



# Report and Recommendation of the President to the Board of Directors

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Project Number: 41958  
April 2008

## Proposed Loan and Political Risk Guarantee Republic of the Philippines: Privatization and Refurbishment of the Calaca Coal-Fired Thermal Power Plant Project

In accordance with ADB's public communications policy (PCP, 2005), this abbreviated version of the RRP excludes confidential information and ADB's assessment of the project or transaction risk as well as other information referred to in paragraph 126 of the PCP.

Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 1 April 2008)

Currency Unit	–	peso/s (P)
P1.00	=	\$0.024931
\$1.00	=	P41.56

## ABBREVIATIONS

ADB	–	Asian Development Bank
APA	–	asset purchase agreement
BFB	–	Belgelectric Finance B.V.
CSP	–	country strategy and program
DOE	–	Department of Energy
DU	–	distribution utility
EEC	–	Emerald Energy Corporation
EPIRA	–	Electric Power Industry Reform Act of 2001
ERC	–	Energy Regulatory Commission
IFC	–	International Finance Corporation
IPP	–	independent power producer
IPPA	–	IPP administrator
LLA	–	land lease agreement
Meralco	–	Manila Electric Company
NPC	–	National Power Corporation
PPA	–	power purchase agreement
PRG	–	political risk guarantee
PSALM	–	Power Sector Assets and Liabilities Management Corporation
PSC	–	power supply contract
PSDP	–	Power Sector Development Program
SEI	–	Suez Energy International
Suez	–	Suez-Tractebel S.A.
TransCo	–	National Transmission Corporation
WESM	–	wholesale electricity spot market

## WEIGHTS AND MEASURES

BTU	–	British thermal unit
GWh	–	gigawatt-hour
kV	–	kilovolt
kWh	–	kilowatt-hour
mg/L	–	milligrams per liter
mg/Nm <sup>3</sup>	–	milligrams per normal cubic meter
MW	–	megawatt

## NOTES

- (i) The fiscal year (FY) of the Government and its agencies ends on 31 December. "FY" before a calendar year denotes the year in which the fiscal year ends, e.g., FY2008 ends on 31 December 2008.
- (ii) In this report, "\$" refers to US dollars.

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# PHILIPPINES

## PRIVATIZATION AND REFURBISHMENT OF THE CALACA COAL-FIRED THERMAL POWER PLANT PROJECT



## I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on (i) a proposed loan without government guarantee to Emerald Energy Corporation (EEC), and (ii) a proposed political risk guarantee (PRG) supporting a sponsor guarantee of a subordinated loan to EEC, to finance the privatization and refurbishment of the 600 megawatt (MW) Calaca coal-fired thermal power plant. The Project's design and monitoring framework is in Appendix 1.

## II. INTRODUCTION

2. Power generation in the Philippines was a virtual monopoly until an executive order (EO 215), signed in 1988 opened the door to private generating companies. A power crisis in the early 1990s crippled the country and forced the Government to enter into a large number of power supply contracts with independent power producers (IPPs) in quick succession. Over 2 years, the National Power Corporation (NPC)<sup>1</sup> entered into 27 power purchase agreements (PPAs) with IPPs, and, by 1999, IPPs accounted for 55% of total installed capacity in the country. These PPAs contain minimum offtake provisions, as well as fuel cost pass-through and foreign exchange adjustments. The obligations of NPC under these PPAs are guaranteed by the national Government.

3. The additional power from the IPPs came online just when the Asian financial crisis occurred. Demand for power therefore did not grow as projected, resulting in an oversupply of electricity in the country. Still, unit prices for electricity dispatched rose because of the minimum offtake provisions of the PPAs. As a result, the cost of electricity in the country today is among the highest in Asia. The situation was complicated further by the substantial depreciation of the Philippine peso during the same period. These two factors, together with insufficient tariff increases, contributed to a decline in the financial health of NPC, which recorded a net profit of about P3.1 billion (\$74.6 million) in 1997 to a net loss of about P13.0 billion (\$312.8 million) in 2000<sup>2</sup> causing a strain on the financial resources of the Government.

4. Against this background, the Government decided to embark on market-oriented reforms and on 8 June 2001 signed into law the Energy Power Industry Reform Act (EPIRA, or Republic Act 9135). EPIRA was designed primarily to reduce public debt, improve efficiency in the sector, and encourage competition to bring down the cost of electricity. The main feature of the law was the privatization of the generation and transmission assets of NPC under the management of the Power Sector Assets and Liabilities Management Corporation (PSALM). EPIRA also created a wholesale electricity spot market (WESM) and advocated competition in the retail supply of electricity.

5. PSALM's power plant privatization target was to sell 70% of NPC's eligible capacity in Luzon and Visayas by June 2004. This process has lagged far behind target, with only about 11% of NPC's eligible capacity in Luzon and Visayas turned over to private companies by July 2007. The privatization program however gained momentum in 2007 when NPC successfully auctioned off four power plants,<sup>3</sup> though these plants have yet to achieve financial closure. Appendix 2 gives an update on the privatization of NPC's power plants.

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<sup>1</sup> NPC is a state-owned utility that was solely responsible for electricity generation and transmission in the Philippines until EPIRA was passed into law and implemented.

<sup>2</sup> Woodhouse, Erik J. 2005. *The IPP Experience in the Philippines*. Stanford University.

<sup>3</sup> The power plants auctioned are Masinloc (600 MW), Calaca (600 MW), Ambuklao (75 MW), and Binga (100 MW).

6. PSALM offered the Calaca plant for sale by competitive bidding on 16 October 2007 and drew interest from three bidders.<sup>4</sup> Calaca Holdco Inc. (which later became EEC), a special-purpose company wholly owned by Suez-Tractebel S.A. (Suez) through its subsidiary Belgelectric Finance B.V. (BFB), submitted the winning bid of \$786.53 million.

7. Several bidders had approached the Asian Development Bank (ADB) for financial support for their plans to acquire, refurbish, and operate the Calaca plant. After the bid was awarded to EEC and Suez Energy International (SEI)<sup>5</sup> confirmed its request for financial assistance from ADB, the concept clearance paper was finalized and approved by Management on 12 November 2007.

### III. BACKGROUND

#### A. Philippine Power Sector

##### 1. Power Situation in Luzon

8. The Philippine electrical power grid, with about 15,803 MW of installed capacity, is divided into three: Luzon (Northern Philippines), Visayas (Central Philippines), and Mindanao (Southern Philippines). The Luzon grid, where the Calaca plant is located, is the largest of the three grids and accounts for about 76.5% of the total installed capacity nationwide in 2006. (Refer to Table 1 for a profile of the Luzon grid.) A large portion of the load in the Luzon grid is in Metro Manila, while the generation sources are in the northern and southern parts of Luzon.

9. At present, the supply of electricity throughout Luzon indicates that there is enough supply to meet demand, with a dependable capacity of 10,466 MW in 2006 against an actual peak demand of 6,466 MW and required capacity<sup>6</sup> of 7,953 MW. However, from 26 June 2006 to 25 June 2007 only about two thirds of the dependable capacity was offered on the spot market. With few exceptions, the offered capacity ranged from 3,500 MW to 7,400 MW.<sup>7</sup> A review of the hourly load during the first year of the spot-market operations, on the other hand, showed demand ranging from 2,500 MW to about 6,500 MW, and averaging about 4,600 MW given a load factor of 72%.<sup>8</sup> This would indicate that offered capacities approximate the demand.

10. The supply of electricity in Luzon is vulnerable to the weather and other factors. Thinning water reserves during the dry season make the capacity of hydropower plants unreliable. Power from the plants at this time typically falls to about one fourth of dependable capacity, and a prolonged dry season can temporarily shut down the plants. Power supply also depends on the availability and reliability of fuel. Fuel for coal- and oil-fired power plants, which together account for about 50% of the dependable capacity in Luzon, is imported and procured on the spot

<sup>4</sup> The two other bidders were First Gen Corporation (Philippines) and AES Corporation (USA).

<sup>5</sup> SEI is a division of Suez-Tractebel.

<sup>6</sup> Required capacity refers to the peak demand plus the Energy Regulatory Commission–approved reserve margin above the peak demand of 23.4%, consisting of 2.8% load following and frequency regulation, 10.3% spinning reserve, and 10.3% back up.

<sup>7</sup> Philippine Electricity Market Corporation. 2007. *Annual Market Assessment Report for the Period 26 June 2006 to 25 June 2007*. Manila.

