

ECONOMIC ANALYSIS

A. Introduction

1. The Sustainable Energy Sector Reform Program is designed as a series of single-tranche operations to support the 2013 National Power Policy of the Government of Pakistan to develop an efficient, sustainable, and affordable consumer-focused power generation, transmission, and distribution system that meets the needs of its citizens and supports the economy.¹ This economic analysis summarizes the program's economic benefits.

2. The program has three key output areas: (i) tariffs and subsidies, (ii) sector performance and private sector participation, and (iii) accountability and transparency. The program's policy actions address key issues in these three areas and have been agreed with the government.

B. Sector Overview

3. In fiscal year (FY) 2016, Pakistan's electricity generation mix, excluding the K-Electric system of Karachi, consisted of hydropower (33.9%), oil (32.5%), gas (28.6%), coal (0.1%), and others (4.8%).² While the decline in oil prices since 2015 has helped the sector better manage generation costs, heavy reliance on fuel oil coupled with a shortage of inexpensive domestic gas supplies increased the cost of generation significantly.

4. The Government of Pakistan has not passed on the high cost of electricity to consumers for sociopolitical reasons. The National Electric Power Regulatory Authority (NEPRA), an independent regulator of the electricity subsector, determines cost-recovery tariffs based on targets of system losses and collection rates. Based on these NEPRA-determined tariffs, the government sets and notifies end-customer tariffs, which are lower than the prices determined by NEPRA. The gap between the tariffs is covered by the government in the form of tariff differential subsidies to power distribution companies (DISCOs). These subsidies amounted to PRs289 billion in FY2014,³ PRs220 billion in FY2015,⁴ and PRs171 billion in FY2016, and are projected to be PRs118 billion in FY2017.⁵ Because the NEPRA-determined tariffs understate system losses and overstate revenue collection rates, DISCOs bear the difference between the subsidized tariffs and the actual cost of electricity supply. DISCOs have sought to reduce system losses (which fell from 21.9% in FY2013 to 17.9% in FY2016) and increase collection rates (which rose from 86% to 94% during the same period). However, under the current tariff framework, DISCOs face significant challenges in making infrastructure investments to reduce technical and commercial losses.

5. The financial issues in the distribution segment have also led to insufficient payments to generators and fuel suppliers, causing lack of funds to sustain stable electricity generation. Pakistani consumers currently face routine load shedding as a consequence.

6. While the electricity subsector struggles to tackle the system losses and financial issues, the National Transmission and Despatch Company (NTDC) has forecast that growth in electricity demand in Pakistan (in terms of kilowatt-hours) will average 6.14% per year during

¹ Government of Pakistan. 2013. *National Power Policy 2013*. Islamabad.

² Based on sales data provided by the Ministry of Water and Power, Pakistan.

³ Disbursed amounts of tariff differential subsidies based on data provided by the Ministry of Finance.

⁴ Ministry of Finance of the Government of Pakistan. 2015. *Federal Budget 2015-16 – Budget in Brief*. Islamabad.

⁵ Ministry of Finance of the Government of Pakistan. 2016. *Federal Budget 2016-17 – Budget in Brief*. Islamabad.

2015–2037.⁶ However, demand is estimated to have grown by only 4% in 2015.⁷ The subsector's infrastructure and financial constraints may prevent the forecast demand growth, and the program's policy actions, such as tariff and subsidy reforms, will be key in removing these constraints.

C. Economic Benefits

7. The program's economic benefits arise from effectively removing the key constraints behind each of the three output areas. In the output 1 (tariffs and subsidies) policy areas, the current tariff scheme in Pakistan has two elements that complicate cost recovery: (i) the gap between the tariffs determined by NEPRA and those charged to customers, which result in large electricity subsidies; and (ii) the gap between the NEPRA-determined tariffs and the actual cost of delivering electricity to customers, which is not addressed through existing mechanisms.

