ADB

Concept Paper

Project Number: 53165-001
September 2019

Proposed Programmatic Approach and Policy-Based Loan for Subprogram 1
Islamic Republic of Pakistan: Energy Sector Reforms and Financial Sustainability Program

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 9 September 2019)

Currency unit	–	Pakistan rupee/s (PRe/PRs)
PRs1.00	=	$0.00640
$1.00	=	PRs156.21

ABBREVIATIONS

ADB	–	Asian Development Bank
FY	–	fiscal year
NEPRA	–	National Electric Power Regulatory Authority

NOTES

(i) The fiscal year (FY) of the Government of Pakistan ends on 30 June. “FY” before a calendar year denotes the years in which the fiscal year ends, e.g., FY2018 ends on 30 June 2018.

(ii) In this report, "$" refers to United States dollars.

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PROGRAM AT A GLANCE

1. Basic Data			**Project Number:** 53165-001
Project Name	Energy Sector Reforms and Financial Sustainability Program (Subprogram 1)	**Department/Division**	CWRD/CWEN
Country	Pakistan	**Executing Agency**	Ministry of Finance
Borrower	Islamic Republic of Pakistan		

2. Sector	**Subsector(s)**	**ADB Financing ($ million)**
✓ **Energy**	Energy sector development and institutional reform	300.00
	Total	**300.00**

3. Strategic Agenda	**Subcomponents**	**Climate Change Information**	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Climate Change impact on the Project	Low
		ADB Financing	
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns	Mitigation ($ million)	21.00

4. Drivers of Change	**Components**	**Gender Equity and Mainstreaming**	
Governance and capacity development (GCD)	Institutional development Public financial governance	Some gender elements (SGE)	✓
Partnerships (PAR)	Official cofinancing Private Sector		
Private sector development (PSD)	Conducive policy and institutional environment		

5. Poverty and SDG Targeting		**Location Impact**	
Geographic Targeting	No	Nation-wide	High
Household Targeting	No		
General Intervention on Poverty	Yes		
SDG Targeting	Yes		
SDG Goals	SDG9, SDG10, SDG12, SDG13		

6. Risk Categorization: Complex

7. Safeguard Categorization **Environment:** C **Involuntary Resettlement:** C **Indigenous Peoples:** C

8. Financing

Modality and Sources	**Amount ($ million)**
ADB	**300.00**
Sovereign Programmatic Approach Policy-Based Lending (Concessional Loan): Ordinary capital resources	300.00
Cofinancing	**50.00**
Export-Import Bank of Korea - Programmatic Approach Policy-Based Lending (Loan) (Not ADB Administered)	50.00
Counterpart	**0.00**
None	0.00
Total	**350.00**

Currency of ADB Financing: USD

I. THE PROPOSAL

1. The proposed Energy Sector Reforms and Financial Sustainability Program aims to address fiscal, governance, technical, and policy deficits in Pakistan's energy sector. These arrears have adversely impacted the sector's quality and efficiency of services, and the sustainability of energy infrastructure and finances, thereby challenging Pakistan's fiscal balance and macroeconomic stability. The program incorporates lessons learned from similar policy-based interventions by the Asian Development Bank (ADB) and draws on the recommendations and lessons in the sector assistance program evaluation.[1] The program is conceived in close coordination with key development partners, and underpins the International Monetary Fund's recently approved $6.0 billion extended fund facility to curtail the sector's burden on the annual budget and to stem quasi-fiscal losses and associated negative impact on economic growth.

