Report and Recommendation of the President to the Board of Directors

Project Number: 48307-001
January 2015

Proposed Loan
Engro Elengy Terminal Private Limited
Engro Fast-Track Liquefied Natural Gas Regasification Project
(Pakistan)

CURRENCY EQUIVALENTS
(as of 18 January 2015)

Currency unit	–	Pakistan rupee/s (PRe/PRs)
PRe1.00	=	$0.0099
$1.00	=	PRs100.59

ABBREVIATIONS

ADB	–	Asian Development Bank
ECL	–	Engro Corporation Limited
EETPL	–	Engro Elengy Terminal Private Limited
FSRU	–	floating storage and regasification unit
Km	–	kilometer
LNG	–	liquefied natural gas
LPG	–	liquefied petroleum gas
LSA	–	Liquefied Natural Gas Operations and Services Agreement
MMCFD	–	million cubic feet per day
MPNR	–	Ministry of Petroleum and Natural Resources
mtpa	–	million tons per annum
MW	–	megawatt
RLNG	–	regasified liquefied natural gas
SSGC	–	Sui Southern Gas Company Limited
TCP	–	time charter party

NOTES

(i) The fiscal year (FY) of Engro Elengy Terminal Private Limited ends on 31 December.

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

Vice-President	L. Venkatachalam, Private Sector and Cofinancing Operations
Director General	T. Freeland, Private Sector Operations Department (PSOD)
Director	D. Purka, Infrastructure Finance Division 1, PSOD
Team leader	M. Hashimi, Investment Specialist, PSOD
Team members	P. Bailet, Senior Counsel, Office of the General Counsel
	S. Choudhry, Senior Investment Officer, Pakistan Resident Mission, Central and West Asia Department
	S. Durrani-Jamal, Senior Economist, PSOD
	J. Gomez, Safeguards Officer, PSOD
	S. Hassan, Treasury Specialist, Treasury Department
	M. Manabat, Senior Investment Officer, PSOD
	N. Peters, Senior Safeguards Specialist, PSOD
	B. Raemaekers, Principal Guarantees and Syndication Specialist, PSOD
	R. Samiano, Safeguards Officer, PSOD
	K. Taniguchi, Senior Economist, PSOD
	D. Urbaneja-Furelos, Young Professional, PSOD
	J. Ventura, Senior Investment Officer, PSOD

CONTENTS

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan of $30 million to Engro Elengy Terminal Private Limited (EETPL) for the Engro Fast-Track Liquefied Natural Gas Regasification Project in Pakistan.[1]

II. THE PROJECT

A. Project Identification and Description

1. Project Identification

2. Pakistan's energy sector is in crisis. Since 2008, power generation shortages—predominantly on account of fuel (both gas and fuel oil) unavailability—have exceeded over 5,000 megawatts (MW) on average, resulting in frequent and unscheduled industry shutdowns, massive layoffs, urban blackouts, and frequent public unrest.[2] Almost one-third of the country's power capacity is reliant on gas, hydropower, and fuel oil each. The majority of the fuel-fired thermal plants can also operate on gas, provided it is available. Besides power generation, gas resources are needed for domestic, fertilizer, industry, and transport usage, and in FY 2013 collectively accounted for half of the country's energy needs (64.6 million tons of oil equivalent). In FY2013, demand for natural gas was estimated to be 5,938 million cubic feet per day (MMCFD) against supply of 3,748 MMCFD—a deficit of 2,190 MMCFD. Compounding this problem is the fast-depleting nature of the country's domestic gas supply reserves.[3] Based on the Pakistan Economic Survey of 2013–2014, Pakistan's gas extraction (of 1.5 trillion cubic feet) is declining at an average rate of 2.3% per annum, whereas demand for gas is projected to increase from 5,938 MMCFD in FY2013 to 8,212 MMCFD by FY2028.[4]

3. With few near-term solutions to address the compounding energy deficit, the Ministry of Petroleum and Natural Resources (MPNR) identified the proposed project as one of the fast-track investments for Pakistan to improve its energy security measures. The MPNR sought to utilize existing energy handling infrastructure in the country by using floating storage and regasification units (FSRUs) to bring regasified liquefied natural gas (RLNG) to the country's energy mix by 31 March 2015.[5] Following a tender process, Engro Corporation Limited (ECL) special purpose vehicle EETPL was selected to develop the project. The first LNG cargo is expected to arrive on 31 March 2015, the required commercial operations date of the project according to the Liquefied Natural Gas Operations and Services Agreement (LSA).[6]

