



Technical Assistance Report

Project Number: 50081-001
Knowledge and Support Technical Assistance (KSTA)
August 2017

Islamic Republic of Pakistan: Update on Energy Sector Plan

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 14 August 2017)

Currency unit	–	Pakistan rupee/s (PRe/PRs)
PRe1.00	–	\$0.00948
\$1.00	–	PRs105.37

ABBREVIATIONS

ADB	–	Asian Development Bank
FODP	–	Friends of Democratic Pakistan
TA	–	technical assistance

NOTES

- (i) The fiscal year (FY) of the Government of Pakistan ends on 30 June. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g., FY2017 ends on 30 June 2017.
- (ii) In this report, "\$" refers to United States dollars.

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KNOWLEDGE AND SUPPORT TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data		Project Number: 50081-001	
Project Name	Update on Energy Sector Plan	Department /Division	CWRD/CWEN
Nature of Activity	Policy Advice	Executing Agency	Economic Affairs Division (Old)
Modality	Regular		
Country	Pakistan		
2. Sector		ADB Financing (\$ million)	
✓ Energy	Energy efficiency and conservation		0.50
		Total	0.50
3. Strategic Agenda		Climate Change Information	
Inclusive economic growth (IEG) Environmentally sustainable growth (ESG)	Pillar 1: Economic opportunities, including jobs, created and expanded Eco-efficiency	Climate Change impact on the Project	Low
4. Drivers of Change		Gender Equity and Mainstreaming	
Governance and capacity development (GCD) Knowledge solutions (KNS) Private sector development (PSD)	Institutional development Institutional systems and political economy Knowledge sharing activities Conducive policy and institutional environment	No gender elements (NGE)	✓
5. Poverty and SDG Targeting		Location Impact	
Geographic Targeting	No	Nation-wide	High
Household Targeting	No		
SDG Targeting	Yes		
SDG Goals	SDG3, SDG7, SDG8, SDG9		
6. Risk Categorization		Low	
7. Safeguard Categorization Safeguard Policy Statement does not apply			
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		0.50	
Knowledge and Support technical assistance: Technical Assistance Special Fund		0.50	
Cofinancing		0.00	
None		0.00	
Counterpart		0.00	
None		0.00	
Total		0.50	

I. INTRODUCTION

1. The proposed knowledge and support technical assistance (TA) will assess the progress made during 2010–2016 on the recommendations of the Integrated Energy Sector Recovery Report of the Friends of Democratic Pakistan (FODP), analyze the lessons learned from the changing global realities, and propose recommendations as inputs for a new energy policy for the medium term (2018–2023).¹ The findings will be designed to inform the Government of Pakistan on past progress and provide options for the future energy strategy of the country.²

2. The Asian Development Bank (ADB) is the lead and anchor development partner of the Government of Pakistan in the energy sector with an ongoing portfolio of \$2.8 billion in investments in energy generation, transmission, distribution, energy efficiency, renewable energy development, and analytical and advisory assistance. The TA is consistent with ADB's country partnership strategy for Pakistan, 2015–2019 and is included in ADB's current country operations business plan, 2018–2020 for Pakistan.³

II. ISSUES

3. A reliable and sustainable energy sector is essential to Pakistan's economic growth and sustainability. Economic growth improved between FY2010 and FY2016, but was still lower than in the preceding decade. A major hurdle in achieving further growth is the intense energy shortage.⁴ Although Pakistan has abundant renewable and sizable conventional energy resources, public and private investment in energy infrastructure has not been sufficient to meet demand. Electricity supply must be further improved by stepping up efficiency, and operation and maintenance of generation, transmission, and distribution networks. Although electricity outages have declined and become more predictable since 2010, the 5-gigawatt demand–supply gap combined with the stressed transmission and distribution system continues to result in significant load shedding—10 hours per day in rural areas and 5 hours in urban areas.⁵ The national electrification rate remains low at around 67%, and is even lower (57%) in rural areas. Some improvements in sector efficiency, low fuel prices since 2014, and introduction of surcharges have contributed to managing financial challenges in the sector. However, continued reliance on imported fuel-based generation and high consumer receivables, accentuated by insufficient tariffs, have resulted in a persistent circular debt.

4. The power subsector relies heavily on government support—direct subsidies amounted to about 1.5% of gross domestic product in FY2016. Costs that cannot be recovered from consumers or the government accumulate on the books of the public electricity distribution companies. The distribution companies in turn fail to pay fully for goods and services they receive, especially electricity, thus spreading the shortfall throughout the supply chain. Commonly called the circular debt, these accumulated arrears amounted to about 4% of gross domestic product in FY2013.⁶ Actions are required to remove two main distortions: (i) the long-standing gap between

¹ The TA first appeared in the business opportunities section of ADB's website on 30 Jun 2017.

