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Report No: 41345-VN

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 91.1 MILLION

(US$150 MILLION EQUIVALENT)

TO THE

SOCIALIST REPUBLIC OF VIETNAM

FOR A

RURAL DISTRIBUTION PROJECT

April 18, 2008

Vietnam Sustainable Development Unit
Sustainable Development Department
East Asia and Pacific Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective March 31, 2008)

Currency Unit = Vietnam Dong (VND)
16,110 VND = US$1
US$1.646542 = SDR 1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AusAID	Australian Agency for International Development	MONRE	Ministry of Natural Resources & Environment
AMT	Aligned Monitoring Tool	MPI	Ministry of Planning and Investment
BOT	Build, Operate, Transfer	MV	Medium Voltage
CPS	Country Partnership Strategy	MW	Megawatt
DMS	Detailed Measurement Survey	PBR	Performance Based Rate
DIR	Detailed Implementation Review	PC	Power Company
DA	Designated Account	PC1	Power Company No. 1 (northern region)
DP	Displaced Person	PC2	Power Company No. 2 (southern region)
DSCR	Debt Service Cover Ratio	PC3	Power Company No. 3 (central region)
EA	Environmental Assessment	PCB	Polychlorinated Biphenyls
EIRR	Economic Internal Rate of Return	PECC	Power Engineering Consulting Company
EA/EMP	Environment Assessment/Environmental Management Plan	PFRP	Policy Framework for Resettlement Plans
EMDP	Ethnic Minority Development Plan	PIU	Project Implementing Unit
ERAV	Electricity Regulatory Authority of Vietnam	PMB	Project Management Board
EVN	Vietnam Electricity	PMDP6	Power Master Development Plan No. 6 (2006–2015)
FMR	Financial Monitoring Report	PMU	Project Management Unit
FIRR	Financial Internal Rate of Return	PSD	Provincial Power Service Department
GOV	Government of Vietnam	PIP	Project Implementation Plan
IAS	International Accounting Standards	RE	Rural Electrification
ICB	International Competitive Bidding	ROW	Right of Way
ICM	International Creditors' Model	RP	Resettlement Plan
IDA	International Development Association	SBD	Standard Bidding Document
IDC	Interest During Construction	SBV	State Bank of Vietnam
IPP	Independent Power Project	SC	Special Commitment
kV	Kilovolt	SFR	Self Financing Ratio
kVA	Kilovolt- Ampere	SEDP	Socio-Economic Development Plan (2005 – 2010)
kWh	Kilowatt hour	SEM	Strategy for Ethnic Minorities
LDU	Local Distribution Utility	TA	Technical Assistance
LRMC	Long-Run Marginal Cost	TWh	Terawatt hours (1TWh= 1 billion kWh)
LV	Low Voltage	VAS	Vietnam Accounting Standards
M&E	Monitoring and Evaluation	VDB	Vietnam Development Bank
MoF	Ministry of Finance	VND	Vietnam Dong
MoIT	Ministry of Industry and Trade		

Vice President:	James W. Adams
Country Director:	Ajay Chhibber
Sector Manager:	Hoonae Kim
Task Team Leader:	Hung Tien Van

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VIETNAM

Rural Distribution Project

CONTENTS

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Annexes:

VIETNAM

RURAL DISTRIBUTION PROJECT

PROJECT APPRAISAL DOCUMENT

EAST ASIA AND PACIFIC

EASVS

Date: April 18 , 2008	Team Leader: Hung Tien Van
Country Director: Ajay Chhibber	Sectors: Power (100 percent)
Sector Manager/Director: Hoonae Kim	Themes: Rural services and infrastructure (P)
Project ID: P099211	EA Category: B, Partial Assessment
Lending Instrument: Specific Investment Loan	

Project Financing Data

[ ] Loan [X] Credit [ ] Grant [ ] Guarantee [ ] Other:

For Loans/Credits/Others:
Total Bank financing (US$m.): 150.0
Proposed terms: Standard, with 40 years maturity

Financing Plan (US$m)

Source	Local	Foreign	Total
BORROWER/RECIPIENT	54.15	0.00	54.15
International Development Association (IDA)	81.36	68.63	150.00
Australian Agency for International Development (AusAID)		3.00	3.00

Estimated disbursements (Bank FY/US$m)

FY	09	10	11	12	13				
Annual	1.9	25.1	59.9	51.7	11.5				
Cumulative	1.9	26.9	86.9	138.5	150.0				

Project implementation period: Start: June 2008 End: 31 December 2012
Expected effectiveness date: November 2008
Expected closing date: 30 June 2013

Does the project depart from the CAS in content or other significant respects? ***Ref. PAD A.3***	[ ]Yes [X] No
Does the project require any exceptions from Bank policies? ***Ref. PAD D.7*** Have these been approved by Bank management?	[ ]Yes [X] No [ ]Yes [ ] No

Is approval for any policy exception sought from the Board?	[ ]Yes [X] No
Does the project include any critical risks rated "substantial" or "high"? ***Ref. PAD C.5***	[ ]Yes [X] No
Does the project meet the Regional criteria for readiness for implementation? ***Ref. PAD D.7***	[X]Yes [ ] No

Project development objective ***Ref. PAD B.2, Technical Annex 3***
The objective of the proposed project is to improve the reliability and quality of medium voltage service to targeted retail electricity distribution systems.

Project description ***Ref. PAD B.3, Technical Annex 4***
Component 1: Rehabilitate and strengthen rural distribution networks in about 15 provinces in the northern region of Vietnam.
Component 2: Rehabilitate and strengthen rural distribution networks in about 20 provinces in the southern region of Vietnam.
Component 3: Rehabilitate and strengthen rural distribution networks in about 11 provinces in the central region of Vietnam.
Component 4: Rehabilitate and strengthen rural distribution networks in the rural areas and islands surrounding Hai Phong City.
Component 5: Rehabilitate and strengthen rural distribution networks of Hai Duong Province.
Component 6: Rehabilitate and strengthen rural distribution networks in Dong Nai Province.
Component 7: Support the corporate development of selected power distribution companies.

