

**HB363: Clean and Renewable Energy Standard (CARES)**  
**Economic Matters Committee Hearing**  
**February 28th, 2020**

**OPPOSED**

The Institute for Energy and Environmental Research, Nuclear Information and Resource Service, Beyond Nuclear, Food & Water Watch, Harford County Climate Action, Howard County Climate Action, IndivisibleHoCoMD, and Sunrise Movement Baltimore are opposed to the “CARES” bill, HB 363. This proposed legislation purports to have a goal of a 100% carbon-free electricity sector by 2040; in practice it will undermine Maryland’s transition to an efficient, economical, and fully renewable electricity system by 2040, which is a central objective of our organizations.

Among other basic problems, the CARES bill:

- Does not increase renewable electricity requirements beyond those already passed in the Clean Energy Jobs Act in 2019;
- Does not include a date certain for the state’s coal plants to be shut down, nor a plan for the workers or communities where they are located that would enable them to prosper after closure;
- Includes natural gas, most likely fracked gas, with “carbon capture and sequestration” as a “clean” energy resource, a technology that – if it works outside of the context of added petroleum production – would be prohibitively expensive;
- Includes combined heat and power, mainly fueled by fracked gas without carbon capture and sequestration, which, for practical purposes, would likely dominate the Clean Energy Resource carve-out in the proposed CARES targets;
- Includes very costly new nuclear generation, such as “small modular reactors” (SMRs), as clean energy resources, despite the Administration’s acknowledgement that such technology will not be available for more than a decade from now, and even though nuclear power is not renewable and produces plutonium and other long-lived radioactive and toxic wastes;
- Includes large hydropower in Tier 1 renewable resources for the first time;
- Sets the stage for the kinds of massive, uneconomical subsidies that a few states are providing to existing nuclear plants – without increasing carbon-free electricity by a single electron.
- Does nothing to prepare the state for the significant increases in distributed renewable energy resources, including distributed solar and distributed storage, which will be needed to make Maryland’s electricity system more resilient in the face of climate extremes. The only distributed resource it promotes, combined heat and power, would mainly rely on natural gas, increasing emissions as well as the state’s vulnerability to stranded asset costs.

We will consider three items in more detail to illustrate that, despite nice-sounding phrases about clean energy and net zero emissions, HB 363 will enable no significant progress towards an emissions-free electricity system; potentially, it could set Maryland back both economically and ecologically where climate protection is concerned.

### Gas with carbon capture and sequestration<sup>1</sup>

The only context in which carbon capture from fossil fuel power plants has worked is when the CO<sub>2</sub> is injected into the ground to stimulate oil production (“Enhanced Oil Recovery”). More oil is, of course, the opposite of the direction we need for climate change mitigation – and that use, is in any case, not possible in Maryland, which has no significant oil production industry.

The National Petroleum Council 2019 report on CCS technology estimates that subsidies will be required for carbon capture and sequestration from stationary power plants where the CO<sub>2</sub> is not used for enhanced oil recovery. For natural gas fired power plants, the National Petroleum Council estimates the total cost for capture, transport and sequestration of CO<sub>2</sub> to be \$107 per megawatt hour.<sup>2</sup> To this must be added the cost of the electricity generation itself. That cost, from a new combined cycle plant, is estimated at \$56 per MWh, assuming continued low cost gas,<sup>3</sup> bringing the total cost to \$163 per MWh. This can be compared to the estimated cost of utility-scale solar of about \$40 per MWh and onshore wind at \$41 per MWh. Offshore wind cost was estimated at \$88 per MWh.

The cost of generating electricity from natural gas with CCS electricity, assuming it is available and sites for sequestration can be found and licensed, would be greater than the entire retail cost of electricity is today. The cost difference between CCS and utility scale solar and onshore wind is more than enough to allow for investments to compensate for variability and still have reliable wind and solar power more affordably than gas with CCS. Rather than plan for an increase of solar and wind and the accompanying investments that will be needed to have an emissions-free grid, the CARES bill consigns Maryland’s climate and economic future to speculation, subsidies, and high costs, including in the form of gas with CCS.

The added considerations of the use of fracked gas and methane leaks only make a bad proposal worse.

