Structuring a Green Recovery: Evaluating Policy Options for an Economic Stimulus Package

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Response to additional questions from members of the Select Committee on Energy Independence and Global Warming
US House of Representatives

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Dear Members of the House Select Committee on Energy Independence and Global Warming,

Thank you for the opportunity to testify before you on January 15th on energy and environmental options for an economic stimulus package. Below are my answers to your follow-up questions. The views expressed here are my own and do not reflect the opinions of either the Peterson Institute for International Economics or the World Resources Institute.

1. *What is the single most productive action that Congress can do to stimulate the economy?*

As an energy economist, rather than a macroeconomist, I limit my response here to what the most productive form of "green" fiscal stimulus rather than the most effective form of stimulus overall. Of the energy-related policy options we evaluated, direct government investments in residential weatherization or federal building retrofits provided the most stimulus value. The economic outcome of government investments in building efficiency are more certain than tax credits for renewable energy or vehicle trade-in programs given the current economic climate. In addition, the energy savings that result from such efficiency improvements help offset the long-term fiscal impact of current spending.

2. *Do you support including additional spending for the nuclear industry as part of a carbon-free portfolio included in second stimulus plan?*

As with the other energy-related stimulus activities we evaluated, the key question is how quickly funds for nuclear power expansion would be put to work in the economy. For nuclear power in particular, planning and regulatory hurdles may be more significant barriers than the availability of government funding.

3. *Many studies show that imposing limits on carbon emissions will slow U.S. economic and job growth. How can imposing a cap and tax system to reduce GHG emissions which would tend to cause households and businesses to substitute more expensive renewable energy for lower cost fossil fuels have a positive impact on the economy?*

From an employment standpoint, the net impact of price-based climate policy depends on the resulting increase in electricity prices and on the relative labor-intensity of low-carbon energy sources

vs. high-carbon energy sources. Our analysis shows that a switch from fossil fuel to renewables and efficiency is a net job-creator if there is no resulting change in energy prices. We have not modeled the impact of prospective domestic climate legislation on energy prices. It's clear from the existing studies it is clear that this will depend largely on the types of cost containment mechanisms included.

4. ***What rate for electricity did you use to reach your conclusion on the amount of annual savings for building efficiency? How would changing rates alter your models? Did your models incorporate the possibility of a cap and tax scheme and the resulting increased cost of energy?***

All energy prices in our analysis come from the US Energy Information Administration's National Energy Modeling System (NEMS). We took EIA's Annual Energy Outlook 2009 and imposed our policy scenarios. The resulting changes in energy costs, both to individual firms and the economy as a whole, are then generated dynamically by NEMS. We did not include price-based climate policy in our core scenario. We did, however, examine the impact of some fiscal stimulus proposals under the EIA's 2008 assessment of the Lieberman-Warner bill.

5. ***If these investments would result with a net savings, why does Congress need to spend tax dollars on such projects?***

Improving the efficiency of federal buildings won't occur unless government funds are committed. For private residences, households are often deterred by large up-front costs of investing in energy efficiency, even if the return is quite good. Our study does not, however, argue that government spending on renewables and efficiency is the most economically effective way to meet environmental goals (though it may be in some cases). Rather, that among the fiscal stimulus options, investments that improve energy efficiency offer useful co-benefits both in terms of emission reductions and long-term cost savings to households government itself.

6. ***How much R&D funding does the Department of Energy currently conduct? Why should additional money be incorporated in a stimulus bill, rather than through the regular appropriations process? Does your study consider energy research funded from other departments, such as the Department of Defense which is conducting extensive hybrid and battery research?***

Our study does not argue that specific options should or should not be included in a stimulus bill, but provide a framework for assessing the relative merits of individual options in terms of economic stimulus and emission reductions. From a stimulus standpoint, the key consideration facing any potential increase in R&D funding is how quickly it will be put to work. We only evaluated one such scenario, investment in battery R&D, which would likely occur through the Department of Energy. We did not evaluate any prospective Department of Defense programs.

7. ***A smart grid will be a necessary development to replace our existing aging and stressed transmission grid. What aspect of developing a smart grid necessitates emergency spending from the stimulus?***

In my view, the important question is not whether grid investments are urgent enough that they must be included in a stimulus package, but rather would grid investment make for useful stimulus.

Certain "smart grid" spending fits this bill, particularly installation of Advanced Metering Infrastructure as part of residential or government building retrofits funded by the stimulus package.

8. ***In previous committee hearings, some witnesses have explicitly stated that road infrastructure development is not "green" policy. Why do you include transportation projects in with other "green" policies? Wouldn't infrastructure projects help to reduce congestion and thus, reduce emissions?***

We do not include road investment as a "green" policy, but as an example of the energy and environmental impact of non-"green" portions of a stimulus package. We find that investment in roads does increase CO2 emissions and oil imports, but that dollar-for-dollar this effect is fairly modest compared to the savings achieved through the "green" programs assessed.