Which safeguard policies are triggered, if any? ***Ref. PAD D.6, Technical Annex 10***

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP 4.01)	[x]	[ ]
Natural Habitats (OP/BP 4.04)	[ ]	[x]
Pest Management (OP 4.09)	[ ]	[x]
Physical Cultural Resources (OP/BP 4.11)	[ ]	[x]
Involuntary Resettlement (OP/BP 4.12)	[x]	[ ]
Indigenous Peoples (OP/BP 4.10)	[x]	[ ]
Forests (OP/BP 4.36)	[ ]	[x]
Safety of Dams (OP/BP 4.37)	[ ]	[x]
Projects in Disputed Areas (OP/BP 7.60)*	[ ]	[x]
Projects on International Waterways (OP/BP 7.50)	[ ]	[x]

Environment Category: B, partial assessment

Significant, non-standard conditions, **if any**, for: ***Ref. PAD C.6***
Board presentation: May 2008
Loan/credit effectiveness: November 2008
Covenants applicable to project implementation:
Covenants will require that EVN and the PCs maintain a debt service coverage ratio of 1.5 times or more, a self financing ratio of at least 25 percent and a debt equity: ratio of no more than 70:30.

* *By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas.*

A. STRATEGIC CONTEXT AND RATIONALE

1. Country and Sector Issues

Background

1. The economic growth of over 7 percent over the past several years is at the root of many of the issues in Vietnam's energy sector: growing GDP feeds increasing demand, while meeting that demand enables GDP to continue to grow. Starting from a low base in 1995, energy consumption looks set to grow at 10-15 percent per year for the foreseeable future. Demand comes primarily from the industrial and household sectors which each account for about 45 percent of the total. Since 1995, electricity revenues have grown by 15 percent per year; household access has increased from 50 percent to 92 percent; and annual per capita consumption increased from 156 kilowatt hours (kWh) to about 650 kWh.

2. The main electricity provider is Vietnam Electricity (EVN), which met a five-fold increase in demand for electricity from 8.7 Terawatt hours (TWh) in 1990 to 51.3 TWh in 2006. EVN's average tariff revenue was about 4.97 cents/kWh in 2006, sufficient to make a profit. Electricity for EVN's own consumption, technical and non-technical losses fell to just over 11 percent in 2006. EVN operates a mixture of coal, gas and hydro generation plant. It owns and operates the transmission and medium voltage (MV) distribution systems, the low voltage (LV) distribution to the main urban areas and LV distribution in some rural areas. EVN also has interests in power engineering consulting companies, power training and research institutes, a telecommunications business and a bank.

3. Non-EVN actors in the power sector include independent power producers (IPPs), defined in Vietnam as locally owned financed power projects; in the main owners are other large energy or construction companies and are most usually state-owned. There are two internationally-owned and -financed power plants put in place under build, operate transfer (BOT) arrangements, at the Phu My complex in southeastern Vietnam. Between them, IPPs and BOTs accounted for about 24 percent of installed capacity in 2006. About two thirds of LV distribution is owned by local distribution utilities (LDUs) which receive their supply from EVN's MV electricity distribution system, and are responsible for operations and maintenance of their LV systems, including metering, billing and collections.

4. The Government of Vietnam (GoV) passed an Electricity Law in December 2004, which provides the framework for the development of the power sector over the medium term. Subsequent reform developments have included the establishment of the Electricity Regulatory Authority of Vietnam and the preparation of a roadmap for reform which envisages the unbundling of the sector with separate ownership of generation, transmission and distribution and the introduction of competition initially in generation and wholesale supply and later in retail supply.

Major Power Sector Issues

5. The central task for the power sector in Vietnam is to meet demands for electricity in sufficient quantity and of an acceptable quality, in as commercially and financially efficient a way as possible. Several issues arise if this task is to be accomplished in the short and medium term. They are:

- Optimizing power investments – particularly for generation;
- Financing the investments that must be made;
- Implementing the reforms in the power industry and restructuring EVN; and
- Improving access and service quality.

6. Optimizing Power Investments. To meet demand growth and to restore reserve margins to the range of 25 – 30 percent, generating capacity will have to increase from 12,357 Megawatts (MW) in 2006 to 25,000 MW in 2010, 41,000 MW in 2015 and 60,000 MW in 2020. In the recently-approved Power Master Development Plan Number 6 (PMDP6), Vietnam has a good planning framework to meet this massive growth. It envisages growth of all three major power generation sources – hydropower, gas and coal – as well as a significant contribution from renewable energy, predominantly small hydropower of less than 30MW, and imports, mainly from China and Laos. Transmission and distribution system investments must accompany the increase in generation capacity, and there is substantial scope for demand side management to ensure that the system is optimized for least economic cost.

7. Financing Investments. To meet the investment needs for generation, transmission and distribution, Vietnam must mobilize about $20.3 billion between 2006 and 2010, or about $4 billion per year. Of this about $2.3 billion must be spent on expanding generation capacity, and the balance on transmission and distribution. EVN is expected to make about two thirds of the investments envisaged in PMDP6 and must place greater reliance on non-government domestic sources of finance, through joint ventures, domestic bond issuance and equitization as well as through self-financing using retained earnings; ODA and other external sources of finance will also remain significant. Non-EVN sources of investment capital are envisaged mainly to come through further local and foreign direct investment in IPPs and BOTs. The need to attract other sources of finance is a major driver for the reform program.

8. Implementing Reforms. Vietnam has made a strong start to the reform of the sector. The formation of the Electricity Regulatory Authority of Vietnam (ERAV) in October 2005 was an important milestone. GoV has shown its commitment to carrying this through by investing substantially in technical assistance to ERAV, which is the first sectoral economic regulator in Vietnam. Currently, EVN has separate generation, transmission and distribution operations in a group structure under a holding company. The separation of ownership of different segments will, eventually, result in the transformation of EVN into several independent companies specializing in generation, transmission and distribution. Equitization, the process of converting EVN's subsidiaries to joint stock companies and subsequent sale of shares to the public and employees, is being actively pursued and about half of its operations subsidiaries have now been equitized. To date EVN has retained a majority stake in all its equitized subsidiaries.

9. Improving Access and Service Quality. There is a strong need to ensure better electricity supply to all consumers, both to improve living standards directly and to support development of local industrial, agricultural and commercial activities for economic growth and employment. Many of those connected, particularly in the rural areas, receive poor service because current systems are unable to meet current and projected load requirements. The MV system has become a bottleneck in the power flow from the transmission system to the low voltage systems. The resultant fluctuating voltage and poor reliability cause substantial economic loss by interrupting processes and, often, by damaging consumers' appliances. Furthermore, about 1 million households, or 5 million people, still have no grid supply and either depend on poor quality individual systems or do without.

2. Rationale for Bank Involvement

10. Since the late 1990s, IDA has been engaged with Vietnam over the full range of power sector issues. It has achieved this through a combination of economic and sector work, technical assistance and project lending. There is a rich and diverse dialogue centered on expanding and upgrading power service and supporting long-term reforms, backed by a program of lending designed to support the concomitant investment needs. This twin track approach of policy development and lending within a well-defined but flexibly-structured program has proved effective in achieving major impacts in generation, transmission and distribution, private sector participation in generation, rural electrification, renewable energy and demand side management.

