

# Carbon Capture Modernization Act

Senator John Hoeven (R-ND) and Senator Tina Smith (D-MN)

Representative David McKinley (R-WV) and Representative Terri Sewell (D-AL)

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There is bipartisan agreement in support of innovative new energy technologies to improve the carbon emission profile of coal plants. The *Carbon Capture Modernization Act* will modify the Section 48A Advanced Coal Tax Credit so that it will effectively incentivize the use of emission reducing Carbon Capture and Sequestration (CCS) technology.

## **Background on Section 48A Investment Tax Credits**

In 2005, Congress established an investment tax credit for “Credit for Investment in Clean Coal Facilities” in the *Energy Tax Incentives Act (ETIA) of 2005*. The original credit was not designed with CCS in mind. ETIA authorized \$1.3 billion in tax credits to support advanced coal-based generation technology that:

- (1) is a new generator that employs gasification or that meets efficiency requirements of about 40%; or
- (2) is an existing generator which, after installing new equipment, of at least 35% efficient, plus a 4-7% improvement in efficiency (coal type-dependent) when compared to previous operations.

In 2008, Congress provided an additional \$1.25 billion in tax credits through the *Energy Improvement and Extension Act (EIEA) of 2008*, or the “Expansion and Modification of Advanced Coal Project Investment Credit”, which increased the value of the tax credit to 30% of the eligible investment and imposed a new requirement to capture and store at least 65% of the CO<sub>2</sub> in order to be eligible for the tax credits. Thus far, few coal plant CCS projects have come to fruition. Although not the intent, the combined effect of the 2005 and the 2008 laws make the use of the credit for CCS retrofits impossible.

## **The Carbon Capture Modernization Act reconciles the intent of the 2005 and 2008 Congressional actions:**

1. The efficiency (heat rate) requirements from the 2005 statute were not adjusted when the CCS requirement was added to the 2008 bill. Adding CCS equipment to a new or existing unit results in an efficiency loss to the generating unit, as auxiliary power is needed from the unit in order to operate the CO<sub>2</sub> capture system. It can take 25-30% of a unit’s energy output to operate a CCS system. Achieving a 4-7% point efficiency improvement is impossible while operating a CO<sub>2</sub> capture system. Similarly, it is not possible for a new, non-IGCC unit to achieve 40% efficiency while operating a CCS with current technology.

**The Carbon Capture Modernization Act would relax the efficiency requirements for new and retrofit projects if they include CCS (CCS units would be treated the same as IGCC [gasification] units).**

2. The 2008 CO<sub>2</sub> capture and sequestration 65% requirement is too high for retrofit applications. The sizing of the CO<sub>2</sub> capture equipment for large units likely to undertake CCS projects fits well up to about 60% capture. Beyond that, inefficiencies in size, operations, and project economics limit implementation of the technology on existing units.

**To reflect this, the *Carbon Capture Modernization Act* designates a requirement of a minimum 60% CO<sub>2</sub> capture and sequestration for existing units.**

3. Other modifications.

Under the *Carbon Capture Modernization Act*, a CCS retrofit on an existing unit that has undergone a recent best available control technology (BACT) analysis for SO<sub>x</sub> and NO<sub>x</sub> could substitute its BACT determination for criteria prescribed in the 2005 legislation. This does not alter the requirements of the Clean Air Act that govern a unit’s operations. Eligible units would also need to meet the strict 48A mercury emissions requirement.

The *Carbon Capture Modernization Act* specifically directs the Secretary of the Treasury to conduct additional rounds of applications to reallocate any available sec. 48A credits.

In recognition of recent interest in smaller units that will employ CCS, the *Carbon Capture Modernization Act* lowers the 48a credit eligibility threshold from 400MW to 200MW.