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United States Senate

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
WASHINGTON, DC 20510-6150

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June 17, 2010

The Honorable Steven Chu
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. Secretary:

Many of the next generation energy technologies vital for our country's future require the injecting of fluids – be they water, carbon dioxide, or other mixes – deep into the earth's subsurface. Geothermal energy extraction, geologic carbon sequestration, hydraulic fracturing to extract natural gas from shales, and enhanced oil recovery all require the injection and movement of fluids deep underground, a process that by its very nature may induce seismic activity. I understand that the Department of Energy has recently initiated studies in several of its offices and programs to address the issue of induced seismicity, and I commend those efforts.

I am writing to ask that the Department of Energy, in cooperation with the Department of the Interior and all other relevant agencies, initiate a comprehensive and independent National Academy of Sciences and the National Academy of Engineering study to examine the possible scale, scope, and consequences of seismicity induced by energy technologies. Though oil and natural gas extraction processes have moved fluids through the ground for many decades without significant seismic consequences, the prospect of greatly increased deployment of these new energy technologies in the coming years, coupled with a commensurate rising public concern about their safety, makes it necessary to now better understand the nature and scale of seismicity that may be induced by all subsurface energy activity.

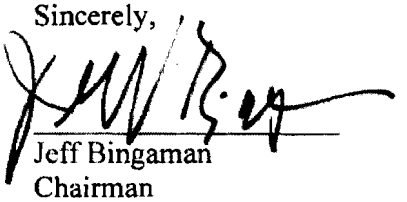
Recent studies such as the 2010 joint University of Texas – Southern Methodist University article by Cliff Frohlich et al. regarding the correlations of seismic activity with natural gas extraction activities in Texas, and the 2007 study led by Ernest L. Majer of the Lawrence Berkeley National Laboratory entitled, "Induced Seismicity Associated with Enhanced Geothermal Systems," indicate a possible link between energy-related subsurface fluid movement and increased seismic activity. Importantly, both studies found that all recorded earthquakes that may have been induced by energy projects were small (less than 4.6 on the Richter scale) and had few or no significant impacts on human health or property. However, both studies emphasize that a more extensive, thorough, and definitive study is necessary to fill gaps in existing knowledge, such as how subsurface energy activities interact with existing geologic stresses to increase or decrease the risk of induced seismic events.

Such a comprehensive study – conducted by the scientifically trusted, nationally recognized, and independent National Academies – will give policymakers the information they need to develop better safety guidelines and regulations for these important energy technologies. It will also provide energy developers with tools to implement appropriate risk mitigation efforts and to choose safe sites for new projects, and arm the public with the information they need to be confident in the safety of their homes and families.

Much of public opposition to the deployment of advanced energy technologies in the United States stems from a lack of clear, trusted information regarding the safety of those new energy facilities for the local communities that are their neighbors. A National Academies study can provide information to these concerned communities – whether near a new geothermal facility tapping heat trapped deep in the earth, a carbon sequestration site storing carbon dioxide underground to facilitate a new clean coal future, a drill rig extracting the newfound riches of America's shale gas, or an aging domestic oil well rejuvenated by enhanced recovery techniques that replaces foreign oil with domestic production – and allow America to proceed safely and with confidence to a cleaner and more secure energy future.

I appreciate your consideration of this request, and look forward to working with you on this.

Sincerely,



Jeff Bingaman
Chairman