

**Deep Decarbonization
And the Fight Against Climate Change
A Talk with Professor Michael Gerrard**

- What is deep decarbonization
 - Drastically reducing the amount of greenhouse gases (GHG) emissions in the atmosphere
 - Two largest sources of carbon emissions
 - Power: electricity generation mostly from coal and natural gas
 - Transportation
 - Broad level overview of deep decarbonization and what it entails
 - Four pillars (key policy goals)
 - Energy efficiency
 - Decarbonization of electricity supply
 - Electrification of as many uses as possible
 - Carbon sequestration – capture the CO₂ before it gets to the atmosphere or draw it down from the atmosphere
 - Requires first three pillars on a massive scale; achieving climate objectives requires four pillars
- Utility-scale renewable energy
 - New utility-scale renewable energy buildout
 - Requires
 - Large-scale solar
 - Large-scale wind farms
 - Large-scale storage
 - Large-scale transmission lines
 - Magnitude of buildout is massive in order to replace existing power generation. Increase in renewable energy needed to replace added load and decreased fossil fuel capacity.
 - Large-scale transmission especially vital because many of these utilities would be located in rural areas.
 - Legal issues
 - Siting
 - Federal lands
 - Dept of the Interior (DOI)'s Bureau of Land Management (BLM) and the Dept of Agriculture's U.S. Forest Service
 - Control nearly 450 million surface acres of federal land
 - Each agency has procedures for permitting and leasing lands. Requires arduous process of developing land use plans and environmental impact statements (EIS).

- BLM leases lands under the Federal Land Policy and Management Act¹ as a temporary conveyance
 - Forest Service makes “special use authorizations” under the National Forest Management Act²
- State/local
 - Siting and permitting largely a state issue unless siting is on federal lands. Land use historically is local issue.
 - Local community opposition to wind and solar sites
 - Landowners typically welcome renewable energy sites on their lands. But developers have faced opposition from some local communities who do not want wind or solar farms near their homes.
 - Renewable Energy Legal Defense Initiative (RELDI)³
 - Joint project between Columbia Law School’s Sabin Center for Climate Change Law and the law firm of Arnold & Porter
 - Provides pro bono legal representation to community groups and local residents who support renewable energy development in their communities.
 - New York’s Accelerated Renewable Energy Growth and Community Benefit Act of 2020
 - Creates Offices of Renewable Energy Siting to establish uniform standards for siting and establishes procedures for permitting
- Offshore wind siting under both fed and state control
 - State control over three nautical miles from shores (and FL and TX control out to 10 nautical miles out in the Gulf of Mexico). Fed control beyond three nautical miles to 200 nautical miles. Offshore wind farms typically both federal and state approvals.
 - Fed Bureau of Ocean Energy Management (BOEM) responsible for offshore wind leasing.
 - Under the Coastal Zone Management Act (CZMA),⁴ states review certain activities for consistency with the policies of state coastal zone management programs.
- Use of contaminated lands

¹ 43 U.S.C. §§1701-1785

² 16 U.S.C. §§1600-1687

³ Renewable Energy Legal Defense Initiative, <https://climate.law.columbia.edu/content/renewable-energy-legal-defense-initiative>.