2. Project Design

4. This project will be Pakistan's first LNG regasification terminal. It involves the construction and operation of a 3 mtpa (or ~400 MMCFD) fast-track LNG regasification facility located at Port Qasim, Karachi, including a jetty, trestle, mooring dolphins, and associated

---

[1] The design and monitoring framework is in Appendix 1.
[2] National Electric Power Regulatory Authority. 2014. *State of the Industry Report 2013.* Islamabad.
[3] Hydrocarbon Development Institute of Pakistan. 2014. *Pakistan Energy Year Book 2013*. Islamabad.
[4] Government of Pakistan, Ministry of Finance. 2014. *Pakistan Economic Survey 2013–14*. Islamabad; Oil and Gas Regulatory Authority. 2014. *State of Regulated Petroleum Industry 2012–13*. Islamabad.
[5] The government's intention was that the need for multiple approvals and licenses from various regulatory and port authorities would be minimized and/or fast-tracked by having a functioning handling facility.
[6] Funds provided by the United States Agency for International Development to hire a qualified market consultant.

facilities, as well as the lease of an FSRU.[7] The LNG will be delivered to the new jetty and transferred to the parked FSRU. EETPL will take delivery of the LNG cargo at the terminal from an MPNR-appointed entity, re-gasify the LNG, and release the RLNG to the off-taker, Sui Southern Gas Company Limited (SSGC)—a state-owned enterprise in which the Government of Pakistan holds 83% shares—in accordance with the nominated quantities under the 15-year take-or-pay LSA.[8]

3. The Sponsor and/or Borrower

5. ECL, formerly Engro Chemical Pakistan Limited (from which it separated in 2010), is a Pakistan-based holding company. ECL's principal activity is to manage investments in subsidiary companies and joint ventures engaged in fertilizers, polyvinyl chloride resin manufacturing and marketing, food, energy, and chemical terminal and storage businesses. The company operates through five segments: (i) fertilizers, which it manufactures, purchases, and markets; (ii) polymers—established with Mitsubishi Corporation—which manufactures, markets, and sells polyvinyl chloride, polyvinyl chloride compounds, caustic soda, and related chemicals; (iii) food, including the manufacturing, processing, and sale of dairy and other food products; (iv) energy and power, which includes an LPG import terminal and a gas-fired combined cycle power project; and (v) other operations, including engineering and automation businesses. ECL is rated AA– by the Pakistan Credit Rating Agency Limited.

B. Development Impact, Outcome, and Output

1. Impact

6. The project's impact is to enhance Pakistan's energy security through diversification of the energy base by building a handling infrastructure for regasifying LNG. Since the gas shortage of 2,190 MMCFD in FY2013 is expected to worsen given the fast-depleting domestic gas reserves, lack of new investments, and no new major discoveries, the project will thus contribute to national energy security priorities and help strengthen the country's natural gas infrastructure. Given that the proposed project of 400 MMCFD will only be able to handle a fifth of the present gas supply deficit, its successful implementation will help catalyze further investment in similar LNG handling facilities in an environmentally sustainable manner.

2. Outcome

7. The outcome will be provision of commercially viable, regasified LNG supply to the power sector in Pakistan. Once fully operational in 2015, the project will provide the country with its first LNG regasification facility. The gas will be fed into the SSGC network and is expected to be used by the energy sector as a replacement for the expensive imported and polluting high-speed diesel fuel on which it currently relies. Once fully operational, this will help the Government of Pakistan save at least an estimated $1 billion[9] in foreign exchange on its fuel

[7] The use of FSRUs is playing an important role in opening up new markets for LNG, as this has enabled countries to import LNG quickly by incurring lower up-front capital costs. Since 2009, 13 countries have become LNG importers, seven of which have used FSRUs.

[8] The levelized tolling charge under the LSA is about $0.66 per million British thermal units (MMBtu).

[9] The underlying assumptions for calculating the potential annual savings of substituting high-speed diesel with 400 MMCFD RLNG are (i) diesel price of $0.7 per liter, and (ii) LNG price of $12 per MMBtu. In the first year of operations, the potential annual savings would be one-half of 400 MMCFD (of RLNG) as the contracted volume is only 200 MMCFD (of RLNG).

import bill of about $14.8 billion.[10] By providing a cleaner and more efficient fuel for electricity generation, the project will result in avoidance of greenhouse gas emissions of about 2 million tons per annum. Through the safe operation of the terminal, the project is expected to promote best industry standards and improve the skills and operational expertise of local staff required to operate and manage the country's first LNG terminal.

