



# Report and Recommendation of the President to the Board of Directors

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Project Number: 43903  
November 2010

## Proposed Loan and Partial Risk Guarantee Uch-II Power Project (Pakistan)

In accordance with ADB's public communication policy (PCP, 2005) this abbreviated version of the RRP excludes confidential information and ADB's assessment of project and transaction risk as well as other information referred to in paragraph 126 of the PCP.

Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 30 September 2010)

Currency Unit	–	Pakistan rupee/s (PRe/PRs)
PRe1.00	=	\$0.012
\$1.00	=	PRs86.275
€1.00	=	\$1.363
\$1.00	=	€0.734
£1.00	=	\$1.578
\$1.00	=	£0.634

## ABBREVIATIONS

ADB	–	Asian Development Bank
CO <sub>2</sub>	–	carbon dioxide
CPS	–	country partnership strategy
CSR	–	corporate social responsibility
EIA	–	economic internal rate of return
FY	–	fiscal year
GSA	–	gas supply agreement
HUBCO	–	Hub Power Company
IPP	–	independent power producer
KAPCO	–	Kot Addu Power Company
KESC	–	Karachi Electric Supply Company
NEPRA	–	National Electric Power Regulatory Authority
NEQS	–	Pakistan National Environmental Quality Standards
NTDC	–	National Transmission & Despatch Company
OGDC	–	Oil and Gas Development Company
O&M	–	operation and maintenance
PEPCO	–	Pakistan Electric Power Company
PM <sub>10</sub>	–	particulate matter of 10 micrometers size or less
PPA	–	power purchase agreement
PIIB	–	Private Power and Infrastructure Board
PRG	–	partial risk guarantee
WAPDA	–	Water and Power Development Authority

## WEIGHTS AND MEASURES

BTU	–	British thermal unit
GW (gigawatt)	–	1 billion watts
GWh (gigawatt-hour)	–	1 billion watts times hours
ha (hectare)	–	10,000 square meters
km (kilometer)	–	1,000 meters
kV (kilovolt)	–	1,000 volts
kWh (kilowatt-hour)	–	1,000 watts times hours
mg (milligram)	–	0.001 grams
MW (megawatt)	–	1 million watts
m <sup>3</sup>	–	cubic meter
Nm <sup>3</sup> (normal cubic meter)	–	1 cubic meter at standard temperature and pressure
t (ton)	–	1,000 kilograms
µg (microgram)	–	1/1,000,000 grams

## GLOSSARY

low-BTU gas	–	Gas with a low calorific value and less heat content
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## NOTES

- (i) The fiscal year (FY) of Pakistan ends on 30 June. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2010 ends on 30 June 2010.
- (ii) In this report, "\$" refers to US dollars.

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## PROJECT SUMMARY

<b>Borrower</b>	Uch-II Power (Private) Limited (Uch-II Power)
<b>Classification</b>	Targeting classification: General intervention Sector (subsector): Energy (conventional energy) Themes (subthemes): <b>Economic growth</b> (promoting macroeconomic stability, promoting economic efficiency and enabling business environment); Private sector development (private sector investment). Location impact: National (high), local (low), urban (low) Partnership: Commercial banks are expected as beneficiaries of the Asian Development Bank's partial risk guarantee.
<b>Environmental and Social Safeguards Classification</b>	Environment: A Involuntary Resettlement: C Indigenous Peoples: C
<b>Project Description</b>	The project involves design, engineering, construction, and operation of a 404 megawatt (MW) gross combined cycle gas-fired power plant, to be located near Dera Murad Jamali, Nasirabad District, Balochistan Province.
<b>Impact, Outcome, and Beneficiaries</b>	The project will encourage private sector participation to alleviate a severe power shortage (estimated at over 4,200 MW peak deficit) that is adversely impacting the country's economic growth and poverty reduction efforts. In addition to providing additional power generation capacity and reliable and affordable electricity, the project will stimulate the economy by purchasing local goods and services and creating jobs for qualified locals in the project area and in the country.
<b>Borrower/ Sponsor</b>	The sponsor is International Power from the United Kingdom. International Power is a leading independent power generation company with interests in 32,358 MW (gross) of power generating capacity, across five core regions—North America, Europe, Middle East, Australia, and Asia. The sponsor is experienced in all phases of the power generation chain, including development, construction, operation, trading, and marketing. International Power is the single largest private investor in Pakistan's power generation industry, with a net ownership of 1,200 MW (three projects) under operation.
<b>Proposed ADB Assistance</b>	ADB will provide a loan of up to \$100 million from the ordinary capital resources and a partial risk guarantee (PRG) to cover up to \$50 million in loans from commercial lenders to Uch-II Power.

## **Implementation Arrangements**

The engineering, procurement, and construction works will be performed by a consortium of experienced contractors. Operation and maintenance will be managed by Uch Power (Private) Limited (Uch Power), with support from International Power, and key maintenance work will be outsourced by the long-term service agreement. After completion, the project will be operated under a power purchase agreement with National Transmission & Despatch Company (NTDC) and a gas supply agreement with Oil and Gas Development Company (OGDC). The Government of Pakistan will assume various key obligations to support the project under the implementation agreement.

## **Justification / ADB Value-Added**

The project merits ADB support because (i) the project will add significant power generation capacity and help reduce load shedding in Pakistan; (ii) the project will promote efficient use of an unused economical indigenous energy resource; (iii) the project will support socioeconomic advancement in a remote and economically deprived area of Balochistan; (iv) ADB's active participation and presence in the project will provide a degree of comfort to the sponsor and other lenders given ADB's strong track record and ongoing public and private sector operations in Pakistan's power industry; (v) the proposed PRG (coupled with the presence of the ADB loan) will catalyze cofinancing from commercial lenders; and (vi) the proposed assistance to the project is aligned with the government's development plan and ADB's operational strategies including Strategy 2020, the country partnership strategy for Pakistan, and the Energy Policy.