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<sup>1</sup> Carbon sequestration cost numbers are from the 2019 National Petroleum Council report entitled Meeting the Dual Challenge. The summary is on the web at <https://dualchallenge.npc.org/files/NPC%20CCUS%20ExecSumm-Dec12-postmeeting.pdf> – hereafter referred to as NPC 2019. Cost estimates for electricity generation from unsubsidized new utility-scale plants are from Lazard’s annual estimates of levelized cost, the most recent version of which was published in November 2019, on the Web at <https://www.lazard.com/media/451086/lazards-levelized-cost-of-energy-version-130-vf.pdf> hereafter referred to as Lazard 2019.

<sup>2</sup> NPC 2019, Figure ES-13, p. 37.

<sup>3</sup> Lazard 2019, p. 3.

## New nuclear plants

The CARES bill provides for new nuclear plants to be built as part of Maryland’s low-carbon electricity in the post-2030 period. New nuclear plants of the existing variety – large, light water reactors – are estimated to cost between \$118 and \$192 per MWh which averages out to \$155 per MWh compared to about \$40 per MWh for onshore wind and utility scale solar and \$88 per MWh for offshore wind. Moreover, nuclear costs tend to go up, while solar and wind costs tend to decline. Over the period 2009 to 2019, Lazard’s nuclear costs estimates rose by 20%, while wind costs declined by 70% and solar by 89%.

The PPRP report on nuclear power commissioned under a provision of CEJA cites the International Atomic Energy Agency, which promotes nuclear power, as concluding that electricity from SMRs will be even more expensive from current designs:

Though SMRs have a lower initial capital cost per unit, costs do remain a concern. Their expected generating cost of electricity will probably be substantially higher than that for large reactors.<sup>4</sup>

Costs that are “substantially higher” than current reactors would mean substantially higher than roughly \$155 per MWh – which is already about four times the cost of utility-scale solar and onshore wind and nearly double the cost of offshore wind. Like gas with CCS, HB 363 would simply have us wait with fingers crossed and hope for these technologies to work and prepare to pay for them through the nose. At the same time, HB 363 ignores the scale-up of technologies that are already low cost beyond the provisions in existing law. It is a dangerous strategy for climate and economically imprudent and risky for Maryland families and businesses.

## Existing nuclear plants

HB 363 opens the door to expensive and counterproductive subsidies for old nuclear power plants. The bill does not include any provisions for how Maryland would meet the CARES targets if Exelon were to decide that a nuclear power plant were not profitable enough to continue operating. This would leave the state in a position to subsidize that nuclear plant, or else fall short of the CARES targets. Exelon has exploited such concerns in other states to extract massive ratepayer subsidies. Such subsidies for nuclear reactors in other states have proven to be extremely costly, diverting billions of consumer dollars that could be spent on cost-effective climate solutions, like energy efficiency, wind, and solar.

Contrary to common sense and economic prudence, HB 363 does not make any provision to compare the costs over, say, a twenty-year period of providing subsidies to existing nuclear plants (like New York or New Jersey) with entering into power purchase agreements for utility scale solar or wind in the most economical locations in the PJM grid.

Even more damaging to the state’s economy and plans, HB 363 includes a provision to reduce the Tier 1 requirements based on existing nuclear generation. This could eliminate Tier 1 entirely

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<sup>4</sup> Power Plant Research Program, *Nuclear Power in Maryland: Status and Prospects*, Department of Natural Resources, January 2020 p, 28.

for several years, and damage the entire renewable energy industry for over a decade. The provision to restrict eligibility to nuclear power plants connected to the distribution system in Maryland applies not only to the Calvert Cliffs Nuclear Power Plant on Chesapeake Bay. It would also include Exelon's Peach Bottom Nuclear Power Plant just north of the border in Pennsylvania. Peach Bottom is connected to Maryland's distribution system by a transmission line directly from its switchyard across the state line to BGE's Conastone Substation in Harford County. The two plants together account for about 60% of Maryland electricity sales.

There are two provisions in CARES that should be supported: the removal of black liquor and trash incineration from the RPS. The legislature has known for quite some time that neither of these sources of electricity generation is clean nor renewable. While we welcome the governor's support for eliminating these pollution subsidies, we urge the Committee to move stand-alone bills enacting these changes: HB98 sponsored by Chair Davis and HB438 sponsored by Del. Nick Mosby. These changes are long overdue and should be made on their own merits without jeopardizing the state's progress to a renewable electricity system or consigning Maryland's fate to high cost technologies and perpetual fossil fuel use.

We recommend an unfavorable report on HB 363.

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