3. Output

8. The project output is the completion of Pakistan's first LNG regasification facility and associated gas infrastructure, with a gas handling capacity of 3 mtpa by 2015. This would enhance Pakistan's energy security through diversification of its energy base. In addition, the project will help stimulate regional and national economic growth through a combination of private sector investment, employment skills enhancement, and taxes.

C. Alignment with ADB Strategy and Operations

1. Consistency with ADB Strategy and Country Strategy

9. The project is consistent with the midterm review of Strategy 2020 of the Asian Development Bank (ADB) with its focus on inclusive economic growth, environmentally sustainable growth, private sector development and operations, environment and climate change, and infrastructure development.[11] ADB's support for the project is in line with ADB's country partnership strategy for Pakistan, 2009–2013, which emphasizes energy sector development, private sector participation in infrastructure development, and expansion of ADB's private sector operations in the energy sector.[12] Energy infrastructure has featured prominently in ADB's private sector operations in Pakistan.

2. Consistency with Sector Strategy and Relevant ADB Operations

10. The project is in line with ADB's Energy Policy, which stresses the importance of energy security, maximizing access to energy for all, transition to a low-carbon economy, and avoidance of greenhouse gas emissions.[13] The project is a logical outcome 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, particularly when the country faces challenges in attracting commercial investment. The supply of RLNG to power producers at cost will make it easier for the government to move toward market-based gas pricing for other consumer segments such as industry and domestic consumers; this, in turn, will provide much-needed stimulus to private investment in domestic gas exploration and production activities.

3. Lessons from Previous Operations

11. ADB has taken the lead in supporting the government's initiatives to attract private capital into the energy sector and has been instrumental in pioneering many transactions, keeping in view local banks' long-term lending constraints. ADB financed the first two private hydropower projects in Pakistan—the 84 MW New Bong Escape and the 147 MW Patrind

[10] State Bank of Pakistan. Economic Data. http://www.sbp.org.pk.
[11] ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020.* Manila; ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific.* Manila.
[12] ADB. 2009. *Country Partnership Strategy: Pakistan, 2009–2013.* Manila.
[13] ADB. 2009. *Energy Policy.* Manila.

hydropower projects.[14] It was also instrumental in financing Pakistan's first three private wind power projects—Zorlu Enerji (56 MW)[15] and Foundation Wind Energy I (50 MW) and II (50 MW).[16] ADB's participation in these projects has not only been a source of much-needed long-term financing, which is crucial for infrastructure development, but it also provides a catalytic effect for raising local financing for these projects. This catalytic effect is also witnessed in other markets in general and for LNG projects in particular. For example, ADB played a central role in financing the first LNG terminal in India and subsequent financings thereafter; in each case, the client recognized that ADB's presence helped raise additional financing and promote sector reforms by introducing market-based prices.[17] The project also fully compliments ADB's sovereign operation's support for energy sector reforms that target fuel mix diversification in the power sector.[18]

D. Project Cost and Financing Plan

12. The project is estimated to cost between $130 to 150 million, including contingencies and will be financed through a combination of equity and debt.

E. Implementation Arrangements

13. Table 3 summarizes the implementation arrangements.[19]

Aspects	Arrangements
Management	EETPL management is composed of staff having sufficient experience in construction and operation of the terminal operations.
Implementation period	May 2014–March 2015 (11 months). The estimated commercial operations date is 31 March 2015.
Operations arrangements	
Revenue structure	Based on a 15-year tolling arrangement with SSGC, EETPL will deliver about 400 million cubic feet per day of regasified LNG to SSGC in exchange for a fixed capacity charge as well as a usage-based utilization charge.
Performance monitoring	Key performance indicators, including output and outcome indicators, will be reported by EETPL and monitored by the Asian Development Bank.

ECL = Engro Corporation Limited, EETPL = Engro Elengy Terminal Private Limited, LNG = liquefied natural gas, LSA = Liquefied Natural Gas Operations and Services Agreement, SSGC = Sui Southern Gas Company Limited.
Sources: Asian Development Bank and Engro Elengy Terminal Private Limited

III. THE PROPOSED ADB ASSISTANCE

A. The Assistance

14. ADB will provide a project finance loan of up to $30 million.

[14] 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; and ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Patrind Hydropower Project in Pakistan.* Manila.
[15] ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan for Zorlu Enerji Power Project in Pakistan.* Manila.
[16] ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Partial Credit Guarantees for Foundation Wind Energy I and II Projects in Pakistan.* Manila.
[17] ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Loan for the Dahej Liquified Natural Gas Terminal Expansion (Phase 3) in India.* Manila.
[18] ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Loans to Islamic Republic of Pakistan for the Jamshoro Power Generation Project.* Manila.
[19] Details of Implementation Arrangements (accessible from the list of linked documents in Appendix 2).

