University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE

Senate Bill 528: Climate Solutions Now Act of 2022

Education, Health and Environmental Affairs:
Chair: Senator Paul G. Pinsky. Vice-Chair Cheryl C. Kagan

Testimony from:
Peter Goodwin: President, University of Maryland Center for Environmental Science
Chair, MCCC Science and Technical Working Group

Thank you for the opportunity to testify in support of SB528. I will make just 3 points.

The Committee is very aware that Maryland today is already witnessing many consequences of climate change as highlighted in the Maryland Commission on Climate Change 2021 Annual Report. The urgent need for action is described by many sources that have been rigorously vetted and peer reviewed, including:

- In 2020, over 10,000 scientists from 153 countries signed on to an open letter[1] describing the climate emergency and urging immediate action.
- The Physical Basis Report[2] of the IPCC released in August 2021 issued a CODE RED warning. More than 800 scientists participated in synthesizing over 14,000 scientific studies and publications over 6 years to draw conclusions that are defensible, relevant and disturbing.

A target has been established to limit global warming to 1.5ºC above pre-industrial levels. Failure to restrict global warming to 1.5ºC will result in more severe weather events and extremes (*high confidence*). Many ecosystems will reach a tipping point of unpredictable change due to complex feedback mechanisms that are not fully understood. These changes will make it difficult and more costly for us to adapt our economies, modify infrastructure or give ecosystems and species the chance to adapt.

To achieve this 1.5ºC target, globally we need to be 45% below 2010 greenhouse gas emission levels by 2030 and reach net zero by 2050 [2,3]. At the 2020 levels of emissions we will cross this threshold in only 10 years. **Therefore, SB528's goal of achieving Net-Zero by 2045 highlights Maryland's willingness to lead the governments across the globe.**

Secondly, engineering and technological innovation will make a significant contribution in the coming decades but we need to start taking steps now with what we have. **We need to ensure that investments, either public or private, made today are able to integrate advances in energy sources, efficiencies and enhancements implemented by communities. This is particularly important in electrification of transportation systems and buildings.** The proposed Climate Transition and Clean Energy Hub as a clearing house for information on advanced technology and architectural could reduce the time for implementation. This is a

rapidly advancing field and a central focal point can harness the deep expertise in Maryland across agencies, engineering and consulting firms, NGOs, universities as well as existing Councils and Commissions.

The third comment is regarding Maryland's Commission on Climate Change (MCCC). There are some excellent examples of systems tracking progress related to Climate Change, including Maryland's first-ever 2021 Coastal Adaptation Report Card led by UMCES. For the MCCC, Maryland should be proud of the many organizations and individuals who donate thousands of hours each year to the Commission's work for meetings, supporting the Working Groups and task forces set up to explore specific issues. This structure represents the people of Maryland, business interests, agencies, NGOs and universities and is supported by outstanding scientists, engineers and planners in our state agencies. Significant progress was made in 2021 and the MCCC committed to an annual tracking of MCCC recommendations.
The implementation of MCCC recommendations should be given significant consideration either through Executive Branch or State legislative action, where appropriate.

References

1. Ripple, W.J. et al., 2020. World Scientists' Warning of a Climate Emergency. *BioScience*, Volume 70, Issue 1, 8-12. 12, https://doi.org/10.1093/biosci/biz088
2. IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press.
3. Han, G. and J. Holmes, 2021, Climate Transparency Report: Comparing G20 Climate Action Toward Net Zero. 16p. www.climate-transparency.org