<sup>8</sup> Studies indicate that the load factor, which is the ratio of average demand to peak demand in Luzon, has consistently been in the 72% range since 1991.

market by NPC. The recent strong global demand for coal and oil, and NPC's inadequate inventory of fuel, has occasionally led to fuel supply shortages. Another key factor is the uncoordinated scheduling of plant repair and maintenance, since many of the plants are separately owned. Repair and maintenance has taken power plants out of the system for weeks. Finally, because of their overall poor condition, many NPC plants often fail or unexpectedly shut down.

**Table 1: Installed and Dependable Capacity, by Fuel Source, in Luzon, 2006**

Fuel Source	Installed Capacity		Dependable Capacity		Electricity Generation	
	MW	%	MW	%	GWh	%
Coal	3,769	31.2	3,287	31.4	14,099	34.2
Diesel/Oil	2,333	19.3	1,928	18.4	1,711	4.2
Hydropower	2,247	18.6	1,813	17.3	5,492	13.3
Natural Gas	2,763	22.8	2,703	25.8	16,366	39.7
Geothermal	954	7.9	726	7.0	3,520	8.5
Nonconventional	25	0.2	9	0.1	53	0.1
<b>Total</b>	<b>12,091</b>	<b>100.0</b>	<b>10,466</b>	<b>100.0</b>	<b>41,241</b>	<b>100.0</b>

GWh = gigawatt-hour, MW = megawatt.

Note: The figures may not add up because of rounding.

Source: Department of Energy power statistics.

11. By Department of Energy (DOE) estimates, energy consumption in Luzon will increase by an average of 4.0% yearly. This is a realistic estimate, given the 4.9% average growth in gross domestic product in 2002–2006 against a 3.4% annual growth in peak electricity demand. With two major power plants scheduled for retirement in 2009–2010<sup>9</sup> and only 38 MW of committed projects under construction, DOE predicts a need for about 1,950 MW of additional generating capacity in the Luzon grid by 2014. There are concerns that given the difficulty in selling NPC assets, the addition of new capacity in a timely manner to replace decommissioned power plants would even be more challenging. Moreover, the law no longer provides for a default producer of power or a government agency that could contract capacity from IPPs to ensure a stable supply and meet expected demand. If no additional capacity is created in the meantime,<sup>10</sup> the critical period in the Luzon grid will begin in 2011, when the reserve margin will fall below the required minimum level. About P71.0 billion (\$1.7 billion) will be needed to finance the additional capacity required in Luzon, according to DOE.

## 2. Industry Structure and Reforms

12. The signing of EPIRA in 2001 signaled a radical change in the Philippine power sector. The significant provisions of the law include (i) the creation of PSALM to own and manage the privatization of NPC generation and transmission assets, (ii) the creation of the Energy Regulatory Commission (ERC) with wide-ranging powers to regulate the behavior of participants in the industry, (iii) the congressional investigation and review of all IPP contracts, (iv) the unbundling of power rates, (v) the creation of WESM, and (vi) the development of competition in the retail supply of electricity.

<sup>9</sup> These are the Hopewell gas turbine power plant (100 MW of dependable capacity) and Malaya oil thermal power plant (650 MW of dependable capacity).

<sup>10</sup> The country's power development plan assumes that roughly 1,750 MW from three power plants will be commissioned by 2009–2010. But none of the plants identified (San Gabriel, Ilijan gas-fired expansion, and GN Power coal-fired) have started construction.



13. The EPIRA-mandated restructuring program has met most of the above targets, albeit much later than originally planned. However, until recently, no significant privatization of NPC assets has taken place (para. 5), while the implementation of a retail market remains uncertain since key conditions precedent have yet to be realized.

14. **Power Sector Assets and Liabilities Management Corporation.** PSALM is a government corporation established primarily to implement EPIRA's restructuring and privatization mandate. EPIRA requires PSALM to take ownership of all NPC assets and liabilities. In carrying out its mandate, PSALM will inevitably incur substantial losses from its operations largely because of the excessive debt of NPC, take-or-pay provisions of the IPP contracts, and insufficient tariff increases. To offset these costs, PSALM relies heavily on the proceeds of the sale of NPC assets (as they occur). Other future revenue sources of PSALM are the concession fees from the transmission grid concessionaire (as and when the franchise is granted to the winning bidder, para. 27) and the proceeds of the stranded debt and costs levied on electricity consumers (para. 34). To ease the financial burden of PSALM, the Government assumed P200 billion in debt at the end of 2004. ERC also approved a tariff increase in 2005. These measures turned PSALM's financial fortunes around, producing a net income of P1,904 million (\$45.8 million) in 2005 and P685 million (\$16.5 million) in 2006.<sup>11</sup> NPC also recorded a favorable net income of P86.0 billion (\$2.1 billion) in 2005 and P90.0 billion (\$2.2 billion) in 2006.<sup>12</sup>

15. Besides overseeing the privatization of NPC assets, PSALM is tasked to review and renegotiate the IPP contracts. By the end of 2004, PSALM had substantially renegotiated the IPP contracts, saving up to \$2.9 billion in the process. As the privatization of NPC assets and the levy of stranded debt and costs progress further, PSALM should have enough revenues to fund all of its liabilities, which amounted to P60.6 billion (\$1.5 billion) at the end of 2006, while also helping reduce the liabilities of NPC, which amounted to P1,062 billion (\$25.6 billion).

16. Unless it is extended by law, PSALM has a corporate life of 25 years from the effectivity date of EPIRA. Under EPIRA, all assets and liabilities of PSALM that are outstanding when its term expires will be assumed by the Government.<sup>13</sup>

17. **Regulation.** The ERC is an independent quasi-judicial regulatory body created by EPIRA to replace the Energy Regulatory Board (ERB). It is mandated to promote competition, encourage market development, and penalize abuse of market power. Among its functions are: (i) establishing and enforcing a method of setting transmission and distribution wheeling rates, (ii) amending or revoking the authority of an industry participant to operate that fails to comply with EPIRA or any order of the ERC, and (iii) resolving disputes between participants in the sector.

18. The ERC also reviews and must approve the terms and conditions of most industry contracts where a regulated entity (i.e., a distribution utility [DU] or transmission operator) is a counterparty. In particular, a generating company may sell power to any franchised DU through a bilateral contract, provided ERC approves the transaction to ensure that the DU can recover its generation cost from its customers. The present role of ERC in setting rates and approving industry transactions will, however, be phased out with the operation of the WESM, open

<sup>11</sup> Commission on Audit, Republic of the Philippines. *Annual Audit Report on the Power Sector Assets and Liabilities Management Corporation for the Year Ended December 31, 2006*. Manila.

<sup>12</sup> Commission on Audit, Republic of the Philippines. *Annual Audit Report on the National Power Corporation for the Year Ended December 31, 2006*. Manila.

<sup>13</sup> R.A. 9136 Electricity Power Industry Reform Act of 2001. Implementing Rules and Guidelines. Rule 21. Section 4.

access, and retail competition. Specifically, bilateral contracts with other generators, or directly with end users<sup>14</sup> or contestable customers,<sup>15</sup> will not require regulatory approval.

19. The success of the power sector reforms depends largely on public confidence in the sector's regulatory regime. Investors will be particularly concerned with the regulator's independence from political pressure, its technical experience, and the efficiency, transparency, and consistency of review and decision making. To address these concerns and move the reform program forward, ADB has provided a loan<sup>16</sup> and technical assistance<sup>17</sup> to the Philippines to support ERC's ability to, among others, (i) respond efficiently and fairly to market issues, and (ii) communicate all regulatory matters clearly and effectively to the public and to stakeholders. The continued involvement of ADB in the sector as lender and provider of technical assistance helps ensure the stability of the regulatory regime.

20. **Distribution.** The distribution of electricity remains a regulated activity under EPIRA. Power is distributed through DUs, which are given an exclusive franchise to operate in a particular geographic area. There are now 136 DUs, of which 13 are private companies, 4 are owned by local government units, and 119 are customer-owned electric cooperatives. The largest DU is Manila Electric Company (Meralco), which holds the distribution franchise for 23 cities and 88 municipalities including Metro Manila. Its service area covers almost a quarter of the Philippine population and produces about 50% of the country's gross domestic product. In 2006, Meralco sold 25.1 billion kilowatt-hours (kWh) of electricity,<sup>18</sup> or about 60% of the power generated in Luzon.