11. In the early years several donors financed rural electrification, often focusing on specific geographic areas of Vietnam. Improving access is, however, a long term and complex process. Because it is not possible to deal conclusively with all the issues at once, IDA complemented these early investments, and developed a comparative advantage, particularly as the issues have transitioned from traditional rural electrification – connecting large numbers of consumers – to the more complex combination of policy, management and physical outcomes at the scale now required. While other donors and multilateral institutions could, and are welcome to, cofinance investments, there are none that are willing to undertake IDA's pivotal role over the long term.

12. IDA has evolved a ten-year program including four discrete operations that prioritize and deal selectively with the issues while underpinning GoV's long term objective of universal access. The proposed project is the third in a planned series of four. The first, Rural Energy Project (Cr. 3358-VN, closed FY07) focused on increasing the number of basic connections. Second Rural Energy Project (Cr. 4000-VN, FY05, ongoing) addresses rehabilitation of the existing LV systems and the development of institutions and actors to ensure service delivery at the retail level. The proposed project would likewise focus on the improvement of the medium voltage systems and support the corporate development of the electric power distribution entities, known as Power Companies (PCs). The fourth project would support provision of electricity for the remaining households as yet unconnected.

3. Higher Level Objectives to which the Project Contributes

13. Ensuring there is sufficient electric power of acceptable quality is central to Vietnam's integration into the world economy and to improving its competitiveness. Development of an

electric power system responsive to a country's economic and social needs is a major undertaking, especially in a fast-growing economy such as Vietnam's. Both the GoV's Socio-Economic Development Plan for 2006 – 2010 and the Bank's Country Partnership Strategy (CPS Report 38236-VN) for the same period, presented to the Board and discussed on February 1, 2007, recognize this. They aim to sustain high economic growth to reach middle-income status by 2010 while improving social achievements, upholding social coherence, and sustaining the natural resource base. The proposed project will contribute to improving Vietnam's electric power service provision and thus help competitiveness by boosting productivity in the power sector and in the economy as a whole.

B. PROJECT DESCRIPTION

1. Lending Instrument

14. A Specific Investment Credit has been chosen because it most closely matches the client's needs. Other instruments which have a policy element to them, including an Adaptable Program Loan were considered and rejected because most of the policy elements for rural access are in place. Similarly, a Sector Adjustment Loan was rejected because the project is focused on new physical investment and the development of the PCs rather than reform or restructuring of the sub-sector.

2. Project Development Objective and Key Indicators

15. The objective of the proposed project is to improve the reliability and quality of medium voltage service to targeted retail electricity distribution systems. The project will achieve this though investment in rehabilitating and increasing the capacity of existing distribution lines and substations and standardizing them to 22, 35 and 110 kilovolts (kV)[1]. It will enable distribute systems to meet the growing demand more efficiently, provide better quality and quantity of electric power for productive uses, and reduce power system losses. Technical assistance will complement the physical investment by supporting the development of the PCs into modern power distribution utilities.

16. The key indicators measure the reliability and quality of power supply to the LV system in terms of interruptions in supply and power quality. A further key indicator is consumption of higher quantities of electricity; while it is not easy to measure directly, consumer surveys will assess this indicator. Selected indicators would also measure the impact of the project in improving distribution systems and enhancing system reliability. Although not included as part of the development objective, indicators would also track the impact of the technical assistance in improving the performance of the PCs.

17. The key indicators and results framework are set out in Annex 3.

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[1] 22kV is used in more populous areas including towns and cities. The 35kV level is used to keep losses low in mountainous and less populous areas where power distribution lines are longer. 110kV is used throughout the country to link the transmission system with 22 or 35 kV MV systems.

3. Project Components

18. The project will have seven components, six of which are aimed at improvement of MV service in the territory of a participating PC. Each of the six components may contain two types of subproject involving new construction, rehabilitation, strengthening or a combination of any of the three, of: (i) all of the 22 or 35 kV system requiring improvements within a single province falling within the territory of a participating PC; or (ii) a single substation or line at the 110 kV level feeding the 22/35 kV systems in rural areas within a province or provinces falling in the territory of a participating PC. A seventh component will support the corporate development of selected PCs through technical assistance. Each component is outlined below.

Component 1: *Improvement of the rural distribution system in the Northern Region (Total cost $66.83 million, of which IDA $47.44 million).* This component will rehabilitate and strengthen rural distribution networks in about 15 provinces in the northern region of Vietnam, which are the responsibility of Power Company No.1 (PC1).

Component 2: *Improvement of the rural distribution system in the Southern Region (Total cost $36.99 million, of which IDA $27.73 million).* This component will rehabilitate and strengthen rural distribution networks in about 20 provinces in the southern region of Vietnam, which are the responsibility of Power Company No.2 (PC2).

Component 3: *Improvement of the rural distribution system in the Central Region (Total cost $63.14 million, of which IDA $46.53 million).* This component will rehabilitate and strengthen rural distribution networks in about 11 provinces in the central region of Vietnam, which are the responsibility of Power Company No.3 (PC3).

Component 4: *Improvement of the rural distribution system in the area of Hai Phong City (Total cost $17.85 million, of which IDA $13.16 million).* This component will rehabilitate and strengthen rural distribution networks in the rural areas and islands surrounding Hai Phong City, in the north of Vietnam, which are the responsibility of Hai Phong Power Company (PC Hai Phong).

Component 5: *Improvement of the rural distribution system in Hai Duong Province (Total cost $6.45 million, of which IDA $5.06 million).* This component will rehabilitate and strengthen rural distribution networks of Hai Duong Province in the northern region of Vietnam, which are the responsibility of Hai Duong Power Company (PC Hai Duong).

Component 6: *Improvement of the rural distribution system in Dong Nai Province (Total cost $11.38 million, of which IDA $8.59 million).* This component will rehabilitate and strengthen rural distribution networks in Dong Nai Province in the southern region of Vietnam, which are the responsibility of Dong Nai Power Company (PC Dong Nai).

Component 7: *Corporate development of PCs (Total cost $4.5 million, of which IDA $1.5 million and AusAID $3 million).* This component will support the corporate development of PCs 1, 2 and 3. It will focus on building capacity of the PCs so that they can in the future act as independent participants in the power market as it develops

according to the Government's road map for reform. Five main areas would be addressed:

- Developing PCs' financial management practices for greater autonomy;
- Increasing capacity to forecast market development and to undertake commercially-based investment decisions;
- Planning and implementing monitoring systems for performance standards;
- Supporting PCs as they prepare for further reform of the power sector; and
- Preparation of plans for completing GoV's program of universal electrification.

