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On Behalf Of:

Committee: House Committee On Climate, Energy, and Environment

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As a student at Oregon State University over 5 years ago, I had the opportunity to take part in undergraduate research in the polymers and rheology lab on campus. I worked on this lab's "Plastics to Fuel" project, which focused on plastic recycling in a pyrolysis reactor. Working in this lab gave me valuable research and problem solving skills that I use to this day. I learned about the plastics pollution problem and the many methods of recycling that we need to use to solve it.

Researching pyrolysis, and now my career in the field of plastics recycling, have given me a completely new perspective on the lifecycle of post-consumer plastics. Our typically mechanical recycling methods work well on particular items: clear PET bottles, HDPE milk jugs, colored HDPE detergent bottles, and metals. Our current recycling infrastructure can manage around one third of our plastic waste, due to well-understood limitations in the technology. But this leaves a huge gap in the plastic we consume and a goal of circularity.

Pyrolysis offers the opportunity to recycle materials that we currently do not. Pyrolysis can handle dirty, degraded, and mixed plastics in a way that mechanical recycling cannot. And by depolymerizing these materials back to virgin quality, the possibilities for how these materials are recycled is no longer limited. The benefits of recycling polymers that were previously not recyclable through mechanical methods can be argued to outweigh the additional energy costs. And as with any other plant, pyrolysis should be regulated and monitored through permitting.

Pyrolysis can be used, and is already being used in many other states, in tandem with our current recycling infrastructure to keep as many plastics out of our landfills as possible. Pyrolysis is a necessary addition to our recycling toolbox if we want to make any impact in the plastic pollution crisis.