21. EPIRA allows generating companies to sell electricity to DUs, or to retail electricity suppliers through bilateral contracts or the WESM. But no DU may source more than 50% of its total demand from an associated generating company through bilateral power supply contracts. Power purchase contracts entered into before EPIRA are exempted from this requirement.

22. **Generation.** The generation of electricity will not be regulated by ERC. However, to ensure a competitive market, EPIRA requires that no one company, including its related entities, may own more than 30% of the installed generating capacity of the Luzon, Visayas, or Mindanao grid or 25% of the total installed generating capacity nationwide. Generating companies in the country can be classified into four groups: (i) NPC-owned power plants, which are being privatized; (ii) NPC IPPs, which are privately owned power plants with long-term PPAs with NPC; (iii) Meralco IPPs, which are power plants owned by the private sector and have long-term PPAs with Meralco; and (iv) other IPPs, which comprise power plants purchased from NPC by the private sector.

23. At present, about 92.3% of the installed capacity in the country and 94.6% in Luzon is owned or controlled collectively by NPC or PSALM and Meralco (Table 2). PSALM, which is responsible for bidding the generation capacity of NPC IPPs on the WESM, has grouped these

<sup>14</sup> In general, generating companies may not sell power directly to industrial or commercial customers connected to the network of a DU until open access and retail competition is declared by ERC. However, about 114 industrial customers have been allowed to source power directly from NPC. No regulatory restriction prohibits other generating companies from reaching an agreement with such customers once these customers' contracts with NPC expire.

<sup>15</sup> Once retail competition is implemented, contestable customers will initially be defined as end users with an average monthly peak demand of 1 MW.

<sup>16</sup> ADB. 2006. *Proposed Program Cluster Loan. Power Sector Development Program (Philippines)*. Manila.

<sup>17</sup> ADB. 2004. *Technical Assistance to the Republic of the Philippines for Institutional Strengthening of Energy Regulatory Commission and Privatization of National Power Corporation*. Manila.

<sup>18</sup> [www.meralco.com.ph](http://www.meralco.com.ph)

assets into three<sup>19</sup> to introduce competition into the market. Each trading group is responsible for bidding the capacity of the generation assets in its portfolio to achieve maximum dispatch and revenues. NPC, on the other hand, bids the capacity of its plants on the WESM separately.

**Table 2: Installed Capacity, by Type of Generator, 2006**

Ownership	Philippines		Luzon	
	MW	%	MW	%
NPC	4,173	26.4	2,469	20.4
NPC IPPs	8,113	51.3	6,669	55.2
Meralco IPPs	2,304	14.6	2,304	19.1
Other IPPs	1,213	7.7	649	5.4
<b>Total</b>	<b>15,803</b>	<b>100.0</b>	<b>12,091</b>	<b>100.0</b>

IPP = independent power producer, Meralco = Manila Electric Company, MW = megawatt, NPC = National Power Corporation.

Note: The figures may not add up because of rounding.

Source: Department of Energy power statistics.

24. With assistance from ADB and the World Bank, PSALM is undertaking an initiative to appoint IPP administrators (IPPAs)<sup>20</sup> to manage the contracted capacity of NPC, including bidding on the WESM and bilateral contracting. The IPPAs will operate independently of PSALM to minimize opportunities for collusion.

25. **Transmission.** The National Transmission Corporation (TransCo) was established in 2001 as a limited-liability corporation wholly owned by PSALM, to assume the electrical transmission functions of NPC until privatization.

26. In Luzon, TransCo operates a 500 kilovolt (kV) transmission backbone running north to south, which is designed to adequately transfer large amounts of power to Metro Manila. This system is running well and is unlikely to cause constraints in the foreseeable future. TransCo also manages a 230 kV system that works in parallel with the 500 kV line. This 230 kV system does have transmission constraints, though these are expected to be addressed by the completion of the expansion projects approved under the current transmission development plan. Both systems are designed and operated at N-1<sup>21</sup> contingency levels.

27. EPIRA requires the privatization of the transmission assets of NPC. The structure of the privatization calls for a concession to be awarded through competitive bidding, granting the winning bidder the exclusive right to operate the transmission systems throughout the Philippines for 25 years. The concessionaire will be responsible for improving, expanding, operating, and maintaining the transmission system and will be entitled to receive regulated wheeling charges for its services. Legal title to the transmission assets will, however, remain with TransCo. Bidding for the sale of the transmission assets of TransCo was held in December 2007. Two bidders took part in the process and the concession was awarded to a consortium consisting of the State Grid Corporation of the People's Republic of China and the Monte Oro Grid Resources Corporation, which submitted a bid price of \$3.95 billion. The start date of the

<sup>19</sup> There were initially four trading teams but these were reduced to three in March 2007.

<sup>20</sup> These are independent entities to be appointed by PSALM through competitive bidding.

<sup>21</sup> The N-1 rule states that during the outage of any single transmission element of the power system, the following conditions shall be simultaneously met: (i) no transmission elements are overloaded; (ii) bus voltages are within allowable limits; (iii) the remaining generators stay in synchronism after a disturbance; and (iv) no service interruption of customers.

concession will be subject to, among others, Congress' granting a franchise to the winning bidder to carry out the concession.

28. **Wholesale Electricity Spot Market.** An important component of the power sector reform is the establishment of a market for electricity to encourage competition in the sector and reduce the cost of energy. The WESM, which started commercial operations in June 2006, is a gross-offer pool, net-settlements market, which enables the trading of electricity as a commodity in 24 one-hour trading periods daily. All available power in the system, including contracted capacity under bilateral arrangements, is offered on the market and will be dispatched in the order of their bid price, with the market clearing at the price set by the highest bidder to be dispatched.

29. EPIRA permits industry players to enter into bilateral contracts for a fixed price and quantity of electricity. Such contracts will be structured as "contracts for differences" rather than contracts for electricity supply. Differences between the market clearing price and the contracted price will be settled by the contracting parties outside the WESM. Of the total volume traded in July 2007, only about 16% was not contracted with bilateral parties. The rest was all subject to bilateral contracts. EPIRA permits such arrangements but limits each DU to sourcing no more than 90% of its power requirements from bilateral supply contracts during the first 5 years of the WESM.

30. In the first year of commercial operations of the WESM, the weekly spot price ranged from P0.00/kWh (\$0.00/kWh) to P12.58/kWh (\$0.30/kWh), for a median weekly average price of about P4.27/kWh (\$0.10/kWh).

31. **Open Access and Retail Competition.** A key objective of EPIRA is to enable retail customers to choose their electricity provider. To this end, qualified parties should be allowed to use distribution lines provided they pay the wheeling rates approved by ERC. EPIRA, however, states that open access and retail competition can be declared by ERC only when all of the preconditions have been met. Two of these preconditions—(i) the privatization of at least 70% of the total capacity of NPC generation assets in Luzon and Visayas, and (ii) the transfer of the management and control of at least 70% of the total energy output of power plants under contracts with NPC to IPPAs—have yet to be achieved.<sup>22</sup> If the momentum for the sale of NPC assets continues, then the privatization condition is likely to be achieved by 2009. The implementation of the IPPAs, on the other hand, remains uncertain because of the complexity of the transaction. ADB and the World Bank are providing technical assistance to facilitate this process. In addition to the preconditions stipulated by law, ERC also requires the establishment of a customer switching system and pertinent regulations.

32. ERC will announce the start of retail competition when all of the conditions referred to in the previous paragraph have been met. Implementation will begin 6 months after the announcement. At this time, it is unclear when all of the preconditions will be satisfied.<sup>23</sup> Retail competition will be implemented in phases beginning with end users that have an average peak demand of 1 MW. The second phase will cover single or aggregated loads of at least 750 kW. Thereafter, the threshold will go down gradually until ultimately, households are given the right to choose their electricity provider.

<sup>22</sup> Amendments to EPIRA are now being considered by Congress. These amendments will lower the threshold of open access to the sale of 50% of NPC generation assets and the transfer of 50% of the IPP contracts.

<sup>23</sup> In August 2007, the President announced that open access would apply immediately within the boundaries of the special industrial zones, also referred to as economic zones.

33. **Universal Charge.** A component of the electric bill levied on end users is a universal charge collected for specific purposes including missionary electrification, environmental charges, payment of NPC's stranded debt and costs, and payment of DUs' stranded costs. This charge is collected by DUs as a pass-through charge. At present, only the missionary electrification<sup>24</sup> and environmental components are collected by the DUs.