## **I. THE PROPOSAL**

1. I submit for your approval the following report and recommendation on a proposed loan and partial risk guarantee to Uch-II Power (Private) Limited (Uch-II Power) for the Uch-II Power Project. The design and monitoring framework is in Appendix 1 and the summary poverty reduction and social strategy is in Appendix 2.

## **II. BACKGROUND AND RATIONALE**

### **A. Project Identification and Selection**

2. The Asian Development Bank (ADB) has been working closely with the Pakistan Power and Infrastructure Board (PPIB) to identify independent power producers (IPPs) that would best match ADB's goal of supporting the development of both the power industry and the private sector in Pakistan. This close collaboration between ADB and the PPIB led to the identification of the proposed project. The project was one of the three power projects that the PPIB bid out in March 2007. The projects were bid out through international competitive bidding to ensure tariff competitiveness and transparency. A consortium of International Power from the United Kingdom and Creative Energy Resources from the United Arab Emirates, which are also the main shareholders of Uch Power (Private) Limited (Uch Power), the company that is operating the Uch Power (Uch-I) Project, submitted a proposal for development of a 404 megawatt (MW) combined-cycle power plant to be located at the Uch-I project site. Like the Uch-I project, the Uch-II plant will use low British thermal unit (BTU) gas from the Uch gas reservoir as the primary fuel. After a detailed evaluation, the PPIB gave approval in August 2008 for the consortium to develop the project further.

### **B. Sector Performance**

#### **1. Demand and Supply Gap of Electricity**

3. Addition of power generation capacity in Pakistan is a matter of utmost urgency. Pakistan's power industry faces a major supply deficit that is constraining the country's already fragile economic growth. As compared with 18,926 MW peak demand in mid-2010, the country had only 14,723 MW firm supplies, resulting in a shortfall of 4,203 MW (or 22.2% of the country's peak electricity demand).<sup>1</sup> As of June 2010, the country's installed power generation capacity was 20,375 MW, of which approximately 55% was owned and operated by government entities and 45% by independent power producers and/or majority private operators. Appendix 3 provides more details on Pakistan's power sector.

4. Although electricity sales and demand have risen by more than 40% during the last 5 years, investment in new generation capacity has lagged behind. The resultant power shortage has led to ever increasing incidents of brownouts and blackouts in all major urban centers. Measures to ration consumption are already being taken. Even with the economic slowdown and dislocations caused by the flooding in 2010, power demand is expected to continue to increase, and latent demand is considered substantial. Left unattended, the country's power deficit will continue to worsen and adversely impact Pakistan's economy.

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<sup>1</sup> Private Power and Infrastructure Board. <http://www.ppib.gov.pk/SupplyDemand.html>

## 2. Primary Energy and Fuel Mix

5. Pakistan urgently needs to develop indigenous energy resources. The power industry in Pakistan is a mix of thermal, hydro, and nuclear power plants. Thermal power plants, which use imported fuel oil to meet almost 52% of their fuel needs (the balance is based on gas), account for 67.6% of installed capacity; hydro plants account for 30.3%, and nuclear plants provide the remaining 2%. Coal-fired thermal plants account for only 0.1%. Originally, the ratio of hydro to thermal installed generation capacity in the country was about 2:1 (in 1985). Over time, more thermal generation capacity was installed, leaving the country heavily dependent on imported oil for its primary fuel requirements. Rising oil imports have caused the country's current account deficit to increase. They have also caused considerable price escalation and volatility. High electricity tariffs are eroding the viability and affordability of the sector.

## 3. Financial Position

6. The "circular debt problem" impedes the progress of power generation expansion and sours the mood of existing and potential investors in Pakistan's power industry. Circular debt starts with accumulation of payables by the Government of Pakistan to distribution companies, which are passed on to the generators and then to fuel suppliers. This circular debt causes delays in fuel supply to power generators, affecting generation capacity. Distribution companies are not able to charge the full cost-recovery tariff determined by National Electric Power Regulatory Authority (NEPRA). The government has insulated low-income power consumers by providing subsidies to distribution companies, but there have been delays in government payments. This has resulted in revenue shortfalls for distribution companies and temporary deferment of payments to nearly all power plants in the system. Power generation companies have seen their receivables rise, and generation companies have been forced to stop, delay, or reduce payments to their fuel suppliers to balance their cash flows. This has negatively impacted generation capacity. This issue is not new and has been partially mitigated in the past. However, it is once again becoming a growing problem that must be resolved if the potential of the private sector to address Pakistan's power deficit is to be unleashed. Measures are underway, but challenges remain.

## 4. Response by the Government of Pakistan

7. To address the energy shortage and growing power crisis, the government has decided to implement several energy expansion initiatives, with an emphasis on developing indigenous resources. These initiatives include expanding thermal and hydropower generation capacity by independent power producers (IPPs) under the government's Power Policy 2002, procuring power from rental power plants under short-term agreements, securing electricity and gas imports from regional projects, and tapping into the huge potential of renewable energy sources. The government is also exploring the possibility of using its domestic coal reserves, which are among the largest in the world (albeit low quality and remotely located). However, the time horizon for domestic coal-fired power generation is relatively long term. In the short to medium term, it is expected that both conventional (i.e., thermal) and renewable energy—predominantly hydro and wind—will be the mainstays of Pakistan's electricity supply. Simultaneously, improving transmission and distribution efficiency is a key area of focus, and ADB has been assisting the government's program through its public sector operations.<sup>2</sup>

<sup>2</sup> ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranchise Financing Facility to the Islamic Republic of Pakistan for Power Transmission Enhancement Investment Program*. Manila; ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranchise Financing Facility to the Islamic Republic of Pakistan for Power Distribution Enhancement Investment*. Manila;



8. The government has started efforts to resolve the circular debt problem by increasing consumer tariffs and by transferring the debt in the system to a newly established company outside of the energy sector. ADB continues to support the government's sector reform program under the Accelerating Economic Transformation Program.<sup>3</sup>

9. The reform and restructuring of the sector has been supported by major development partners such as ADB and the World Bank, but progress has been slow and protracted and many areas have lagged behind expectations.<sup>4</sup> The appointment of independent boards of directors, critical for autonomy and commercial discipline, needs to be pushed and political interference needs to be reduced. Another important measure required to move toward full commercialization of the power industry is to make the Central Power Purchasing Authority effective as an autonomous body to ensure financial transparency and accountability. Insufficient reform of end-consumer tariffs, delinquent customer accounts, and other institutional factors are major hurdles to reforming and improving the poor financial health of the sector.

