China Low-Carbon Development Paths Program Strategy

Overarching goal: To take an "integrated" approach to reducing the social costs associated with fossil fuel combustion by addressing the economic framework in which energy decisions are made.

Goal #1: Encourage China's development of "sustainable energy futures" scenarios and the policies necessary to achieve them.

Means:

1. Encourage the adoption of sustainable energy analytic approaches by long-term planning agencies at the central and provincial government levels.
2. Assist with the development of scenarios for China's carbon emissions over the 1999-2020 time frame, including articulating the policies necessary for achieving maximum carbon reductions over that time frame, and encourage China's policy decision-makers to implement those policies.

Evaluation Criteria (Key Performance Indicators):

We support and evaluate projects based on the ability to deliver measurable progress in the form of key performance indicators (KPIs).

1. The degree to which sustainable energy scenarios are credible, in circulation, and are used by China's senior policy decision-makers.
2. The degree to which sustainable energy analytic tools and techniques are adopted by Chinese non-governmental and quasi-governmental energy policy organizations, such that those techniques become utilized broadly.
3. The degree to which carbon emissions are reduced as a result of policy adoption and implementation.

Goal #2: Encourage China's development of economic signals that promote energy efficiency and renewable energy goals.

Means:

1. Assist China's efforts to quantify and publicize the social, environmental, and public health costs of fossil fuel combustion.
2. Assist with the development of tax, fiscal, and/or economic policies that promote speedy adoption of "all-in costs" energy pricing.

Evaluation Criteria (Key Performance Indicators):

We support and evaluate projects based on the ability to deliver measurable progress in the form of key performance indicators (KPIs).

1. The extent to which China's policy decision-makers adopt policies that internalize the social costs of fossil combustion.
2. The degree to which central government and provincial agencies adopt shadow externalities charges that increase incentives for energy efficiency and renewable energy technologies.

3. The degree to which analytic tools for assessing the all-in costs of fossil combustion and the comparative benefits of energy efficiency and renewable energy are adopted by central and provincial government decision-makers.

Goal #3: Encourage China's State Council (cabinet) to issue energy efficiency and renewable energy policy directives to central, provincial, and local governmental entities in order to expedite policy development and implementation in all program areas.

Means:
By monitoring State Council dockets, respond to energy-related issues under consideration by the State Council, and encourage energy efficiency and renewable energy policy recommendations to become part of the State Council discussion.

Evaluation Criteria (Key Performance Indicators):
We support and evaluate projects based on the ability to deliver measurable progress in the form of key performance indicators (KPIs).

1. The extent to which the State Council acknowledges the importance of energy efficiency and renewable energy as solutions to pressing social and environmental problems.
2. The extent to which State Council directives regarding energy efficiency, renewable energy, and related environmental performance influence China's central, provincial, and local governments to expedite energy efficiency and renewable energy policy adoption and implementation, leading to measurable reductions in carbon dioxide emissions.

China Sustainable Energy Program
PROJECT UPDATES
June 2005

Low-Carbon Development Paths

Strategy Goal #1: Encourage China's development of "sustainable energy futures" scenarios and the policies necessary to achieve them.

National Fiscal and Tax Policy Research for Clean Energy Development

Grantees launched a "National Tax and Fiscal Policy for Clean Energy Development Project" in January 2005. Under the guidance of our Senior Policy Advisory Council, this project is led by the Development Research Center of the State Council (DRC) with assistance from the Energy Research Institute (ERI) of the National Development and Reform Commission (NDRC) and the Research Institute of Fiscal Science (RIFS) of the Ministry of Finance (MOF). The main report, comprised of six cross-sector projects, is focused on: (1) energy administration institutional reform and capacity building for policy implementation, (2) increasing government budgets to create and strengthen policy enforcement and compliance, (3) tax and environmental levies to internalize the social costs of fossil fuels, (4) incentive policies to encourage both public and private investment in energy efficiency and renewable energy, (5) price reforms that encourage energy efficiency and renewable energy, and (6) modeling tools for evaluating the public implications of selecting tax and fiscal policy options. Grantees are also carrying out sector policy analysis in the buildings, industry, transportation, electricity, and renewable energy sectors. International energy experts are providing international experience and peer review. Initial results will be presented at the 2005 Senior Policy Advisory Council meeting and feedback will be incorporated into the final policy recommendations. DRC will submit the final recommendations to the State Council, NDRC, and MOF.