8. The program aims to reduce the amount of the subsidies through various measures, such as revising tariff determination processes, improving operational efficiency of subsector entities, and increasing collection from customers. Reducing the subsidies from 1.8% (FY2013) to 0.7% (FY2016) of gross domestic product increased the fiscal space available for other activities, and enabled the government to increase funding for basic needs such as education and health services, where Pakistan still faces significant challenges.⁸

9. One of the key actions to continue on this effort is the amendments to the act that governs the sector regulatory framework, NEPRA Act. The amendments aim to clarify the government's power to introduce electricity surcharges when needed, which is currently challenged at court. Further, it aims to define the role of the government as a policy-maker and NEPRA as the regulator more clearly. This will help the government issue policies such as reflection of higher losses and lower collection rates in tariffs when necessitated by problems such as security in some areas of the country. Once the amended bill is enacted, the government will be able to use these measures to tackle the lack of sufficient financial resources in the sector, which leads to the accumulation of the circular debt.

10. The development and implementation of the action plans to reduce circular debt in outputs 1 and 2 (enabling private sector involvement) are also expected to increase the amount of electricity supplied to the country by improving operational efficiency of state-owned entities and encouraging private sector investment. This will reduce the chronic arrears to power generators and fuel suppliers. A financially healthy energy sector will foster investor confidence in the electricity subsector and ultimately in other fields such as manufacturing.

11. The reduction of circular debt and better financial health of state-owned energy enterprises would also increase their capacity to invest in energy infrastructure, inducing a positive cycle of profits and further investments by energy companies, and providing a stable supply of energy for other economic activities.

12. Output 3 aims to improve accountability and transparency to develop investor and consumer confidence in the energy sector and public entities. Customers who are better informed thanks to improved transparency would be more likely to take action, which would

⁶ National Transmission and Despatch Company. 2014. *Electricity Demand Forecast based on Multiple Regression Analysis*. Lahore.

⁷ Ministry of Finance of the Government of Pakistan, 2015, *Pakistan economic survey, 2015*, Islamabad.

⁸ ADB. 2015. *Country Partnership Strategy: Pakistan, 2015–2019*. Manila. The strategy identifies these as Pakistan's development challenges, along with macroeconomic instability and inadequate infrastructure.

create a strong monitoring mechanism and encourage companies to improve their operational efficiency.

13. The economic benefits from each output category will eventually contribute to building an affordable, reliable, and sustainable energy system in Pakistan by enhancing energy supply capacity, and improving operational efficiency and transparency; a sustainable energy sector will in turn support the economic growth of the country.

D. Development financing needs and the impact of the program

14. NEPRA Act amendments are expected to provide the government and the regulator powers to tackle the existing and future sector issues more effectively. However, the amendments need the approval of the parliament. While it is difficult to estimate exactly how long the parliamentary process will take, the government currently expects about six months before obtaining the approvals from both houses of the parliament. At least during these six months, further impact from losses and lack of collection beyond the NEPRA-determined levels will continue.

15. Based on the electricity sales in FY2016 and results of collection in the first half of FY2017, the estimated amount of such excess losses and lack of collections for six months is PRs 55 billion.⁹ In addition to the budget deficits and tariff differential subsidy needs of the government,¹⁰ this is an indicator of the temporary adjustment cost that the sector will face. Savings obtained as a result of the energy sector reform, can be used by the government in other areas to support the economic growth.

E. Conclusions

16. The overall economic benefit of the program is greater economic growth, supported by a sustainable energy sector. This benefit is a result of reduced subsidies and increased funding for other government activities (output 1); management of circular debt from improved efficiency and better reflection of the cost of electricity supply, which leads to greater investor confidence and private investments (output 2); and a stakeholder monitoring system thanks to improved accountability and transparency to reinforce the sustainability of the sector and economic growth (output 3).

⁹ The total sales in FY2016 were about 93.3 gigawatt-hours for all DISCOs (except the privatized K-Electric). The distribution losses beyond the NEPRA-determined levels were about 2.6%. This results in about PRs 13.9 billion of such losses for six months. The amount of non-collection in the first six months of FY2017 was about PRs 40.6 billion. Therefore, the sum of the excess losses and non-collection for six months is estimated to be about PRs 55 billion.

¹⁰ These figures are discussed in more detail in the Fiscal Analysis supplementary appendix.