19. Each investment component will take place in two phases. The first phase will consist of subprojects that have been appraised and are ready for implementation upon approval by the World Bank's Board of Executive Directors. The second phase will consist of subprojects that are brought forward by implementing agencies when their preparation is complete. When their appraisal by IDA has been satisfactorily completed, they will be financed on a first-come, first-appraised basis until all funds allocated to the component have been committed. The technical assistance component will take place in a single phase over the lifetime of the project.

20. The components are described in further detail in Annex 4 and costs are detailed in Annex 5.

4. Lessons Learned and Reflected in the Project Design

21. A clear roadmap, with objectives focused on the most pressing needs. The GoV has formulated its program for achievement of universal access to power in stages, and has put in place policies to support those stages. The program guides the formulation of investment and reform requirements, which in turn has guided the development of the IDA program of support to the rural electricity subsector.

22. Project design must ensure rapid start-up. In the power sector, as in the wider portfolio in Vietnam, a critical issue is to ensure rapid project start-up. Project design takes this into consideration by decentralizing implementation as far as possible consistent with maintaining quality, and coincidentally encouraging ownership, cost sharing and sustainability. A flexible project design, allowing the use of cost savings or to switch funds between subprojects is important, though it should not be at the expense of good project management, implementation and fiduciary control. Last, a higher degree of readiness of subprojects has been required than hitherto.

23. Cost sharing. Development of rural networks is strengthened through the principle of cost sharing among parties involved. Cost sharing must be carefully designed to ensure ownership while not exceeding financial capacity.

24. Consultation and strong local commitment is essential in projects involving a large numbers of parties. For this Project, commitments were obtained between PCs, their Provincial Supply Departments (PSDs, for PCs 1, 2 and 3) and the LDUs which will benefit from

strengthened MV distribution systems that the complementary investments in LV systems would be made.

25. Fiduciary oversight and execution by the government and its agencies is slow, and further effort is needed to streamline it through clearly set out and agreed procedures, particularly for procurement and disbursement.

5. Alternatives Considered and Reasons for Rejection

26. With demand for power in the rural areas growing in line with the economy, a project to strengthen the distribution system is the highest priority to meet growing demand and increase the reliability of power supply to the rural areas. The proposed design was chosen to optimize speed and flexibility of implementation while ensuring a degree of equity among regions and PCs, and that the most needed investments received the greatest priority. The design options considered included: (i) variations in the number of implementing agencies; (ii) choosing between implementing agencies experienced in working with IDA, and dealing with new ones; and (iii) the kind of subproject to support – whether to work only at 110kV level, or only at 35/22 kV level, or both.

27. A number of options for other investment components were reviewed and not considered suitable for inclusion under the project, including financing for development of small hydropower projects for off-grid supply. For ease of management and maintenance of emphasis on high quality implementation, a more focused operation is preferable.

C. IMPLEMENTATION

1. Partnership Arrangements

28. The Australian Agency for International Development (AusAID) has expressed its interest in providing grant cofinancing to the project for the planned technical assistance and investment components of the project. The tentative amount of cofinancing is AUD 20 million, or about US $17.5 million at today's exchange rate. The AusAID financing would be parallel and share the same project description and implementation arrangements, and would be provided through a World Bank-administered and client-executed Trust Fund.

29. Of the grant, $3 million would supplement the IDA financing for the technical assistance component and has been appraised and is submitted to the World Bank Board as part of the project. As currently planned, the balance of the funds would be used for additional investments similar to those financed by IDA but targeting those systems in more remote areas which are likely to have high economic and social benefits through supporting infrastructure that will allow economic growth. The financing for the investment component would not become available until May 2009. Because of the timing difference in the AusAID financing for the investment component, no additional sub-projects have yet been identified. If approved, the AusAID grant for investment would be processed as additional financing under the umbrella of the project.

2. Institutional and Implementation Arrangements

30. The project will be implemented under the control of EVN, to which responsibility has been delegated by the Ministry of Industry and Trade (MoIT), EVN's supervising ministry. Within each participating PC, the responsibility for implementation will lie with one or more Project Management Boards (PMBs) or specialized investment departments. In the larger PCs, which have territories covering several provinces, the PCs' PSDs will be involved. The implementing arrangements and capacities in PCs are summarized in Table 1.

Table 1: Implementing Agencies

Implementing Agency	Arrangements	IDA Experience
Power Company No. 1	110kV subprojects: existing PMB 22/35kV subprojects: PSDs with PC1-level support	Yes
Power Company No. 2	All subprojects (22/35kV only): PSDs with PC2-level support	Yes
Power Company No. 3	110kV subprojects: existing 110kV PMB 22/35 kV subprojects: rural networks PMB	Yes
Hai Phong Power Company	All subprojects: existing PMB	Indirect (as former PC1 subsidiary)
Hai Duong Power Company	All subprojects: Investment Management Department	Indirect (as former PC1 subsidiary)
Dong Nai Power Company	All subprojects: PMB to be created.	Yes

31. The project will be phased. The first phase will consist of subprojects which have been appraised and which are now ready for implementation. The second phase will consist of subprojects that will be appraised during project implementation; appraisal criteria and the frameworks to ensure they meet the criteria will remain unchanged from phase one.

32. IDA funds will be borrowed by Ministry of Finance and on lent to each participating PC. Report-based disbursement will be used and each PC will have its own designated account (DA). Procurement will be of goods and works for the investment components and consultant services for the technical assistance. As with previous projects, goods will be procured by the implementing agencies in packages designed to optimize speed of implementation with economies of scale in purchasing. Separate works contracts will be let to construct the subprojects. About half the packages for goods will be subject to international competitive bidding (ICB) and half to national competitive bidding (NCB). All the works contracts will be procured through NCB.

33. These implementation arrangements mirror the way in which PCs implement all subprojects, whether financed by themselves or from external sources such as IDA. They have proven effective and, within the constraints of a complex approvals system in Vietnam, efficient. Support to build the capacity of the less experienced implementing agencies will leverage the experience of PCs 1, 2 and 3, and their PMBs. These have extensive experience of IDA procurement and financial management gained through their involvement in many Bank-supported projects during the last decade. As part of ongoing efforts across the whole power sector portfolio, the task team will also continue to pursue efficiency improvements within the PCs and with external agencies, including those responsible for disbursement.

34. Detailed implementation arrangements are discussed in Annex 6, financial management in Annex 7 and procurement in Annex 8.

