Office of the Director
National Research Center For Coal and Energy
Richard A. Bajura

April 15, 2011

Dr. Steven Koonin
Undersecretary for Science
U. S. Department of Energy
Forestall Building
1000 Independence Avenue
Washington, D. C.

Dear Dr. Koonin:

This communication is in response to your request for comments on the programs described in the Quadrennial Technology Review Framing Document.

We recommend that the Department of Energy place additional emphasis and resources in support of technologies using fossil energy in developing a blueprint for America's energy future.

Background

The Department of Energy strategic plan should focus on energy and economic security in addition to protection of the environment. Effective programs for energy production, from domestic resources, for both the electric power and the transportation sectors are key elements in meeting security and environmental goals.

Most of our energy systems depend on coal and liquid petroleum fuels. These technologies and the associated fuel supply infrastructure have been developed and optimized over a century-long time span. Transforming our infrastructure for new advanced energy forms is an important part of our national strategic planning activity. However, effective planning must be based on realistic assessments of the time and R&D required for deployment of new technologies. We believe the time frames envisioned for commercialization of the advanced technologies advocated in the Framing Document are very aggressive. Strong fossil energy programs must be maintained as backup options in the event the advanced technologies take longer times to mature.

All projections for national and global energy mixes show a strong dependence on fossil fuels well into the future. The time line for commercialization of new technologies is typically in excess of 20 years. Transforming an entire

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infrastructure to accommodate new technologies will be much longer. Early deployment of greenhouse gas mitigation technologies currently under development will reduce the scale and cost of future carbon reduction programs that will be needed if we delay implementation while waiting for new technologies to mature. Deployment of fossil fuel-based technologies for producing transportation fuels and chemicals from coal plus biomass will reduce net greenhouse gas emissions while also offsetting a major portion of our trade balance of payments for imported petroleum.

Recommendations

We recommend that the national energy strategic plan includes significant investments in fossil energy technology development. A balance should be maintained between improving the performance of present fossil energy technologies and forcefully pursuing the extended trajectory for developing and deploying newer technologies to a level that ensures reliable operation of our critical energy infrastructures. Given these planning tenets, the amount of funding and programmatic support identified for fossil fuels in the present Framework Document must be increased.

Funding for the core coal research program should be increased to at least $500 million annually and funding for oil and natural gas programs should be increased to at least $120 million annually. In addition, we recommend a robust demonstration program to ensure commercialization of newer technologies before the 2020 time frame.

Thank you for the opportunity to comment.

Sincerely,

Curt M. Peterson
Vice President for Research and Economic Development
West Virginia University

Richard A. Bajura
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