



# NARUC

National Association of Regulatory Utility Commissioners

## Essential Guide to NARUC Coal and Carbon Management Resources



### Overview

NARUC members are increasingly seeking more information about coal and carbon management infrastructure needs, impacts, and the role of Public Utility Commissions (PUCs). This guide connects commissioners and commission staff to essential coal and carbon management resources that NARUC has developed. All of these resources can be found on the [NARUC Coal and Carbon Management webpage](#).

The NARUC Center for Partnerships & Innovation collaborates with the U.S. Department of Energy to maintain the DOE-NARUC Coal Modernization and Carbon Management Partnership. This partnership was established as a cooperative effort to highlight new technology and regulatory approaches to: 1) Improving the environmental and economic performance of coal-fired power plants; 2) Understanding new market opportunities for coal byproducts; and 3) Increasing the deployment of carbon capture, utilization, and storage (CCUS) products. For more information, contact Kiera Zitelman, [kzitelman@naruc.org](mailto:kzitelman@naruc.org), or Kathryn Kline, [kkline@naruc.org](mailto:kkline@naruc.org).

### Foundational NARUC Resources on Coal and Carbon Management and the Role of PUCs

[Recent Changes to U.S. Coal Plant Operations and Current Compensation Practices](#), January 2020

This white paper examines the impact of changes in the electricity generation mix on operating coal-fired power plants and offers an overview of strategies for coal plant owners and operators to manage costs while providing flexible electricity generation.

[A Comprehensive Survey of Coal Ash Law and Commercialization: Its Environmental Risks, Disposal Regulation, and Beneficial Use Markets](#), January 2020

Utility-owned coal ash impoundments can be found in 24 states across the country. Although 64 percent of coal ash is recycled, disposal of the remainder is still a concern for utilities and both environmental and utility regulators due to the environmental and public health threats and costs of potential coal ash spills, as have occurred in some states. This paper offers a comprehensive look at coal ash policies and challenges for utilities, state utility regulators, and other stakeholders.

### About the NARUC Center for Partnerships & Innovation

The NARUC Center for Partnerships & Innovation identifies emerging challenges and connects state commissions with expertise and strategies to navigate their complex decision-making. CPI accomplishes this goal by building relationships, developing resources, and delivering training that provides answers to state commissions' questions.

NARUC CPI conducts work in five key energy topics: generation; transmission; distribution; customers; and critical infrastructure, cybersecurity, and resilience. Find all resources and upcoming events at: <https://www.naruc.org/cpi/cpi-home>.

## Publications and Activities on Key Topics in Coal and Carbon Management

The following resources can be found on the [NARUC Coal and Carbon Management webpage](#). Hyperlinks lead to PDFs of the publications or webinar presentations. To view recordings of past webinars, visit the Coal and Carbon Management webpage or [NARUC's YouTube channel](#).

### Carbon Capture, Utilization and Storage (CCUS)

- [Webinar: Policy Outlook for Carbon Capture in the 2020s](#), June 2022

CCUS are increasingly being recognized as an essential solution for reducing economy-wide carbon emissions and providing economic stimulus. This webinar provided a high-level overview of the federal policy landscape for CCUS, with panelists sharing their perspectives on key CCUS-related elements of recent federal climate, infrastructure, and stimulus initiatives; administration views on the role of CCUS in the power and industrial sectors; and the role of DOE and the National Laboratories in advancing CCUS technologies.

- [Webinar: Advancing Innovation with CCUS Hubs: A Case Study of Houston, Texas](#), April 2022

Carbon capture is a key pathway to meeting decarbonization goals, particularly for baseload electricity generation and hard-to-abate industrial sectors. On this webinar, panelists shared perspectives on why Houston is a likely location for a net-zero hub, opportunities for co-located carbon capture and hydrogen production, and how regulators can deploy technologies that benefit ratepayers and the environment in Texas and beyond.

- [NARUC/WIEB Carbon Capture, Utilization and Storage Workshop Webinar Series](#), September & October 2020

This six-part webinar series (co-sponsored by NARUC and the Western Interstate Energy Board (WIEB)) explored challenges and opportunities facing the U.S. coal fleet related to CCUS and connected stakeholders with experts from the power industry, federal and state government, and other key voices.

### [Onshore U.S. Carbon Pipeline Deployment: Siting, Safety, and Regulation](#), June 2023

This report serves as a primer for regulators and stakeholders who seek to better understand the regulatory challenges and opportunities facing CCUS technology. It covers numerous regulatory issues surrounding carbon pipeline development, including the current narrow federal definition of carbon dioxide and the considerable variation in state and local governments' laws and regulations.

### [Carbon Capture, Utilization, and Sequestration: Technology and Policy Status and Opportunities](#), November 2018

This paper examines the present state of CCUS and the challenges to widespread deployment in the energy sector. It offers an array of actions policymakers and utility regulators can use to encourage CCUS adoption to extend the life of existing coal-fired power plants while drastically cutting carbon dioxide emissions, illuminating how the coal plant of the future could look.

### Coal and Carbon Management and the Energy Transition

- [Energy Transition Workshop Summary](#), June 2022, Chicago, IL

On June 22, 2022, NARUC hosted an Energy Transition Workshop in Chicago, Illinois following the conclusion of the Mid-America Regulatory Conference. The workshop convened stakeholders from across the state energy policy and regulatory landscape to examine the impacts of coal retirements and assess opportunities to enable an inclusive energy transition.