34. **Stranded Debt and Costs.** EPIRA permits NPC, PSALM, and DUs to recover through a universal charge those costs associated with their take-or-pay contracts that were approved by ERB as of 31 December 2000.<sup>25</sup> These costs take two forms: stranded debt and stranded costs. Stranded debt refers to unpaid obligations of NPC, while stranded cost is the difference between the NPC-contracted purchase price and the actual price at which electricity was sold. The amount of stranded debt and costs that NPC or PSALM would seek to recover would depend on several factors including the proceeds from the privatization program. The imposition of the stranded cost charges on customers within the universal charge, and the period of such imposition, will require ERC approval.

## B. ADB Operations

### 1. Country Strategy

35. ADB's country strategy and program (CSP) for the Philippines<sup>26</sup> lists fiscal imbalance, poor investment climate, and weak governance as the country's three most critical binding development constraints. The CSP developed a set of targeted sector policy reform packages, each of which is expected to have a direct impact on at least one of these constraints. The three reform areas are power, financial markets, and governance.<sup>27</sup> Improving the investment climate is a focus of all proposed program lending operations, and infrastructure weaknesses have been repeatedly identified by business as a key obstacle to investment in the Philippines. The Power Sector Development Program (PSDP) (footnote 16) will directly affect fiscal consolidation<sup>28</sup> by reducing the losses at NPC, making PSALM and the energy companies more creditworthy, and creating conditions for the privatization of major power assets. The CSP advocates more cooperation between ADB's public and private sector operations to boost the confidence of investors and promote private investment to offset fiscally constrained public investment. PSDP support for a well-regulated, privatized power sector, together with financial investments, will increase investor interest.

<sup>24</sup> Missionary electrification includes the provision of electricity either to an EC whose distribution network is not connected to the main grid or to unelectrified barangays that are not served by an EC because it would be uneconomical to do so.

<sup>25</sup> R.A. 9136 Electricity Power Industry Reform Act of 2001. Implementing Rules and Guidelines. Rule 17.

<sup>26</sup> ADB. 2005. *Country Strategy and Program (2005–2007): Philippines*. Manila; and ADB. 2006. *Country Operations Business Plan (2007–2008): Philippines*. Manila.

<sup>27</sup> To further support the Government's efforts to improve the fiscal situation and to broaden the reform program, ADB is providing a program cluster covering reforms in fiscal policy, governance in public financial management, the investment climate, and social inclusion. The first subprogram in the cluster was approved on 8 February 2007 (ADB. 2007. *Report and Recommendation of the President to the Board of Directors on Proposed Program Cluster Loan and Technical Assistance Grant to the Republic of the Philippines for the Development Policy Support Program*. Manila). The second subprogram is expected to be processed in early 2008.

<sup>28</sup> Other policy-based operations are: the Local Government Finance and Budget Reform Program, the Financial Markets and Intermediation Program, the Microfinance Development Program, and the Justice Reform Program.

## **2. Energy Sector Strategy**

36. ADB's energy sector strategy<sup>29</sup> defines ADB's operational priorities as (i) reducing poverty by creating an energy infrastructure for sustainable economic growth, (ii) promoting private sector involvement by restructuring the energy sector and creating an enabling environment for private investors, (iii) addressing regional and global environmental impact, and (iv) promoting regional cooperation. In particular, the strategy strongly advocates ADB interventions to increase private sector participation in the energy sector to take advantage of the higher operating efficiencies of private operators and to respond to the large capital requirements of power projects. The strategy also supports market liberalization and the scrapping of subsidies.

## **3. The Project's Consistency with Asian Development Bank Strategies**

37. The Project is fully in line with ADB's country and energy sector strategies. It will directly contribute to achieving the PSDP objective of correcting the country's fiscal imbalance by catalyzing the privatization of an NPC-owned power plant and earning sales revenues for the Government. The Project will also help improve the investment climate by increasing the reliability of generating capacity for commercial and industrial centers. The successful acquisition and operation of the Calaca plant by a reputable foreign entity will boost market confidence and encourage the further privatization of NPC assets and the entry of new players into the market. The Project will enhance competition in the generator market and, in the long run, help drive down the price of electricity.

# **IV. THE PROPOSED PROJECT**

## **A. Project Description**

### **1. Current Status**

38. The Calaca plant is a nominal 600 MW base-load pulverized coal-fired power plant. Each of its two generating units has a gross rated capacity of 300 MW. Unit 1 is equipped with a Foster Wheeler coal-fired, subcritical, natural-circulation, reheat boiler designed to operate on high-quality coal. Unit 2 is equipped with an ABB Combustion Engineering coal-fired, subcritical, forced-circulation, reheat boiler designed to operate on lower-quality coal of the type that may be sourced within the Philippines.

39. Unit 1 was built at a total cost of \$238.50 million and was commissioned on 11 September 1984. The Export-Import Bank of Japan provided funding for its construction. The Philippine Government later sought Japanese Government financing for the construction of unit 2 through official development assistance. Unit 2 was completed at a total project cost of \$351.67 million and began commercial operations on 5 July 1995. The design of the Calaca plant is conventional and typical of modern coal-fired power plants. The plant was originally built to a reasonably high standard, with the use of world-class technology. NPC has managed and operated the Calaca plant since the start of commercial operations of unit 1 in 1984.

40. The plant is currently operating under poor conditions: its availability and reliability statistics are well below those expected from a plant of this fuel type, technology, size, and age.

<sup>29</sup> ADB. 2000. *Energy 2000: Review of the Energy Policy of the Asian Development Bank*. Manila.

Both units of the Calaca plant have been operating with load restrictions for a significant period of each year for various operational reasons. In 2002–2006, unit 1 had an average forced outage rate of 17.2%, and unit 2, 14.4%. Similar plants in North America have an average equivalent availability factor of 84.1% and a forced outage rate of 4.8%. Appendix 3 gives the operating statistics for the Calaca plant from 2002 to 2006.

41. The due diligence done by various experts suggests that the plant can recover its performance and reliability and could operate for another 20 years if the appropriate refurbishment program is implemented and suitable operating and maintenance standards are applied. Its poor condition is attributable not to the original design of the plant but to poor management, inadequate maintenance, and insufficient stocking of spare parts on-site. The use of coal that does not conform to boiler specifications has also impaired its performance.

## **2. Refurbishment and Operation Plan**

42. The objective of EEC's proposed refurbishment plan is to return both units to their original design condition and capacity. Once the refurbishment is completed, the plant is expected to achieve a gross output of 600 MW. The plant would then be in a position to compete directly with other coal-fired power plants and new entrants since EEC would operate the plant to global standards.

43. SEI will also introduce a new management system to improve the efficiency of the plant and increase the productivity of the workers. The new system will also improve the health and safety standards at the plant to a level that would be consistent with industry best practices worldwide. An experienced Suez team will oversee the implementation of these practices at the power plant through training, mentorship, and day-to-day interaction.

## **B. Sponsor**

44. Although formed only in 1997 through a merger, the founding companies<sup>30</sup> of Suez have a 150-year history of providing natural gas, electricity, and water services in Europe and around the world. Suez is considered one of the largest power companies in the world, with a portfolio of 60,000 MW of installed power production capacity at the end of 2006. In addition to being the fifth-largest electricity provider in Europe, Suez is also the leading private power generator in Brazil and Thailand and the leading private developer in terms of installed power capacity in the Gulf countries. Suez, with a Moody's issuer rating of A2 and an S&P LT issuer credit of A–, had €44.3 billion in revenues and net income of €3.6 billion in 2006. Consolidated assets stood at €73.4 billion and consolidated shareholder's equity at €19.5 billion at the end of 2006. Suez is listed on the Brussels, Luxembourg, Paris, New York, and Zurich stock exchanges.

45. As one of the major energy producers on the deregulated European markets, the Suez group has developed significant expertise in managing merchant plants. Through its subsidiaries, Suez manages almost 50 merchant power plants across the world, representing an installed capacity of 24,404 MW, or 40% of the group's total capacities. See Appendix 4 for a list of merchant power plants owned and operated by Suez globally.

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<sup>30</sup> Suez traces its history to the following companies: (i) Société Générale de Belgique, founded in 1822 in Belgium; (ii) Compagnie Universelle du Canal Maritime de Suez, founded in 1858 in France; (iii) Compagnie Lyonnaise des Eaux et de l'Eclairage, founded in 1880 in France; and (iv) Tractebel, founded in 1895 in Belgium.

