

Chairman Joe Manchin's Opening Statement

April 22, 2021

Full Committee Hearing on Carbon Utilization Technologies

- The Committee will come to order.
- We're here today to discuss carbon utilization – that is, the innovative process of taking carbon and clear stream CO₂ from industrial and power plants, and out of the air around us, and turning it into valuable products.
- This is innovation at work and it's shifting our perspective on how harmful emissions can instead be harnessed and put to good use.
- And what a timely discussion, given that today is Earth Day, to talk about this intersection of climate solutions and economic potential.
- I look forward to hearing from our panel of witnesses about barriers to scaling up these opportunities and ways we can support the advancement and deployment of carbon utilization.
- Congress has made significant efforts in recent years to support carbon utilization technologies and projects.
- In order to get CCUS deployed at the scale we need, it is critical that we invest research, development, demonstration, and deployment of the entire CCUS value chain – from capturing CO₂ from coal and natural gas power plants and industrial facilities to utilizing or sequestering that CO₂.

- That's why the Energy Act contained over \$6B in authorizations for CCUS, including over \$280 million specifically for carbon utilization, including coal-to-products demonstration projects and a new carbon utilization research center.
- As Chairman, I am committed to ensuring the implementation of these provisions.
- We need to couple these efforts with necessary modifications to the 45Q tax credit to really incentivize the deployment of these projects and advancing legislation like the SCALE Act, a comprehensive CO2 infrastructure package I was pleased to cosponsor and happy to see included in President Biden's infrastructure plan.
- Nearly all studies that have examined the potential pathways to netzero carbon by 2050 have found a need for a significant amount of carbon capture and carbon removal.
- Dr. Birol of the nonpartisan International Energy Agency has consistently said that CCUS could be the most critical technology for us to invest in to meet our climate goals.
- I am proud of the work that the National Energy Technology Laboratory (NETL) based in Morgantown, West Virginia, is doing under the leadership of Dr. Brian Anderson to lead the way in CCUS efforts and in the development of technologies to use coal in new ways.
- Welcome, Dr. Anderson, I look forward to hearing more about the innovative work being done at NETL.

- Carbon utilization has substantial economic and environmental potential, and should be a key part of conversations around economic revitalization.
- By 2030, the CO₂ utilization market size for products like concrete, fuels and chemicals has potential to reach over \$800 billion. This would represent about 7 gigatons of CO₂, equivalent to 15% of global emissions.
- In addition, the use of coal as a feedstock to produce high value products is a promising field. These new uses for coal can produce products superior in quality and durability to conventional ones, including certain lightweight, high strength building products and materials like carbon fiber.
- The demand for carbon fiber, graphite, and graphene will experience double digit annual growth in the years ahead.
- These new uses for coal also have potential to provide new economic opportunities and revitalize traditional energy producing communities who have been hit the hardest by the energy transition.
- Ramaco Coal is leading the way in the development of coal to products, and I look forward to hearing from Mr. Randy Atkins about the work they're doing.
- I am heartened by the commitment to carbon utilization shown by industry and research partners.
- I'm pleased to welcome two of our witnesses who were involved in the Carbon XPRIZE, a five-year global competition that challenged

innovators to develop breakthrough technologies to convert CO₂ into high net value products.

- Teams from across the globe participated and demonstrated the value of CO₂ in a wide-range of products, including alcohol used in vodka and hand sanitizers, plastics and batteries, and even toothpaste.
- Mr. Jason Begger is the Managing Director of the Wyoming Integrated Test Center, which provided the U.S. site for this competition.
- And Dr. Gaurav (GUH-rawv) Sant (SAHnt) is the Founder and Chief Technology Officer of CarbonBuilt, who just this week was announced as one of the two winners of the XPRIZE for their work to embed industrial CO₂ emissions into concrete, helping reduce the carbon footprint of concrete by more than 50 percent.
- Congratulations Dr. Sant (SAHnt). I look forward to hearing more about your technology, experience and the future opportunities for this breakthrough technology.
- In closing, let me reiterate the tremendous potential of carbon utilization to support our environmental and economic objectives.
- We have an incredible panel of experts with us today who are directly engaged in developing these technologies, and I look forward to this conversation.
- With that, I'll turn it over to Ranking Member Barrasso for his opening remarks.