2. The programmatic approach and policy-based loan will finance three subprograms to be implemented in 2019–2023. Through interlinked policy actions, reform areas of the three sequenced subprograms are underpinned on three pillars: (i) securing financial sustainability, (ii) strengthening governance, and (iii) reinforcing infrastructure improvements. In line with these pillars, subprogram 1 will (i) check the accumulation of circular debt through cost-reflective tariffs with automatic quarterly adjustments and notification mechanism, fully budgeted subsidies, a credible circular debt management plan, and investor-friendly national electricity and renewable energy policies; (ii) streamline integrated planning and bolster governance through appointment of professional heads and autonomous boards, separation of hydrocarbon policy and regulation functions, and development of a privatization road map for liquid natural gas plants; and (iii) enhance infrastructure investments to reduce line losses, rationalize generation cost, increase private sector participation with frequent bidding rounds, finalize a road map to reduce unaccounted-for gas, and set up an alternative dispute resolution mechanism for appeals on regulatory decisions. Subsequent subprograms will build on the earlier initiated interventions and reforms, focusing on settling the stock of circular debt and past taxation issues, instituting multiyear tariffs, unbundling the gas sector, increasing private sector participation, functional outsourcing and management contracts in distribution sector and rolling out distributed generation and off-grid solutions. The program is consistent with ADB's current country partnership strategy for Pakistan, and the under preparation strategy for Pakistan, 2020–2024; and, it is included in the country operations business plan.[2] The program is also aligned with ADB's Strategy 2030 by adding value through finance and knowledge to strengthen sector governance and institutional capacity.[3] The draft design and monitoring framework is in Appendix 1.

II. PROGRAM AND RATIONALE

A. Background and Development Constraints

3. Pakistan's energy sector has multiple structural weaknesses. In 2014, the supply–demand gap peaked at 7,000 megawatts, which accounted for almost 40% of the installed capacity, and led to 12–16 hours of load-shedding per day. In response, the government aggressively added capacity of 12.2 gigawatts of thermal power during 2014–2019 at a cost of $24.8 billion. The added capacity primarily came from imported fuels, under the *take or pay* contracts, which has

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[1] Independent Evaluation Department. 2019. *Sector Assistance Program Evaluation: ADB's Support to Pakistan Energy Sector (2005–2017)*. Manila.

[2] ADB. 2015. *Country Partnership Strategy: Pakistan, 2015–2019.* Manila; and ADB. 2018. *Country Operations Business Plan: Pakistan, 2019–2021.* Manila.

[3] ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific.* Manila.

consequently raised unit generation costs by nearly 7%. All generation plants are structured with capacity payments, but there is little monitoring of actual capacity (installed versus rated) and availability. To cut upstream costs, the regulator needs to validate that generation plants function within the operational parameters and technical benchmarks of their respective generation licenses and the requisite check and balance mechanisms must be in place. Given the sluggish economic growth, it has been a challenge keeping capacity payment per energy unit at 2016 levels, as this would require energy sales to grow by 57% in fiscal year (FY) 2019.[4] The current power generation cost is around PRs600 billion per annum, and the system operator is critical to optimize it through efficiency based dispatch management, that can translate into 0.5%–0.7% cost savings, as improving dispatch by 0.2% can save an estimated PRs1.2 billion annually (footnote 4). The program will address the need to optimize generation costs through induction of renewable energy generation and retrofitting of critical infrastructure; revise the methodology of dispatching merit order; invest into indigenous resources (hydropower, renewable energy, and domestic coal and gas); mutually review existing contracts with independent power producers; privatize the regasified liquid natural gas to power plants and other generation facilities.[5]

4. Lack of corresponding downstream transmission and distribution infrastructure investments has caused congestion, inefficiencies, and high system losses that are 4% higher than 2016 levels. More than one-fourth of electricity generated is lost due to overstressed and dilapidated network, theft, and inadequate energy accounting.[6] The transmission network can currently evacuate 23,000 megawatt-peak and with loss levels of close to 3%, but nearly 10-gigawatt generation cannot be evacuated due to system constraints.[7] This imbalance has led to a capacity trap that has caused a debt trap and depleted sector liquidity.[8]