## 5. Private Sector Investment in Pakistan

10. Pakistan has undertaken wide ranging reforms in the energy sector with the help of ADB and the World Bank. In the early 1990s, the government, recognizing that the required investment in the sector could not be provided by the public sector alone, restructured and opened Pakistan's energy sector to private investment. Since then, Pakistan has had a long history of private sector involvement in the energy sector, and about a third of generation is provided by IPPs. During the past 2 years, nine IPPs representing almost 2,000 MW of installed capacity have achieved financial close under the Power Policy 2002. Most have already been commissioned, and all are expected to start commercial operation by end-2010 or early 2011.

11. ADB has taken the lead in supporting the government's initiative to attract private capital into the energy sector and has been instrumental in many pioneering transactions. ADB financed the first private hydropower project, the New Bong Escape Hydropower Project.<sup>5</sup> This transaction has set the precedent for many follow-on private hydropower projects in Pakistan, several of which ADB is considering. ADB has also provided equity and a partial credit guarantee for a gas-fired combined cycle power project, the Daharki Power Project, using indigenous gas.<sup>6</sup> To further encourage investment in the energy sector, the government has taken steps to privatize state-owned power companies—both generation plants and distribution networks. ADB helped the government privatize the Karachi Electric Supply Company, and, in 2007, ADB provided a loan for the privatized entity to expand its generation, transmission, and

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ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility and Administration of Cofinancing to the Islamic Republic of Pakistan for Energy Efficiency Investment Program*. Manila.

<sup>3</sup> ADB. 2008. *Reports and Recommendations of the President to the Board of Directors: Proposed Program Cluster and Loans for Subprogram 1 to the Islamic Republic of Pakistan for Accelerating Economic Transformation Program*. Manila; ADB. 2009. *Reports and Recommendations of the President to the Board of Directors: Proposed Program Cluster and Loans for Subprogram 2 to the Islamic Republic of Pakistan for Accelerating Economic Transformation Program*. Manila.

<sup>4</sup> Friends of Democratic Pakistan Energy Sector Taskforce. 2010. *Integrated Energy Sector Recovery Report and Plan*. Brussels.

<sup>5</sup> ADB. 2005. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Laraib Energy Limited for the New Bong Escape Hydropower Project in Pakistan*. Manila.

<sup>6</sup> ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Equity Investment and Guarantee for Daharki Power Project in Pakistan*. Manila.

distribution infrastructure.<sup>7</sup> In 2010, ADB has proposed a loan to support the Zorlu Enerji Power Project, which is the first wind power project to be undertaken by the private sector.<sup>8</sup>

## **C. Alignment with ADB Strategy and Operations**

### **1. Consistency with Strategy 2020**

12. The project is consistent with ADB's long-term strategic framework (Strategy 2020), which emphasizes investment in infrastructure to achieve high sustainable economic progress, connect the poor to markets, and increase their access to basic productive assets, as part of ADB's support for achieving inclusive growth.<sup>9</sup> Strategy 2020 puts particular emphasis on expanding energy supplies and promoting energy efficiency through supply-side measures. Strategy 2020 also emphasizes, among five drivers of change, (i) private sector development and private sector operations, and (ii) partnerships. The proposed assistance will promote a larger role for the private sector in financing infrastructure, and will catalyze private investment through ADB's credit enhancement product.

### **2. Consistency with the Country Strategy**

13. ADB's support for the project is in line with the country partnership strategy for Pakistan, 2009–2013, which emphasizes the importance of energy sector development, private sector participation in infrastructure development, and expansion of ADB's private sector operations in the energy sector.<sup>10</sup> The project is a logical continuation of ADB's development and reform efforts in Pakistan's energy sector, which have been designed to promote a well-regulated, market-oriented power industry. Energy infrastructure has featured prominently in ADB's private sector operations in Pakistan.

### **3. Consistency with the Energy Sector Strategy**

14. The project is in line with ADB's Energy Policy, and is particularly consistent with one of the three pillars of that policy—maximizing access to energy for all.<sup>11</sup> Access to modern and reliable energy services fosters sustainable human development, economic growth, a higher quality of life, and improved delivery of social services. The project will add generation capacity and increase the reliability of electricity supplies in a country facing a severe power shortage. The project will promote the use of a low-cost indigenous fuel to generate electricity. Electricity supplied by the project will be more affordable than existing supplies, and will not be affected by the volatility of the international fuel market. The project will operate at high efficiency and will be more environmentally friendly than power plants that use other fossil fuels. By promoting the use of indigenous resources, the project will also contribute to the country's energy security.

<sup>7</sup> ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Loan for KESC Post-Privatization Rehabilitation, Upgrade and Expansion in Pakistan*. Manila.

<sup>8</sup> ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan for Zorlu Enerji Power Project in Pakistan*. Manila.

<sup>9</sup> ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila.

<sup>10</sup> ADB. 2009. *Country Partnership Strategy: Pakistan, 2009–2013*. Manila.

<sup>11</sup> ADB. 2009. *Energy Policy*. Manila.

