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OCCASIONAL
PAPER

Strengthening U.S. International Energy Assistance to Reduce Greenhouse Gas Emissions and Improve Energy Security

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Summary

The Obama administration faces the challenges of reducing global greenhouse gas (GHG) emissions and increasing U.S. energy security. This report provides information on U.S. international energy-assistance programs, a potentially important tool for addressing these challenges. Reducing global GHG emissions and increasing U.S. energy security are global problems that cannot be solved by changes made within the United States alone. Even if the United States acted aggressively to limit its own emissions of GHGs, the country would still be affected by the earth's changing climate and by higher and more volatile oil prices. Energy assistance may provide a lower-cost and more effective opportunity to reduce future growth in GHG emissions and oil consumption before current development patterns become increasingly locked in throughout the developing world. Developing and transitioning countries are projected to account for 91 percent of the *growth* in global GHGs and 96 percent of the *growth* in global oil consumption between 2006 and 2030. International energy assistance may help to reduce this growth, thereby benefiting both the recipients and the United States.

To examine the ways in which U.S. international energy assistance programs could be improved, we gathered and analyzed basic information about U.S. energy assistance for the five years between 2002 and 2006. We then gathered and analyzed similar information for Germany, which has a different approach to planning and implementing energy assistance. We also reviewed recent reports that addressed international energy issues to identify recommendations that could inform changes to U.S. energy-assistance programs. The information we obtained from these sources formed the basis for recommendations that can inform decisions about ways to improve U.S. energy assistance, reduce global GHG emissions, and increase U.S. energy security.

Review of U.S. Energy Assistance

U.S. international energy assistance has two major components. The first component consists of major foreign-policy goals and activities such as rebuilding the energy infrastructures of Iraq and Afghanistan. Investments in these activities between 2002 and 2006 amounted to $3.4 billion. The second component—which we describe as core energy assistance—is longer-term in nature and consists of investments that are sustained from year to year. This component accounted for $811 million over the five-year period.

Of the U.S. core energy assistance, $631 million (78 percent) was focused on energy policy, education, and research. Nuclear power and anti-proliferation projects, non-renewable power generation, and energy distribution each received roughly $50 million (6 to 7 percent each). Renewable power generation received $22 million (3 percent). Geographically, the

Middle East and North Africa received the largest amount of aid over the five-year period, a total of $343 million (42 percent). The next largest amounts went to Europe and Central Asia ($266 million, 33 percent) and South Asia ($88 million, 11 percent). East Asia and the Pacific, Sub-Saharan Africa, and Latin America and the Caribbean each received between $27 million (3 percent) and $18 million (2 percent). Projects with unspecified destinations received roughly $50 million (6 percent).

We supplemented the information on energy-assistance disbursements with a brief review of the goals, strategies, and activities of the primary agencies involved in providing that assistance. The U.S. Agency for International Development (USAID) focuses primarily on promoting economic development, improved access to energy, energy-sector reform, and environmental improvement. The U.S. Department of State (DOS) coordinates all bilateral and multilateral efforts; represents the United States in international agreements, including the United Nations Framework Convention on Climate Change; and provides funding for energy-related foreign-policy matters that do not fit within the mission of other agencies.

The U.S. Department of Energy (DOE) supports research and development (R&D) and technical assistance to help developing and transitioning countries advance their energy efficiency and use of renewable, fossil, and nuclear power. The U.S. Environmental Protection Agency (EPA) has assisted in transferring successful U.S. programs to other countries. These programs include the ENERGY STAR labeling program (run jointly with DOE), the Methane to Markets Partnership (to reduce the venting of methane, which has 25 times the heat-trapping power of carbon dioxide), and emissions cap-and-trade programs modeled on the EPA's sulfur dioxide and nitrogen oxide trading programs. Finally, the Trade and Development Agency (TDA) provides technical assistance, feasibility studies, orientation visits, and trade missions to support economic development in low- and middle-income countries and to promote U.S. exports of products and services to developing countries.