5. Poor governance exacerbates weak sector operations with unfavorable energy generation (60% imported fuels) and sales mix (80% domestic consumers), inability to institute cost-reflective tariffs, shortfall in recoveries, losses, unbudgeted subsidies, and a 35% devaluation of the Pakistan rupee since mid-2018. The power sector's long-term inability to recover its full costs has created a circular debt, with the sector's financial problems spilling over to other sectors in the supply chain including generators, fuel, and equipment suppliers. The cost of energy delivery (including generation, transmission, and distribution) is nearly 30% higher than the revenue recovered.[9] As of 30 June 2019, the sector's outstanding deficit totals $15.4 billion, comprising circular debt (flow and stock) and subsidies, despite settling the circular debt flow fully in 2013.

6. With annual losses of over $2 billion, energy sector entities continue to rely on significant regular fiscal transfers (nearly 1.5% of gross domestic product) and sovereign credit guarantees to maintain their operations.[10] As of 31 December 2018, Pakistan's banking advances totaled PRs7,955 billion, including PRs1,434 billion (18%) for energy sector deficit financing, crowding out private borrowing. According to the World Bank, Pakistan's power sector inefficiencies cost

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4 National Electric Power Regulatory Authority. 2018. *State of Industry Report*, *2017*. Islamabad.1 June.

5 Of the infrastructure investments of $48 billion since 2015, nearly $35 billion (15 projects) is being invested in energy generation and transmission projects in take or pay contracts.

6 Power distribution companies' transmission and distribution losses for FY2017–FY2018 were 18.32%, against the National Electric Power Regulatory Authority's (NEPRA) target of 15.3%.

7 ADB estimates.

8 Additional procurement of generation capacity without matching demand growth entails surplus capacity for which the government and consumers will need to make capacity payments without utilizing this energy. Government of Pakistan, Central Power Purchasing Agency. 2018. *Brief on Market Development Activities*. Islamabad. 30 June.

9 This is calculated as gross billing minus unrecovered amount and unfunded subsidies.

10 Ministry of Finance. 2018. *Annual Budget, FY2018–FY2019*. Islamabad.

the economy $18 billion (6.5% of gross domestic product) in 2015 and constrain the country's growth.[11] These inefficiencies have cut the country's trade and export competitiveness.

B. Policy Reform and ADB's Value Addition

7. With the 4% projected energy demand during 2020–2025, the Government of Pakistan recognizes the sector's adverse fiscal impact on the country's macroeconomic stability. Energy sector reforms could save the economy around $8.4 billion in annual business losses and increase total household income by at least $4.5 billion a year. In consultation with development partners, the government embarked on an inclusive energy reform agenda aligned with the program outcomes to plug governance gaps and revenue leakages, improve revenue collection, reduce losses and capacity charges, develop new policies to rationalize pricing, support tariff reforms, settle long-outstanding issues of taxation and tariff disputes, and reduce subsidies.[12]

8. The program builds on two earlier ADB-assisted policy-based interventions in the energy sector: (i) Accelerating Economic Transformation Program, approved in 2008 but discontinued with the 2010 cancelation of the International Monetary Fund's Standby Arrangement; and (ii) Sustainable Energy Sector Reform Program, approved in 2014 and comprising three subprograms through 2017, aimed to contain circular debt accumulation by reducing transmission and distribution losses, improving tariff collections, and reducing the time for the National Electric Power Regulatory Authority (NEPRA) to determine tariffs.[13] The policy loans managed to ensure the operationalization of the Central Power Purchase Agency and its separation from the National Transmission and Despatch Company. The Sustainable Energy Sector Reform Program also achieved amendments in the NEPRA Act 1997 to align the legislation with the new power market concept, achieve reforms in the tariff-setting and determination process, and support the creation of a consolidated Ministry of Energy. However, several reforms were stalled during the 2018 election period, including improving the commercial viability of and accelerating privatization of sector entities.

