

Memorandum

To: Interested Partners
From: Erich Pica, Friends of the Earth
Re: Nuclear Power and Pending Climate Legislation
Date: May 12, 2008

"The bill, as reported out of committee, would be the most historic incentive for nuclear in the history of the United States."

Lieberman aide quoted in February 8, 2008 *E and E Daily* article entitled "Senate sponsors search for nuclear solutions."

In June, the U.S. Senate will debate S. 2191, the Lieberman Warner Climate Security Act of 2008. The legislation creates a federal cap and trade framework to reduce the U.S. emissions of global warming gases. While there remain serious questions about the strength and effectiveness of these efforts, this memo will only discuss the bill impacts on nuclear power.

Any effort to either cap or tax the amount of global warming emissions released into the atmosphere creates a potential new market for nuclear power. The market is created because the competitors to nuclear power (primarily coal-fired power plants) would have to incorporate the price of carbon created through a cap or a tax into their cost of doing business. A recent survey of economic literature by the Congressional Budget Office suggests that global warming emissions permits under a cap could be worth between \$5 to \$65 per metric ton.¹ This is an added operational cost to fossil fuel fired power plants, and not nuclear power.

The Lieberman-Warner Climate Security Act creates a cap and trade system that will put a price on carbon. To determine the full impact that these prices will have on the economy the Department of Energy's Energy Information Administration, the Environmental Protection Agency and several non government organizations have modeled the bill to determine overall impact. While none of these models were specific to nuclear, they do demonstrate an increase in the electricity produced from nuclear power due to the carbon cap. Some results show:

- The Environmental Protection Agency modeling of S. 2191 using the ADAGE (Applied Dynamic Analysis of the Global Economy) and IGEM (Intertemporal General Equilibrium Model) models found that in unconstrained models nuclear power grows by approximately 150 percent by 2050 from 2005 levels.²

¹ *The Potential for Carbon Sequestration in the United States*. September 2007. Congress of the United States Congressional Budget Office.

² http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf

- The Department of Energy's Energy Information Administration using the National Energy Modeling System (NEMS) found nuclear power production would increase between 88 GW to 286 GW by 2030 when allowed to grow.³
- The Clean Air Taskforce completed some economic modeling on S. 2191 using the National Energy Modeling System. Their modeling demonstrated that approximately 117GW of new nuclear power capacity would be built under S. 2191 by 2030.⁴

Although the models do not agree on the exact number of new nuclear power facilities that could be built, there is a clear indication that placing a price on carbon could provide adequate economic incentives to spur the construction of new plants.

More Subsidies

In addition to the economic benefits of pricing carbon, nuclear power could potentially receive direct subsidies under S. 2191. As currently drafted, S. 2191 creates a fund worth more than \$522 billion for low or zero-emissions technologies (sec. 4402). The subsidies from the low and zero emission technology fund are awarded through a "technology neutral" reverse auction. The subsidy is a 10 year production incentive. There is also available a lump-sum award of up to 30 percent of costs for the construction, expansion or modification of a facility to low and zero carbon technology, which presumably includes nuclear power components.

Potential Floor Amendments

In addition to the contents of the bill, there may be explicit nuclear power provisions added to the bill through a series of negotiations taking place between the Environment and Public Works Committee and Sens. Lieberman and Warner's offices.⁵ Apparently, the negotiations may contain enough nuclear power changes to earn the support of Sen. McCain, who has stated he will not support the bill unless there are nuclear power incentives.

There may also be an attempt by other pro-nuclear power senators to add additional nuclear power language to the bill once it is on the floor. Sen. Isakson (R-La.) drafted an amendment during the Environment and Public Works Committee mark-up that would have created new tax breaks for the construction, operation, and manufacturing of nuclear power facilities, provided federal support for the training of workers and engineers, weakened nuclear waste transport laws, among other things.

³ [http://www.eia.doe.gov/oiaf/servicerpt/s2191/pdf/sroiaf\(2008\)01.pdf](http://www.eia.doe.gov/oiaf/servicerpt/s2191/pdf/sroiaf(2008)01.pdf)

⁴ http://epw.senate.gov/public/index.cfm?FuseAction=Minority.Facts&ContentRecord_id=583c0b2f-802a-23ad-4332-b327e9ae9fe6

⁵ <http://www.eenews.net/EEDaily/2008/05/12/6/>