

April 8, 2018

The Honorable John Barrasso  
Chairman, Committee on Environment and Public Works  
410 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Tom Carper  
Ranking Member, Committee on Environment and Public Works  
456 Dirksen Senate Office Building  
Washington, DC 20510

Ref.: Committee deliberations on the *USE IT* Act

Dear Chairman Barrasso and Ranking Member Carper,

I support S. 2602, the *USE IT* Act, and urge your committee to give it due consideration and move it swiftly to the Senate floor. It is an excellent approach to give Environmental Protection Agency an important stake in developing direct air capture technology. Direct air capture bridges the gap between energy and environmental technologies. Carbon dioxide is the waste from the combustion of fossil fuels. It pollutes the air. A mandate to develop technology options for cleaning up carbon dioxide streams that escape (and will continue to escape) to the atmosphere will empower EPA to better manage this pollutant. EPA needs to assure the availability of affordable tools for recovering carbon dioxide from the environment. Direct capture of carbon dioxide from ambient air is the most straightforward approach. It can recover all the carbon for which emission avoidance is impossible, too expensive, or simply ignored. Direct air capture in combination with carbon dioxide storage or reuse can assure that the carbon budget is fully balanced. Because direct air capture can be applied to any emission, it will cap the price of carbon. The more direct air capture is researched, developed and practiced, the cheaper it will be.


Direct air capture technology is innovative and still new, but it has been demonstrated to work. It works in the laboratory. Outdoor prototypes have been made to work by several groups, including by us at ASU. It also works in small-scale commercial designs, as demonstrated in Europe by Climeworks. However, just like the first airplanes were not yet ready for global passenger travel, air captured must be readied for large-scale deployment.

We have plenty of ideas how to reduce energy consumption and costs but need the resources to follow through. Aviation enabled by the invention of the Wright Brothers, became an industry only when Guggenheim invested into commercialization and research that blossomed into the engineering discipline of aeronautics. Similarly, EPA could advance air capture to realize cost reductions like those enjoyed by renewable energy. Wind energy costs have come down fifty-fold over the last sixty years and photovoltaic energy costs dropped hundred-fold. If direct air capture could reduce its cost only ten-fold, its implementation could be fully paid for by the 45q tax credit.

I very much support the *USE IT* Act in creating an EPA program that helps develop direct air capture technology. An EPA advisory board on this technology would give it the visibility it deserves. I envision Direct Air Capture Institutes that provide the scientific underpinning and systems engineering for this new technology as well as industry – and venture – based R&D that in cooperation with EPA would create economically viable air capture technology.

I appreciate the opportunity to comment on the *USE IT* Act and welcome any questions you may have.

Sincerely,



Klaus S Lackner

Professor and Director of the Center for Negative Carbon Emissions

Cc: Senator Shelley Moore Capito  
Senator Sheldon Whitehouse  
Senator Heidi Heitkamp