Carbon Capture Technologies

"IBEW members are working on the frontlines of climate change. Robust federal support for CCUS will allow coal and gas power plants to stay on-line and protect the large economic ecosystem and the tens of thousands of IBEW members who work in these sectors."

—International President Lonnie Stephenson

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IBEW POLICY BRIEF

GOVERNMENT AFFAIRS DEPARTMENT LEGISLATIVE ACTIVITY

Carbon Capture Technologies

The International Brotherhood of Electrical Workers (IBEW) supports proposals to develop emerging technologies in carbon capture utilization and storage (CCUS), which have the potential to achieve carbon reductions at utility and industrial plants while highlighting American engineering and manufacturing and creating tens of thousands of new jobs.

Domestic energy sources like natural gas and coal are baseload (24/7) sources of electricity production in an industry that provides workers, particularly in rural communities, with a reliable livelihood. The United States has retired some 88,700 megawatts of coal capacity since 2011, mainly due to lower natural gas prices. The U.S. Energy Information Administration projects the additional loss of 12,600 megawatts by the end of 2022. Coal and natural gas will continue to be significant contributors to the total U.S. power generation mix. The U.S. Energy Information Administration (EIA) predicts natural gas will provide over 30 percent of total U.S. generation in 2050.

The consensus among energy and climate experts, including the Intergovernmental Panel on Climate Change and the International Energy Agency, is that CCUS is an essential tool in the effort to reduce carbon emissions. The broad deployment of CCUS is key to avoiding the worst effects of climate change while supporting energy security, protecting existing energy infrastructure and creating high-quality, family-supporting jobs that are critical to working families and communities.

IBEW members have worked countless hours installing and maintaining pollution control equipment in coal-fired powerhouses, steel mills, automobile manufacturing facilities, oil refineries and other industrial facilities.

Effective CO_2 Control

To reach near-zero or equivalent emission targets, CCUS in retrofit applications can work with both coal and natural gas. For utilities, a coal plant equipped with 90 percent effective CO_2 removal has an emission rate of about 200 pounds of CO_2 per megawatt-hour, compared with 800 pounds for uncontrolled new natural gas combined-cycle units. For many industrial sources, like refineries, steel, chemicals, paper and cement, CCUS may be the only effective CO_2 control option.

Fueling the Economy and Energy Independence

The deployment of advanced coal technology and CCUS will provide the United States with a path to enhanced oil recovery, energy independence and greenhouse gas emission reductions. The commercialization of CCUS would also provide the United States with a critical technology it could export to other countries that are significant consumers of fossil fuels, like China and India.

Recent Developments

The Energy Act of 2020, which was passed with strong bipartisan support, created several research and pilot programs to support the development of carbon capture and direct air capture technologies. Among the new programs developed are:

- A general research and development program for carbon capture technologies that is authorized at $230 million annually and gradually decreases to $150 million by 2025
- A large-scale carbon capture pilot project program authorized at $225 million for 2021 and 2022, $200 million for 2023 and 2024, and $150 million for 2025
- A new program for demonstration programs – two focused on capture at natural gas facilities, two at coal facilities and two for emissions at other industrial facilities with funding for $400 million annually through 2024 and $600 million annually in 2025
- A new research, development and demonstration program to examine methods, technologies and strategies for large-scale removal of carbon dioxide from the atmosphere

The Bipartisan Infrastructure Law (BIL) creates several new programs to support the research, demonstration and commercialization of carbon capture technologies. These include:

- $3.5 billion for Regional Direct Air Capture Hubs, which would create four direct air capture hubs (facility, technology or system that uses carbon capture equipment to capture carbon dioxide directly from the air)
- $2.5 billion for Carbon Storage Validation and Testing for Development of new or expanded commercial large-scale carbon sequestration projects and associated carbon dioxide transport infrastructure, including funding for the feasibility, site characterization, permitting, and construction stages of project development
- $2.1 billion for Carbon Dioxide Transportation Infrastructure Finance and Innovation Program to establish and carry out a large-capacity, common carrier infrastructure with associated projects in all major carbon-dioxide emitting regions of the United States
- $355 million for energy storage demonstration projects, including carbon capture technologies and direct air capture technologies

All carbon capture and direct air capture programs created under the BIL require construction and maintenance workers to be paid prevailing wages.

Pending Priorities

<u>Enhance the 45(Q) Tax Credit</u>

The IBEW, energy labor unions and industries that rely on fossil fuels support the reauthorization of the 45(Q) tax credit. The tax credit, which is set to expire at the end of 2025, provides a financial incentive for coal and natural gas-fired power plants and other large industrial sources that rely on fossil fuel to invest in carbon capture and sequestration. Currently, carbon dioxide that is emitted from a power plant or industrial source and is geologically sequestered would receive around $32 per metric ton. That value will steadily rise to $50 per metric ton by 2025. The IBEW and other energy labor unions, as well as the fossil fuel industry, support extending the 45(Q) tax credit beyond 2025 and increasing its value in order to make carbon capture technologies more commercially viable.

The House-passed Build Back Better Act would extend the 45(Q) tax credit through the end of 2031, increase the value of carbon dioxide captured for geological storage to $102 per metric ton, and require the employer to pay the workers who construct and maintain the carbon capture facility prevailing wages and utilize apprentices.

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