### III. THE PROJECT

#### A. Project Description

##### 1. The Borrower/ Sponsor

15. Uch-II Power will be wholly owned by International Power, and will implement the project.

16. International Power is a leading independent power generation company with interests in 32,358 MW of gross generation capacity and 20,671 MW of net generation capacity worldwide. International Power has operations across five regions, namely North America, Europe, the Middle East, Australia, and Asia. Along with shares in power generators, the company also has interests in desalination, steam generation, and energy retail. Through its corporate history, International Power has gained experience in all phases of the power generation chain, including development, construction, operation, trading and, marketing. Its focus is on generating low-cost, affordable power in countries that encourage foreign investment and have high demand growth.

17. International Power has been increasing its presence as a power plant developer in Pakistan since the 1990s, when it began investing in overseas power privatization programs. Over time, International Power has become the single largest private investor in Pakistan's power generation industry. In 1993, National Power, a legacy company of International Power, invested in the Hub Power Company, which became the first IPP in Pakistan.<sup>12</sup> In 1996, International Power purchased shares in Kot Addu Power Company, and in 1994 took a portion of shares in Uch Power.<sup>13</sup> International Power's three Pakistan projects have demonstrated sound financial performance underpinned by long-term power purchase agreements.

##### 2. Project Design

18. The Uch-II project is in the Dera Murad Jamali subdistrict of Balochistan Province, approximately 600 kilometers (km) north of Karachi and 42 km northwest of Jacobabad. It is located on the premises of the Uch-I power station, which is surrounded by a boundary wall covering an area of approximately 260 hectares (ha). The project will require approximately 63 ha including an area for residential and recreational facilities associated with the project.

19. The project will consist of two gas turbine generators, two heat recovery steam generators, one steam turbine generator, one condenser and multicell cooling tower, and balance-of-plant equipment. The project will use low-BTU gas and a high-speed diesel dual fuel combustion system. Low-BTU gas is the primary fuel, but distillate liquid fuel will be used for start up and shut down because these activities are not feasible with low-BTU gas.

20. Electricity generated from the Uch-II project will be stepped up to 220 kV for connection to the 220 kV switchyard. This switchyard will supply power directly to the National Transmission & Despatch Company (NTDC) at its outlet gantries. The NTDC will be responsible for interconnection of the project to the national grid.

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<sup>12</sup> International Power's current share in Hub Power Company is 17%.

<sup>13</sup> International Power's current share in Kot Addu Power Company is 36%, and share in Uch Power is 75%.

### **3. Project Outputs and Outcome**

21. The outcome of the project will be additional electricity supplies of 2,799 gigawatt hours (GWh) annually at an attractive tariff. The project will generate electricity by using competitively priced indigenous gas, and the tariff for electricity supplied by the project will be lower than that for plants that use imported fuel.

22. The primary output of the project will be net additional installed capacity of 375.2 MW, which is equivalent to 8.9% of the energy shortfall in the country. In addition, during construction, it is expected that locally purchased goods and services will amount to \$50 million, and 600–800 local jobs will be created.

### **B. Development Impact**

#### **1. Contribution to Economic Growth and Poverty Reduction through Private Sector Development**

23. The project will help alleviate Pakistan's severe power shortage, which is adversely impacting the country's economic growth and poverty reduction efforts. The project will incrementally increase access to energy for households, business, and industry. Use of indigenous natural resources will result in more affordable electricity and tariffs that are less susceptible to fluctuations in the international fuel and the foreign currency markets. Use of indigenous fuel will also relieve pressure on the country's balance of payments. The project will further demonstrate the advantageousness of private participation in power generation, and may increase general investor and lender confidence in Pakistan. In the long run, the project will contribute to reduction of power shortages and development of indigenous power sources.

### **C. Environment and Social Dimensions**

#### **1. Environment**

24. The project is classified as environmental category A, requiring an environmental impact assessment (EIA) in accordance with ADB's Safeguard Policy Statement (2009). The project's environmental and social impacts were adequately assessed in the EIA report (January 2010) and EIA report addendum (October 2010). The EIA was undertaken in accordance with Pakistan regulations and procedures, and the addendum with revised information was prepared in response to ADB comments. The EIA report was disclosed on ADB's website on 7 July 2010 in accordance with ADB's Safeguard Policy Statement (2009), while the addendum will also be posted on the website.

25. Potential adverse project impacts include a decline in air quality, an increase in greenhouse gas emissions, increased use of water, and an increase in liquid waste generation. These adverse impacts will be adequately mitigated where feasible, as described in the EIA report and addendum. Uch-II Power is deemed to have sufficient capacity to manage environmental and social issues. The project is sited on land acquired by Uch Power, located within the Uch-I fenced compound on mostly vacant land. The locality is arid and fairly remote, with no ecologically sensitive sites.

26. The maximum rates of plant emissions will be within Pakistan National Environmental Quality Standards (NEQS) limits and International Finance Corporation (IFC) guidelines for "fuels other than natural gas" (applied because low-BTU gas is of different quality than "natural

gas”) for all major pollutants, including 5 milligrams per normal cubic meter ( $\text{mg}/\text{Nm}^3$ ) of particulate matter of 10 micrometers size or less ( $\text{PM}_{10}$ ) (against the IFC limit of  $50 \text{ mg}/\text{Nm}^3$ ),  $77 \text{ mg}/\text{Nm}^3$  of oxides of nitrogen (IFC limit:  $152 \text{ mg}/\text{Nm}^3$ ) and 0.18 tons per day (t/day) of sulfur dioxide (NEQS limit: 500 t/day). The projected incremental increase in ground-level concentrations of oxides of sulfur and oxides of nitrogen occurring as a result of the project is low at  $0.2 \text{ micrograms per cubic meter } (\mu\text{g}/\text{m}^3)$  and  $5.9 \text{ } \mu\text{g}/\text{m}^3$ , respectively. Both are within NEQS limits. The increase in the  $\text{PM}_{10}$  24-hour ground-level concentration will be just  $0.4 \text{ } \mu\text{g}/\text{m}^3$ . The cumulative worst-case  $\text{PM}_{10}$  24-hour ground-level concentration of  $100.0 \text{ } \mu\text{g}/\text{m}^3$  is lower than the World Health Organization (WHO) interim target-1 ( $150 \text{ } \mu\text{g}/\text{m}^3$ ), but higher than the WHO guideline ( $50 \text{ } \mu\text{g}/\text{m}^3$ ) because of naturally high ambient levels of particulate matter (WHO guidelines are applicable under IFC guidelines when there is no national standard). Offsetting this projected increase in ambient  $\text{PM}_{10}$  levels is not feasible as there are no identifiable sources of particulate matter other than natural causes and the Uch-I power plant.