Review of German Energy Assistance

There is a perception in the development community that Germany has a highly coordinated approach to international energy assistance. According to Organisation for Economic Co-operation and Development (OECD) data, Germany provided $1.06 billion in energy-related assistance between 2002 and 2006.

The largest portion of Germany's funding, $641 million (60 percent), was used to promote renewable power generation. The next largest categories were energy distribution ($216 million, 20 percent); power generation from non-renewable resources ($101 million, 10 percent); and energy policy, education, and research ($103 million, 10 percent). Germany ended assistance to nuclear projects in 2003.

Over the five-year period, South Asia received the largest amount of German assistance, $407 million (38 percent). The Middle East and North Africa received the next largest amount, $250 million (24 percent). Europe and Central Asia received $183 million (17 percent). Smaller amounts were provided to Sub-Saharan Africa ($84 million, 8 percent); East Asia and the Pacific ($75 million, 7 percent); and Latin America and the Caribbean ($43 million, 4 percent). Unspecified regions received $20 million (2 percent).

Germany's energy assistance differs from that of the United States in the way the funds are used and their regional distribution. Two other characteristics also distinguish German assis-

tance programs. First, Germany's assistance consists primarily of loans (57 percent), followed by grants (41 percent), whereas the United States provides only grants. Second, one German agency—the Federal Ministry for Economic Cooperation and Development (BMZ)—coordinates all overseas assistance but relies on the German Development Bank (KfW) and German Agency for Technical Cooperation (GTZ) to disburse and implement projects.

Review of Recent Reports

We reviewed nine recent reports (i.e., issued within the past 10 years) that address U.S. energy and climate policy. Among the recommendations related to international energy assistance in these reports, there was frequent agreement on the following:

- Increase energy research, development, demonstration, and deployment (ERD3).
- Use international cooperation to accelerate the transfer of knowledge.
- Improve U.S. interagency communication and coordination.
- Increase private sector investment by reforming existing financing mechanisms, creating new financing structures, and creating new public sector institutions.
- Reduce explicit and implicit subsidies to create a level playing field for clean-energy technology and biofuels.

Observations and Recommendations

Our review of U.S. energy assistance revealed the following:

- U.S. agencies pursue different goals with different capabilities and strategies.
- Reducing GHG emissions and improving energy security are not primary agency goals, but many agencies contribute to them indirectly.
- Expanding and replicating existing small programs could provide near-term options to reduce GHG emissions and improve energy security.
- Pursuing multiple goals may require trade-offs and increased coordination among agencies.

In our comparison of U.S. and German assistance programs, we found the following:

- German disbursements exceed U.S. disbursements for core energy assistance.
- German assistance is centrally coordinated, while U.S. agencies operate largely independently.
- German assistance focuses on direct investment in energy-technology deployment (e.g., renewable power), while U.S. aid focuses on energy policy, education, and research.
- German assistance is financed with loans and grants, while the United States uses only grants.

The review of recent reports, given its broader context, led to several additional observations:

- Energy assistance and increased ERD3 funding should support each other.
- Energy assistance can accelerate the transfer of knowledge.
- Energy assistance can be a focal point for improved interagency coordination.
- Energy assistance can and should seek to attract private investment.
- Energy assistance should include help to reduce subsidies and create a level playing field for new technology.

Finally, on the basis of the differences between the U.S and German approaches and perceived performance and our broader observations, we recommend that the following initiatives be undertaken to strengthen U.S. energy assistance over the longer term:

- Assess the effectiveness of U.S., German, and other approaches to providing energy assistance to determine the reasons for any differences in effectiveness and draw lessons for U.S. assistance programs.
- Compare the longer-term benefits of supporting energy-sector policy reform with the shorter-term benefits of supporting more-specific technical assistance or investment projects that reduce GHG emissions and oil consumption.
- Assess the advantages and disadvantages of focusing more U.S. energy assistance on fewer recipients.

These assessments would help inform efforts to improve U.S. energy-assistance programs, reduce global GHG emissions, and increase U.S. energy security.