3. Monitoring and Evaluation of Outcomes/Results

35. Monitoring of progress of the project towards its objectives will be the responsibility of the PCs [Indicators at the project implementation level will be compiled by the PCs and monitor the performance of their subproject(s)]. As part of their corporate responsibilities, the PCs will report regularly to EVN. During the course of the project it is expected that ERAV will develop and promulgate service standards, as part of its measurement of performance of the PCs. The task team will remain engaged with ERAV and the PCs to ensure alignment and to avoid duplication of effort. The key sources for these data will be PCs, PMBs, and their engineering consultants. Specialist environment and resettlement monitoring reports will supplement the PCs reports.

36. The indicators are described further in Annex 3.

4. Sustainability

37. The keys to sustainability in Vietnam's power sector are to ensure that the sector continues to meet demand, that benefits of investments exceed their costs, and that costs are recovered from electricity consumers. Vietnam has a good track record to date: the GoV has shown strong commitment to the reform process which has largely been driven by need to ensure demand in the fast-growing system is met, through gaining access to diversified sources of finance, skills, technologies and fuels. Investment planning is rigorous and PMDP6 shows substantial economic benefits. EVN and the PCs continue to remain profitable without government subsidy, with costs recovered through tariffs. The reform process will further strengthen sustainability by building the regulatory framework, set the grounds for further unbundling of generation, transmission and distribution and reform of wholesale and retail tariff setting by establishing clear and transparent methodologies.

38. At the project level, central and local governments have shown their determination to improve the quality of the rural electrification program during implementation of Rural Energy Project and Second Rural Energy Project. Based on this experience, each PC has identified the priority subprojects, being those which offer the best returns. PCs have demonstrated their commitment and ownership of rural electrification projects through their good record of IDA project implementation.

39. Besides continued borrower commitment, the sustainability of the project relies on continued growth in demand for power in Vietnam and matching the rural distribution system's growth with expansion of generation capacity. Demand growth appears robust, while the need to increase generation capacity is well understood at all levels of government and EVN. Other parts of the Bank Group's program in the power sector in Vietnam address this.

5. Critical Risks and Possible Controversial Aspects

Potential Risks	Risk Rating after mitigation	Proposed Mitigation Measures
To Development Objective		
Coherent planning of MV upgrades prevented through market restructuring, or weak financial capacity of PCs	M	Project design decouples market restructuring from development objective. Support for PCs' corporate development through TA. Limit subprojects to within PCs' financial capacity.
Supply to the MV distribution network (from generation and transmission system) is unable to meet demand and quality needs	M	Ensure adequacy of generation capacity and upgrading of transmission network takes place in parallel with MV upgrading (through other projects).
Demand does not grow at rate expected, resulting in wasted investment or insufficient funds to ensure continued efficient operations	L	Careful appraisal of demand growth. Continued engagement in rural electrification program. Technical assistance to ensure best practice in investment by PCs. Support preparation of regulations that permit reasonable tariffs.
Fraud or corruption lead to poor quality of outputs or subprojects selected or designed on basis other than best practice leading to cost overrun or poor quality.	L	Review of technical design criteria and strict application of subproject eligibility criteria. PC/EVN internal review mechanism supplemented by Bank supervision including ensuring adequate competition during procurement and physical review of subprojects
To Implementation Progress		
Slow start to implementation and disbursement	M	Limit number of implementing agencies new to IDA. Avoid complex structure and work through PCs. Advance investment report and procurement for subprojects to the greatest extent possible. Encourage Provincial Power Services' deeper involvement in the process of planning and implementation of project subcomponents. Agreement with MoF and designated financial controllers on transparent procedures for verification and clearance of the application for disbursement.
Fiduciary management issues: complex/multi-layer procedures and approvals lead to delays in procurement, disbursement or reporting.	M	Work with experienced PCs. Ensure PCs understand requirements. Work with concerned parties to ensure simple procedures maintained in place.
Overall	**M**	

6. Credit Conditions and Covenants

40. All standard condition of effectiveness will apply. In addition, subsidiary loan agreements between the Government and the Participating PCs must be executed.

41. Covenants ensuring the adequate financial performance of EVN and the PCs will be included in the legal agreements. In line with other IDA Credits (and lending from other multilateral lenders) these covenants will require that EVN and the PCs maintain a debt service coverage ratio (DSCR) of 1.5 times or more, a self financing ratio (SFR) of at least 25 percent and a debt: equity ratio of no more than 70:30.

D. APPRAISAL SUMMARY

1. Economic and Financial Analyses

A. Economic Analysis

Cost benefit: For Phase 1: NPV=$64.47 million; EIRR =18.9 percent (see Annex 9)

42. Economic benefits of the project are derived from: (i) incremental sales due to removal of system capacity constraints to existing and new consumers; (ii) reduction of energy losses through improved efficiency; and (iii) increased reliability, through reduced outage time. Costs are based on estimates derived from market prices plus a 15 percent contingency. Each subproject in the first phase is economically viable. The main risks to project economic viability are cost increases and reduced levels of demand from retail systems. Switching values for most subprojects show them to be robust to increases of at least 20 percent in costs and reductions of at least ten percent in demand. For the five phase 1 subprojects where this is not the case, attention to cost control and demand forecasting will be required during procurement and implementation.

B. Financial Analysis

For Phase 1: NPV= US$34.25 million; FRR = 4 percent (see Annex 9)

43. All implementing agencies have an overall positive rate of return for the subprojects for which they are responsible, but some subprojects are close to the hurdle rate of 1.6 percent, the estimated cost of capital. Five subprojects have switching values that are close to estimated costs, of which two are also economically risky. Nonetheless, the PCs which own the projects wish to proceed with them, since these returns are based on costs which include contingency and thus reduce risks of cost overruns. The financial rate of return is generally low because of high costs associated with rural electrification and the assumption, for analytical purposes that the current regime of bulk power tariffs and ceilings on retail tariffs will continue.

44. In addition to the analysis of individual subprojects, the financial performance of EVN and the PCs has been appraised. Performance by EVN and the PCs against three key measures: SFR, DSCR and debt: equity ratio in each of the years from 2001 to 2006 has met the proposed covenanted levels. Projections for 2007 – 2015 indicate that EVN and the PCs will remain profitable and be able to meet the covenanted levels of SFR, DSCR and debt:equity. With the reform of the power sector and restructuring of EVN, the PCs will become increasingly financially autonomous and from 2010 the consumer tariff will be unbundled into separate elements for generation, transmission and distribution. Based on government announcements, Vietnam will move to a performance-based distribution tariff structure during the lifetime of the project, and that will allow PCs to reduce operating costs. A corollary to the revised tariff system is that a fund to cross subsidize between lower- and higher-cost PCs will be put in place. Typically it will transfer funds from urban PCs supplying a higher than average industrial load to rural PCs supplying a predominantly household load.