46. SEI is the business line of Suez responsible for the group's energy activities outside Europe. It manages over 27,000 MW of installed generating capacity in 18 countries out of the 60,000 MW global portfolio of Suez. The fleet of power plants owned or managed by SEI includes 12 coal-fired power plants in six countries with a net installed capacity of 2,309 MW. Apart from power generation, SEI also transports and distributes natural gas. In 2006, SEI sold 109.9 million megawatt-hours of electricity and 13.61 billion cubic meters of natural gas to more than one million customers, generating revenues of €6.2 billion, or about 14% of the total revenues of Suez that year.

47. When SEI started operations in 1988–1989, its power projects were linked to long-term PPAs. With the gradual deregulation of energy markets worldwide, SEI moved from being a pure developer and operator of assets to an asset-based organization that markets a wide range of products and services. In North America, Suez Energy Marketing N.A. trades all the power generated by the fleet of merchant power plants of SEI. Today, SEI manages a portfolio of nine merchant power plants with a combined installed capacity of 4,219 MW out of its portfolio of 27,000 MW.

### **C. Implementation Arrangements**

48. The terms of acquisition of the Calaca power plant and its related land rights are established under two key transaction documents: (i) the asset purchase agreement, and (ii) the land lease agreement.

#### **1. Asset Purchase Agreement**

49. An asset purchase agreement (APA) was signed by the bidder and submitted by EEC as part of its bid. Since the bid date, the APA has also been signed by PSALM. The APA requires EEC to pay at least 40% of the purchase price up front in order for it to take possession of the Calaca plant and have the right to operate it. EEC must pay the balance in equal semiannual installments over a 7-year period. Until full payment is made, PSALM will remain the owner of the plant.

50. The APA may be terminated by either party by reason of default by the other. A PSALM default includes its failure to obtain transferable rights to the foreshore lands within 7 years from the closing date. EEC has numerous obligations, which, if breached, would give rise to an EEC default. These include (i) paying PSALM the amounts that are due, when they are due; (ii) discharging all the rights, liabilities, and obligations of PSALM under contracts that remain in effect after the acquisition date; and (iii) paying taxes, fees, and penalties.

#### **2. Land Lease Agreement**

51. The project occupies an area of about 2.1 million square meters comprising onshore land, foreshore land, and submerged land. EEC will lease the onshore land from PSALM for 25 years under a land lease agreement (LLA) dated 16 October 2007. The agreement also gives EEC or its affiliate the option to acquire the leased land, subject to its meeting Philippine qualification requirements for land ownership.<sup>31</sup>

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<sup>31</sup> Philippine regulations allow only Filipino citizens and corporations or partnerships where at least 60% of the shares are owned by Filipinos, to own or acquire land.



### 3. Power Supply Contracts

52. The supply rights to 11 existing power supply contracts (PSCs) will be assigned to EEC along with the assets of the Calaca plant. The total contracted capacity from these PSCs represents about 40% of the plant's rated capacity. Most of the PSCs will expire within the first 4 years after turnover to EEC.

### 4. Coal Supply

53. Coal is sourced almost exclusively from Semirara Coal Corporation under a long-term supply arrangement. High-quality coal required for blending is procured by NPC for the Calaca plant through spot contracts. EEC will coordinate its procurement of coal through Suez regional office in Thailand.

### 5. Transmission

54. The output of the Calaca plant is transmitted through the 230 kV transmission system. Unlike transmission lines in the northern transmission corridor, each 230 kV transmission line in the south serves a particular generation subgroup. The Calaca plant belongs to the group 1 generators, which also include the Sta. Rita and San Lorenzo power plants.<sup>32</sup> The group 1 generators are linked to Manila through the Calaca–Dasmariñas–Zapote and Calaca–Biñan–Sucat 230 kV lines.

55. TransCo has identified two transmission upgrades to allow full dispatch of the South Luzon generators. These upgrades are referred to as the Batangas transmission reinforcement project (BTRP) and the Biñan–Sucat 230 kV transmission line. Work on the BTRP is ongoing and is expected to be completed by November 2008.<sup>33</sup> The objective of the Biñan–Sucat 230 kV line project is to increase the transfer capacity of the existing Biñan–Sucat lines that would provide for N-1 during full dispatch of the generating plants in South Luzon. Work on this project has been delayed largely by rights-of-way issues, which have substantially been resolved recently. TransCo does not anticipate any further lengthy delays and targets completion date for the Biñan–Sucat project by 2010.

## D. Environmental Aspects and Social Dimensions

56. The Project is located along the shoreline of Barangay San Rafael, Calaca, in the province of Batangas, about 115 kilometers south of Manila. It is bounded to the north by the Calaca–Balayan National Highway, to the east by the Cawong (Bolboc) River, to the west by the Dacanlao River, and to the south by Balayan Bay.

### 1. Environment

57. The Project is classified as environmental category B under ADB's *Environment Policy* (2002). An initial environmental examination (IEE) has been conducted and the summary IEE is available at the ADB website. The Project involves the refurbishment of an existing coal-fired thermal power station with no capacity expansion under the project financing plan; all

<sup>32</sup> The Sta. Rita and San Lorenzo plants are combined-cycle gas thermal power plants owned by First Gen, an affiliate of Meralco. Power from both these plants is transmitted to the Calaca switchyard through 230 kV lines.

<sup>33</sup> ADB provided a loan to finance the transmission line from Calamba to Sucat under ADB. 1997. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of the Philippines for the Power Transmission Reinforcement Project*. Manila (Loan 1590-PHI).

modifications will be confined to the current site. The Project is expected to bring about local and environmental benefits, including overall air quality improvements with substantial reduction in carbon dioxide emissions per unit of electricity generated. EEC will target to meet the environmental standards laid out by the World Bank.<sup>34</sup>

58. The plant has been issued the required environmental clearances and environmental permits to operate since 1987.<sup>35</sup> The Project is expected to improve the overall environmental performance of the plant by (i) repairing and maintaining (a) electrostatic precipitators, (b) the continuous emission monitoring system, (c) ambient monitoring stations, and (d) the fugitive dust control system; (ii) rehabilitating the wastewater collection and treatment system; (iii) conducting soil and groundwater investigation; (iv) reviewing and updating environmental monitoring arrangements; (v) developing management plans for asbestos-containing materials and other wastes; and (vi) introducing a formal environmental health and safety management system. The ongoing public consultation and stakeholder engagement program<sup>36</sup> will continue and will be strengthened as required under ADB's *Public Communications Policy* (2005). A detailed environmental, health, and safety (EHS) compliance audit of the facility will be conducted yearly. ADB will review the semiannual environmental monitoring report and the annual EHS audit report.

## 2. Social Aspects

59. The Project is classified as category C with respect to involuntary resettlement and impact on indigenous peoples. It will not involve any additional land acquisition, change in land use, or access restriction. The plant site is fenced with no informal settlers on the property.

60. **Involuntary Resettlement.** When land was acquired for the plant 27 years ago, 361 families in barangays San Rafael, Comastilisan, Quisumbing, and Pantai had to be relocated. Each affected household was given a plot of land in a resettlement site, disturbance payment, and compensation for land. All private land acquired for the use of the power plant itself is covered by deeds of absolute sale, and there are no pending issues, legal or otherwise, related to compensation for land included in the leased premises.

61. In addition to compensation payments and a plot of land in a resettlement site, NPC also provided employment opportunities to resettlers and implemented development and livelihood projects, electrification projects, and activities in reforestation, watershed management, health, and environmental improvement as required under Energy Regulation 1-94.<sup>37</sup> Current community development activities include cattle fattening, road improvements, canal lining, and

<sup>34</sup> The target standard for particulates is 100 milligrams per normal cubic meter (mg/Nm<sup>3</sup>), more stringent than the national standard of 200 mg/Nm<sup>3</sup>. For oxides of nitrogen, the plant will comply with 750 mg/Nm<sup>3</sup>, while standards for sulfur dioxide will be 1,500 mg/Nm<sup>3</sup>. More stringent effluent discharge standards will also be targeted: 50 milligrams per liter (mg/L) for total suspended solids, following the World Bank's guidelines, compared with national standards of 200 mg/L; 0.003–0.5 mg/L for metals against 0.5–1 mg/L; 10 mg/L for oil and grease against 15 mg/L.