² FODP Energy Sector Task Force. 2010. *Integrated Energy Sector Recovery Report and Plan*. Islamabad.

³ ADB. 2015. *Country Partnership Strategy: Pakistan, 2015–2019*. Manila; and ADB. 2017. *Country Operations Business Plan: Pakistan, 2018–2020*. Manila.

⁴ Average annual economic growth during FY2010–2016 was 3.8%, down from 5.1% in FY2005–2009. ADB. 2015. *Key Indicators for Asia and the Pacific 2015*. Manila.

⁵ ADB. 2017. *Report and Recommendation of the President to the Board of Directors: Proposed Policy-Based Loan for Subprogram 3 to the Islamic Republic of Pakistan for Sustainable Energy Sector Reform Project*. Manila.

⁶ Circular debt is the amount of cash shortfall within the Central Power Purchasing Agency, which it cannot pay to power supply companies. The overdue amount is a result of the (i) difference between the actual cost and the tariff determined by the National Electric Power Regulatory Authority, which entails loss for a distribution company; (ii)

the cost of service and revenues gained either from tariffs or subsidies; and (ii) the unusually high cost of providing that service. At the same time, inequities caused by poorly targeted subsidies must be rectified to ensure that the sector develops in a socially and environmentally sustainable way.

5. In 2009, the FODP, recognizing the impact of persistent energy shortages on the economy and livelihoods, solicited the preparation of a sustainable and integrated energy plan for Pakistan.⁷ The government and ADB led the effort by creating the Pakistan Energy Sector Task Force to prepare an energy sector recovery report with a comprehensive road map for mobilizing international assistance and a recommended action plan to solve energy security problems. The governments of the United States, Japan, and Germany, among other development partners, formed the core team with the chairs and finalized the report in October 2010, which was presented to the ministerial meeting of the FODP comprising 24 countries and institutions. The recommendations of the report were subsequently fed into the Petroleum Exploration and Production Policy 2012 and the National Power Policy 2013.⁸ ADB has supported the reforms through three subprograms of the Sustainable Energy Sector Reform Program loan in concert with the International Monetary Fund-assisted Extended Fund Facility and cofinancing from the World Bank, the Japan International Cooperation Agency, and the French Development Agency.

6. Under the Petroleum Exploration and Production Policy 2012, the government enhanced the wellhead pricing terms for natural gas producers. The response has been positive: 50 offers were received in a recent bidding for 58 blocks with exploration and production rights. However, the response from foreign companies remained subdued, even after the gas price rose from \$4 to \$6 per million British thermal units for some zones. A Tight Gas Policy for exploration and production was announced in May 2011. The policy gives a 40% premium over the respective price for each zone under the 2009 policy. Under the 18th constitutional amendment, provinces were awarded greater authority in the approval process for oil and gas sector affairs, which has delayed exploration in some cases. In addition, the Petroleum Rules 2013 were modified to disburse the royalty share directly to the provinces instead of channeling these through the federal government, which had been a long-standing provincial grievance.

7. The National Power Policy 2013 encourages independent power producers to invest in new power plants or to convert existing ones to operate on less-expensive fuels. In the medium term, low-cost gas pipelines, coal, and hydropower projects will be implemented. In the long term, large infrastructure hydropower projects will be completed, and existing high-cost energy projects and contracts will be retired, to ensure more affordable electricity generation.

8. Pakistan is vulnerable to the negative impacts of climate change. Landslides and erosion have resulted in siltation of water reservoirs. Changes in rainfall patterns and glacial melt have also reduced hydropower generation output. Although Pakistan's greenhouse gas emissions are low by global standards, carbon emissions in Pakistan grew by 105% (from 152.79 million tons in 1990 to 313.48 million tons in 2010). The significant increase in greenhouse gas emissions,

delayed or nonpayment of subsidies by government; and (iii) delayed determination and notification of tariffs. It is the government's policy to reduce and limit the circular debt overtime and to address and eliminate its causes.

⁷ The 2010 report recommended five key areas of reforms and investments: (i) strengthen energy sector governance and regulation, (ii) rationalize pricing and energy subsidies, (iii) develop energy finance capability, (iv) mainstream energy efficiency into energy policy, and (v) fast-track investment projects for energy security.

⁸ The policy seeks to eliminate load shedding by 2017, by (i) reducing the average system-wide generation cost from \$0.12 per kilowatt-hour to \$0.10 per kilowatt-hour by 2018, (ii) decreasing transmission and distribution losses from the current 25%–28% to 16% by 2018, and (iii) increasing revenue collection from 85% to 95% of total billing.

particularly carbon dioxide, is mainly attributed to the burning of fossil fuels for electricity, transport, and manufacturing.

