Upgrading the 45Q Tax Credit: Panel Discussion on the Carbon Capture Utilization and Storage Act

Shannon Angielski
Coal Utilization Research Council
USEA Briefing
October 27, 2016

CURC
COAL UTILIZATION RESEARCH COUNCIL
www.coal.org

CURC Members

Coal Producers
Arch Coal, Inc.*
Cloud Peak Energy Resources LLC
Lignite Energy Council
Peabody Energy**

Equipment Suppliers
B&W Power Generation Group***
Caterpillar Global Mining
General Electric***
LP Amina LLC
Mitsubishi Heavy Industries America

Research Organizations
Battelle
Electric Power Research Institute
Gas Technology Institute
University of North Dakota Energy & Environmental Research Center

NGOs
ClearPath Action
CoalBlue Project

Labor Unions
United Mine Workers of America
International Brotherhood of Boilermakers
International Brotherhood of Electrical Workers

State Organizations
Energy Industries of Ohio
Greater Pittsburgh Chamber of Commerce
Illinois Coal Association
Pennsylvania Coal Alliance
Kentucky Energy & Environment Cabinet
West Virginia Coal Association
Wyoming Infrastructure Authority

Trade Associations
American Coal Council
American Coalition for Clean Coal Electricity
Edison Electric Institute
National Rural Electric Cooperative

Utilities
American Electric Power
Basin Electric Power Cooperative
Duke Energy Services
LG & E and KU Services Company
Southern Company
Tri-State Generation & Transmission*

Universities
Lehigh University
Ohio State University
Pennsylvania State University
Southern Illinois University
University of Kentucky / CAER
University of Wyoming
West Virginia University

Companies in red indicate 2016 Steering Committee Members

* CURC 2016 Co-chairs
** CURC 2016 Vice-Chair
*** CURC 2016 Leadership Council

Why 45Q Credits are Necessary

CURC
COAL UTILIZATION RESEARCH COUNCIL
www.coal.org

- CCUS technology currently costs too much and has yet to be adequately demonstrated on large-scale electric generating systems
- As witnessed by the deployment curve with renewable energy technologies, we know that development of improved CCUS technologies and successive application will reduce the cost of these technologies over time
- 45Q credits will help offset the costs of adding CO_2 capture to a power generation facility.

45Q Background

- Enacted as part of the Energy Improvement and Extension Act of 2008
- Credit is equal to:
  - $20 per metric ton for qualified CO2 that is captured and disposed of in secure geological storage or
  - $10 per metric ton for qualified CO2 that is captured and used as a tertiary injectant in a qualified EOR project
- Program is capped at 75 million tons

Challenges with Existing 45Q Program

- ~45 million of the authorized 75 million tons have already been claimed
- Cap creates financial uncertainty because it is unknown if remaining credits will be available when a project begins to inject CO_2
- Credit amounts are insufficient to cover costs of CCUS on power generation and do not stimulate financing of CO_2 capture projects
- Eligibility criteria can be restrictive and limiting

S. 3179, The Carbon Capture, Utilization and Storage Act

CURC
COAL UTILIZATION RESEARCH COUNCIL
www.coal.org

- Removes cap
- Makes credit available through 2024 (commence construction)
- Credit claiming period is 12 years
- Increases credit values over a 10 year escalation period to:
  - $35/ton for EOR
  - $35/ton for CO2 used in non-EOR applications (CO_2 Utilization)
  - $50/ton for geologic storage
- Proposes assignability to other entities involved in the project
- Modifies eligibility criteria:
  - Shifts from industrial emitter to CO2 capture equipment owner
  - CO_2 Thresholds
    - Maintains 500,000 tons of CO2 for EGUs
    - 100,000 tons for industrial emitters
    - 25,000 tons for pilot projects in which the CO_2 is sequestered in a utilization project