<sup>35</sup> Environmental compliance certificates (ECCs) were issued on 21 April 1987 for unit 1 and on 24 April 1992 for unit 2. Official notification of sale or transfer to amend the ECCs will be required. Environmental permits need to be obtained and renewed periodically. The plant is renewing its effluent discharge permit.

<sup>36</sup> The Multipartite Monitoring Team (MMT) in the original stakeholder engagement program, comprises staff from NPC, DENR, local government units, nongovernment organizations, and people's organizations, and representatives from the private and public sectors.

<sup>37</sup> Energy Regulation 1-94 requires that generation facilities owned by NPC transferred to PSALM and later privatized must provide a P0.01/kWh financial benefit to host communities, including resettlement areas. In addition, P0.0025/kWh of the total electricity sales will be allocated to the Development and Livelihood Fund for the resettlement area.

the construction of seawalls, culverts, multipurpose halls, schools, water tanks, health centers, and artificial reefs. After the turnover, EEC intends to engage in discussions with the local government unit to identify community projects or initiatives that would be most effective in delivering a better quality of life to the people of Calaca and other communities around the plant.

62. **Indigenous Peoples.** The municipalities of Calaca and Balayan are semi-urban, and there are no indigenous peoples in the project area.

63. **Labor and Workplace Conditions at the Calaca Plant.** All of the NPC employees were terminated by NPC in February 2003 and were paid severance payments. Those that were rehired by NPC, TransCo, and PSALM were taken on as new government service employees with the clear understanding that upon privatization they would be given due notice and a severance payment before termination. These arrangements are in accordance with government civil service rules and regulations and national labor standards.<sup>38</sup>

64. Currently, the plant has 288 budgeted positions. As provided for in the APA, EEC will offer all plant personnel a contract for 5 months. During this period, their competence and qualifications will be assessed and skills mixes identified according to the requirements of the new operational structure. Job classifications will be set, and training opportunities will also be identified. With labor consultations and an objective personnel evaluation system, it is expected that the labor rationalization process will be nondiscriminatory and acceptable to ADB as compliant with recognized labor conventions.

## **E. Development Impact<sup>39</sup>**

65. The Project would help advance the economic development of the country by promoting the power sector reforms of the Government. It would earn revenues for the Government to ease its fiscal imbalance, and would also provide reliable and efficient power supply in the country. Progress in the reform of the power sector would encourage further investments in the sector at the appropriate time. It would also introduce competition into the sector and would thereby bring down the costs of electricity over time. The acquisition, refurbishment, and operation of the Calaca plant by a large and experienced global energy provider would result in the plant achieving operating efficiencies that are consistent with global industry best practices. This would also result in more environmentally sound power generation.

## **F. Economic Evaluation**

66. The economic analysis of the Project was carried out according to ADB's *Guidelines for the Economic Analysis of Projects* (1997). The Project is expected to provide a net benefit to the economy by reducing national debt, replacing current generation with more efficient and environmentally sound generation, adding new generation capacity, and making the sector more competitive overall, thereby lowering electricity tariffs in the long run. The reduction in national debt is assumed to be the difference between EEC's payment for the assets and the depreciated economic value of the assets, adjusted for financing for the Project from domestic sources. Part of the electricity output from the Project will replace electricity already generated

<sup>38</sup> Labor standards are set under the Philippine Labor Code (Presidential Decree 442 as amended, 1 May 1974).

<sup>39</sup> The development effectiveness of the Project will be assessed in terms of private sector development, business success, and economic sustainability, according to the guidelines for implementing the Good Practice Standards for Evaluation of Private Sector Investment Operations prepared by the Evaluation Cooperation Group of multilateral development banks.

by Calaca (the non-incremental portion), but the electricity will be generated more efficiently. The remaining output will be new generation stemming from the implementation of EEC's refurbishment plan (the incremental portion). The benefit for the non-incremental portion is the opportunity cost the economy "saves" by not having to use more expensive electricity generated by less efficient plants. For the incremental portion, the benefit is calculated by valuing the additional electricity output from the Project at the projected WESM spot price. This market price reflects the consumers' willingness to pay for additional electricity, and, hence, is a good approximation of the benefit to the economy of Calaca's added electricity generation. Environmental benefits are also expected from the Project, but these were not quantified in the analysis.

67. The economic internal rate of return under the ADB base case was estimated at 39.6%—above the social discount rate of 12.0%. Sensitivity testing against four adverse scenarios demonstrates that the Project is economically robust and viable.

## **V. THE PROPOSED ASSISTANCE**

### **A. ADB Loan**

68. The proposed ADB assistance consists of a direct loan of up to \$120 million to EEC, without a government guarantee, and a PRG of up to \$90 million. The direct loan will be provided from ADB's ordinary capital resources. Part of the loan, may be converted into peso, at the option of EEC to minimize the Project's exposure to foreign exchange risk.

69. The loan will be documented in a loan agreement, which will be subject to conditions precedent to the disbursement, including all necessary government, creditor, and shareholder approvals and consents, and all contractual and financial arrangements satisfactory to ADB. The loan agreement will include appropriate covenants, representation, and warranties, as well as events of default.

### **B. ADB Political Risk Guarantee**

70. The PRG will be issued by ADB in favor of the sponsor or one of its affiliates (PRG beneficiary). ADB's obligation to make payment under the PRG will arise if a political risk causes a loss of revenue to the Calaca Power Project and such loss results in EEC's failure to service its obligations under the subordinated loans. These loans, made by commercial banks, will be guaranteed by the PRG beneficiary under a comprehensive guarantee. The ADB guarantee will cover (i) transfer restriction, (ii) expropriation, (iii) political violence, and (iv) contract disputes.

### **C. Justification**

71. The Project merits ADB support for the following reasons:

- (i) It will further the privatization efforts of the Government to promote competition and efficiency in the power sector and to put the sector on a sounder financial footing. It will bring the percentage of NPC's privatized eligible assets to almost 40%. Proceeds from the sale of the Calaca plant will be used to reduce PSALM and NPC debt.
- (ii) The Project will increase the electricity supply, improve the operating efficiency of the plant, bring about environmental benefits including air quality improvements

and bring the plant's health and safety standards up to global standards. The Calaca plant is now underutilized, operating inefficiently, and violating environmental, health, and safety standards.

- (iii) The Project will embody ADB's country and energy strategies, which emphasize support for energy infrastructure development with private sector participation. It will support ADB's thematic priorities of economic development, private sector development, good governance, and environmental protection, and will directly complement the Philippines' Power Sector Development Program (para. 35) by catalyzing the privatization of an NPC-owned power plant and earning sales revenues for the Government. The Project will also help improve the investment climate by increasing the reliability of generating capacity for the economic center. Successful acquisition and operation of the plant by a reputed foreign private sector will boost market confidence and induce more foreign investment.
- (iv) ADB's involvement in the Project will catalyze long-term private sector equity and debt by offering protection against political uncertainties, including the risk that PSALM will breach its contractual obligations, regulatory risks, and the risk that the Government will fail to complete its sector reform program.

#### **D. Anticorruption Measures and Combating Money Laundering and the Financing of Terrorism**

72. EEC was advised of ADB's *Anticorruption Policy* (1998, as amended to date) and policy relating to the *Combating of Money Laundering and the Financing of Terrorism* (2003). Consistent with its commitment to good governance, accountability, and transparency, ADB will require EEC to institute, maintain, and comply with internal procedures and controls following international best-practice standards to prevent corruption or money laundering activities or the financing of terrorism, and to covenant with ADB to refrain from engaging in such activities. Such obligations will be contained in ADB loan and guarantee documentation. The financing documentation between ADB and EEC will, further, allow ADB to investigate any violation or potential violation of these undertakings.

### **VI. INVESTMENT LIMITATIONS**

73. The proposed direct loan and PRG for the Project will, once approved, increase ADB's group exposure to the Suez group to \$260 million, and its total nonsovereign exposure to the Philippines to 11.17% and that to the conventional energy generation subsector to 20.39%. The proposed financing is within ADB's aggregate country, industry, group, and single-exposure limits for nonsovereign investments.

### **VII. ASSURANCES**

74. Consistent with the Agreement Establishing the Asian Development Bank, the Government will be requested to confirm that it has no objection to the proposed assistance to EEC. No funding will be disbursed until ADB receives such confirmation. ADB will enter into suitable loan and guarantee documentation, in form and substance satisfactory to ADB, following the approval of the proposed financing by the Board of Directors.