9. The program will continue to implement reforms envisaged under previous interventions, such as institutionalizing the National Electricity Policy and Plan, establishing appellate tribunals, and making the distribution tariff-setting process de-politicized, automated, and independent, with NEPRA as the tariff-setting, determination, and notification authority, and the government declaring subsidies well in advance to allow NEPRA to reflect them in the tariff. The government is developing and executing an automated process for fuel and capacity charges in the tariff. It is also pursuing a road map to increase regulatory independence and institute a framework for a multi-year tariff for all power distribution companies. The program will focus on preparation, approval, and implementation of (i) a renewable energy policy, (ii) a 25-year integrated energy plan, (iii) a plan to reduce unaccounted-for gas, (iv) a roadmap for privatization of two liquid natural gas plants, and (v) a policy for greater private sector participation in hydrocarbons exploration.

10. The programmatic approach will (i) confirm sequencing of reforms and investment projects in coordination with donors, (ii) ensure continued engagement as the reforms are multifold and require 5 years to implement and yield results, and (iii) allow ADB to explore cofinancing options.

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[11] World Bank. 2018. Power Sector Distortions Cost Pakistan Billions. Press release. 12 December.

[12] Recovery of power distribution companies for FY2017–FY2018 remained at 90.1%, against NEPRA's target of 100%.

[13] ADB. 2008. *Report and Recommendation 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 (Loan 2446, $300 million, approved on 30 September); and ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Proposed Programmatic Approach and Policy-Based Loan for Subprogram 1 to the Islamic Republic of Pakistan for the Sustainable Energy Sector Reform Program.* Manila (Loan 3126, $400 million, approved on 24 April).

C. Impacts of the Reform

11. The program will address sector inefficiencies, strengthen sector governance, and eliminate quasi-fiscal losses. Reducing circular debt will improve sector liquidity, protect funds for infrastructure expansion, finance technological improvements, phase out subsidies, and reduce consumer tariffs. The appointment of professional management and independent boards will reinforce accountability mechanisms and autonomy of power entities that will facilitate functional outsourcing and management contracting to lower inefficiencies, thereby leading to phased privatization and eventual graduation to an accountable competitive power market. These reforms would secure a reliable, sustainable, and affordable energy sector. On the downside, implementing cost-reflective tariffs would require continued insulation of lifeline consumers through subsidies, the autonomy of sector entities would challenge government intervention and control, and unskilled workforce would lose jobs. The government must mitigate the negative spillover impact of reforms through budgetary support and incentives in service structure.

D. Development Financing Needs and Budget Support

12. Pakistan's 2019 growth trajectory dipped into a stabilization mode with unsustainable fiscal and current account deficits.[14] To support the government's growing development financing needs and the cost of implementing sector reforms, ADB has programmed a $1 billion equivalent assistance over 2019–2022, to be disbursed in three subprograms. As Pakistan's largest development partner in the sector with lending totaling $7.76 billion since 2005, ADB leads development coordination and is prominently positioned to partner with the government in instituting policies and reforms to address constituents of circular debt. In the medium term, a declining growth rate coupled with rising inflation constrains government finances, which will incur significant adjustment costs from the program reform areas, including (i) rationalization of tariffs and provision of subsidies to lifeline consumers; (ii) establishment of appellate tribunals; (iii) retirement of expensive loans to meet the legislated contingent liability ceiling;[15] (iv) reinforcement of integrated planning and management systems; and (v) financing of infrastructure, institutional, and system improvements. ADB's concessional lending resources will provide the loans. The Export-Import Bank of Korea intends to cofinance $50 million for the subprogram 1, and ADB is discussing cofinancing for the ensuing subprograms with other donors.

E. Implementation Arrangements

13. The Ministry of Finance will be the executing agency, responsible for overall program monitoring and reporting.[16] The Ministry of Energy is proposed as the implementing agency. An ongoing technical assistance is preparing the program and providing requisite analytical support to implement the policy actions.[17] The proceeds of the policy-based loan will be withdrawn in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

III. DUE DILIGENCE REQUIRED

14. In coordination with stakeholders, the due diligence will include (i) sector assessment focusing on specific policy measures to be taken, (ii) economic and financial analysis, (iii) a risk assessment and management plan, (iv) program impact assessment, (v) environmental

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[14] For FY2019–FY2024, the International Monetary Fund projects the economy to grow at an average rate of 2.5%.