9. The sector underpinned the manifesto of all political parties in previous elections in May 2013, and is again emerging as a key factor in the political landscape of Pakistan in the run-up to its national elections in May 2018. The government has requested ADB to update the 2010 FODP energy report and to revise its action plan by reflecting the progress made in the energy sector as per recommendations of the FODP report, and the frameworks of the power and petroleum policies, and to confirm residual issues and options for the next steps.

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

10. The TA is aligned with the following impact: achieve an efficient and financially sustainable energy sector.⁹ The TA will have the following outcome: findings of the report fed into Pakistan's new energy policy for the medium term (2018–2023).¹⁰

B. Outputs, Methods, and Activities

11. It is envisaged that the TA outputs will inform the government on the progress on the key points identified in the FODP report in 2010 and recommendations from this assessment. Together with the views from other development partners, the output of the TA will be available as input to the new energy sector policy for the next medium term from FY2018 to FY2023.

12. To provide inputs for the government, the TA will build upon (i) the recommendations of the 2010 FODP report, (ii) ADB's experience in the sector, (iii) other related knowledge products and the government's recently implemented strategic policy initiatives in the sector, and (iv) recent global technology- and energy-related developments—e.g., drop in fossil fuel prices, shale revolution, and improvements in renewable energy technologies (solar and wind) to reduce prices. The advisory and analytical assessments under the TA will cover the progress made on the 2010 FODP report's recommendations, as well as energy sector constraints in Pakistan. The report will analyze what was achieved, suggest measures for improvements, and summarize the lessons for the future.

13. **Output 1: Key energy sector analyses and recommendations for 2018–2023 prepared.** The consultants will review and analyze improvements achieved in the electricity and gas subsectors since 2010 by discussing and reviewing subsector policies and regulations with the government, international development partners, and the private sector. The analysis will evaluate progress and formulate inputs into the next 5-year (2018–2023) energy sector strategy of Pakistan, including lessons, recommendations, and implementation action plans for key subsectors. The progress will be discussed and reported to the stakeholders in monthly meetings of the steering committee chaired by the Economic Affairs Division, in coordination with the Ministry of Water and Power and the Ministry of Petroleum and Natural Resources of the Government of Pakistan.

⁹ TA-defined. Rectifying the infrastructure deficit in the energy sector is critical to overcoming challenges posed by supply-chain bottlenecks to growth and poverty reduction.

¹⁰ The design and monitoring framework is in Appendix 1.

14. **Output 2: Stakeholder views on progress during 2010–2017 collected.** The analysis will be based on ongoing consultation with the government and development partners, but the result of the assessments and draft reports from output 1 will also be disseminated to these stakeholders to consolidate their inputs. The drafts will be circulated both electronically and in printed copies, and a concluding coordination meeting will be convened to finalize the report.

15. The TA approach to this intervention is deemed appropriate because it (i) will continue analytical work co-led by ADB in 2010 and largely supported by the FODP report, and builds on the policy reforms supported by ADB's policy-based loans with cofinanciers; (ii) requires limited funding; and (iii) can be implemented fast by immediately recruiting the individual consultants and having a report completed by 31 May 2018.

C. Cost and Financing

16. The TA is estimated to cost \$510,000, of which \$500,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF VI). The government is soliciting additional support and cofinancing to complement the TA work, and will provide counterpart support in the form of staff support, office space, access to data, and by hosting meetings of stakeholders, and other in-kind contributions amounting to \$10,000. The key expenditure items are listed in Appendix 2.

17. Parallel cofinancing is envisaged to be provided by other bilateral and multilateral partners to support the work of the consultants.

D. Implementation Arrangements

18. ADB will be the implementing agency and will administer the TA. The Economic Affairs Division of the Ministry of Finance, the government's lead focal division to engage with development partners and external aid, will be the executing agency. The Energy Division of ADB's Central and West Asia Department will organize the workshops; and select, supervise, and evaluate consultants and resource persons for the workshops, if required. The output of the consultants will be approved by the steering committee.

Implementation Arrangements

Aspects	Arrangements		
Indicative implementation period	15 August 2017–15 May 2018		
Executing agency	Economic Affairs Division of the Ministry of Finance, Government of Pakistan		
Implementing agency	Energy Division, Central and West Asia Department, ADB		
Consultants	To be selected and engaged by ADB		
	ICS International consultants	10 person-months	\$250,000
	ICS National consultants	24 person-months	\$160,000
Advance contracting and retroactive financing	Not applicable		

Aspects	Arrangements
Disbursement	The technical assistance resources will be disbursed following ADB's <i>Technical Assistance Disbursement Handbook</i> (2010, as amended from time to time).
Asset turnover or disposal arrangement upon technical assistance completion	Not applicable

ADB = Asian Development Bank, ICS = individual consultant selection.