## VIII. RECOMMENDATION

75. I am satisfied that the proposed loan and political risk guarantee would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

- (i) a loan of up to \$120,000,000 to Emerald Energy Corporation from ADB's ordinary capital resources; and
- (ii) a political risk guarantee of up to \$90,000,000 in favor of the party providing a credit guarantee of a subordinated loan to Emerald Energy Corporation

in each case, for the Privatization and Refurbishment of the Calaca Coal-Fired Thermal Power Plant Project and on such terms and conditions as are substantially in accordance with those set forth in this report, and as may be reported to the Board.

Haruhiko Kuroda  
President

28 April 2008

## DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<b>Impact</b> A reformed power sector that provides an efficient and reliable supply of energy without putting a strain on government resources	<ul style="list-style-type: none"> <li>Privatization of 70% of NPC power plants in Luzon by 2009</li> <li>Implementation of open access and retail competition in Luzon by 2013</li> <li>An improvement in the financial health of PSALM and NPC by 2015</li> </ul>	<ul style="list-style-type: none"> <li>Publicly available statistics and reports</li> <li>Financial statements of PSALM and NPC</li> </ul>	<b>Assumptions</b> <ul style="list-style-type: none"> <li>The Government remains committed to privatizing the remaining NPC power plants in Luzon.</li> <li>The Government will initiate the necessary process to implement the appointment of IPPAs to manage the take-or-pay contracts of NPC.</li> <li>Proceeds from the asset sales would be used to reduce debt.</li> </ul> <b>Risk</b> <ul style="list-style-type: none"> <li>The power sector reform initiatives will be reversed.</li> </ul>
<b>Outcome</b> <ul style="list-style-type: none"> <li>Increased supply of net dependable capacity in the Luzon grid</li> <li>Addition of new players, introducing competition into the market</li> <li>No power interruptions resulting from supply shortages</li> </ul>	<ul style="list-style-type: none"> <li>An increase in the net dependable capacities of the privatized plants by 2010</li> <li>A decrease in the average spot-market prices to the long-run marginal costs by mid-2013</li> <li>Timely capacity additions to match increased demand for power</li> </ul>	<ul style="list-style-type: none"> <li>Market assessment reports provided by PEMC</li> <li>Publicly available information</li> </ul>	<b>Assumptions</b> <ul style="list-style-type: none"> <li>New owners of the privatized plants will refurbish the power plants.</li> <li>Regulatory actions and decisions reflect the Government's continued support for market development and fair competition.</li> </ul> <b>Risks</b> <ul style="list-style-type: none"> <li>The momentum of sector reform slows down.</li> <li>Market players collude to frustrate reform efforts.</li> </ul>
<b>Outputs</b> <ul style="list-style-type: none"> <li>EEC refurbishment plan designed to return both units to</li> </ul>	<ul style="list-style-type: none"> <li>An increase in the net dependable capacity of the</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring reports submitted by the project company and the</li> </ul>	<b>Assumptions</b> <ul style="list-style-type: none"> <li>EEC is committed to achieving the performance targets</li> </ul>

<b>Design Summary</b>	<b>Performance Targets/Indicators</b>	<b>Data Sources/Reporting Mechanisms</b>	<b>Assumptions and Risks</b>
<p>their original design specifications</p> <ul style="list-style-type: none"> <li>• Environmental, health, and safety management plans designed to meet best global industry practices</li> <li>• Reduction in carbon dioxide emissions per unit of electricity generated</li> </ul>	<p>Calaca plant by 2010</p> <ul style="list-style-type: none"> <li>• An improvement in the equivalent availability factor by 2011</li> <li>• Compliance by the Calaca plant with World Bank emission standards by 2010</li> <li>• Significant improvement in heat rates</li> </ul>	<p>independent engineer</p> <ul style="list-style-type: none"> <li>• Monitoring reports submitted by the Multipartite Monitoring Committee</li> <li>• Monitoring reports submitted by the project company and the independent engineer</li> </ul>	<p>including environmental, health, and safety standards.</p> <ul style="list-style-type: none"> <li>• An effective and collaborative working relation exists between the new owners and plant personnel.</li> <li>• Continued cooperation exists between EEC, government agencies, and civil society.</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• There is no support for the refurbishment plan or for the management and operating systems from plant personnel.</li> </ul>
<p><b>Activities with Milestones</b></p> <ol style="list-style-type: none"> <li>1. EEC acquires the Calaca plant in 2008</li> <li>2. Refurbishment program carried out in 2008-2010</li> <li>3. EEC introduces new management systems and operating process based on best global industry standards (2008-2010)</li> </ol>			

EEC = Emerald Energy Corporation, NPC = National Power Corporation, PEMC = Philippine Electricity Market Corporation, PSALM = Power Sector Assets and Liabilities Management Corporation.



**STATUS OF THE PRIVATIZATION OF  
NATIONAL POWER CORPORATION GENERATION ASSETS**  
(as of 31 December 2007)

1. When it started operations, the Power Sector Assets and Liabilities Management Corporation (PSALM) identified 31 power plants owned by the National Power Corporation (NPC) and with an aggregate capacity of 5,914.1 megawatts (MW) that would have to be privatized.<sup>1</sup> By the end of 2007, PSALM had turned over eight of these plants with an aggregate capacity of 480.5 MW to private entities at a combined price of \$664.2 million. In determining the level of privatization for open access and retail competition, however, only 475.4 MW of the already privatized assets are considered. This would represent only 10.96% of the 4,335.7 MW of total operating capacity in Luzon and Visayas. Almost all of the plants were purchased by wholly owned Filipino companies, except for Magat, which was purchased by a consortium consisting of Filipinos and Norwegians. Refer to Table A2.1 for a list of generations assets auctioned by PSALM.

2. In addition to the eight power plants already privatized, bidding for four other power plants was successfully concluded in 2007 and is now in various stages of financial closure. The combined bid price of these power plants is \$2,041.5 million. The successful turnover of these power plants, expected to take place in 2008, will bring the total number of installed capacity privatized to 1,855.5 MW, though only 1,850.4 MW, representing about 42.7% of the operating capacity in Luzon and Visayas, would be considered in determining open access and retail competition. Foreign investors were largely behind the purchase of these four major assets.

**Table A2.1: Generation Assets Sold**

Power Plant	Grid	Fuel	Installed Capacity (MW)	Date of Bidding	Purchase Price (\$'000)	Winning Bidder
Talomo	Mindanao	Hydro	3.5	25 Mar 2004	1,370	Hydro Electric Dev't Corp
Agusan	Mindanao	Hydro	1.6	4 Jun 2004	1,528	First Gen Holdings
Barit	Luzon	Hydro	1.8	25 Jun 2004	480	People's Energy Services, Inc.
Cawayan	Luzon	Hydro	0.4	30 Sep 2004	410	SORECO II
Loboc	Visayas	Hydro	1.2	10 Nov 2004	1,420	Sta. Clara Int'l
Pantabangan-Masiway	Luzon	Hydro	112.0	7 Sep 2006	129,000	First Gen Hydro Corp
Magat	Luzon	Hydro	360.0	14 Dec 2006	530,000	SN Aboitiz Power Corp
Masinloc	Luzon	Coal	600.0	26 Jul 2007	930,000	Masinloc Power Partners Co. Ltd.
Calaca	Luzon	Coal	600.0	16 Oct 2007	786,530	Calaca Holdco Inc.
Ambuklao-Binga	Luzon	Hydro	175.0	28 Nov 2007	325,000	SN Aboitiz Power Hydro Inc.
<b>Total</b>			<b>1,855.5</b>		<b>2,705,738</b>	

MW = megawatt.

Source: Power Sector Assets and Liabilities Management Corporation.

<sup>1</sup> These included decommissioned assets and assets located in Mindanao.

3. To achieve the target of selling at least 70% of the total capacity of NPC's generation assets in Luzon and Visayas, PSALM would need to auction off about 11 power plants, representing 1,669.3 MW in installed capacity. PSALM's indicative privatization schedule released in July 2007 shows that it intends to achieve this target by the end of 2009, though it recognizes that delays can occur as a result of several factors, including investor interest in specific power plants. (Table A2.2 provides a list of NPC generation assets that will be auctioned by PSALM). To optimize opportunities for the privatization of NPC power plants, PSALM would consider selling a mix of plants under a portfolio and bidding them out as one package. The specific timetable for the sale of the remaining assets would be released publicly a few months before the bid date.