Recommendation: During the transition to a market economy in the 1990s, China abandoned critical fiscal policies that had helped keep energy use in check. Faced with a goal to quadruple its GDP by 2020, new tax and fiscal policies should be adopted to encourage energy efficiency and renewable energy.

Low-Carbon Scenarios Project

Robust energy planning requires scenarios analysis as a basis for policy decision-making; decision-makers need these analytic tools in order to anticipate the future impacts of today's policy decisions. CSEP has supported energy scenarios analysis since the program's inception, including work led by the Beijing Energy Efficiency Center (BECon), along with the Lawrence Berkeley National Laboratory (LBNL), Energy Research Institute (ERI), the Sustainable Development Center of the Chinese Academy of Social Sciences (CASS), the China Energy Research Society (CERS), and Tsinghua University. The team collaborated to create integrated "top-down" and "bottom-up" scenarios models for the *Scenarios Analysis 2030* project.

Incorporating international best practice into scenario modeling and analysis, the team analyzed high energy consumption patterns in 2004 and published their findings in the *2004 Annual Energy Development Report*, which includes energy forecasts for 2005 and 2006. Initial findings and policy recommendations have been submitted to NDRC and the State Council and have been widely cited by major Chinese newspapers. This project will address China's social development goals and policies to expedite energy efficiency and renewable energy development, which will culminate in a new *National Energy Plan 2005-2030*.

Recommendations:

- Incorporate much more aggressive energy efficiency and renewable energy development targets into China's energy planning. Scenario analysis demonstrates that the potential for these technologies is more cost-effective than previously thought.
- Develop an immediate Action Plan for implementing energy efficiency policies. The scenarios demonstrate that China's greatest and most accessible energy resource is energy waste. It is substantially cheaper—indeed profitable—to develop this waste than to build new supply. Require provincial and local governments to implement the National Energy Efficiency Action Plan.

Local Carbon Scenarios Analysis and Carbon Reduction Targets in Beijing and Shanghai

With Beijing hosting the 2008 Olympics and Shanghai the 2010 World EXPO, the international community has raised concerns about the air quality of these cities. Led by the Beijing Sustainable Development Center (BSDC) and the Shanghai Academy of Environmental Sciences, local teams are developing carbon scenarios analysis in Beijing and Shanghai. The goal is to help local administrators (1) to create carbon reduction targets and (2) to implement energy efficiency and renewable energy solutions that mitigate carbon emissions, clear the air, and improve public health.

Recently, the State Council has called for a transition to a resource-efficient society and issued China's first *Medium-and Long-term Plan for Energy Conservation*, which sets a target of five percent annual improvement in energy intensity (energy consumption per unit GDP). To reach this target, local governments must develop local action plans to implement low-carbon energy technology investment. Based on the project team's analysis, Beijing and Shanghai are urged to develop both mandatory requirements and market-based incentives for promoting public and private investment in energy efficiency and renewable energy. Beijing and Shanghai are considering such plans, which could serve as models for national replication.

Recommendations:

- Senior central government officials should support the implementation of local carbon emissions reduction targets in order to improve air quality and stimulate investment in clean production and energy efficient technologies.
- Senior officials should require all provinces and cities nationwide to develop *and implement* low-carbon energy technology development plans (emphasizing demand-side energy efficiency and renewable energy investment), building on the experience of Beijing and Shanghai.
- Beijing and Shanghai governments should implement regulations and incentives to catalyze investment in energy efficient technologies in order to serve as national and international models.