[15] Ministry of Finance. 2016. *Fiscal Responsibility and Debt Limitation Act, 2005 (Amended)*. Islamabad.

[16] Subprogram 1 is implemented in 2019–2020. The program policy actions are interlinked and sequenced in three subprograms.

[17] ADB. 2017. *Technical Assistance to the Islamic Republic of Pakistan for the Update on Energy Sector Plan*. Manila.

assessment, and (vi) fiduciary safeguards assessment. The program is expected to be classified as category C both for environment and social safeguards. The initial poverty and social analysis is in Appendix 3. The summary of due diligence to be carried out is as follows:

(i) **Safeguards.** All impacts of the proposed policy actions on the environment, involuntary resettlement, and indigenous peoples, if any, will be assessed.
(ii) **Financial.** Sector due diligence will confirm the government's fiscal capacity to absorb the impact of reforms and the adequacy of committed resources.
(iii) **Economic.** The economic viability, affordability, and sustainability of the program will be assessed, and the economic benefits and reform costs will be evaluated.
(iv) **Governance.** Improved energy sector governance at the regulatory, corporate, and government levels, as well as related mechanisms and capacity issues, will be agreed with the government as part of the program design.
(v) **Gender, poverty, and social.** No poverty or social issues requiring specific attention have been identified. The program will protect lifeline consumers from tariff volatility. For gender inclusiveness, gender impacts will be examined during due diligence.

IV. PROCESSING PLAN

A. Risk Categorization

15. All three subprograms are categorized *complex* as they exceed the $50 million threshold.

B. Resource Requirements

16. ADB staff with expertise in the energy and finance sectors will process the program. Staff will dedicate an estimated total of 12 person-months to processing. A consultant will be required for 8 person-months to support diagnostic analysis and policy dialogue.

C. Processing Schedule

17. The table lists major milestones up to Board discussion for the loan processing schedule.

Proposed Processing Schedule

Milestones	Expected Completion Date
Concept clearance	September 2019
Fact-finding mission	September 2019
Loan negotiations	October 2019
Board consideration	November 2019
Loan signing and effectiveness	November 2019

V. KEY ISSUES

18. The key issues are (i) immunizing reforms from political interventions to eliminate historical recurrence of circular debt; (ii) securing strong government commitment to invest in infrastructure, despite an unprecedented financial crunch; (iii) mandating extra diligence by ADB during processing and implementation as the sector assistance program evaluation rates implementation of reforms *less than successful*; (iv) possibly adjusting the program timeline to meet objectives as reforms are substantial, frontloaded, and politically difficult to implement; and (v) diligently implementing ADB's investment projects, aligned to support the sector reforms. A programmatic approach would provide flexibility to align policy actions with evolving sector realities, shifting macroeconomic parameters, and varying institutional absorptive capacities.

DESIGN AND MONITORING FRAMEWORK

(Initial Draft)