27. The project is expected to produce 2.125 million t of carbon dioxide ( $\text{CO}_2$ ) per year, a reduction of about 64,000 t of  $\text{CO}_2$  annually over conventional boilers burning oil (the main type of generation currently supplying the grid), or a reduction of about 494,000 t of  $\text{CO}_2$  annually over coal-fired thermal generation.  $\text{CO}_2$  emissions will be quantified and reported annually. Offsetting  $\text{CO}_2$  emissions occurring as a result of the project will not be possible with local tree planting because of the arid conditions surrounding the plant site and the large volume of water required if irrigation were to be undertaken.

28. Water use for the project will total  $10,300 \text{ m}^3/\text{day}$  during operation. Water use will be minimized by vertical draft cooling towers with continuous cooling water reticulation; close monitoring of cooling water chemistry to optimize use; and water conservation in the colony. All project water requirements will be reallocated from the Uch-I plant's water allocation, which is only partially used, thus causing minimal impact on existing users. A “zero discharge” wastewater treatment system will be installed to treat  $1,238 \text{ m}^3$  of effluent per day. All treated effluent will be discharged into an on-site evaporation pond for tertiary treatment. Water quality in this pond will in general comply with NEQS and IFC guidelines. Total dissolved solids and chlorine (residual) will be above NEQS limits, and total suspended solids and chlorine (residual) may breach IFC limits, but this is acceptable given that there will be no discharge from the pond to any other surface water. Minimal infiltration will occur from the pond because of the very low permeability of the silty clay subsoil.

## **2. Social Dimensions**

29. The project is classified category C for involuntary resettlement and indigenous people safeguards. The project will be constructed on 83.5 ha (206 acres) within the fenced property of Uch Power, which has a total land area 260 ha (642 acres) in Dera Murad Jamali, Balochistan. The land for the project will be leased to Uch-II Power by Uch Power. Uch Power acquired its land in 1996; it was previously owned by the government and private landowners. Compensation has been fully paid to the original owners at above-fair-market value plus the mandated 25% additional cost of acquisition following the provisions of the Land Acquisition Act of 1894. The land where the Uch-II plant will be constructed has no occupants or signs of occupancy, and no outstanding issues with land acquisition. The tribal communities outside the project area are inhabited by the Bhangar, Bangul-zai, Bahrani, Jamali, Jakhrani, and Khosa tribes, among others. Although the residents of the villages near the project area may have tribal affiliations, the project will not in any way affect their dignity, human rights, livelihood systems, or culture. This is demonstrated by the operation of the similar Uch-I plant in the area

for 10 years. Moreover, the land where the project will be constructed is not owned, used, occupied, or claimed as ancestral domain or asset by any of these groups.

### **3. Consultation and Participation Process**

30. Consultations with local communities reached a wide segment of the population in the project area and took the form of formal and informal meetings, focus group discussions, and in-depth interviews. Information related to the project was discussed and various stakeholders were encouraged to voice their concerns and opinions. Feedback obtained from the stakeholders was documented, and all issues and suggestions raised were recorded. Three key issues were raised during the detailed consultations in 11 villages: (i) giving priority to local villagers for project-related employment and activities, (ii) ensuring that community water resources are not overexploited, and (iii) ensuring that traffic is managed so as not to jeopardize the safety of the communities. Mitigating measures were incorporated in the project design to address these issues.

## **D. Implementation Arrangements**

### **1. Construction Arrangements**

31. During construction, the project technical team will be headed by a project manager who will coordinate with the engineering, procurement, and construction (EPC) contractor, and with the owner's engineer. The project manager will be experienced in power plant management and will be responsible for meeting the plant's pre-operations requirements.

32. The project will be constructed under an EPC contract performed by an experienced contractor consortium.

### **2. Operations Arrangements**

33. Operation and maintenance (O&M) of the project will be carried out by Uch Power under an O&M agreement. A dedicated O&M team may also be added. All maintenance work will be carried out as per the recommendations of the original equipment manufacturer.

34. As the sponsor of the project, International Power will also play an important role in the project's O&M. Uch-II Power will implement International Power's policies, procedures, and standards—particularly in the areas of environment, health, and safety management—and will be subject to periodic audits to monitor compliance in these areas. The project will also leverage International Power's global resources and network (i.e., technical support) and benefit from its industry experience and best practices.

### **3. Gas Supply**

35. The project's fuel will be low-BTU gas from the Uch gas field, which is 47 km away from the project site. Gas will be supplied by Oil & Gas Development Company (OGDC) under a 25-year take-or-pay gas supply agreement (GSA).

#### **4. Power Offtake**

36. The NTDC is the power offtaker and will purchase electricity from the project under a 25-year take-or-pay power purchase agreement (PPA). The tariff payable by the NTDC will be consistent with the tariff determined by the NEPRA. The project will supply base load electricity.

#### **5. Role of the Government of Pakistan**

37. The government plays a crucial role for the project as well as for other IPPs in Pakistan. Its obligations are set out under an implementation agreement with Uch-II Power. Under the implementation agreement, the government grants the company the exclusive right to develop, own, and operate the project using gas from the Uch gas reserve, subject to applicable laws, regulations, and certain other obligations, for a period of 25 years. Among the principal functions of the implementation agreement is to provide assurances to the company, International Power, and lenders that the various government entities and agencies will meet their contractual obligations—including paying dues on time.