B. Value Added by ADB Assistance

15. ADB funding is needed for this critical energy security asset as long-term limited recourse financing is not readily available in Pakistan's market. This project is the first of its kind in Pakistan, and hence ADB's support will help set appropriate structural, legal, documentary and financial benchmarks which can be used for follow-on projects (the government has already indicated that it intends to set up two to three LNG regasification terminals in the next five years given severe gas shortage of over 2,000 MMCFD). ADB's has a strong presence through its public and private sector operations in the country; International Monetary Fund regularly consults with ADB on country's energy related reforms. The project involves multiple layers of government entities and does not benefit from a government guarantee of offtaker's obligations. The sponsors value that ADB's central role in financing energy sector projects will ensure that the government and government entities will continue to honor their obligations for this project for the duration of ADB financing.

16. ADB engagement with the project sponsors has allowed the project to ensure compliance with the highest environment and social safeguard standards. This engagement will also help improve the environmental management and protection of the project area.

IV. POLICY COMPLIANCE

A. Safeguards and Social Dimensions

17. In compliance with ADB's Safeguard Policy Statement (2009), the project is classified category A for environment, and category C for both involuntary resettlement and indigenous peoples. The potential environmental and social impacts of the project have been identified and effective measures to avoid, minimize, mitigate, and compensate for the adverse impacts are incorporated in the safeguard reports and plans. The institutional capacity and commitment of EETPL to manage the project's social and environmental impacts are deemed adequate. During project implementation, EETPL will submit to ADB semiannual environmental and social monitoring reports verified by an experienced external expert; during operations, externally verified reporting will continue on an annual basis.

18. The FSRU and other facilities are located about 5 km from the nearest community in Port Qasim, a secure industrial seaport in Karachi. An environmental impact assessment has been prepared to comply with local and ADB's Safeguard Policy Statement (2009) requirements. The draft environmental impact assessment was disclosed for public disclosure on the ADB website on 14 July 2014. A quantitative risk assessment has been prepared for the regasification facility taking into consideration marine failure and regasification system or operating failure. The quantitative risk assessment found that none of the scenarios assessed gave rise to a high risk to members of the public and that the permanent exclusion zone remains within the facility's berthing pocket. Construction of the project has required marine dredging with associated spoil management impacts, including the removal of a significant number of mangrove trees in a reclamation area of about 41 hectares. EETPL has committed to a mangrove replacement program, which will be carried out in consultation with an independent monitoring consultant and the International Union for Conservation of Nature. Air emissions and effluents from the facility will meet applicable national environmental quality standards and the World Bank Group's environmental, health, and safety guidelines. The thermal discharge is projected to be within 3°C of the seawater's ambient temperature at the edge of the mixing zone. EETPL will apply a grievance redress mechanism; adopt the existing environment, health,

and safety management system of Engro Vopak Terminal Limited; and allocate sufficient personnel to implement and monitor the environmental and social management plan of the project.

19. Most of the project facilities will be constructed onshore and inside the premises of Port Qasim, except for a portion of the 23 km natural gas transmission pipeline that will be installed outside the port boundary. There are no outstanding compensation issues related to land that will be used by the project within the fenced boundaries of the port. The lease agreement of EETPL with Port Qasim Authority covers the area for facilities and pipeline right-of-way. No private land acquisition is required for any of the project facilities and there are no encroachments and/or use of land along the pipeline right-of-way which is owned by the government. No villages or residential colonies are located within 5 km of the proposed site. The nearest human settlements, about 7–9 km from the proposed site, are Lath Basti village, Port Qasim residential colony, Goth Lal Mohammad, Goth Mohammad Keserani, and Pipri Colony. These communities are not considered indigenous peoples according to the criteria in ADB's Safeguard Policy Statement (2009) hence no impacts are expected.

20. EETPL will comply with ADB's Social Protection Strategy and report regularly to ADB on its compliance (including contractors) with national labor laws and adherence to internationally recognized core labor standards.[20]

B. Anticorruption Policy

21. EETPL was advised of ADB's policy of implementing best international practice relating to combating corruption, money laundering, and the financing of terrorism. ADB will ensure that the investment documentation includes appropriate provisions prohibiting corruption, money laundering, and the financing of terrorism, and remedies for ADB in the event of noncompliance.

