DEVELOPMENT COORDINATION

A. Major Development Partners: Strategic Foci and Key Activities

1. Since 1987, the Asian Development Bank (ADB) has provided lending support of more than $4.4 billion to the People's Republic of China (PRC) to finance 39 projects in the energy sector. Of the total loan amount, 57% was for energy conservation, energy efficiency, environment improvement, and emission reduction projects; 22% was for renewable energy projects (e.g., hydropower, pumped storage, and coal-mine methane power plants); 13% for thermal power generation; and 8% for electricity transmission and distribution. Over the years, ADB's operations in the PRC energy sector have evolved from capacity addition in traditional power generation and transmission projects to advanced technology, pioneering clean energy projects, with substantial demonstration effects. Since 2006, all of ADB's energy sector operations aimed to achieve emission reductions and improve energy efficiency. Sector projects included a 250 megawatt (MW) coal-fired integrated gasification combined cycle power plant project in Tianjin, which is the first of its kind in a developing country; multi-component urban environment improvement projects in Liaoning, Inner Mongolia Autonomous Region, Shanxi, and Heilongjiang; flexible financing through a multitranche financing facility for hydropower plants in Gansu; and energy efficiency projects in Guangdong, Hebei, and Shandong. ADB's sector priorities will continue to be governed by the principles of energy efficiency, renewable and cleaner energy development, and climate change mitigation.

2. ADB has supported 116 technical assistance (TA) projects in the PRC energy sector, valued at about $62 million, to help prepare larger projects, provide policy advice, and build institutional capacity in provinces and utilities that implement ADB-financed projects. Such TA included clean production, energy conservation, energy efficiency, and environmental management. Recently approved TA projects support innovative demonstration projects, as ADB seeks to play a leadership role in introducing cutting-edge technologies to contribute to high-impact climate change mitigation, particularly in concentrated solar thermal power (CSP), small hydropower, applications of smart grid technology and clean coal technology such as the integrated gasification combined cycle with carbon capture and storage, and the development of a carbon trading system. For CSP technology deployment in the PRC, ADB has provided a TA to (i) develop a road map for CSP plant development in Gansu and Qinghai provinces, (ii) prepare a pre-feasibility study for a CSP project in Gansu province, and (iii) implement a pilot CSP project in Beijing.[1]

3. The World Bank is another important multilateral financier of energy projects in the PRC. Since the early 1990s, it has provided more than $6.2 billion, mainly for large thermal and hydropower generation, and power transmission and distribution projects, but also for energy efficiency and renewable energy projects. Among the bilateral agencies, Japan International Cooperation Agency is the largest source of external assistance to the power sector in the PRC. It has provided concessional loans totaling $0.67 billion for power sector projects through its official development assistance window. It has also provided special credits to major cities to improve their environment by installing emission control devices and equipment in power plants and factories, as well as by building water treatment facilities. German development cooperation through KfW had provided about $400 million in mixed credits, mostly for power plants and turbine modernization projects. It supported the government in energy efficiency and renewable energy development. Other bilateral sources of export credits or mixed credits in the PRC

[1] ADB. 2009. *Technical Assistance to the People's Republic of China for Concentrating Solar Thermal Power Development*. Manila (TA 7402-PRC).

energy sector include Australia, Canada, Denmark, France, Italy, Spain, the United Kingdom, and the United States.

4. The European Investment Bank is in its first phase of providing a China Climate Change Framework Loan (CCCFL) under the PRC–European Union (EU) Partnership on Climate Change, launched during the PRC–EU summit in 2005, encompassing the PRC–EU Action Plan on Energy Efficiency and Renewable Energies and the PRC–EU Action Plan on Clean Coal. The first phase of the CCCFL includes up to 14 projects for a total loan amount of €220 million. For the second phase, over €500 million is being considered. The projects financed under the first phase of the CCCFL include renewable energy, energy efficiency, and forestation.

5. For CSP development in the PRC, the Clinton Foundation has supplied policy advisory support for CSP technology deployment under a large-scale solar program. The European Solar Thermal Electricity Association is also active in encouraging CSP domestic market and associated supply chain development through knowledge dissemination and policy analysis.

6. The table shows the major development partners developing utility-scale CSP in the PRC.

Major Development Partners in Concentrated Solar Thermal Power Development in the People's Republic of China

Development Partner	Project Name	Duration	Amount ($ million)
ADB	Gansu-Jinta Concentrated Solar Power Project [a]	2013–2017	100.00
World Bank	China Concentrated Solar Power Project in Ordos, Inner Mongolia Autonomous Region[b]	2013–2017	80.00

ADB = Asian Development Bank.

[a] 2013 standby and 2014 firm; 50 MW install capacity with 1 hour thermal storage. The estimated total project cost is $143.00 million.

[b] Board approval is expected in 2013; 50 MW install capacity with 4 hours thermal storage. The estimated total project cost is $156 million.

B. Institutional Arrangements and Processes for Development Coordination

7. Close cooperation between development partners has been pursued through regular meetings. ADB has established working relationships with the World Bank and other multilateral and bilateral agencies for discussing policy issues and coordinating lending and TA operations. Both ADB and the World Bank emphasize the importance of improving energy efficiency, promoting clean energy, protecting the environment, and a greater role for the private sector in clean energy financing. As ADB and the World Bank are the sole development partners providing funding to utility-scale demonstration CSP projects, more project-specific collaboration and coordination are required to ensure the assistance is used effectively and efficiently.

C. Achievements and Issues

8. ADB's experience with energy projects in the PRC has been positive overall. Projects are generally well designed and smoothly implemented, although difficulties have emerged in some projects. Success is attributed to extensive preparation of ADB interventions, a high degree of local ownership, effective leadership in project management offices, and timely policy

and enterprise reforms. ADB has worked closely with the government in harmonizing approval procedures to minimize project start-up and implementation delays.

9. In 2012, the government requested (i) $150 million of ADB loan assistance for a 50 MW CSP demonstration project (parabolic trough with 7 hours storage and dry-cooling system) in Delingha, Qinghai Province; and (ii) $80 million of the World Bank loan assistance for a 50 MW CSP demonstration project (parabolic trough with 4 hours storage and dry-cooling system). In addition, $100 million of ADB loan assistance was requested in 2013 for a 50 MW CSP project (parabolic trough with 1 hour storage and wet-cooling system) in Jinta, Gansu Province.

D. Recommendations

10. As ADB and World Bank assistance to three demonstration CSP projects with different system configuration design and climatic conditions will provide valuable lessons for standardizing technical specification, developing plant operation code, and improving the tariff regime for CSP technology scale-up, project-specific collaboration and coordination with the World Bank will be necessary for sharing project-specific knowledge and lessons learned.