



UNITED STATES SENATE COMMITTEE ON

ENERGY AND NATURAL RESOURCES

SENATOR LISA MURKOWSKI, *Chairman*

Opening Statement
Hearing on Technologies for Large Scale Carbon Management
Chairman Lisa Murkowski
July 28, 2020

Good morning, everyone. The committee will come to order as we meet to examine the development and deployment of technologies for large-scale carbon management, such as carbon removal, carbon utilization, and carbon storage.

This is something that I have personally been interested in for a quite some time. I've had briefings over the years, including one very substantive one from one of our witnesses this morning, our former Secretary [of Energy] Moniz. It is a subject that should captivate us all in terms of the potential, in terms of just the innovation that we're seeing take place at multiple different levels. So, being able to explore that this morning is particularly welcome. We had actually planned to hold this particular hearing months ago, in March, before the COVID-19 pandemic took hold. So, I am glad that we are able to return to it, as carbon management will very likely prove to be an important option for reducing emissions and the impacts of climate change.

Just a few years ago, the concept of "carbon removal" was really focused on planting trees. It wasn't widely seen as a realistic approach that could be dramatically scaled. I do want to recognize that Senator Barrasso, from this Committee, has proposed a technology prize for direct air capture for over a decade now. So, he's been focused on this and has a vision to it as well.

It is now becoming clear that technologies to permanently remove carbon dioxide from the air and the ocean are not only real, but they are needed and they are certainly worth pursuing. When coupled with the increased deployment of low and zero-emission technologies, carbon removal options can help offset "hard-to-abate" sectors and could eventually even help reduce atmospheric carbon dioxide levels.

And to me this is very, very exciting, again.

The technologies range from direct air capture facilities, which filter carbon dioxide out of the air, to techniques that combine natural processes like photosynthesis and the mineralization of rocks while ensuring that carbon dioxide does not re-enter the atmosphere. Another crucial aspect of the large-scale carbon management will be to ensure that the infrastructure to safely transport and store carbon dioxide is readily available and affordable.

Some companies are already making initial investments in carbon removal. Occidental Petroleum is partnering with the firm Carbon Engineering to build a large direct air capture facility in Texas that can utilize carbon dioxide for enhanced oil recovery. Other large companies, including Microsoft, have made significant commitments to invest in carbon removal technologies to physically offset their current, and even historical, emissions.

A recent report from the World Resources Institute estimates that with enough investment across carbon removal technologies and infrastructure, the United States could remove up to two gigatons of carbon annually by 2050. That's the equivalent to 30 percent of our country's current greenhouse gas emissions. So, it really puts it into context, the scale that we're talking about.

It's also clear that much, much more research and development will be necessary before a variety of carbon removal technologies are commercially viable and able to operate at scale. I'm excited to learn more about the policies that could support them, whether new research and development or other approaches.

I would point out that our committee has already taken initial steps to support carbon removal technologies. Senator Manchin's EFFECT Act, which is included in our American Energy Innovation Act, authorizes R&D programs at the Department of Energy to make large-scale carbon management a reality, including programs focused on carbon removal, carbon utilization, and carbon storage.

While we will focus on issues that are solely within our jurisdiction for this hearing, it is clear that efforts to scale up carbon removal research and development cross many different agencies. In recognition of this, based on recommendations from some of our witnesses here today, I'm introducing a new bill with Senator Kyrsten Sinema, which we are calling the CREATE Act.

This bill establishes an executive committee at the Office of Science and Technology Policy to coordinate interagency efforts on carbon removal research and development. That effort will be crucial as we look to effectively deploy resources to advance carbon removal technologies, and I'm already looking to build on it with some other measures.

I'm very pleased to welcome a great set of witnesses who are with us, in person and virtually, to tell us about the state of large-scale carbon management and what more we can be doing.

I will introduce the panel after Senator Manchin gives his opening comments, but I do just want to acknowledge and thank you all for being here, again at a hearing that I've been looking forward to for some months now. But it kind of came together late last year when Senator Manchin and I had an opportunity to meet with Secretary Moniz and really started to appreciate the immense potential of these technologies.

Senator Manchin I turn it over to you.

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