⁴ 16 U.S.C. §§1451-1466

- Contaminated lands and closed mining or landfill areas may have potential second life as solar or wind sites.
- Liability concerns under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
 - Owners or operators on contaminated sites may be liable for cleanup.
- Though EPA has stated that it will generally not take enforcement action against renewable energy developers on contaminated lands, developers are weary of siting facilities on contaminated lands without legal assurances.
- National Environmental Policy Act (NEPA)⁵
 - Requires federal agencies to prepare an EIS for federal action that may affect the quality of the human environment.
 - Process may take several years and be extremely costly.
 - Solar projects typically require its own EIS.
 - Some states also have their own EIS requirements.
 - Reforms needed in NEPA review, including lowering degree of environmental review
 - Reforms needed in review structure: e.g., EIS, lowering degree of environmental review.
 - Fixing America's Surface Transportation Act (FAST Act)⁶
 - Among other things, requires federal agencies to maintain a database that present project-specific permitting timetables with projected dates for completion of environmental reviews and permit issuances.
 - Establishes the federal Permitting Improvement Steering Council responsible for developing schedules and timelines for efficiency
- Species protection laws
 - Endangered Species Act (ESA)⁷ and Migratory Bird Treaty Act⁸
 - Securing ESA and other species protection laws compliance may be difficult
 - Current species protection laws do not provide exemptions for renewables or other projects that have environmental benefits
- Transportation
 - Link between climate change and transportation

⁵ 42 U.S.C. §§4321 et seq.,

https://www.energy.gov/sites/default/files/nepapub/nepa_documents/RedDont/Reg-NEPA.pdf.

⁶ Pub. L. No. 114-94, <https://www.congress.gov/114/plaws/publ94/PLAW-114publ94.pdf>.

⁷ 16 U.S.C. §§1531-1544

⁸ 16 U.S.C. §§703-712

- Transportation is the largest contributor of GHG emissions.
 - Reducing transportation emissions requires replacing all gas- and diesel-powered vehicles, reducing miles traveled, improving mass transit, and promoting other forms of transportation (biking, walking) by improving infrastructure and land use
- Fuel economy and emission standards
 - Environmental Protection Agency and Department of Transportation sets GHG emission standards from transportation.⁹
 - 2020 Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule¹⁰
 - Lowered from Obama administration’s rule of 5% motor vehicle emission standards to 1.5%
 - Revoked California’s preemption waiver
 - SAFE Rule will likely be reevaluated under Biden
- Facilitating growth of alternative fuel vehicles
 - Renewable Fuel Standard program¹¹
 - Created under the Energy Policy Act of 2005
 - Requires certain volume of renewable fuel to replace or reduce petroleum-based transportation fuel (including gas and diesel), heating oil or jet fuel
- Biden administration
 - In January 2021, the Biden administration set ambitious goals to fight climate change through following executive actions:
 - Statement to rejoin the Paris Agreement¹²
 - EO on Tackling the Climate Crisis at Home and Abroad¹³
 - Establishes climate considerations essential part of foreign policy and national security
 - Reaffirms hosting Leaders’ Climate Summit on Earth Day, April 22, 2021

⁹ See regulations for greenhouse gas emissions for light-duty vehicles at <https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-greenhouse-gas-emissions-passenger-cars-and> and for heavy-duty vehicles at <https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-greenhouse-gas-emissions-commercial-trucks>.

¹⁰ 49 CFR Parts 523, 531, 533, 536, and 537 and 40 CFR Parts 85 and 86, https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/final_safe_preamble_web_version_2003_30.pdf.

¹¹ EPA Renewable Fuel Standard Program, <https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard>.

¹² Acceptance on Behalf of the United States of America, Jan. 20, 2021, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/>.

¹³ Executive Order 14008, Jan. 27, 2021, <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>.

- Establishes the White House Office of Domestic Climate Policy and the National Climate Task Force
- Directs federal agencies to clean energy and infrastructure projects
- Pauses entering into new oil and natural gas leases on public lands or offshore waters to the extent possible
- EO Establishing the President's Council of Advisors on Science and Technology (PCAST)¹⁴
 - Re-establishes PCAST
 - Directive is to advise on policy that affects science, technology, and innovation

Additional Resources

- Sabin Center for Climate Change Law Climate Reregulation Tracker: <https://climate.law.columbia.edu/content/climate-reregulation-tracker>
- Model Laws for Deep Decarbonization in the United States: <https://lpdd.org/>

¹⁴ EO 14007, Jan. 27, 2021, <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-presidents-council-of-advisors-on-science-and-technology/>.