

## THE CHINA–GEF PARTNERSHIP TO INCREASE USE OF RENEWABLE ENERGY

Around the world, the transition to renewable energy systems has begun. From private investors to governments to multilateral assistance agencies, renewable energy is receiving increasing investment shares and attention. China's experience provides a good example.

Chinese leaders recognized early on that accelerating the transition to efficient and renewable energy would bring enormous economic, social, and environmental benefits. They realized that the transition was inevitable, not because fossil fuel supplies would run out, but because the relative costs and risks of using them would continue to increase. In contrast, wind, sun, and water are free. Free, that is, except for the ways and means of efficiently converting them to energy.

The potential for renewable energy in developing countries is challenged by several factors, not the least of which are the up-front costs of installing equipment and the limited resources of the people who need it. Certainly, this is the case in China. Chinese leaders, well aware of the complexity of a transition to renewable energy, turned to the Global Environment Facility (GEF) for assistance.

Through the GEF, China is developing new energy programs and approaches that go beyond one-time, stand-alone projects. They seek to have a broader, more significant impact—nothing less than structural change at the national level. From the beginning, these strategies build in project components for large-scale and long-term replication, monitoring and evaluation, and stakeholder involvement in partnerships with the



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national government, the private sector, and other actors.

A leading example is China's Renewable Energy Scale-Up program. With \$41.6 million in grants from the GEF, outside loans and grants totaling \$129 million, and significant national investment, China is working to remove barriers to the introduction of cost-effective renewables; reduce the cost and improve the performance of small hydro, wind, and selected biomass technologies; and increase the market penetration of renewables enough to make a sizable cut—187 metric tons of carbon—in greenhouse gas emissions.

China's 10-year program sets ambitious targets for investment and government commitment to a supportive policy environment. Among other things, it envisions the implementation of a national policy framework to develop large-scale commercial markets in renewable energy. This framework requires that a share of electricity supply be met from renewable resources as part of a mandated market.

Chinese leaders expect the costs of renewable energy to decline and the economic and environmental benefits (both local and global) to accelerate. The program also supports improvements in the quality and performance of equipment and strengthens the capability of service industries to respond to increased market demand.

China's renewable energy portfolio includes a number of other GEF projects. For example, a \$5.8 million GEF grant is supporting the first phase of a project to reduce the cost of fuel cell buses in Beijing and Shanghai. Buses are a major source of greenhouse gas emissions as well as localized air pollution in China. Fuel cell-powered vehicles offer the potential for pollution-free transportation. In collaboration with both the national and local governments, GEF is helping public transit companies obtain fuel cell buses for the two cities and operate them over a total distance of 1.6 million kilometers. The initiative includes significant private sector involvement and is designed to sustain the effort beyond the duration of the GEF project. Chinese officials and project designers anticipate that lessons learned from the project can be used to develop similar initiatives in other cities and countries.

Another GEF project is helping rural health clinics switch from coal-fired electricity to solar and photovoltaic (PV) systems, at a 30 percent lower cost. As the health delivery expenses are

reduced, the clinics become more self-sufficient and can re-channel income toward improving health services. The target is to rehabilitate from 2,000 to 4,000 clinics per year in 10 provinces throughout the country. The passive solar health clinics are designed by local villagers, who also volunteer their labor for construction and maintenance.

The GEF is also sponsoring projects to help strengthen China's capacity to work with renewable energy, to undertake solar and wind energy assessments, and to expand methane recovery and use.

### **INCREASED USE OF RENEWABLE ENERGY IN CHINA**

- About 50 million households are served by small hydro village-scale mini-grids.
- About 10 million households are served by solar hot water heaters.
- China's latest five-year plan calls for a five-fold increase in wind power, to 1,500 megawatts, by 2005. The plan also proposes requiring that 5 percent of all new power generation come from renewables, which could mean an additional 20,000 megawatts of power by 2010.

### **FOR MORE INFORMATION**

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