C. Investment Limitations

22. The proposed loan is within the medium-term, country, industry, group, and single-project exposure limits for nonsovereign investments.

D. Assurances

23. Consistent with the Agreement Establishing the Asian Development Bank (the Charter),[21] the Government of Pakistan will be requested to confirm that it has no objection to the proposed assistance to EETPL. 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

24. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of $30,000,000 to Engro Elengy Terminal Private Limited for the Engro Fast-Track Liquefied Natural Gas Regasification Project in Pakistan from ADB's ordinary capital resources, with such

[20] ADB. 2003. *Social Protection.* Manila (adopted in 2001).
[21] ADB. 1966. *Agreement Establishing the Asian Development Bank.* Manila.

terms and conditions as are substantially in accordance with those set forth in this report, and as may be reported to the Board.

Takehiko Nakao
President

3 February 2015

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and/or Indicators with Baselines	Data Sources and/or Reporting Mechanisms	Assumptions and Risks
Impact Pakistan's energy security through diversification of the energy base enhanced	Supply of natural gas increases from 1,500 billion standard cubic feet per annum in 2014 to 4,275 billion standard cubic feet per annum in 2030 Increase of natural gas in country energy mix from 31 million tons of oil equivalent in 2013 to 116 million tons of oil equivalent in 2030	Government of Pakistan statistics ADB statistics Published annual reports of SSGC and Sui Northern Gas Pipelines Company Limited	**Assumptions** Price competiveness of regasified LNG compared with high-speed diesel fuel for power generation Investment in gas transmission infrastructure to supply and distribute additional gas volumes **Risks** Deterioration in macroeconomic climate in Pakistan Increase in gas prices resulting from increased international demand for gas as a cleaner alternative to coal Development of LNG pipeline infrastructure
Outcome Commercially viable, regasified LNG supply to the power sector in Pakistan provided	200 MMCFD of incremental natural gas supply from 2015 and 400 MMCFD from 2016 onwards[a] At least 1,600 MW of existing power generation capacity switches from high-speed diesel to gas Greenhouse gas emissions avoided equivalent to about 2 million tons of carbon dioxide per annum Country's first LNG terminal operates for 15 years in line with industry's best practices and without any major accident 50 workers employed full time during operations by 2015	Engro Elengy Terminal Private Limited's operating reports Development effectiveness monitoring reports Audited financial statements	**Assumptions** Continuing operations of regasified LNG facilities Timely completion of gas distribution networks by SSGC and Sui Northern Gas Pipelines Company Limited **Risks** Gas supply risk Offtaker risk SSGC payment risk

Design Summary	Performance Targets and/or Indicators with Baselines	Data Sources and/or Reporting Mechanisms	Assumptions and Risks
Output Completion of Pakistan's first LNG regasification facility and associated gas infrastructure with a gas handling capacity of 3 million tons per annum by 2015	LNG terminal capacity of 3 million tons per annum fully operational by 2016 Associated facilities (i.e. trestle, pipelines, and jetty) constructed by 2015 A new high-pressure pipeline of about 23 kilometers constructed by 2015 Locally purchased goods and services amount to $4.6 million by 2015 200 workers employed full time during construction from 2014 to 2015 Environment and social safeguards implemented	Construction and project monitoring reporting Company financial statements Development effectiveness monitoring reports	**Assumption** Facility is commissioned on time and within budget. **Risk** The contractors are not able to execute the project within budget and on time.
Activities with Milestones 1. Completion of Pakistan's first LNG regasification facility and associated gas infrastructure with a gas handling capacity of 3 million tons per annum by 2015 1.1 Financial close by Q1 2015 1.2 Commercial operations by Q2 2015			**Inputs** Debt provided by multilateral development and domestic banks. Equity provided by sponsor

ADB = Asian Development Bank, LNG = liquefied natural gas, MMCFD = million cubic feet per day, Q = quarter, SSGC = Sui Southern Gas Company Limited.

[a] The regasified LNG from the project, considered the most effective use of imported gas, is expected to be used only by the power sector as a replacement for the expensive liquid fuel that the power sector presently relies on.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=48307-001-3

1. Sector Overview
2. [Confidential information]
3. Contribution to the ADB Results Framework
4. [Confidential information]
5. [Confidential information]
6. Country Economic Indicators
7. Summary Poverty Reduction and Social Strategy
8. Safeguards and Social Dimensions Summary