Strategy Goal #2: Encourage China's development of economic signals that promote energy efficiency and renewable energy investment.

Environmental and Public Health Impacts Study

Internalizing public health and environmental costs into the prices of fossil fuels is the most economically efficient approach to sustainable development in policy and decision-making. Development is not sustainable without sustainable energy; sustainable energy development must maximize energy efficiency and renewable energy if to minimize environmental and social costs.

To better quantify the public health costs of fossil fuels, grantees are analyzing environmental degradation and human exposure to key air pollutants, and estimating public health costs and environmental losses. This can serve as the basis for energy price reform. The research team, including the Chinese Research Academy of Environmental Sciences (CRAES), ERI, and Beijing University, is developing a comprehensive model of fossil fuel use and air pollution emissions in sectors, regions, and main enterprises, and estimating their contributions to environmental losses and public health costs. The final report will be submitted to the State Council, NDRC, MOF, the Ministry of Public Health (MOH), and the State Environmental Protection Administration (SEPA).

Recommendations: The State Council, NDRC, MOF, MOH, and SEPA should develop (1) stringent emissions standards and regulations, and (2) financial and incentive policies that internalize the social costs of fossil fuels, thereby removing the false subsidy currently accorded to dirty fossil fuels and pricing these fuels properly. This will make energy efficiency and renewable energy technologies comparatively cost-effective in the marketplace, and will catalyze China's environmentally sustainable development.

Goal #3: Encourage China's State Council (cabinet) to issue energy efficiency and renewable energy policy directives to central, provincial, and local governmental entities in order to expedite policy development and implementation in all program areas.

Key Energy Policy Recommendations

The State Council Development Research Center (DRC) and the State Council Research Office (SCRO) are working together to gather energy efficiency and renewable energy policy recommendations from grantees and submit them to the top national leaders and relevant government agencies. Policy recommendations submitted to date include: (1) motor vehicle fuel efficiency standards, improved fuel quality (low-sulfur fuels), and bus rapid transit systems; (2) building energy efficiency codes and local implementation administration; (3) industrial sector targets and mandatory government incentives for industrial energy efficiency; (4) a new national energy plan emphasizing the internalization of externalities, energy efficiency, and renewable energy; (5) regional and provincial utility regulatory agencies that institutionalize demand-side energy efficiency and renewable energy; and (6) public benefits funds and mandatory market share to get volume renewable energy production underway. DRC and SCRO are communicating with government officials, grantees, and other stakeholders to further develop

these policy recommendations. Additional policy recommendations will be submitted on a continual basis.

Energy Policy Research Journal

The China Energy Research Society (CERS) publishes a leading magazine, *Energy Policy Research*, which is distributed to senior energy decisionmakers, and is a conduit for delivering the recommendations of all grantees to high-level officials. Recently, energy efficiency and renewable energy policies recommended by several grantees, including motor vehicle fuel efficiency standards, bus rapid transit, building energy efficiency, carbon reduction scenarios analysis, Shanghai's energy plan, and urban sustainable energy development, were published in the Journal. In 2005, CERS will continue its efforts to increase grantee access to decision-makers through high-profile meetings, expanded outreach, and stronger public education.

Media Outreach

Global Village of Beijing (GVB), a non-governmental organization that coordinates workshops for and outreach to major media outlets, took great efforts to increase public awareness and encourage adoption of policies for sustainable energy development. To date, GVB held a series of media-education workshops with over 60 journalists attending each event, including government-affiliated organizations such as the *People's Daily*, *Guangming Daily*, and *Xinhua News Agency*, which have strong access to senior officials. Due in significant part to increased media exposure, the *Renewable Energy Law* was endorsed on February 28, 2005, significantly earlier than expected.

Recommendation: Encourage the media to inform the public of the need to invest in energy efficiency and renewable energy technologies in order to bring about environmentally sustainable development.