Country's Overarching Development Objectives Financial sustainability and self-reliance of energy sector achieved (Vision 2025)[a]			
Results Chain	**Performance Indicators with Targets and Baselines**	**Data Sources and Reporting Mechanisms**	**Risks**
Effect of the Reform Financial, technical, and governance deficits in energy sector reduced	To be accomplished by 2024: a. The government has reduced circular debt by implementing the circular debt management plan (baseline: PRs1.5 trillion in 2019 to XX in 2024). b. The government has lowered the weighted average cost of generation by implementing integrated energy plan (baseline: PRs14.7 in 2019 to XX in 2024). c. The power sector appellate tribunals have disposed-off 60% of the complaints within 6 months of application submission on an annual basis (baseline: nil in 2019 to XX in 2024).	a. National budget documents b. NEPRA state of industry reports	Political instability to cause delays in implementing critical reforms.
Reform Areas under Subprograms 1. Securing financial sustainability	**Indicative Policy Actions** (Timing and sequencing under respective subprograms to be determined during due diligence stage) By 31 December 2022: 1.1 The government has notified the power tariff for FY2019–2020 based on realistic targets including the prior year adjustment of losses for eligible distribution companies. a. Ministry of Finance has allocated the full amount of required subsidy in the budget and committed to a realistic release pattern. b. NEPRA has revised, notified, and implemented the "Guidelines for	1.1 State Bank of Pakistan data	Unanticipated barriers and legal challenges slow the pace of implementation.

	Determination of Consumer End Tariff (Methodology and Process)" Act 2018 by mid-March each year, enabling the federal government to ascertain subsidy and its provision in time for the subsequent FY budget. c. The government has adopted efficiency-based dispatch instead of (subsidized) fuel cost. d. NEPRA has adopted a system of increased frequency of efficiency testing under third party supervision. 1.2. The government has largely settled the past accumulated circular debt on balance sheets of distribution companies and Power Holding Private Limited by preparing and approving a policy framework from the ECC for settling past accumulated circular debt. 1.3. The government has approved the National Electricity Policy, the National Electricity Plan, the Renewable Energy Policy, and the Integrated Energy Plan.	 1.2 National budget documents 1.3 NEPRA state of industry reports	
2. Strengthening governance (institutional and regulatory)	2.1 The government has approved a plan to restructure and staff Power Division and to increase women's recruitment in the energy sector including power utility companies; and distribution, transmission, and generation companies. 2.2 The ECC has approved separation of regulatory and policy functions under the Directorate General of Petroleum Concessions in the Ministry of Energy. 2.3 The government has approved a privatization plan for regasified liquid natural gas plants.	2.1 NEPRA state of industry reports 2.2–2.3 The Oil and Gas Regulatory Authority's state of industry reports	Unanticipated legal barriers may prolong implementation timelines