2. Technical

45. The Vietnamese National Technical Regulations for Rural Electrification, promulgated by MoIT in May 2006 will apply to all subprojects. Phase one subprojects have been appraised and found to be designed according to the Regulations, and Phase two subprojects will be appraised against them. The standards themselves were prepared by international consultants with support from SIDA; they have been appraised and are considered to meet international standards for distribution system planning expansion, quality of design and safety in operation.

3. Fiduciary

46. The financial management assessment concluded that the proposed implementing agencies have the capacity to meet minimum IDA requirements on financial management and disbursement. Risks are assessed as moderate, and report-based disbursement is proposed. Independent auditors acceptable to IDA will be selected to audit project and entities' accounts. Further details are provided in Annex *7.*

47. The procurement capacity assessment concluded that existing capacity meets minimum IDA requirements, and the project is assessed as moderate risk. Procurement capacity will be enhanced in some implementing agencies, particularly PCs Hai Phong and Hai Duong. The procurement plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity. Annex 8 provides further details on procurement.

4. Social

48. Access to improved quality and availability of electricity in rural areas is a long-standing GoV commitment, which is seen as a source of national unity. The benefits of improvements in the quality of the life of the local people are well understood, including increasing their income through improvements in productivity. In addition the quality of life improvements through access to electricity have positive, but indirect, social benefits. The policy of universal access to electricity is applied even-handedly, and within project areas all the people, including members of ethnic minorities, will have equal access to project benefits. Nonetheless, it is inevitable that those in the most remote areas are the most costly and difficult to electrify, and special interventions beyond the scope of this project are needed.

49. The adverse social impacts of the projects are largely felt at the household level through loss or restrictions in use of land when it is used for rights of way, poles or substations. These impacts are normally relatively small for the individual household, affecting a few square meters of land but seldom houses or structures. Nonetheless the total number of the households affected by the project can be large. Strenuous efforts are made to minimize impacts by system designers, and land holders who lose the use of their land are always compensated and surveys indicate that nearly all households view electrification positively even when they are affected.

5. Environment

50. The policy and regulatory frameworks for the environment impacts resulting from rural electricity projects are in place and are generally understood by central and local government and the PCs and the PSDs. Capacity to implement and oversee the projects is limited in some cases, and the project will, as in previous projects, seek to build capacity at the local level through training and ensuring that adequate monitoring of the safeguards aspects is in place.

51. The project will entail the handling and management of older transformers that will be taken out of service and which may contain polychlorinated biphenyls (PCBs). At the higher concentrations often found in the oil in older transformers, PCBs can be harmful to human health. There are currently no mechanisms for the safe disposal of PCB-contaminated materials in Vietnam, however a separate project now under preparation will address this issue, and EVN is one of the implementing agencies for it. Project EAs and EMPs have adopted a precautionary approach, requiring the safe handling and storage of any transformer suspected of containing PCB-contaminated oil.

6. Safeguard Policies

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP 4.01)	[x]	[ ]
Natural Habitats (OP/BP 4.04)	[ ]	[x]
Pest Management (OP 4.09)	[ ]	[x]
Physical Cultural Resources (OP/BP 4.11)	[ ]	[x]
Involuntary Resettlement (OP/BP 4.12)	[x]	[ ]
Indigenous Peoples (OP/BP 4.10)	[x]	[ ]
Forests (OP/BP 4.36)	[ ]	[x]
Safety of Dams (OP/BP 4.37)	[ ]	[x]
Projects in Disputed Areas (OP/BP 7.60)*	[ ]	[x]
Projects on International Waterways (OP/BP 7.50)	[ ]	[x]

52. The project is rated as Category B. An Environmental Guideline has been developed and approved for use under the project. The guideline was used in developing the Environmental Assessments/Environmental Management Plans (EA/EMPs) for the first phase subprojects and will be used for the EA/EMP assessments of all sub-projects proposed in the remaining subprojects to be appraised in the second phase. The EA/EMPs for all first phase projects address all environmental issues satisfactorily, and are in compliance with Vietnamese and Bank environmental regulations, policies and procedures. The EMPs have adequate budgets for mitigation and satisfactory monitoring arrangements. A summary is provided in Annex 10.

53. A Social Assessment has been carried out, which has drawn on existing material, including the draft Country Social Analysis. This has provided the basis for developing the Policy Framework for the Resettlement Plans (PFRP) and the Strategy for Ethnic Minorities (SEM). The Policy Framework and Strategy were developed based on OP 4.12 and OP 4.20 and will be approved for use under the project by the appropriate levels of GoV. The frameworks

* *By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas*

were used in developing RPs and Ethnic Minority Development Plans (EMDPs) for Phase one projects and will be used for all subprojects to be appraised in Phase two.

54. RPs provide adequate budgets for resettlement and compensation, and includes adequate institutional arrangements and mechanisms for implementation monitoring and grievance redress. These RPs have been approved by Government and cleared by the Bank (see also Annex 10).

55. The Phase one subprojects do not cause any culturally specific impacts on communities of ethnic minorities. The EMDPs for Phase one have been prepared in close consultation with local authorities and ethnic minorities who are residing in the project areas. EMDPs for any projects in Phase two will be prepared separately and the same SEM will be applied.

7. Assessment of Fraud and Corruption Safeguards

56. The areas considered most likely to be subject to wrongdoing are fraud in financial management, fraud and corruption in procurement and fraud and corruption in the implementation of resettlement and payment of compensation. Safeguards to prevent fraud and corruption in these areas put in place by participating PCs and EVN have been reviewed and assessed as adequate to enable them to implement the Bank's anti-corruption guidelines. There have been no allegations of fraud or corruption in the power sector in Vietnam, and no extraordinary mitigating measures are considered necessary to supplement those already in place.

57. EVN has established an anti-corruption committee, chaired by the Chief Executive Officer and with members drawn from the inspection (internal compliance), planning, personnel and finance functions and from the trade union. The committee has specific terms of reference, meets regularly and has powers of investigation and sanction. The structure, terms of reference and working procedures are mirrored in each of the PCs, with the PC's Director taking the place of the Chief Executive. Minutes of the meetings of the anti-corruption committees of EVN and PCs were reviewed and discussed. EVN and each PC have received a copy of the Bank's Fraud and Corruption Guidelines and have agreed to be bound by them for the project.

