

Coal And Nuclear — A History Worth Repeating?

Law360, New York (April 07, 2010) -- Despite Federal Energy Regulatory Commission Chairman Jon Wellinghoff's statement in a conference last April that "baseload capacity is going to become an anachronism," the draft proposal by U.S. Senator Lindsey Graham, R-S.C., to establish a national clean and renewable energy standard may actually prove that nuclear and advanced coal-fired baseload capacity is anything but anachronistic, and it may very well be the key to a clean and prosperous future for electric utilities.

Development of Baseload Generation

Throughout the 1970s and 1980s, as the electricity industry grew and large-scale power companies expanded the size of their plants, economies of scale and technological innovations made investments in transmission upgrades the logical solution to providing energy and cost efficient transmission.

Larger utilities discovered they could produce more baseload generation at increasingly lower costs as their output increased. Smaller utilities, which historically had difficulty owning baseload generation, increasingly participated in nuclear and coal-fired plants through joint ownership.

In many ways, the increase in baseload generation during 1970-1990 paved the way for an improved nationwide transmission system and lower electric rates as electric utilities gained access to the consistent flow of excess power generated at large coal and nuclear facilities.

Recent Legislation

Fast forward to 2010, and the sources of power traditionally used to provide cost efficient baseload generation such as coal and nuclear energy are not typically the selling point for legislation touting itself as promoting clean and efficient energy.

Last year, the U.S. Senate Committee on Energy & Natural Resources passed the American Clean Energy Leadership Act of 2009 ("ACELA"), which proposed 15 percent of U.S. electricity demand by 2021 be met by renewable energy and efficiency improvements.

Although the legislation did not explicitly permit nuclear or advanced coal-fired power to be used to comply with the new standard, the ACELA did permit electricity from nuclear generators placed in service after the enactment of the bill, electricity from improved efficiency in existing nuclear generators and electricity from certain types of clean coal power to be excluded from the baseline for power generation used to set the renewable generation requirements.

In effect, this exclusion permits a utility using these particular types of nuclear and coal power to provide less energy from renewable sources and still meet the standard.

The American Clean Energy and Security Act of 2009 (the “Waxman-Markey Bill”), passed by the U.S. House of Representatives last year had a similar goal to the bill passed by the Senate but attempted to accomplish it through a cap-and-trade program for the most common greenhouse gases and a national renewable energy standard (“RES”).

The proposed RES would require electric utilities to meet 20 percent of their electricity demand through renewable energy sources and energy efficiency by 2020.

Similar to the ACELA, the Waxman-Markey Bill also permitted electricity from nuclear generators placed in service after enactment (although it did not include improved nuclear efficiency) and certain types of clean coal power to be excluded from the baseline for power generation.

Another bill in the Senate, submitted by Sen. Maria Cantwell, D-Wash., and Sen. Susan Collins, R-Maine, in December of last year, the Carbon Limits and Energy for America’s Renewal Act (the “CLEAR Act”), bills itself as an act to “promote clean energy jobs and economic growth.”

The CLEAR Act proposes a monthly auction for “carbon shares” in which consumers would receive 75 percent of the resulting revenue as a refund for increased energy cost in efforts to reduce U.S. greenhouse gas emissions relative to 2005 levels by 20 percent by 2020, but it does not set forth explicit incentives for traditional baseload generation sources such as nuclear power.

The Graham Proposal and Potential Subsequent Legislation

It is in this legislative climate, that on Feb. 17, 2010, Sen. Lindsey Graham circulated his draft, the “Clean Energy Act of 2009.”

The draft proposes to establish a national clean energy standard that goes beyond just excluding nuclear and advanced coal generation from the baseline, and actually includes them alongside traditional renewable energy sources under the definition of “clean energy.”

The draft sets forth a national renewable portfolio standard requiring electric utilities to obtain 13 percent of a facility’s power generation by 2012 from combined clean energy and efficiency resources, 25 percent by 2025 from such sources and 50 percent by 2050. While encouraging clean energy, the bill also allows energy efficiency improvements to count towards up to 25 percent of the standard.

Under the proposed legislation, the options to meet the “clean energy” standard are more varied than those proposed in the past.

Wind and solar power facilities and certain types of biomass and hydropower facilities would qualify, but so would new nuclear power plants (placed in service after enactment of the bill), existing nuclear plants with increased efficiency over the three-year period after enactment and coal-fired plants that capture and permanently sequester 65 percent or more of their greenhouse gas emissions.

Electric utilities located in Hawaii or those selling less than four million megawatt-hours of electricity would be exempt from the national clean energy standard. Any clean energy facility located on Native American land would qualify for double credits, and small clean energy distributed generators (no larger than 1 megawatt) would receive triple credits.

The draft also provides for a greater investment in coal and nuclear generation. Although the language has not yet been finalized, the proposal includes a placeholder to provide loan guarantees for at least 60 new nuclear reactors and for increasing research and deployment of carbon capture and sequestration for fossil-fueled facilities.

After Sen. Graham circulated his draft legislation, on March 9, 2010, Sen. Richard G. Lugar, R-Ind., announced he too is working to develop a bill that will focus on clean energy and energy efficiency efforts. Lugar's proposal will purportedly develop a new federal clean energy standard to set a standardized level for the use of clean fuels without including the cap-and-trade scheme used by previous efforts.

In contrast to the ACELA and Waxman-Markey bill, which promote nuclear and clean coal generation to the extent they are excluded from the baseline for power generation, Lugar intends for his bill to include a diverse mix of qualifying clean sources that will include nuclear and clean coal technology with carbon capture and storage.

Modernization of the Grid

In addition to the efforts to encourage clean energy generation, the Graham proposal and any subsequent legislation set forth by Lugar or others should ensure energy generation remains reliable and as cost efficient as possible to keep utilities' rates affordable for United States industry.

The ability to provide reliable, cost efficient and energy efficient generation has traditionally depended upon two key elements — large amounts of baseload generation and the ability of the nation's electric transmission system to effectively transport this generated power.

The current electricity grid faces several obstacles in order to become fully compatible with increased renewable energy generation.

In order to efficiently transmit renewable energy, the grid will need to be able to incorporate intermittent renewable electricity generation, integrate distributed and renewable generation and carry renewable power over long distances from their source to city centers.

Currently, the nation's grid is composed of three separate regional grids — the Western Interconnection, the Eastern Interconnection and the Electric Reliability Council of Texas (ERCOT).

Without improvements to the current grid system, there is only a limited ability to transmit electricity across these interconnects, creating a bottleneck that inhibits states with vast amounts of solar and wind energy from transmitting large amounts of generated power to other interconnects.

The answer to these problems will require expansion of the current transmission system, increased efficiency of electricity transmission and, most importantly, time.

The Value of History

The broadened benefits to the nuclear and clean coal industry within Sen. Graham's proposal encourage traditional baseload generation to provide an enhancement to backbone generation and transmission resources, aid the integration of renewable resources and mitigate the disparate regional impacts of renewable standards and initiatives.

While further discussions are undoubtedly needed, Sen. Graham's proposal illuminates the fact that some history may be worth repeating, and a reinvigorated investment in long-established sources of baseload generation may

be what the electric utility industry needs to promote a lower carbon footprint while maintaining sustainable and reliable growth.

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