

Good afternoon Chairman Feldman and Members of the Education, Energy and Environment Committee,

I am Carol Lane, Vice President of Government Relations for X-energy, a Maryland company specializing in Small Modular Reactor (SMR) reactor design and fuel manufacturing. Our focus is on developing the first next-generation nuclear reactor by the end of the decade. I am honored to voice our support for SB 805 under Senator Brooks' and Senator Klausmeier's sponsorship.

X-energy was founded in 2009 in Greenbelt, Maryland. When I joined in 2015, there were less than a dozen employees. Today, we are located in Rockville, Maryland, have topped 450 employees with over 1000 subcontractor FTEs, and, we are about to open a new Operator Training Facility in Fredrick, Maryland in two weeks. This facility will be a state-of-the-art simulator and virtual reality tool to be utilized to train future operators of all our reactors, regardless of where they are deployed.

Today, as you know, 23% of Maryland energy generation comes from nuclear power and approximately 80% Maryland's carbon free energy comes from nuclear energy. Yet, a 2021 survey of media-attentive and engaged voters statewide, shows that only 54% of them indicate that they are familiar with the Calvert Cliffs nuclear power plant or recognize the clean energy comes from nuclear power and that plant specifically.

This emphasizes the critical importance of a Task Force that brings together diverse representatives from the state, to ensure that community engagement, technical and economic impacts and various incentives for deployment are considered as the state considers moving forward on employing new nuclear energy to meet its future energy needs. SB805 provides an enabling framework.

Today's SMRs offer various technologies, that are distinct from the current fleet of light water reactors and offer some significant advantages. In the case of X-energy, we are deploying High Temperature Gas-Cooled reactors. These HTGRs, as they are called, have characteristics that increase safety, increase economic competitiveness, offer extremely high reliability and can serve new applications and geographic areas that were previously not considered for nuclear reactors. Examples of these advantageous features are:

- Our TRISO fuel (coated particles of uranium) has been called by the Department of Energy, the most robust fuel on Earth - rendering the reactor meltdown-proof.
- Another part of our safety case is that no water is used in our reactor core, but instead helium – an inert gas – is flowed through our reactor core to generate the heat.
- As a result of the safety features, our emergency planning zone is significantly reduced to approximately 400 meters or ¼ of a mile, compared to the 10 miles required for conventional nuclear reactors today. This allows plants to be sited in closer proximity to the energy consumers.
- Our technology produces both electricity and high-quality steam, adaptable for various applications such as industrial processing or production of hydrogen.

Our inaugural plant will be constructed in Seadrift, Texas, at a Dow Chemical facility. Powering their site with nuclear energy will allow Dow to decarbonize their chemical manufacturing by approximately 400,000 tons of CO₂ emissions annually. This first plant is part of the US Department of Energy's Advanced Reactor Demonstration Program designed to reduce cost, schedule and regulatory risk for future customers. X-energy was selected as one of two companies to move forward to deploy an advanced reactor by the end of the decade. This is a 50-50% public-private partnership.

The intended outcome is to provide next in line customers, like Maryland, to consider advanced nuclear reactors with reduced cost and schedule risk to meet the escalating demand for power, driven by data centers, electric vehicles, and the need for replacing retiring coal plants.

In 2022, X-energy received a grant from the Maryland Energy Administration to do a feasibility study on a Maryland site of a retiring coal plant. The study was designed to look at the feasibility of siting a nuclear reactor on a particular site and assess the benefits and costs of that technically. For example, how to take advantage of the infrastructure, transmission lines, etc. that currently exist at a site. Concurrently, Frostburg State University provided a socio-economic analysis of the impact of siting a nuclear plant on a retiring coal plant site. We would be glad to provide a copy of the public report to the Committee.

As a result of conducting this assessment, the Maryland Energy Administration has to capability to do feasibility studies in a cost-effective and efficient manner. Moving forward with feasibility studies in parallel with the Task Force, provides input to the Task Force, and could enhance the deployment timeline.

As the Committee considers advancing this legislation, there are three things we would suggest:

- 1- We believe the schedule for the Task Force recommendations could be shortened. There are several other states that have established task forces with similar scope. We would recommend the report be provided by mid or even early 2025 to enable operations to begin in the early-mid 2030's, if the state decides to move in this direction, to meet state clean energy goals.
- 2- In parallel with the Task Force, we would suggest that some funding be identified for feasibility studies on multiple potential sites. This would allow for potential deployment to align with the early-mid 2030s timeframe, rather than doing this sequentially.
- 3- With the emergence of new advanced reactor technology, we would recommend that nuclear reactor development companies be included as participants in the Task Force. These new advanced reactors offer benefits and opportunities for both electricity and process heat that are significantly different than today's light water reactor fleet. This could be informative to the members of the Task Force. For example, the state of Texas has set up an Advanced Nuclear Energy Working Group with a similar scope to the Task Force in SB 805, and X-energy is a participant on the Working Group.

We strongly endorse Senate Bill 805, recognizing it as a catalyst to expedite the deployment of SMRs in Maryland. This legislative initiative has the potential to play a vital role in fulfilling the state's future energy needs in a manner that is clean, safe, and economically viable.