Source: Asian Development Bank estimates.

19. **Consulting services.** The required expertise is in line with the outputs of the TA. All consultants will be engaged by ADB in accordance with its Guidelines on the Use of Consultants (2013, as amended from time to time).¹¹ Two individual international consultants—an energy economist, and an energy sector and electricity subsector specialist—will lead the analytical work. The three individual national consultants—an energy finance and regulatory expert, a hydrocarbon expert, and an energy efficiency and renewables expert—will support the international specialists with field work, data collection, and subsector analyses. All individual consultants will be recruited using output-based contracts, following the arrangement and organization of the earlier ADB-assisted TA that formulated the FODP report. Two-hundred hard copies of the final report will be printed for dissemination, and for reference and use by the government, development partners, media, and industry professionals.

IV. THE PRESIDENT'S DECISION

20. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$500,000 on a grant basis to the Government of Pakistan for Update on Energy Sector Plan, and hereby reports this action to the Board.

¹¹ Terms of Reference for Consultants (accessible from the list of linked documents in Appendix 3).

DESIGN AND MONITORING FRAMEWORK

Impact the Technical Assistance is Aligned with An efficient and financially sustainable energy sector achieved ^a (TA-defined).			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Findings of the report fed into Pakistan's new energy policy for the medium term (2018–2023).	a. Assessment of progress against the Integrated Energy Sector Recovery Report (2010) is finalized by 31 May 2018 (2017 baseline: not applicable) ^b	a. Final report of the TA.	Newly elected government not committed to energy sector reforms.
Output 1. Key energy sector analyses and recommendations for 2018–2023 prepared. 2. Stakeholder views on progress during 2013–2017 collected	By 2018: 1a. Electricity subsector progress assessment and lessons learned during 2010–2017 are developed. (2017 baseline: not applicable) 1b. Gas subsector progress assessment and lessons learned during 2010–2017 are developed. (2017 baseline: not applicable) 1c. New energy sector recommendations based on progress during 2010–2017 are developed. (2017 baseline: not applicable) 2a. At least one stakeholder coordination meeting on the report is convened by March 2018.	Monthly progress reports of the TA.	Newly elected government not proactive in garnering support from donors for sector strategies and reforms.

Key Activities with Milestones

1. Key energy sector analyses and recommendations for 2018–2023 prepared

- 1.1 Post expression of interest for individual consultants by 1 June 2017.
- 1.2 Sign contracts with all consultants by 15 July 2017.
- 1.3 Hold monthly meetings with development partners to report on and monitor the TA progress.
- 1.4 Prepare initial draft report of the assessments by 31 October 2017.
- 1.5 Prepare draft final report of the assessments by 31 January 2018.
- 1.6 Finalize the report by 30 May 2018.

2. Stakeholder views on progress during 2013–2017 collected

- 2.1 Identify key stakeholders from the government and development partners and form a government-led consultative group by September 2017.
- 2.2 Circulate the initial draft report among stakeholders by November 2017.
- 2.3 Circulate and discuss the draft final report among stakeholders by February 2018.
- 2.4 Hold a final consultative group meeting to consolidate inputs and finalize the report by March 2018.

Inputs

Asian Development Bank: \$500,000 from the Technical Assistance Special Fund (TASF VI)

Note: The Government will provide counterpart support in the form of staff support, office space, access to data, and by hosting meetings of stakeholders, and other in-kind contributions amounting to \$10,000. Development partners will contribute by providing additional consulting input on the oil and gas subsectors, thus complementing the TA scope.

Assumptions for Partner Financing: not applicable

TA = technical assistance.

^a Rectifying the infrastructure deficit in the energy sector is critical to overcoming the challenges posed by supply chain-bottlenecks to growth and poverty reduction.

^b Friends of Democratic Pakistan, Energy Sector Task Force. 2010. *Integrated Energy Sector Recovery Report and Plan*. Islamabad.

Source: Asian Development Bank.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Amount
Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	250.0
ii. National consultants	160.0
b. Out-of-pocket expenditures	
i. International and local travel	45.0
ii. Seminars and conferences	10.0
iii. Reports and communications	10.0
2. Printed external publication	10.0
3. Contingencies	15.0
Total	500.0

Note: The technical assistance is estimated to cost \$510,000, of which contributions from the Asian Development Bank amounting to \$500,000 are presented in the table above. The government will provide counterpart support in the form of staff support, office space, access to data, and by hosting meetings of stakeholders, and other in-kind contributions amounting to \$10,000. The value of government contribution is estimated to account for 2% of the total technical assistance cost.

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF VI).

Source: Asian Development Bank estimates.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/LinkedDocs/?id=50081-001-TARreport>

1. Terms of Reference for Consultants