1) Additional regulation;
- 2) Reduction or removal of legal barriers;
- 3) Market-leveraging approaches;
- 4) Removal of incentives for fossil fuel use;
- 5) Tradable permits or allowances;
- 6) Information/persuasion;
- 7) Facilities and operations;
- 8) Infrastructure development;
- 9) Research and development;
- 10) Insurance;
- 11) Property rights;
- 12) Social equity.



# Key Findings on Legal Pathways

- Legal tools are available to decarbonize U.S.
- Books include more than 1,500 specific recommendations for federal, state, local and private action.
- There are a 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.

# III. Moving Forward With the Legal Pathways— Resources for Policymakers

## Mobilizing Pro Bono Lawyers Through Coordinating Law Firms

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



Renewable Energy Legal Defense Initiative



## Legal Pathways to Deep Decarbonization in the United States

This resource hub is based on the forthcoming book, *Legal Pathways to Deep Decarbonization in the United States*, which provides a legal playbook for deep decarbonization in the United States, identifying well over 1,000 legal options or pathways for reducing greenhouse gas emissions. These pathways involve federal, state, and local law, as well as private governance.

Part I. Context

Part II. Cross-Cutting Approaches to Reducing Emissions

Part III. Energy Efficiency, Conservation, and Fuel Switching in Buildings and Industry

Part IV. Energy Efficiency, Conservation, and Fuel Switching in Transportation

Part V. Electricity Decarbonization

Part VI. Fuel Decarbonization

Part VII. Carbon Capture and Negative Emissions

Part VIII. Non-Carbon Dioxide Climate Pollutants



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Website coming soon:

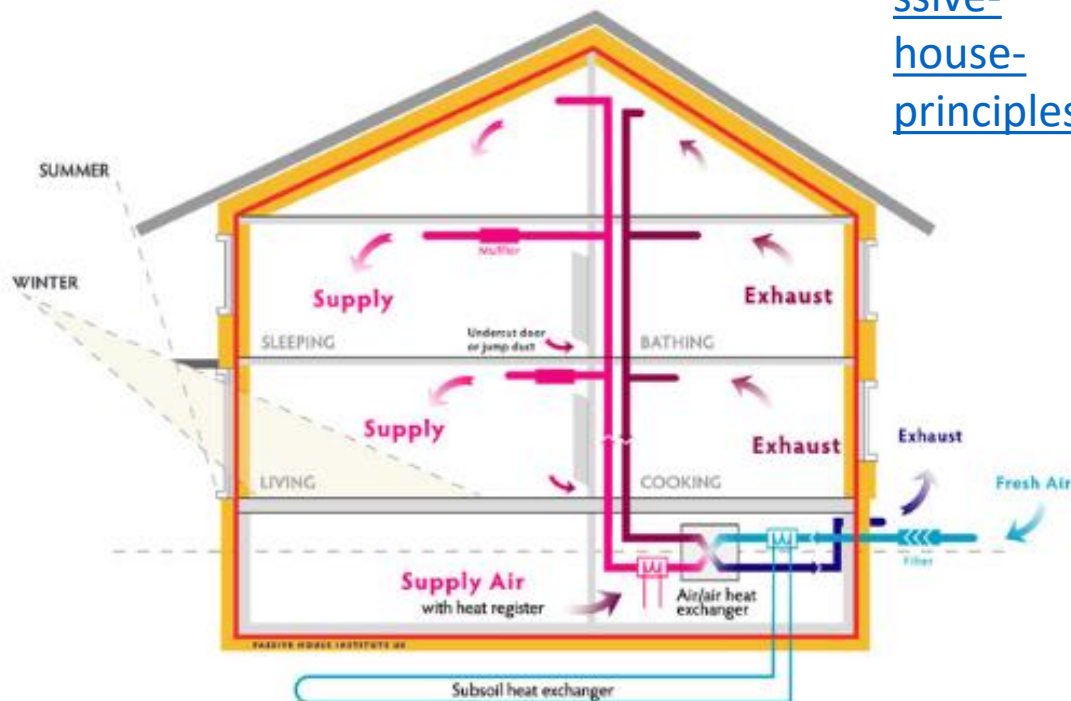
<http://columbiaclimatelaw.com/resources/model-laws-and-protocols/legal-pathways-to-deep-decarbonization-in-the-united-states/>

Rick Horsch of White & Case has agreed to coordinate the effort to find pro bono lawyers to do the legal drafting on federal and state statutes and regulations, model local laws, etc.

**Any lawyers who might want to assist should contact Rick directly:**  
**[rhorsch@whitecase.com](mailto:rhorsch@whitecase.com)**



## Passive House Principles



<http://www.phius.org/what-is-passive-building/passive-house-principles>

Model City/County/Local Building Code or Ordinance

### Recommendation:

"Within the authority granted to them under state law and state building code requirements, local legislative bodies should adopt advanced building and energy codes that drive down carbon use in buildings, such as Seattle's Energy Code." *Deep Decarbonization in New Buildings*, Paddock and McCoy at 48 ELR 1047. [\[Insert link to article\]](#)

### Type of Legislation or Rule:

Model City/County/Local Building Code or Ordinance

### Accompanying Material to be Prepared:

A commentary explaining the Code or Ordinance and supporting legal memorandum should also be prepared. An example of such an explanatory commentary and supporting legal memorandum can be found [here](#)

### Special Legal Expertise

Real estate law, land use and zoning law, or construction law experience is desirable, but not essential

### Deadline for Completion:

[Discuss and agree on reasonable deadline for completion following initial assessment by drafting attorney]

### Notes/Comments/Sources:

The drafter should review and analyze the laws adopted by Seattle and other city and local jurisdictions on advanced energy codes for the significant reduction of energy use in newly constructed buildings, consider their strengths and weaknesses, and based on that analysis prepare a model building code that could be as a template by other cities, counties and local governments.

