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U.S. Senate Wants To Decrease CO2 By Increasing Nuclear Energy

The title of this 01 February 2016 Forbes article by James Conca, Ph.D. "U.S. Senate Wants To Decrease CO2 By Increasing Nuclear Energy" is self-explanatory. The article documents that there is strong bipartisan support for expanding nuclear energy to combat the global warming harms of increasing levels of CO2 and other greenhouse gases associated with fossil-fueled powered electric power generation.

Sadly, the California Energy Commission seems to want to move in a diametrically-opposed direction regarding Diablo Canyon Power Plant (DCPP) rather than strongly endorsing a NRC license renewal for DCPP, California's largest power generator by far. See pages 313-314 of 420 of the proposed 2015 IEPR final version with the heading "Diablo Canyon" to see the lack of strong support for DCPP's license renewal. Almost all of the topics are those raised by interests opposed to DCPP license renewal - and those concerns are vastly overblown, particularly in light of the absence of DCPP emissions while cost-effectively generating prodigious amounts of power on a 24/7 basis - and providing both voltage and frequency stability to the California power grid.

For additional perspective, note that the laws of thermodynamics require that during power generation, waste heat must be absorbed by the environment, independent of the means of power generation. Thus, a large fossil-fueled power plant such as Moss Landing generates a similar amount of waste heat per mega Watt-hour of electricity as DCPP. Eventually, all of that waste heat drives the evaporation of water. In the case of DCPP, the alleged environmental benefits of retrofitting cooling towers at a cost of about \$14 billion vastly outweigh the negligible environmental benefits. Thus, alternative compliance and mitigation strategies regarding once-through-cooling advocated by some SWRCB staff should be pursued.

Additional submitted attachment is included below.

<http://www.forbes.com/sites/jamesconca/2016/02/01/u-s-senate-wants-to-decrease-co2-by-increasing-nuclear-energy/print/>
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U.S. Senate Wants To Decrease CO₂ By Increasing Nuclear Energy

Building on the Obama Administration's recent [Nuclear Summit at the White House](#), the United States Senate made an even bigger statement in favor of new nuclear energy. At the [Advanced Nuclear Summit](#) in Washington, D.C. last week, hosted by the [Third Way](#), several U.S. Senators attending the meeting announced the [Nuclear Energy Innovation Capabilities Act](#), S.2461, intended to facilitate the development of advanced nuclear technologies.

The next day, the Senate overwhelmingly approved the legislation in a vote of 87 to 4.

The legislation, introduced by Senators Sheldon Whitehouse (D-RI) and Mike Crapo (R-ID), directs the U.S. Department of Energy to prioritize partnering with private innovators on new reactor technologies and the testing and demonstration of new reactor designs. The measure is cosponsored by Senators Jim Risch (R-ID), Cory Booker (D-NJ), Orrin Hatch (R-UT), Mark Kirk (R-IL) and Dick Durbin (D-IL), an unusually bipartisan group for nuclear energy, signaling a shift in views on nuclear in light of climate change and grid reliability.

In a show of legislative force rare at a nuclear meeting, Senator Lisa Murkowski (R-AK) kicked off the Advanced Nuclear Summit, and Senators Crapo, Whitehouse and Booker closed it out. The Act now becomes part of the larger energy policy reform bill before the Senate, S.2012 the Energy Policy Modernization Bill, which is the largest energy bill in decades, and one intended to take America's energy path into the 21st Century.

This vote also reflects the observation that coal is still the [fastest-growing energy source in the world](#). “Nuclear energy has an important role to play as we transition to a carbon-free energy future. This amendment will help drive investment, remove bureaucratic barriers, and allow our entrepreneurs and businesses to unleash the promise of advanced nuclear technologies,” said Senator Booker (D-NJ).



The Nuclear Energy Innovation Capabilities Act, S.2461, introduced and passed 87 to 4 in the U.S. Senate last week, allows innovative companies and reactor designs to take advantage of DOE nuclear facilities, for a fee, to test new designs and fuel that could never be accomplished by a small company on its own. Shown here is such a facility – the Advanced Test Reactor at DOE’s Idaho National Laboratory. Source: DOE INL.

This new effort follows on the heels of previous efforts to solidify our nuclear power program. A few years ago, a bipartisan team of [Senators drafted legislation](#) aimed at reaching a long-term solution for the Nation’s nuclear waste. Senators Ron Wyden (D-OR), Lisa Murkowski (R-AK), Dianne Feinstein (D-CA) and Lamar Alexander (R-TN) proposed legislation that would implement recommendations made by the President’s [Blue Ribbon Commission](#) on America’s Nuclear Future, which was formed to address this issue.

The hurdles faced by nuclear power in this country include the complicated and sometimes arbitrary regulations and financial challenges not faced by other forms of clean energy. Under S.2461, the Nuclear Regulatory Commission (NRC) would report to Congress on any barriers that would prohibit the licensing of new reactors within a four-year time period.

Third Way, a think-tank sometimes referred to as radically centrist, has been addressing this issue in their [21st Century Nuclear campaign](#), building on the consensus that new nuclear technologies offer unmistakable benefits for protecting our energy security, fighting climate change, and building advanced manufacturing in the United States.

Josh Freed summed up this new support, “A year and a half ago, Third Way took a serious look at whether advanced reactors would ever be ready to play a serious role in providing clean, cheap, reliable energy. To our surprise, we discovered that dozens of private sector companies, backed by real private capital, were pursuing advanced nuclear solutions. These companies said their number one need is getting the federal government’s support of innovation and its regulatory practices to match today’s nimble R&D strategies of the private sector. That is exactly what we are doing.”

“Innovation in the 21st century looks different than the centralized approach of the 1960’s. Even something like the Apollo mission would be difficult to replicate the same way today.”

Many innovative reactor designs for advanced GenIV nuclear reactors have developed logically from our 60 years of nuclear experience. The hundreds of millions of hours that the traditional GenII and GenIII reactors have been safely operating, and the lessons learned from the only three nuclear power accidents over that time, have shown us what the [next generation of nuclear](#) needs to be.

Lacking policy leadership, the general industrial world has not seen the incentive to commit to the specialized nuclear facilities required for the precise testing of components, development of specific material needs, and other work necessary to complete the design and construction of these new reactors. Although these facilities are already available to commercial users through fees and cost share arrangements, this bill directs DOE to give priority to projects engaging the private sector’s testing and demonstration of advanced reactor concepts.

Then there’s the issue of getting any new reactor design licensed by the U.S. Nuclear Regulatory Commission. A new design takes longer to understand and evaluate since there’s no precedent and NRC staff are unfamiliar with the new designs.

This is why S.2461 is so important.

“As the Senate works to craft a modern, competitive national energy policy, this amendment will help spark the development of our next generation of nuclear capacity,” said Senator Whitehouse (D-RI).

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