**Table A2.2: Generation Assets for Bidding**

<b>Power Plant</b>	<b>Grid</b>	<b>Fuel</b>	<b>Installed Capacity (MW)</b>
Tiwi	Luzon	Geothermal	275.0
Makban	Luzon	Geothermal	410.0
Angat	Luzon	Hydro	246.0
Bacman	Luzon	Geothermal	150.0
Palinpinon	Visayas	Geothermal	192.5
Tongonan	Visayas	Geothermal	112.5
Bohol	Visayas	Diesel	22.0
Panay (Dingle)	Visayas	Diesel	146.5
Amlan	Visayas	Hydro	0.8
Iligan 1 and 2	Mindanao	Diesel/Bunker	114.0
Navotas I/II	Luzon	Diesel	310.0
Limay	Luzon	Diesel/Bunker	620.0
<b>Total</b>			<b>2,599.3</b>

MW = megawatt.

Source: Power Sector Assets and Liabilities Management Corporation.

4. PSALM has a twofold strategy for disposing of its decommissioned assets. It could choose to dispose of the assets through open competitive bidding or through a third-party auctioneer. Decommissioned assets usually generate interest for their scrap value. Refer to Table A2.3 for a list of NPC's decommissioned assets.

**Table A2.3: Decommissioned Assets**

<b>Power Plant</b>	<b>Grid</b>	<b>Fuel</b>	<b>Installed Capacity (MW)</b>
Manila Thermal	Luzon	Bunker	200.0
Bataan	Luzon	Bunker	225.0
Aplaya	Mindanao	Diesel/Bunker	108.0
General Santos	Mindanao	Diesel/Bunker	22.3
Sucac	Luzon	Bunker	850.0
Cebu	Visayas	Diesel/Bunker	54.0
<b>Total</b>			<b>1,459.3</b>

MW = megawatt.

Source: Power Sector Assets and Liabilities Management Corporation.

**CALACA COAL-FIRED THERMAL POWER PLANT:  
OPERATING PERFORMANCE**

**Table A3.1: Calaca Unit 1—Operating Performance**

<b>Item</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>5-Year Average</b>	<b>2007<sup>a</sup></b>
Gross Generation (MWh)	919,313	1,036,350	978,837	1,133,693	833,020	980,243	532,940
Station Service (MWh)	78,153	93,008	98,158	133,383	95,140	99,568	51,942
Net Generation (MWh)	841,160	943,342	880,679	1,000,310	737,880	880,674	480,998
Capacity Factor (%)	35.15	39.19	37.24	43.13	33.12	37.57	40.67
Equivalent Availability Factor (%)	44.18	45.46	32.35	51.76	26.00	39.95	37.72
Forced Outage Rate (%)	27.71	16.58	14.55	8.47	18.91	17.24	13.15
Net Heat Rate (BTU/kWh)	10,691	11,013	12,150	12,122	11,874	11,570	11,547

BTU/kWh = British thermal unit/kilowatt-hour, MWh = megawatt-hour.

<sup>a</sup> As of June 2007.

Source: National Power Corporation.

**Table A3.2: Calaca Unit 2—Operating Performance**

<b>Item</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>5-Year Average</b>	<b>2007<sup>a</sup></b>
Gross Generation (MWh)	1,347,971	1,220,955	1,301,609	750,470	1,418,997	1,208,000	662,703
Station Service (MWh)	86,123	81,620	81,130	61,849	90,451	80,235	47,131
Net Generation (MWh)	1,261,848	1,139,335	1,220,479	688,621	1,328,546	1,127,766	615,572
Capacity Factor (%)	51.56	47.92	49.43	28.47	53.98	46.27	50.58
Equivalent Availability Factor (%)	75.68	64.72	47.00	16.65	56.25	52.06	51.12
Forced Outage Rate (%)	14.33	15.42	7.21	24.60	10.29	14.37	22.2
Net Heat Rate (BTU/kWh)	10,748	11,339	11,356	11,135	11,189	11,153	11,375

BTU/kWh = British thermal unit/kilowatt-hour, MWh = megawatt-hour.

<sup>a</sup> As of June 2007.

Source: National Power Corporation.

## SUEZ GROUP MERCHANT POWER PLANTS

Company/Project Name	Country	Fuel	Net Installed Capacity (MW)	Suez Group
Chehalis Power Generating	US	Natural Gas	520	SEI
Choctaw Generation LP– Red Hills	US	Lignite	440	SEI
Choctaw Gas Generation LLC	US	Natural Gas	746	SEI
Hopewell Cogeneration LP	US	Natural Gas	365	SEI
Hot Spring Power Company, LLC	US	Natural Gas	746	SEI
North Jersey Energy Associates LP	US	Natural Gas	287	SEI
Syracuse Energy Corporation	US	Coal	65	SEI
Tractebel Northeast Generation GP, Inc.	US	Natural Gas	304	SEI
Wise Country Power Company	US	Natural Gas	746	SEI
<b>Total SEI</b>			<b>4,219</b>	
Drogenbos CCGT	Belgium	Natural Gas	460	SEE
Herdeersburg (Bruges) CCGT	Belgium	Natural Gas	460	SEE
Saint-Ghislain CCGT	Belgium	Natural Gas	350	SEE
Vilvoorde CCGT	Belgium	Natural Gas	385	SEE
Zandvliet Power CCGT	Belgium	Natural Gas	197	SEE
Amercoeur Thermal	Belgium	Fuel Oil, Coal, and Gas	256	SEE
Awirs Thermal	Belgium	Fuel Oil , Coal, and Gas	416	SEE
Kallo Thermal	Belgium	Gas	522	SEE
Langerlo Thermal	Belgium	Fuel Oil, Coal, and Gas	602	SEE
Mol Thermal	Belgium	Fuel Oil, Coal, and Gas	255	SEE
Monceau Thermal	Belgium	Fuel Oil, Coal, and Gas	92	SEE
Rodenhuize Thermal	Belgium	Fuel Oil, Coal, and Gas	526	SEE
Ruien Thermal	Belgium	Fuel Oil, Coal, and Gas	879	SEE
Drogenbos Gas Turbine	Belgium	Natural Gas	78	SEE
Mol Gas Turbine	Belgium	Natural Gas	30	SEE
Doel	Belgium	Nuclear	2,759	SEE
Tihange	Belgium	Nuclear	2,423	SEE
Eems CCGT	Netherlands	Natural Gas	1,705	SEE
Almere CHP	Netherlands	Natural Gas	118	SEE
Bergum Thermal	Netherlands	Natural Gas	664	SEE
Eems Thermal	Netherlands	Natural Gas	695	SEE
Flevo Thermal	Netherlands	Natural Gas	491	SEE
Gelderland Thermal	Netherlands	Coal, Fuel Oil, and Biomass	602	SEE
Harluco Thermal	Netherlands	Natural Gas and Biomass	350	SEE
Eems Gas Turbine	Netherlands	Natural Gas	17	SEE
FlevoGas Turbine	Netherlands	Natural Gas	22	SEE
Chooz B	France	Nuclear	650	SEE
Tricastin	France	Nuclear	457	SEE
CNR	France	Hydro	2,937	SEE
SHEM	France	Hydro	773	SEE
Tor di Valle CCGT	Italy	Natural Gas	118	SEE

<b>Company/Project Name</b>	<b>Country</b>	<b>Fuel</b>	<b>Net Installed Capacity (MW)</b>	<b>Suez Group</b>
Torrevaldaliga CCGT	Italy	Natural Gas and Fuel Oil	568	SEE
Voghera CCGT	Italy	Natural Gas	380	SEE
Napoli Levante Thermal	Italy	Natural Gas	115	SEE
Torrevalaliga Thermal	Italy	Natural Gas and Fuel Oil	154	SEE
Valdo Ligure Thermal	Italy	Coal and Fuel Oil	295	SEE
Montemartini GT	Italy	Fuel Oil	81	SEE
Romerbrücke CHP	Germany	Fuel Oil, Coal, and Gas	110	SEE
Polaniec Thermal	Poland	Coal, Fuel Oil, and Biomass	1,654	SEE
Castelnou CCGT	Spain	Natural Gas	758	SEE
<b>Total SEE</b>			24,404	
<b>Total Suez Group</b>			28,623	

SEE = Suez Energy Europe, SEI = Suez Energy International.

Source: Suez Energy International.