#### **6. Procurement**

38. The EPC contractor was selected through international competitive bidding.

#### **7. Anticorruption Policy**

39. Uch-II Power was advised of ADB's Anticorruption Policy (1998, as amended to date) and the Combating of Money Laundering and the Financing of Terrorism Policy (2003). Consistent with its commitment to good governance, accountability, and transparency, ADB will require the company to institute, maintain, and comply with internal procedures and controls following international best practice standards for the purpose of preventing corruption or money laundering activities or the financing of terrorism and covenant with ADB to refrain from engaging in such activities. The investment documentation between ADB and Uch-II Power will further allow ADB to investigate any violation or potential violation of these undertakings.

#### **8. Project Performance Monitoring, Reporting, and Evaluation**

40. Uch-II Power will be required to submit quarterly unaudited financial statements, quarterly construction or operations reports, and annual operating budgets to ADB and the other lenders, and must report any material changes. The company will be required to hire an internationally reputable accounting firm (or its local affiliate) to audit its annual accounts in line with international financial reporting standards. ADB will monitor the project's construction progress and operation performance, using information from public sources, lender's advisors, and government statistics. The project will be evaluated on two levels: (i) success of the project, including its completion, commissioning, and operation; and (ii) impacts beyond the project, including the country's economic growth and the increase of private sector participation in Pakistan's energy sector. The performance indicators are included in the design and monitoring framework (Appendix 1).

## **IV. THE PROPOSED ADB ASSISTANCE**

### **A. The Assistance**

#### **1. ADB Loan**

41. The proposed loan of up to \$100 million will be provided from ADB's ordinary capital resources without government guarantee. The loan amount will not exceed 25% of the final total project cost approved by the NEPRA upon completion. Proceeds of the loan will be used for eligible capital expenditures and civil works for the project.

#### **2. ADB Partial Risk Guarantee**

42. The proposed partial risk guarantee (PRG) will be extended without government counterindemnity in favor of commercial lenders that will provide direct loans of up to \$50 million to Uch-II Power (ADB-guaranteed loan). Proceeds of the ADB-guaranteed loan will be used for the project's costs and expenditures.

### **B. Justification for ADB Assistance**

43. The proposed assistance by ADB to the project is justified for the following reasons:

- (i) the project will add significant power generation capacity, which will help reduce load shedding in Pakistan and strengthen the supply network and stabilize voltage in the province of Balochistan;
- (ii) the project will use an unused and economically attractive indigenous energy resource to supply affordable electricity and reduce reliance on expensive oil imports. This will significantly reduce the volatility of the project's electricity tariff and relieve stress on Pakistan's foreign exchange reserves. Furthermore, it will contribute to Pakistan's energy security.
- (iii) the project will create revenue opportunities for the gas industry, and will also create job opportunities for local people during construction and operation of the project and will support socioeconomic advancement in a remote and economically deprived area of Balochistan.
- (iv) ADB's active participation and presence in the project will reassure the sponsor, International Power, and other lenders that the government and government entities will continue to support the project. Given ADB's track record and ongoing engagement in Pakistan's energy sector—including policy dialogue, public sector reform programs, and recent financing of key IPPs through private sector operations—project participants will value ADB's role in mitigating risk, solving problems, and catalyzing financial resources to support private sector power projects in Pakistan.
- (v) ADB's assistance is considered indispensable to achieve financial close. The long-term financing that ADB will provide is essential to ensure successful implementation of the project, and would not otherwise be easily available under the present financial and country environment.



- (vi) Consistent with ADB's mandate to mobilize financing from other sources, the proposed PRG (coupled with the presence of the ADB loan) will catalyze financing from commercial lenders.
- (vii) The proposed assistance to the project is aligned with the government's development plan and ADB's operational strategies as discussed in this report.

### **C. Assurances**

44. Consistent with the Agreement Establishing the Asian Development Bank, the Government of Pakistan will be requested to confirm that it has no objection to the proposed assistance to Uch-II Power (Private) Limited. ADB will enter into suitable finance documentation, in form and substance satisfactory to ADB, following approval of the proposed assistance by the Board of Directors.

## **V. RECOMMENDATION**

45. I am satisfied that the proposed loan and partial risk guarantee would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

- (i) the loan of up to \$100,000,000 to Uch-II Power (Private) Limited for the Uch-II Power Project in Pakistan from ADB's ordinary capital resources; and
- (ii) the partial risk guarantee with a maximum aggregate liability of up to \$100,000,000, without government counter-indemnity, to guarantee up to 100% of scheduled payments of principal and interest under commercial loans of up to \$50,000,000 to Uch-II Power (Private) Limited for the Uch-II Power Project in Pakistan.

Haruhiko Kuroda  
President

19 November 2010

## DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<b>Impacts</b> Economic growth in Pakistan is less constrained by deficient power supply Increased investments by the private sector in power generation projects in Pakistan	Peak shortages and energy outages reduced by 11% by 2020 Private power generation increases to 50% by 2020	Government and ADB statistics	<b>Assumptions</b> Government continues to allow tariffs that provide reasonable returns to private investors  <b>Risks</b> Pakistan is not able to increase its indigenous gas production to sustain incremental power capacity Circular debt not resolved, forcing some shutdowns of existing capacity Deterioration in macroeconomic and/or political climate in Pakistan
<b>Outcome</b> Production of low-cost electricity	Project dispatches an estimated average annual production of 2,838 GWh The net average tariff per KWh from the project is lower than for plants running on imported fuel from 2013 to 2028	Government/NTDC/NPCC statistics ADB research Project reporting	<b>Assumptions</b> Reliable transmission and distribution network with sufficient capacity to dispatch power Sufficient gas supply Electricity output of the project adds to the output during peak hours but does not replace the output of more expensive generation alternatives  <b>Risk</b> Circular debt not resolved, forcing some shutdowns of existing capacity
<b>Outputs</b> Construction and operation of a power plant running on indigenous gas Mobilization of debt from international lenders to help close the financing gap	Pakistan's electricity generation capacity increases by 375.2 MW (net) on commissioning Locally purchased goods and services amount to \$50 million by 2013 600–800 people locally employed during construction by 2013	Project reporting Project construction report and completion certification by lenders' technical advisor ADB review mission	<b>Assumptions</b> Project reaches completion and starts operation as scheduled. Sufficient gas supply Qualifications of locals are matched with the employment requirements during construction. ADB PRG helps lenders overcome their hurdles to provide required long-term financing.
<b>Activities with Milestones</b> <ol style="list-style-type: none"> <li>Financial close by 31 March 2011</li> <li>Construction starting immediately after financial close</li> <li>Commissioning 30 months after start of construction (by September 2013)</li> </ol>			<b>Inputs</b> Funding from (i) ADB (loan and guarantee), (ii) other Multilateral and Bilateral Development Banks, (iii) international and local commercial banks, and (iv) shareholders