The Seattle law adopting advanced building and energy codes is discussed by Paddock & McCoy in their article, *Deep Decarbonization in New Buildings*, at ELR 10141. The drafter should review the Paddock & McCoy article and the references to relevant legislation.

Information on the **City of Seattle's Energy Code**, which goes beyond some of the mandates in the statewide code (for example, the ability to accommodate the installation of a solar PV system and the city's building envelope for commercial buildings) is as follows:

Fact Sheet, Northwest Energy Efficiency Council, Air Barrier Management (July 2011), [http://neec.net/sites/default/files/neec\\_codes\\_training/NREC-Air-Barrier-07-2011.pdf](http://neec.net/sites/default/files/neec_codes_training/NREC-Air-Barrier-07-2011.pdf). (requiring a tightness of 0.3 cubic feet per minute (cfm) per square foot rather than 0.4 cfm in the state code).



Seattle Department of Construction and Inspections, Energy Code,  
<http://www.seattle.gov/DPD/codesrules/codes/energy/overview/> (last visited Nov. 1, 2017).

Seattle, Wash., Energy Code, Commercial Provisions (2016),  
[http://www.seattle.gov/dpd/cs/groups/pan/@pan/documents/web\\_informational/p2395485.pdf](http://www.seattle.gov/dpd/cs/groups/pan/@pan/documents/web_informational/p2395485.pdf).

Seattle's Code fills in gaps in the State of Washington's Code. To prepare a more comprehensive advanced building and energy code at the local level, pertinent state codes should be considered. State building codes designed to reduce energy are discussed by Paddock & McCoy in their article, *Deep Decarbonization in New Buildings*, at ELR 10140-41.

**The California Code** and some related materials can be found at:

International Code Council, California, <https://codes.iccsafe.org/public/collections/CA> (last visited Nov.1, 2017).

See also California Energy Commission, 2016 Building Energy Efficiency Standards Frequently Asked Questions (2017),  
[http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016\\_Building\\_Energy\\_Efficiency\\_Standards\\_FAQ.pdf](http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf).

International Code Council & Department of Housing and Community Development, Guide to the 2016 California Green Building Standards Code: Residential 1 (2016), available at <https://cdn-codes-pdf.iccsafe.org/uploads/bookpdfs/Guide%20to%202016%20CalGreen%20Residential.pdf#viewer.action=download>.

**Hawaii's** State Building Code Council unanimously adopted the 2015 IECC with amendments to address the state's specific needs. Hawaii's code and some related materials can be found at:

Press Release, Governor David Ige, Governor Ige Signs Bill Setting 100 Percent Renewable Energy Goal in Power Sector (June 8, 2015), <http://governor.hawaii.gov/newsroom/press-release-governor-ige-signs-bill-setting-100-percent-renewable-energy-goal-in-power-sector/>.

Haw. Stat. Code §§C403.2.2, C403.2.3, C405.2.1, C405.2.2, C405.2.3.

Haw.Stat.Code §C402.5; Howard Wigg & Eric Makela, 2015 IECC With Hawaii Amendments (2016), <https://energy.hawaii.gov/wp-content/uploads/2016/07/2015-IECC-with-Hawaii-Amendments.pdf>.

Cadmus Group, Inc., Analyses and Proposal of Hawaii Amendments to the 2015 International Energy Conservation Code 3 (2016), available at <https://energy.hawaii.gov/wp-content/uploads/2016/07/Analyses-and-Proposal-of-Amendments.pdf>.

The **Washington State Building Code** and some related materials can be found at:

Washington State Building Code Council, 2015 Washington State Energy Code: Progress Toward 2030 (2015), <https://fortress.wa.gov/ga/apps/SBCC/File.ashx?cid=6095>.

Wash. Rev. Code §19.27A.170 (2009), <http://app.leg.wa.gov/RCW/default.aspx?cite=19.27A.160>.

[You may wish to consult with Lee Paddock or Caitlin McCoy for their additional thoughts on the legislation (contact information for Paddock & McCoy to be included, provided they so agree.)]



[https://www.researchgate.net/publication/295796118\\_SUSTAINABLE\\_BUILDING\\_MATERIALS\\_USED\\_IN\\_GREEN\\_BUILDINGS/figures?lo=1](https://www.researchgate.net/publication/295796118_SUSTAINABLE_BUILDING_MATERIALS_USED_IN_GREEN_BUILDINGS/figures?lo=1)

# Resources available right now

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) – available late March 2019 (\$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](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3247105)



# Contacts

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<http://ssrn.com/author=725005>