Senate Bill 528 Climate Solutions Now Act of 2022

Senate Committee on Education, Health and Environmental Affairs, February 15, 2022

Testimony by Donald F. Boesch, Ph.D.

Chairman Pinsky and members of the Committee, I am Donald Boesch, now retired as Professor Emeritus from the University of Maryland Center for Environmental Science. I served as the Center's President from 1990 to 2017 and, as such, as a member of the Maryland Commission on Climate Change and chair of its Scientific and Technical Working Group. I am now speaking only for myself as a scientist with substantial experience in climate science assessments.

I will not describe the many severe impacts and risks of human-caused climate change because Maryland has already committed to limiting them through the enactment of Greenhouse Gas Emissions Reductions Acts of 2009 and 2016. I will try to briefly explain why science indicates that it has become more urgent that we aggressively reduce our emissions of carbon dioxide and other heat trapping gases. In addition to setting new commitment timeframes, Maryland must enable bolder mechanisms to reduce these emissions. In other words, we must act with urgency and agency—and SB 528 does that.

Scientist are by training and method cautious and conservative. In 2011, when I was a contributing author to the National Academy of Sciences report *America's Climate Choices*,[1] one of co-authors, a distinguished climate scientist, balked at describing the need to act as "urgent," so we substituted "pressing" instead. In 2019, I chaired another committee charged with crafting a position statement for the 60,000-member American Geophysical Union. By then we had no reservation entitling the statement: *Society Must Address the Growing Climate Crisis Now*.[2] Virtually no climate scientist would disagree that there is a truly urgent need to rapidly reduce our greenhouse gas emissions.

Why has there been this shift in this sense of urgency? It isn't so much that the world has warmed more than scientists thought. In fact, the global warming forecasts produced in the 1980s have turned out to be quite accurate, even those modeled by Exxon's scientists. Yes, some resulting changes have happened faster than expected, such as melting of glaciers, intense rainfall events, and wildfires. As you are aware, we are already experiencing both the incremental and devastating impacts of the climate changes caused by humans.

The main reason for the increased sense of urgency is that greenhouse gas emissions and concentrations have continued to grow. The carbon dioxide emitted remains in the atmosphere for 300 to 1,000 years and the methane, an even more potent greenhouse gas, remains for about a decade. We face a rapidly closing window in which we must eliminate emissions to avoid exceeding concentrations in the atmosphere that result in crossing dangerous thresholds of irreversible change.

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[1] https://www.nap.edu/catalog/12781/americas-climate-choices

[2] https://www.agu.org/Share-and-Advocate/Share/Policymakers/Position-Statements/Position_Climate

After the Paris Agreement, the Intergovernmental Panel on Climate Change, or IPCC, in 2018 determined that in order to limit warming to 1.5°C, as a global average, net CO_2 emissions must be reduced to zero by mid-century and emissions of other greenhouse gases, such as methane, must also to be substantially reduced. This conclusion was strengthened in the latest IPCC Assessment released in August, 2021. The emissions pathways capable of reaching net zero by 2050 require reductions of 50% by 2030. If this is not achieved the 1.5°C window is nearly shut. Keep in mind that these are global emissions, so that the high per-capita emissions from the United States, with its wealth and potential for innovation, must be more ambitious than this.

While the commitment made in 2009 for a 25% reduction in Maryland's emissions by 2020 and another commitment in 2016 for 40% by 2030 seemed bold at the time, they are now clearly deficient. Furthermore, unlike a number of other states, Maryland still lacks any legal commitment to greenhouse gas emissions reductions beyond 2030. Thus, the commitments for reductions in net greenhouse gas emissions included in SB 528 of 60% by 2030 and 100% by 2045 (from 2006 levels) are consistent with Maryland's place in the world, the Paris Agreement, IPCC scientific assessments, national targets set by President Biden, and commitments made by California, New York and other leading states.

In the present situation in which delaying action by just a year or two matters a lot, the *2030 Greenhouse Gas Reduction Action Plan* released in February 2021 by the Maryland Department of the Environment took too long to develop. It was more ambitious that the 2019 draft in estimating—using some questionable assumptions—that Maryland's emissions could be reduced by as much as 50% by 2030 as this figure from the Plan indicates (Figure 1). Still, the Plan does not lay out a pathway to achieve net-zero emissions by 2045—a goal that it commendably embraces. The actions proposed in the Plan would only achieve about a 70% net reduction by 2050. The red curve I have superimposed on the figure shows why a 60% reduction by 2030 is better aligned with the pathway to net zero by 2045.

In other words, while the MDE Plan accepts the urgent demand for emission reductions, it does not include the agency—the means or capacity—to match its ambition. Clearly, we need to act now in 2022 to provide that agency, including the necessary statutory authorities. We cannot afford to wait until 2030, take stock of the reductions that have been achieved, and then spend another couple of years considering how navigate an even steeper decline to net zero.

