Project Summary Information (PSI)

Project No.: 000006

Project Name	Transmission System Strengthening Project (Tamil Nadu)
Country	Republic of India
Sector	Energy / Power
Project No.	000006
Borrower	Power Grid Corporation of India Limited (POWERGRID)
Implementation Agencies	POWERGRID
Environmental and Social Category	Category B
Date of PSI prepared or updated	September 28, 2017
Date of Concept Approval	April 19, 2016
Date of Appraisal Approval	April 18, 2017
Date of Board Approval	September 27, 2017

I. Introduction

1. India has made significant progress on many fronts in the past decade, and performed relatively well in the recent global economic slowdown – its GDP growth was 7.2% in fiscal year 2014/15 (FY2014/15) and 8.0% in FY2015/16, and is projected to be 7.1% in FY2016/17. Due to the reduced external vulnerabilities and improved growth prospects, India has attracted large foreign direct investment inflows in recent years. In 2016 India's international reserves reached US$360.2 billion (around 8.6 months of import cover), and its external debt-to-GDP ratio remained largely stable at 23.5%. Looking ahead, India's medium-term economic outlook is expected to be sustainable, characterized by continued high GDP growth rate.[1]

2. Although its steady economic growth in the past decade has lifted many people out of poverty, as per IMF and World Bank's statistics, around 21% of the population still lives below the national poverty lines.[2] To unleash India's economic growth potential and move more people out of poverty, India must invest heavily in infrastructure, including electricity. As of June 30, 2017, India had about 330.3 gigawatt (GW) of installed capacity.[3] However, there are still 280 million people in the country without connection to the power grid, and many who are connected continue to face frequent supply disruptions.[4]

3. The Government of India (GoI) has prioritized electricity sector development in its 12th Five Year Plan (2012-2017).[5] The GoI planned to increase the share of renewable energy in the

[1] International Monetary Fund (IMF), 2017. Country Report No. 17/54: 2017 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for India.
[2] World Bank, 2016, World Development Indicators.
[3] Central Electricity Authority (CEA), 2017. All India Installed Capacity of Power Stations (as of June 30, 2017). New Delhi, India.
[4] World Bank, 2016, World Development Indicators: Energy and Mining.
[5] Government of India, Planning Commission. 2013. Twelfth Five Year Plan (2012-2017). New Delhi, India.

country's electricity generation, and announced at the 2015 Paris Climate Conference (also known as COP21) that it aimed to increase to 40% the share of installed generating capacity from non-fossil fuel-based energy resources by 2030. This includes plans to quadruple the country's (non-hydro) renewable energy capacity to 175 GW by 2022, which will require substantial investments in generation, as well as substantial complementary investments in strengthening the transmission network to absorb the intermittent renewable energy.[6]

4. Tamil Nadu is the leading state in India with the highest installed generating capacity of renewable energy and is expected to contribute about 8,884 megawatt (MW) of solar power and 11,900 MW of wind power towards the national target. However, due to inadequate transmission infrastructure, Tamil Nadu has been facing challenges in evacuating electricity from renewables, such as wind, and exploiting its large renewable energy potential.

II. Project Objective and Expected Results

5. The objective of the Project is to enhance capacity of electricity supply in Southern Region and re-balance the peak and off-peak energy sharing from the surplus areas of Northern and Western Regions to the deficit areas in Southern Region. The expected main result of the Project is the increased capacity of electricity supply added in Southern Region of India.

III. Project Description

6. The Project is a subset of the "HVDC Bi-pole Link between Western Region (Raigarh, Chhattisgarh) and Southern Region (Pugalur, Tamil Nadu) – North Trichur (Kerala)" (the Scheme), which comprises 3 related schemes to expand the interstate transmission network in western and southern India.

- Scheme 1: 800 kV HVDC link from Raigarh (Chhattisgarh, Western Region) to Pugalur (Tamil Nadu, Southern Region).
- Scheme 2: 400 kV transmission segments from Pugalur to 5 other grid substations in Tamil Nadu state.
- Scheme 3: 320 kV HVDC link from Pugalur (Tamil Nadu) to Trichur (Kerala).

7. Upon completion, the Scheme (Schemes 1-3 combined) will be able to wheel 6.0 GW of power from Chhattisgarh and Madhya Pradesh states to the Pugalur hub substation, and then transfer 4.0 GW of electricity into Tamil Nadu and 2.0 GW of electricity into Kerala. While POWERGRID has already secured financing support for Schemes 1 and 3 (and related substations) from the Asian Development Bank (ADB), investment funding for Scheme 2 is urgently needed to maximize the potential benefit of the whole Scheme.

IV. Environmental and Social Category

8. The Bank has decided to apply ADB's Safeguard Policy Statement (2009) (ADB SPS) to the Project because: (i) it is consistent with the Bank's Articles of Agreement and materially

[6] Government of India, MNRE. 2015. Tentative State-wise break-up of Renewable Power target to be achieved by Year 2022. New Delhi.

consistent with the provisions of the Bank's Environmental and Social Policy and relevant Environmental and Social Standards; and (ii) the monitoring procedures that ADB has in place to ascertain compliance with the ADB SPS are appropriate for the Project. Under the ADB SPS, the Project is classified Category B for Environmental and Involuntary Resettlement, and Category C for Indigenous Peoples. An Initial Environmental Examination (IEE), including an Environmental Management Plan (EMP), and a Compensation Plan for Temporary Damages (CPTD) have been prepared and disclosed on the POWERGRID's website[7] and the Bank's website.[8]

V. Estimated Project Cost and Financing Source

9. The Project is estimated to cost US $303.47 million. The GoI has requested a loan of US $100 million from AIIB and a loan of US $50 million from ADB to help finance the Project (ADB's Loan No. and Title: 3365-IND: Green Energy Corridor and Grid Strengthening Project). Any shortfall in the funds required would be covered by POWERGRID.

Sources	**Amount** (US $ million)	**Share of Total** (%)
AIIB	100.0	33.0
ADB	50.0	16.5
POWERGRID	153.47	50.5
Total	**303.47**	100.0

VI. Implementation

10. The Project will be implemented over 31 months between August 1, 2017 and February 29, 2020.

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[7] http://www.powergridindia.com/disclosure
[8] https://www.aiib.org/en/projects/proposed/2016/india-transmission-system.html