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Statement from John Thompson, Director, Fossil Transition Project, on opinion paper by Dr. Mark Zoback et al. on seismic risk of geologic storage of carbon dioxide, June 19, 2012

Dr. Zoback's opinion article released yesterday seeks to cast doubt on the overall viability of geologic carbon storage, based on concerns over induced seismicity. In the four-page "Perspective" piece, he highlights the importance of ensuring that seismicity is considered in the siting, permitting and managing of carbon storage sites. However, Dr. Zoback has failed to fully take into account multiple options available for geologic carbon storage that, taken together, would indicate a more optimistic assessment of the long-term potential for CCS:

- Already in the U.S., over 1 billion tons of CO2 have been safely injected and geologically trapped since the 1970s in depleted oil fields through enhanced oil recovery (EOR). The National Energy Technology Laboratory projects that the US could sequester at least 20 billion tons more CO2 for EOR projects, roughly 10 times the output of the U.S. coal fleet.
- Even beneath the U.S. Midwest, where many of the region's coal-fired power plants will look to store their carbon emissions, Dr. Zoback acknowledges that some of the region's emissions can be safely stored in the Mt. Simon formation in the Illinois basin, where there are also several other target formations with multiple overlying seals that he does not even consider. And, if a maximum storage level is ever attained there, CO2 could be pipelined to other storage sites where there is minimal seismic risk. A pipeline to southern Illinois is already in the planning stages that will bring CO2 from the Midwest to EOR projects in LA, TX and MS.
- Offshore, within the continental shelf, where Dr. Zoback acknowledges that formations would not be prone to seismicity, there is an enormous capacity on all three U.S. coastlines for carbon sequestration, with estimates ranging from 500 billion tons to 7.5 trillion tons, according to NETL.
- To reduce pressure in some storage formations, brine water removal combined with saline storage can ease and redistribute pressures to further reduce seismic risk.

- According to researchers at MIT who have studied the CO2 storage capacity in the U.S., there's just not enough data to construct any models that can currently predict earthquakes induced from carbon dioxide injections.
- Carbon dioxide injection projects around the world have yet to report any significant induced seismicity (including the 1 billion tons injected for EOR).

So while Dr. Zoback is raising the awareness of the importance of selecting safe sequestration sites, we strongly disagree with his pessimistic conclusion about the global future of carbon capture and storage. His opinion paper draws that conclusion by analogy and computer modeling, but it's highly premature to condemn CCS without more experience; more investment and research is needed, not less. There's no question that seismic factors must be considered in the planning and permitting process for selecting carbon storage sites, and that EPA and state regulators should pay attention to induced seismicity. But fundamentally, we maintain that the expense of overcoming any such obstacles will be minimal compared to the global costs of climate change from unmitigated industrial greenhouse gas emissions into our atmosphere.

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Clean Air Task Force is a non-profit environmental organization with offices throughout the United States and in China that works to protect the earth's atmosphere by improving air quality and reducing global climate change through scientific research, public advocacy, technological innovation and private sector collaboration. For more information please visit www.catf.us.