The MDE Plan also makes clear where we need to provide the agency needed to achieve these emission reductions. The second figure, showing the Plan's projections of emissions by sector, indicates that the anticipated reductions by 2030 will come from largely from electricity generation. By 2050 the largest emissions gaps remaining based on present policies and programs would be from the transportation (in dark green) and residential and commercial building (blue and gold) sectors.

Very appropriately then, the Climate Solutions Now Act of 2022, provides consequential and heretofore missing capacity to achieve significant reductions in the transportation and residential and commercial building sectors. It does this in numerous ways, including providing

for a Climate Catalytic Capital Fund, setting building electrification and emissions standards, and advancing mass transit and zero-emissions vehicles. I want to emphasize that virtually all of these actions were recommended in one form or another by the Maryland Climate Change Commission in its 2021 report. Furthermore, SB 528 also mandates an all-of-government approach in which all decisions made by Maryland state agencies are examined through the lens of limiting harmful climate change.

With all this in mind, I urge the General Assembly to pass the Climate Solutions Now Act of 2022 and Governor Hogan to sign it into law. We need both the urgency and the agency that it provides.

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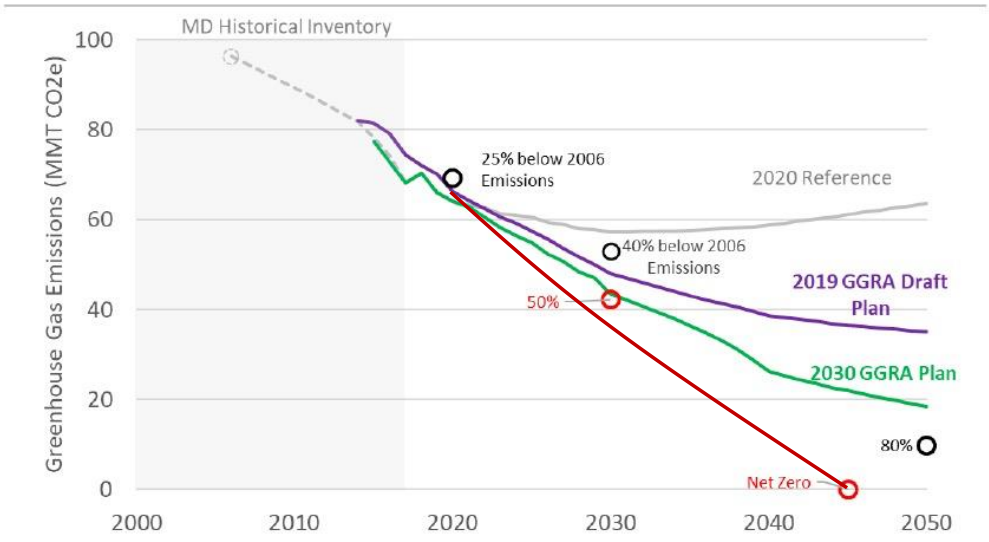

Figure 1. 2030 GGRA Plan emission reduction projections (Figure ES-4) with a red line superimposed to illustrate the necessary pathway to net-zero emissions in 2045, a target recommended by the Maryland Commission on Climate Change and accepted in the Plan.

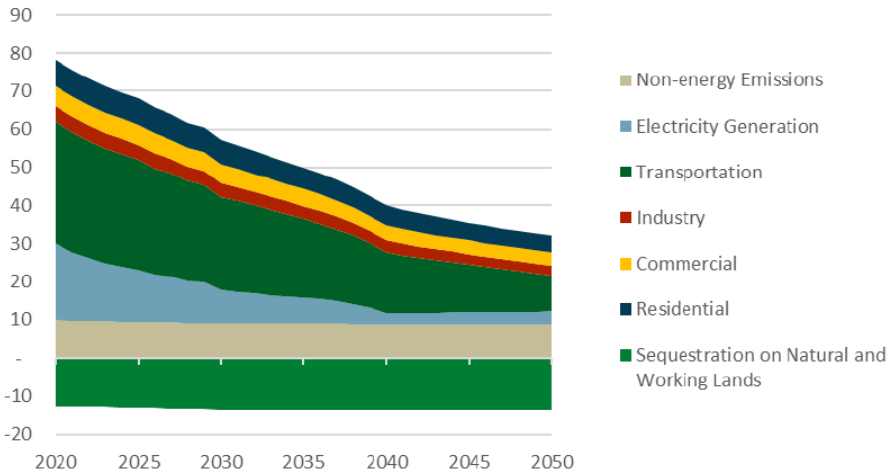

Figure 2. Maryland greenhouse gas emissions projections by sector under the 2030 GGRA Plan (Figure ES-5).