58. Internal processes and controls in EVN and the PCs separate responsibilities for preparation of investment proposals, procurement and financial management documents from review and clearance. The review of financial management arrangements is discussed in Annex 7, and finds that the PCs responsible for financial management have competent personnel, established integrated financial management systems, adequate procedures and internal controls. The review of procurement arrangements is discussed in Annex 8. Procurement is generally well done in the PCs and there have been few indicators of irregularities in procurement processing in the past and none that indicate fraud and corruption. There is adequate separation of design, procurement and approvals, including of cost estimates, and the PCs responsible for procurement have, or will have after training, adequate and competent personnel.

59. For resettlement compensation, there is separation between project design, which is carried out by the PC, and compensation setting which is carried out by District government. In addition to the PCs' own review and agreement of resettlement compensation with the provincial and district authorities, an independent monitoring consultant is hired, part of the terms of

reference of which are to solicit local opinions. In addition resettlement compensation amounts and rates are publicized at commune level, thus reducing the possibility of collusion between individuals and local government officials. The measures and the findings are noted in Annex 10.

8. Policy Exceptions and Readiness

60. No policy exceptions for the project are required.

61. About 50 percent (25 of the expected 54 subprojects, by value $123 million of $202 million) had, at appraisal, obtained approval for their feasibility studies. By negotiations about 50 percent of approved subprojects had detailed designs and procurement documents approved. In addition, the following readiness criteria have been checked at appraisal:

Fiduciary (financial management and procurement) arrangements are in place;
Project staff from the PMBs is already in place, and their staff will be augmented on an as needed basis;
Counterpart funds have been budgeted;
Disclosure requirements for safeguards have been met;
Results assessment arrangements completed: monitoring and evaluation (M&E) institutional obligations have been spelled out; M&E capacity in place; indicators specified; baseline data has been collected;
Final draft Project Implementation Plans have been reviewed and agreed; and
Land acquisition plans are ready.

Annex 1: Country and Sector or Program Background

VIETNAM: Rural Distribution Project

SECTOR BACKGROUND

Introduction to Vietnam's Electric Power Sector

1. Vietnam's electric power system caters to the country's resource endowment and geographic configuration. With water resources available in all three of the country's main regions, hydroelectric power was the dominant source of power generation from the late 1980s until recently. Thermal generation from coal adds base load capacity in the north. Thermal generation from offshore natural gas has been developed in the south since the late 1990s, adding to small amounts of oil-fired thermal capacity. Total generating capacity on the system by the end of 2006 was 12,357 MW (see Table A1.1). A 500 kV backbone transmission line connects the regions and generation sources, enhancing the optimal use of resources during different seasons and as the generation mix and demand evolve. This basic configuration of the system is expected to continue over the long term as the overall system expands. Although the mix will continue to vary from year to year, as new large plants are added, hydro and gas are each expected to contribute about 40 percent of power generation, and coal about 20 percent, over the medium term.

Table A1.1: Vietnam's Power Generating Capacity (MW available at end of year)

	2003	2004	2005	2006
EVN-owned:				
Hydro	4,121	4,121	4,155	4,583
Coal	1,185	1,205	1,245	1,245
Oil and gas	2,713	3,161	3,137	3,590
Total EVN	8,019	8,487	8,537	9,418
Owned by others				
Hydro	-	-	298	326
Coal	-	155	138	370
Oil and gas	1,252	1,305	1,914	1,936
Other[1]	72	42	168	307
Total owned by others	1,324	1,502	2,518	2,939
Total	9,343	9,989	11,055	12,357

[1] Includes biogas cogeneration, small hydro, purchases from other countries.

2. EVN is now completing a second north-south 500 kV line, and strengthening power transfer capabilities. With additional 500 kV lines for power evacuation from new major generation complexes and work beginning on high-voltage rings around Hanoi and Ho Chi Minh City, the total 500 kV network extended to about 3,259 km in 2006. In that year 220 kV lines totaled 5,278 km and 110 kV lines totaled 11,820 km. Interconnections with neighboring China, Cambodia and Laos had a capacity of about 300MW in 2006, but will grow significantly in the future.

3. Vietnam's power industry has struggled over the last decade to expand the system to meet rapidly growing demand, and has been generally successful, although serious shortages did appear during the summer of 2005, when drought conditions coincided with tight capacity constraints, and reappeared in the summer and fall of 2007. Since 1995, electricity sales have grown by a consistent 15 percent or so per year, at almost double the 7.1 percent p.a. rate of GDP growth. Electricity production during the same period grew by 13.6 percent per year, growing somewhat slower due to power system efficiency gains. Transmission and distribution losses, for example, fell sharply during the period from an unfortunate 21.4 percent of power production in 1995 to a reasonable level of just over 11 percent in 2006 (Table A1.2).

Table A1.2: Vietnam's Electricity Production and Sales 2002 – 2006

	2002	2003	2004	2005	2006
Total production (TWh)	35.8	40.8	46.2	52.05	59.01
Total sales (TWh)	30.3	34.9	39.7	44.92	51.30
Transmission and distribution loss (percent)	13.4	12.23	12.09	11.78	11.05

4. Electricity use in Vietnam is growing from a very low base for a country its size. In 1995, total power sales of 11,185 GWh amounted to only 156 kWh per person per year. Even after growth of more than threefold in electricity use during 1996-2006, total end-use consumption amounted to only 650 kWh per capita per year, compared to an average of 1,343 kWh[2] per capita per year in East Asia and Pacific and 1,225[2] kWh per capita per year in low and middle income countries worldwide.

5. Industrial electricity use has now overtaken residential consumption, and accounts for nearly 50 percent of the total (See Table A1.3). Although the service sector has played a role, industry and household use have been primarily responsible for the growth in electricity demand, and this trend is expected to continue. The share of agriculture in electricity demand, which is not an electricity-intensive sector, has fallen sharply.

Table A1.3: Vietnam's Electricity Consumption by End User 2000 – 2006, TWh

	2000	2004	2006
Industry and construction	9.1	17.9	24.3
Agriculture	0.4	0.6	0.6
Residences	11.0	17.7	22.0
Commerce and Other	1.9	3.5	4.4

6. Rapid increases in industrial electricity use are following rapid growth in the manufacturing sector. Industrial value added grew by about 11 percent per year during 1996-2004. Industry's share of GDP, which is a relatively electricity-intensive sector, increased from 22.6 percent in 1995 to 41.6 percent in 2006. Moreover, the types of light industry which are growing fast in Vietnam—food and beverage processing, textiles, light chemicals, and light consumer durable goods—often tend to increase power use per unit value added as development

[2] 2004 data.

proceeds, due to increasing automation, packaging and (for food, beverages and textiles) increased use of cooling. Industrial electricity demand growth has increased especially fast during the last few years (22 percent p.a. between 2000 and 2006), and is expected to continue to be a key demand driver.