ADB = Asian Development Bank, GWh = gigawatt hour, MW = megawatt, NPCC = National Power Control Centre, NTDC = National Transmission & Despatch Company, PRG = partial risk guarantee.

Source: Uch-II Power and Asian Development Bank estimates.

## SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

Country/Project Title: Pakistan Uch-II Power Project

Lending/Financing  
Modality:

Direct Loan and Partial Risk Guarantee

Department/  
Division:

Private Sector Operations Department  
Infrastructure Finance Division 1

### I. POVERTY ANALYSIS AND STRATEGY

#### A. Links to the National Poverty Reduction Strategy and Country Partnership Strategy

ADB's support for the project is in line with the Pakistan country partnership strategy (CPS)<sup>a</sup> and the government's strategic emphasis on energy sector development. As per the ADB CPS, "ADB views itself as one of Pakistan's strategic development partners for infrastructure development," with power as one of the main areas of support, and "the emphasis on lending for economic infrastructure will be continued, which is consistent with the high priority attached to it in the government's Medium Term Development Framework." The proposed project also conforms to the cross-cutting theme of sustainable environmental management, as reflected in the CPS. Lastly, the CPS mandates that ADB develop greater complementarity between its public and private sector operations. It places specific emphasis on the role of the private sector as a driver of investment growth and employment. The project will tap gas from a nearby gas reservoir to generate power that will be made available to alleviate the country's power supply deficiency.

#### B. Poverty Analysis

**Targeting Classification:** General Intervention

**Key issues.** During construction, the project will employ construction workers from nearby communities, thereby augmenting the incomes of local households. This will in turn lead to the creation of small enterprises to service the construction workforce. During operation, the presence of power plant personnel and contractors will increase local demand for food and services, thus benefiting local business. The project is expected to implement local development programs through the corporate social responsibility (CSR) initiatives. The CSR initiatives are mainly focused on (i) socioeconomic development projects mainly in Balochistan Province's Naseerabad District and surrounding areas; and (ii) other noteworthy causes in Balochistan and in the rest of the country (e.g., provision of food assistance to thousands of affected individuals during the 2010 Indus river flooding).

**Design features.** The project has no specific technical design feature that is relevant to poverty reduction except for the expected implementation of the CSR initiatives, which are discussed in more detail in the social analysis and strategy section below.

### II. SOCIAL ANALYSIS AND STRATEGY

#### A. Findings of Social Analysis

**Key issues.** An environmental and social impact assessment, social compliance audit on prior land acquisition, and due diligence on other social dimensions were undertaken for the project. These reports concluded that the construction and operation of the project power plant are not expected to have adverse social impacts. Key findings are as follows:

**Involuntary resettlement.** The project will be constructed on 83.5 hectares (ha; 206 acres) within the fenced property of Uch Power, which has a total land area of 260 ha (642 acres). The land for the project is being leased by Uch Power to the project company, Uch-II Power. The total landholding of Uch Power was acquired from the government of Balochistan in 1996. Compensation has been fully paid to the original owners (portions of the land were privately held and portions were government land) at above-fair-market value plus the mandated 25% additional cost of acquisition following the provisions of the Land Acquisition Act of 1894. The land where the project will be constructed has no occupants or sign of occupancy. There are no outstanding issues with land acquisition, and Uch Power confirms that it has not received any complaints or grievances emanating from the original owners of the land.

The land and surrounding areas are arid and not suitable for agriculture, with low population density.

**Indigenous peoples.** There are eight villages near the project area: three on the southern side, one on the western side, two on the northern side, and two near the access road leading to the site. These villages are composed of 169 households whose main tribal affiliations are as follows: Bhangar, Bangul-zai, Bahrani, Jamali, Jakhrani, and Khosa. Other tribes in these villages are: Bbbor, Brohi, Bugti, Gola, Jat, Kaprani, Lahri, Lango, Lanha, Lashari, Machi, Marri, Pechwa, Raeesani, Solangi, and Soomro.

Although the residents of the villages located near the project area may have tribal affiliations, the experience of the Uch-I plant, which has been operating in the project area for 10 years, indicates that the project will not in any way affect their dignity, human rights, livelihood systems, or culture. Moreover, the land where the project will be constructed is not owned, used, occupied, or claimed as ancestral domain or asset by any of these groups.

**Labor and working conditions.** Pakistan has ratified all International Labour Organization fundamental conventions covering the four core labor standards. These are embodied in the Constitution and in the Industrial Relations Ordinance (IRO) of 2002. Uch Power has demonstrated its commitment to following the 2002 IRO, and has a human resources policy and manuals that cover employee benefits, equal opportunity, nondiscrimination, grievance mechanism, and others. Uch-II Power will implement the same policies.