### [Mitigating Stranded Asset Risks to Utility Customers: an Exploration of Securitization and Retiring Coal Generation](#), February 2024

Coal in the U.S. has dropped to providing less than 20% of electricity generation, down from 51.7% in 2000, with 9.5 GW of coal-fired capacity retiring in 2023. This report explores the use of securitization to mitigate costs to ratepayers from retiring coal plants that haven't fully depreciated, compared to cases in which coal plants retire prematurely and owners continue to recover undepreciated costs through rates.

- [Webinar: Federal-State Collaboration for Energy Community Revitalization](#), September 2021

In February 2021, the Interagency Working Group (IWG) on Coal and Power Plant Communities and Economic Revitalization was established by executive order to identify resources and strategies to support energy workers and communities affected by the energy transition. On this webinar, IWG leaders shared lessons learned from the initial report and listening sessions to date and highlighted opportunities for collaboration with state public utility commissions.

[Regulators' Energy Transition Primer: Economic Impacts on Coal-Producing Communities, Environmental Justice Considerations, and Implications on Clean Energy Jobs](#), October 2021

This primer offers a background for NARUC members to understand how the transition from coal to low-carbon energy resources is affecting communities and workers. It also provides further discussion of the environmental, climate, and energy justice considerations of the transition, as well as an overview of current federal programs and funding available to support affected communities.

[The Role of State Utility Regulators in a Just and Reasonable Energy Transition: Examining Regulatory Approaches to the Economic Impacts of Coal Retirements](#), September 2021

This report examines the authority of PUCs across the country to consider non-energy economic impacts beyond direct ratepayer effects and summarizes approaches that PUCs, utilities, and other stakeholders have used to mitigate the economic fallout of coal retirements, specifically.

[Coal and Carbon Management Guidebook: Coal-to-Hydrogen Opportunities and Challenges](#), September 2021

This guidebook provides a detailed outlook on the opportunities and challenges for coal and biomass resources and infrastructure to participate in the growing low-carbon hydrogen economy. It also outlines the present and forecasted market demand for hydrogen, addresses how state utility regulators can analyze and manage risks associated with low-carbon hydrogen technologies, and summarizes DOE's investments in research and development for hydrogen production from coal and biomass.

## Federal Policy and Incentives

- [Webinar: Coal and Carbon Capture Provisions in the Inflation Reduction Act](#), September 2022

This webinar convened expert panelists to provide insights on the key coal and carbon capture provisions of the IRA, explore how the law will impact coal-fired generation and coal communities, and discuss how state regulators can coordinate effectively with stakeholders as programs are designed and implemented.

- [Webinar: CCUS: Financial Incentives and Investment Efforts](#), September 2020

This webinar explains the section 45Q and 48A tax incentives and discusses other financial mechanisms, such as private activity bonds, master limited partnerships and opportunity zones currently in place to govern and promote CCUS activities and deployment.

## Coal Products

- **Webinar Series: Beneficial Coal Ash Reuse: Surveying Industry Opportunities**, January & February 2024  
This two-part webinar series explored industrial opportunities for coal ash. In [part one](#) of the series, attendees discovered the environmental and industrial benefits of coal ash reuse, hearing from companies and researchers about current and developing products. [Part two](#) focused on the challenges and obstacles that hinder coal ash reuse in the United States.
- [Briefing Webinar: NETL's Critical Mineral Sustainability Program](#), May 2023  
This webinar provided information on the history and progress of the National Energy Technology Laboratory's (NETL) Critical Mineral Sustainability Program, including updates from pilot project participants, and provided discussion about the impacts and opportunities at the state level for regulators.
- [Webinar: R&D Spotlight: The Wyoming Innovation Center and Market Opportunities for Coal Resources](#), October 2022  
The Wyoming Innovation Center opened its doors on June 14, 2022, as a location to conduct research on carbon capture, rare earth element extraction from fly ash, and other coal-to-products research. This webinar shared information about the creation of the Wyoming Innovation Center, current and upcoming projects, and the impact the Center's work will have on emerging market opportunities and innovative methods to use domestic coal resources in the growing clean energy economy.

## Non-NARUC Coal and Carbon Management Resources

- [Interagency Working Group on Coal & Power Plant Communities & Economic Revitalization](#), April 2021  
The Interagency Working Group (IWG) convenes 12 federal agencies to develop a place-based approach to economic revitalization, targeting federal engagement and investment to support coal, oil, and gas communities across the U.S. The IWG's website offers reports, technical assistance, and federal funding opportunities for energy communities.
- [U.S. Carbon Capture Activity and Project Map](#)  
This resource developed by the Clean Air Task Force maps carbon capture activities across the United States. The interactive map identifies the carbon capture activity subsector, project capture capacity, and whether or not the project is operational or in the development stage.
- [Pulverized Coal Carbon Capture Retrofit Database](#)  
This NETL tool provides a high-level analysis of the incremental costs for retrofitting point sources with CO<sub>2</sub> capture and compression systems. Options are available to include the cost of other technological improvements that would be required to comply with various regulations and new source performance standards when installing CO<sub>2</sub> capture technology.
- [2020 Carbon Capture Program R&D Compendium of Carbon Capture Technology](#), May 2020  
This compendium developed by NETL highlights efforts related to NETL's Carbon Capture program, including the development of sorbents, solvents, membranes, and novel concepts for both post- and pre-combustion CO<sub>2</sub> capture.
- [Accelerating Decarbonization of the U.S. Energy System](#), 2021  
This National Academies of Sciences consensus study report identifies key technological and socio-economic goals that must be achieved to put the United States on the path to reach net-zero carbon emissions by 2050.