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# Deployment Policy for IGCC and CCS in the United States

Kelly Sims Gallagher

# What is “deployment?”

Research

Development

Demonstration

Early deployment

Widespread diffusion



# What is deployment policy?

Policy that *pulls* energy technologies into the marketplace

Policy that *creates a market* for cleaner or more advanced technologies

Policy that is *coordinated with RD&D policy* as part of an integrated energy-technology innovation policy

We really need a coordinated *strategy* for RD3 for advanced coal and CCS technologies (and low-carbon technologies more generally). Currently, the effort is fragmented.

# Deployment policy for IGCC in the United States

- **Energy Policy Act of 2005**

- Loan guarantees for “advanced” energy technologies
  - “3 Party Covenant” for advanced coal and IGCC
  - 16% of pre-applications were for IGCC through 2008; none approved yet
- Tax credits for IGCC
  - Investment Tax Credits for IGCC Plants -- IGCC projects are eligible for a 20% investment tax credit, while other advanced coal-based projects that produce electricity are eligible for a 15% credit, and industrial gasification projects are eligible for a 20% percent credit
- The Clean Coal Power Initiative (CCPI) supports large-scale demonstration projects together with private sector.

- **American Recovery and Reinvestment Act of 2009**

- Additional funds appropriated for loan guarantees and tax credits

- **State-level incentives**

- Some combination of tax credits, loan guarantees, low interest loans, sales tax exemptions, bond funds in most coal-producing states

# Deployment Policy for CCS

- **FutureGen** as demonstration to precede “early deployment”
  - To demonstrate at scale
  - To provide greater confidence to firms, banks, and public
- **Clean Coal Power Initiative**
  - Also to accelerate development and demonstration of advanced coal technologies

## Other Options:

- Price on carbon dioxide (through cap-and-trade or carbon tax)
- Grants or subsidies for CCS
- Tax credits or loan guarantees for CCS
- Government assistance with siting

# Recent Policy Proposals

- **Boucher Bill -- Carbon Capture and Storage Deployment Act (2009)**
  - Allows utilities to impose a small fee on fossil fuel generation to support secure and stable funding for large-scale CCS demonstration projects. Would be assessed for 10 years, and generate approximately \$1.0 billion per year. Revenues managed by an independent Carbon Storage Research Corporation
- **Waxman-Markey Bill -- “The American Clean Energy and Security Act” (2009)**
  - GHG emissions target of 20% below 2005 levels by 2020 and 80% below 2005 levels by 2050
  - Cap-and-trade program for electricity producers, oil refineries, natural gas producers. and industrial sources
  - Regulations for geologic storage sites (certification and permits regime)
  - Incorporates Boucher Bill
  - Authorizes grants for commercial deployment of CCS (to EPA, not DOE) for plants >250 MW, which derive at least 50% of their fuel input from coal or pet coke. Grants to cover incremental capital and operating costs. Subject to appropriations.
  - New performance standards for new coal-fired power plants. Beginning 1/1/15, emissions performance standard of 1,100 lbs CO<sub>2</sub>/MWh, equivalent to a carbon capture rate of approximately 50%.

# Ongoing Issues

- Costs of CCS (especially for capture)
- Liability
- Siting
- Lack of federal CO<sub>2</sub> policy
- Uncoordinated RD3 effort, especially with Congress
- Local government opposition (or support)
- Public understanding and support
- Understanding about *which* policies are most effective