

TERMS OF REFERENCE FOR CONSULTANTS

A. International Consultant

1. The International Consultant's position requires in-depth country knowledge, experience and familiarity with the energy sector in the PRC, backed by a substantive knowledge of issues, policies, programs and sector reforms in the PRC energy sector. Knowledge of evaluation approaches and methods is a key requirement, as well as an excellent grasp of social and environmental aspects as well as other cross-cutting themes.

2. The International Consultant will oversee the work of the domestic consultant, review the deliverables from the domestic consultant and use his experience and insights to enhance the quality of the deliverables. The deliverables, which will be write-ups on specific aspects, will include, but not be restricted to the following:

- (i) A broad analysis of economic performance, rise in energy users, energy consumption mix and energy intensity of Shanxi province and the three cities (of Taiyuan, Datong and Yangquan).
- (ii) An assessment of the Executing Agency and the three PIAs
- (iii) A thorough update of the various assumptions and inputs for the financial and economic analyses of the three subprojects presented in the PCR. This will include (among other aspects) an update on the tariffs for coal gas, methane gas and district heating service to various customer categories, the respective operating and maintenance costs, as well as other technical and operational parameters of the subprojects.
- (iv) The current status of the present working of the SO₂ emission trading system, including insights in to the next steps required to increase participation from enterprises that have trading permits in Taiyuan city, as well as to encourage other cities to adopt SO₂ emissions trading system
- (v) An assessment of the policy level constraints and other factors that affect private sector involvement in SO₂ emissions trading, and investments required to reduce emissions
- (vi) An assessment of the current state of knowledge and awareness of GHG related aspects within the SPG, the EA and the PIAs; as well as the system in place to assess the GHG implications of the three subprojects; as well as the steps taken by SPG and other organizations in implementing the national climate change program, and further support required from the PRC Government or elsewhere toward implementing the national climate change program.
- (vii) An assessment of the social impact of the Shanxi Environment Improvement Project and its various subprojects from the viewpoint of assessing its long term sustainability
- (viii) An assessment of the current status of the implementation of the recommendations of ADB's Technical Assistance on the pro-poor urban heating tariff reforms; and an assessment of the policy level constraints and other factors that impede the implementation of such reforms.
- (ix) An assessment of the environmental emissions reductions and monitoring related aspects in the three cities of Taiyuan, Datong and Yangquan
- (x) An assessment of the Project design aspects, with a view to providing the rationale for any design deficiencies that are identified
- (xi) Identifying key lessons that are learnt from the Project
- (xii) An assessment of the evaluation ratings given in the PCR, and rationales for either retaining or changing the ratings.

B. Domestic Consultant

3. The Domestic Consultant will work with the Mission leader and the International Consultant in undertaking the PPER. This Domestic Consultant will have substantial knowledge of the issues, policies, programs, and reforms in the energy sector. Working knowledge of evaluation approaches and methods is needed, together with an understanding of crosscutting themes, including environment and social aspects. The detailed tasks are given below:

- (i) Support the international consultant and the team leader by collecting and undertaking analysis of relevant data and information gathered through meetings/interviews with key project participants and review of necessary documents.
- (ii) Should it be necessary, arranging for and holding follow-up meetings (after the evaluation mission) with the executing agency, project implementation agencies and various other offices in Beijing and Shanxi province.
- (iii) Draft appropriate write-ups on a variety of topics for reviewed by the International Consultant and the Mission Leader.
- (iv) Assist the international consultant and the team leader, while in the field, with liaison with government departments, agencies, and other stakeholders. Assist team leader with mission logistics, as necessary, including arranging vehicles for hire and local hotel arrangements. To also assist the Team Leader with any other mission-related tasks during the evaluation mission.
- (v) Compile relevant background data/information regarding (among other) the following: (i) present day Government policy thrust regarding coal use reduction in cities, particularly by coke-oven gas, methane capture and improved district heating systems; (ii) assessing the replication potential of the various subprojects; (iii) institutional, policy and regulatory, pricing, technology or other barriers to accelerate investment in such projects; (iv) ways to demonstrate the additionality of the Project in terms of removal of some/many/all barriers; (v) basic statistics on the economic performance of the Shanxi province, growth in number of residential, commercial and industrial customers; (vi) energy consumption in Shanxi province as well as in the three cities; and (vii) various indicators of energy intensity of the Shanxi province.
- (vi) Assess the performance of the EA and the three PIAs from the perspective of ascertaining their long term sustainability in terms of autonomy from the provincial/municipal governments, benefits from capacity building undertaken thus far etc.
- (vii) Review available technical data and coefficients as inputs to the reevaluation of financial and economic analyses. Collect updated information on the operational and financial performance of the project implementation agencies, as well as on tariffs, operations and maintenance costs etc.
- (viii) Conduct basic fact-finding regarding the working of the SO₂ emissions trading system, as well as on how to make it more wide-spread in Taiyuan, and expand to other cities of Shanxi province.
- (ix) Assess the policy level constraints and other factors that affect private sector involvement in emissions trading or other initiatives that improve urban air quality.
- (x) Conduct basic fact-finding regarding the current state of knowledge and awareness of GHG related aspects, the system in place to monitor the GHG implications of the three subprojects, the steps taken by SPG and other organizations in implementing the national climate change plan, further support

- required from the PRC Government agencies or from elsewhere to implement the national climate change plan etc.
- (xi) Conduct basic fact-finding regarding the current status of the implementation of the recommendations of the ADB TA on pro-poor urban heating tariff reforms; and an assessment of the policy level constraints and other factors that impede such reforms.
 - (xii) Collect the necessary data and other information necessary for a thorough assessment of the social impact of the Project and its subprojects from the viewpoint of assessing its long term sustainability. Among the issues that should be addressed include: (i) implications of increase in gas and heating tariff on the poor; (ii) employment generation/loss of jobs; and (iii) resettlement issues.
 - (xiii) Collect the necessary data and other information necessary for a thorough assessment of the long term environmental impact of the Project and its subprojects. In particular, this will cover the following environmental emissions and monitoring related issues: (i) the decrease in SO₂, NO₂ and TSP emissions that can be attributed to the Project in the three cities each year since Project completion; (ii) coal use reduction that can be attributed to the Project in the three cities each year since Project completion; (iii) ambient air quality levels in the three cities vis-à-vis Class I/II/III levels (perhaps against the backdrop of energy consumption growth and number of energy users in the three cities) and ; (iv) increase of the air quality monitoring systems in the three cities since Project completion.
 - (xiv) Providing inputs to the Mission Leader and International Consultant on design aspects of the Project (how it could have been better), key lessons learnt from the Project, and thoughts on evaluation ratings of the Project for the various evaluation criteria (and their respective rationales).