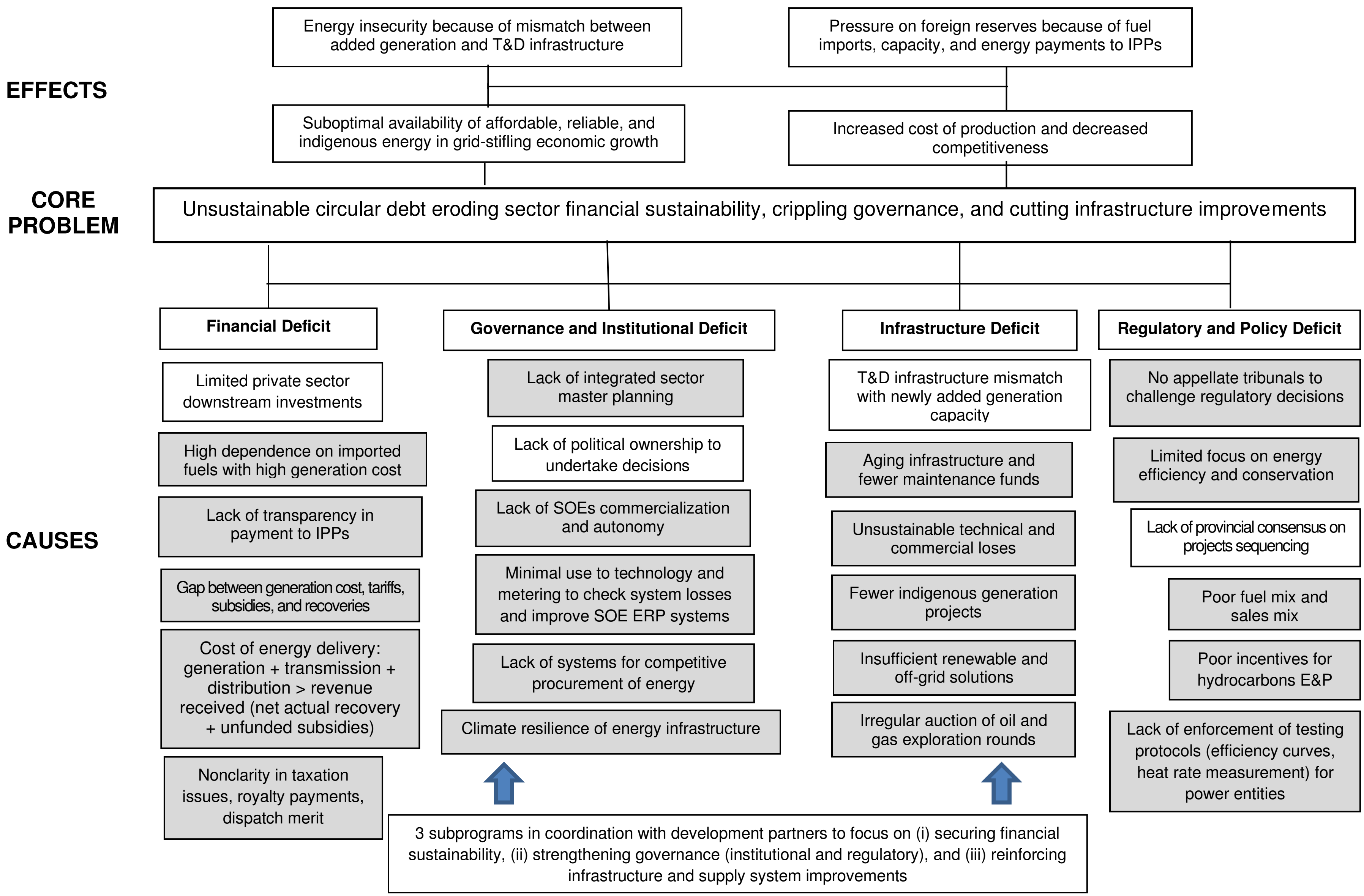
3. Reinforcing infrastructure and supply system improvements	3.1. The NTDC and distribution companies have prepared a detailed infrastructure master plan with priority to evacuate renewable energy, consistent with open-access transmission system. 3.2. The government has approved a 5-year rural and off-grid electrification plan along with simplification of procedure for promoting net metering regime. 3.3. The government has approved a plan to increase bidding rounds for oil and gas blocks through smaller chunks to encourage sustained and reliable exploration in oil and gas sectors.	3.1 NEPRA state of industry reports 3.2 NTDC power statistics 3.3 Pakistan Energy Yearbook	Lukewarm support from private sector to disrupt reforms effort and investment targets
Budget Support ADB: Subprogram 1: $300 million (concessional OCR); Total for 3 subprograms: $1 billion			
Assumptions for Partner Financing: Bilateral development partners (Japan International Cooperation Agency, Export-Import Bank of Korea) have expressed their interest for parallel cofinancing of these subprograms. The cofinancing amounts and outputs will be confirmed at due diligence during the fact-finding stage.			

ADB = Asian Development Bank, ECC = Economic Coordination Committee of the Cabinet, FY = fiscal year, NEPRA = National Electric Power Regulatory Authority, NTDC = National Transmission and Despatch Company, OCR = ordinary capital resources.

[a] Government of Pakistan, Ministry of Planning, Development and Reform. 2014. *Pakistan 2025: One Nation–One Vision*. Islamabad.

Source: Asian Development Bank.

PROBLEM TREE



E&P = exploration and production, ERP = enterprise resource planning, IPP = independent power producer, SOE = state-owned enterprise, T&D = transmission and distribution.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/LinkedDocs/?id=53165-001-ConceptPaper

1. Initial Poverty and Social Analysis