**Corporate social responsibility (CSR).** Uch Power engages the neighboring communities and villages and the wider community where it does business through CSR initiatives. It has robust CSR programs that are geared toward community welfare and support activities and other socioeconomic development projects, mainly in Balochistan Province's Naseerabad District. The CSR programs also focus on other noteworthy causes in Balochistan and in the rest of Pakistan. The programs are governed by a committee comprised of representatives from the local administration and provincial government. The committee reviews the development requirements of the local communities and selects programs that would most benefit these communities. Uch-II Power is expected to apply the same CSR policies and procedures applied by Uch Power.

## B. Consultation and Participation

1. Community consultations were carried out in the project area through formal and informal meetings, focus group discussions and in-depth interviews. The company's socioeconomic team, assisted by environmental specialists, initiated the sessions by giving a brief, simple, and nontechnical description of the project, including an overview of all likely positive and negative impacts. This was followed by an open discussion in which all participants were encouraged to voice their concerns and opinions. Stakeholder feedback was documented, and all issues and suggestions raised were recorded. Through this process the consultations reached a wide segment of the population in the project area and actively involved all stakeholders. Community consultations were carried out included in the villages of Azizabad, Faiq Khan Jamali, Haji Mohammad Ayub Mangal, Haji Rehmat, Haji Sohbat Khan, Jan Mohammad Jamali, Langha Khan Jamali, Mir Abdul Ghafoor Lari, Soobho Khan Jatak, and Taj Mohammad Khan Jamali,. They are inhabited by the Jamali, Jakhrani, Khoso, Mengal, Lari, Panhwar, and Pandrani tribes. Consultations were conducted in the Balochi and Sindhi languages. Three points were raised during the series of consultations: (i) local villagers should be given priority for jobs created by project-related works and activities, (ii) community water resources should not be overexploited, and (iii) increased traffic should not jeopardize the safety of the communities. Addressing these concerns, project-related jobs will be provided to qualified local villagers; community water resources will not be exploited (the combined usage of the Uch-I plant and the proposed Uch-II plant is likely to be only about 42% of the water allocation to the Uch site); and traffic management measures to ensure the safety of local communities have been included in the project's environment management plan.

2. What level of consultation and participation (C&P) is envisaged during the project implementation and monitoring?

☒ Information sharing   ☒ Consultation   ☐ Collaborative decision making   ☐ Empowerment

3. Was a C&P plan prepared? ☐ Yes   ☒ No

C&P activities were done in the context of environmental and social assessment, discussed thoroughly in the environmental impact assessment (EIA) report, and implemented as appropriate. Most of the consultations took place during the early phase of project preparation. A complaints registry will be established and community engagement is expected to continue through the company's CSR initiatives.

## C. Gender and Development

**Key Issues.** Dera Murad Jamali Tehsil has a population of 157,429, of which 82,627 is male and 74,802 is female, according to the population and housing census of 1998. According to the 1998 census, the male-to-female ratio is 1.10:1. The socioeconomic study for the EIA covered 103 villages with a total population of 21,055 and approximately 3,779 households. The male population of these villages is estimated to be close to 51.05%, while the female population is estimated to be about 48.94%, for a male-to-female ratio of 1.04:1. Women in the community generally observe *purdah* from outsiders. The *purdah* restrictions are more stringent for young girls. Adult women can appear before male members of the same tribe. The restrictions on mobility are not very strict; they vary with the marital status and age of women and from tribe to tribe. The social impact assessment looked at various factors affecting the socioeconomic status of women, e.g., health, education, livelihoods, and drinking water supply. No particular gender-related issue was identified by the social impact assessment for the project.

In avoiding gender bias in the workplace, the project will follow the same human resources policies being maintained by Uch Power, which provides for specific entitlements such as maternity benefits in addition to the usual company benefits.

Additional special arrangements are also available to the employees, covering items such as daily pick-up and drop-off from work station. During project construction, contractors will be bound by contractors' agreements and are expected to follow local norms when engaging local communities.

**Key actions.** Measures included in the design to promote gender equality and women's empowerment—access to and use of relevant services, resources, assets, or opportunities and participation in decision-making process:

☐ Gender plan    ☐ Other actions/measures    ☒ No action/measure

### III. SOCIAL SAFEGUARD ISSUES AND OTHER SOCIAL RISKS

Issue	Significant/Limited/ No Impact	Strategy to Address Issue	Plan or Other Measures Included in Design
<b>Involuntary Resettlement</b>	No impact.	None.	<input type="checkbox"/> Resettlement Plan <input type="checkbox"/> Resettlement Framework <input checked="" type="checkbox"/> No Action
<b>Indigenous Peoples</b>	No impact.	None.	<input type="checkbox"/> IP Plan <input type="checkbox"/> Other Action <input type="checkbox"/> IP Framework <input checked="" type="checkbox"/> No Action
<b>Labor</b> <input checked="" type="checkbox"/> Employment opportunities <input type="checkbox"/> Labor retrenchment <input checked="" type="checkbox"/> Core labor standards	Limited. During construction and operation, there will be employment opportunities for qualified locals.	During construction and operation, it is expected that Uch-II Power and civil works contractors will follow 2002 IRO, which is consistent with international labor standards. Compliance with core labor standards will be covenanted.	<input type="checkbox"/> Plan <input checked="" type="checkbox"/> Other Action <input type="checkbox"/> No Action
<b>Affordability</b>	No impact.	None.	<input type="checkbox"/> Action <input checked="" type="checkbox"/> No Action
<b>Other Risks and/or Vulnerabilities</b> <input type="checkbox"/> HIV/AIDS <input type="checkbox"/> Human trafficking <input type="checkbox"/> Others	No impact.	None.	<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input checked="" type="checkbox"/> No Action

### IV. MONITORING AND EVALUATION

Are social indicators included in the design and monitoring framework to facilitate monitoring of social development activities and/or social impacts during project implementation? ☒ Yes ☐ No

a: ADB. 2009. *Country Partnership Strategy: Pakistan 2009–13*. Manila.  
 Source: Asian Development Bank and Uch-II Power.