7. With both increases in the urban population and the success in rural electrification about 32.5 million new people were added as power users from 1996 to 2006, representing some 40 percent of Vietnam's population today. Probably even more influential on demand growth, however, given the low consumption levels of new rural household customers, has been growth in household appliance ownership, as disposable incomes have grown from very low levels in the mid-1990s. Even so, the current average consumption of about 20 kWh/month per person among residential electricity users is low, and certain to increase, as power use grows from nascent levels in the countryside and as heavy appliance use, especially use of air conditioners, begins to take hold among middle-income groups.

Policy and Institutional Framework

8. In line with Vietnam's socialist market economy, public ownership dominates the energy sector, but increasingly, market forces are being brought to bear and private sector participation is expanding. From 1995-2006, power sector operations were organized into Electricity of Vietnam, a General Company operating under Decree 91 of 1995 which created a number of large state owned enterprises. In 2006, Vietnam Electricity Group was created, into which the assets of Electricity of Vietnam were placed, under a holding company structure.

9. Key legislation on the electricity sector includes the Electricity Law (2004), followed by Decrees 105 and 106 (2005), which have to do with implementation of the Electricity Law and the Prime Minister's Decision 258 of 2005 establishing the Electricity Regulatory Authority of Vietnam (ERAV). The Prime Minister's Decision 26 of January 2006 sets out the roadmap for reform of the power sector and Decision 1855 of December 2007 sets out the national strategy for energy development to 2020. Other legislation includes Decree 22 (1999), setting out the cost sharing arrangements for rural electrification, Decree 45 (2001), laying down the rural electrification strategy) Decree 55 (2003) and Decree 189 (2007), establishing the functions, tasks, powers and organizational structure of the Ministry of Industry and Trade (MoIT). As discussed in later parts of this Annex, the Electricity Law aims at development of a new framework for the regulation and operation of the power sector in the coming years.

Government Policy and Regulation Responsibilities

10. MoIT has first-line policy and supervisory responsibilities for the energy sector, both as the 'line ministry' and as the ministry with oversight responsibility for state-owned companies. MoIT is responsible for supervising implementation of government policy, and recommending and drafting major policy reforms for government adoption. It is responsible for review and submission for Prime Minister approval of master investment plans for the sector and all major investment projects. Although these often require review and approval from other agencies as well, including the Ministry of Planning and Investment (MPI) and the Prime Minister's office,

MoIT is the government window for the energy companies. Of the major energy subsectors, electric power has been of particular importance within MoIT.

11. ERAV, the electricity regulator, is a semi-independent arm of MoIT and is responsible for the regulation of the sector including the issuing of licensing, review of the power system's expansion plans and financing needs, preparation, issuing and enforcement of regulations and review and recommendation of tariffs though its role will change in 2009/2010. Since its creation in October 2005, ERAV has been mainly concerned with preparing detailed market design and creation of a body of licensing, tariff and other regulations needed in time for the transition of the market to the Generation Competitive phase, envisaged to start in 2009.

12. In addition to the Government Office (of the Prime Minister), other key government agencies for the power sector include:

The Ministry of Planning and Investment (MPI), which is responsible for the preparation of the country's overall economic development plans, and review and provision of recommendations to the Prime Minister for all projects using public funds or other resources;

The Ministry of Finance (MoF), which, in addition to its broad role overseeing financial matters for the Government and the budget, arranges Government guarantees for export credits, and provides, through its Vietnam Development Bank (VDB), public sector loans to qualified users;

The Ministry of Natural Resources and Environment (MONRE), which is responsible for environmental regulation;

The State Bank of Vietnam (SBV), which is responsible for allocation of foreign exchange, and, as such, is the counterpart for international donor lending, and a key agency for implementing guarantees for foreign exchange convertibility; and

Provincial Peoples' Committees (PPCs), which have integrated government oversight responsibility for local government, including all government functions delegated by the central government.

Power Sector Structure and Ownership

13. EVN owns and operates the existing state-owned power plants. Many of EVN's power plants have been equitized, that is the assets have been placed into a Joint Stock Company (JSC) and shares offered for sale to the public and to EVN employees. EVN has, to date, retained a majority shareholding in equitized power plants. EVN's ownership currently extends to about 76 percent of installed and operating capacity.

14. Key subsidiaries include 11 PCs, which are in charge of power distribution from 110 kV downwards. The three largest PCs are PC1 (northern Vietnam), PC2 (southern Vietnam), and PC3 (central Vietnam), while the remaining seven manage the power distribution systems in Hanoi, Ho Chi Minh City, Hai Phong and Da Nang cities and in Hai Duong, Ninh Binh and Dong Nai provinces. EVN also retains a majority shareholding in the equitized Khanh Khoa PC which covers a single province in Central Vietnam. The PCs each maintain their own financial

accounts, although these are also consolidated into EVN's, and in practice they have little financial autonomy. Other key entities under the EVN umbrella include the Power Transmission Company (recently formed from four companies), four Power Engineering Consulting Companies, the National Load Dispatch Center, a number of equipment manufacturing companies, a telecoms subsidiary and a bank.

15. State policy has increasingly encouraged development of independent power generation by investors other than EVN. Whereas non-EVN owned capacity totaled some 620 MW in 2002, accounting for just 7 percent of installed capacity connected to the system, it amounted to nearly 3,000 MW in 2006 taking total non-EVN owned capacity available to the grid to 24 percent of the national total. In Vietnam Independent Power Projects (IPPs) refer to locally-owned and -financed plant with power purchase agreements with terms as short as two or three years. Several Vietnamese SOEs are active in this market, notably Petrovietnam, the oil and gas company, Vinacomin the mineral mining company and some large construction firms.

16. Internationally-owned and –invested power plants are generically known as build operate transfer (BOT) projects. They may be wholly owned by foreign, private firms or in various joint-venture arrangements. The two gas-fired Phu My units are the first examples of the BOT structure in Vietnam, with several more under development. MoIT is responsible for executing bidding and contracting procedures for BOTs.

17. About two thirds of the LV retail distribution system in rural Vietnam is owned by entities other than Vietnam Electricity. The local distribution utilities (LDUs) are the product of the major effort in rural electrification and the need to share costs between the central budget and provinces, communes and electricity consumers, mandated by Decree 22 of 1999. As a result of the decree, LDUs were formed to connect consumers to an LV system, and in turn, connect the LV system to the PCs' MV system. Until 2004, local power distribution was handled by Commune Electricity Groups or other informal entities. According to Government regulations, however, all of these entities are now required to convert to formal legal entities, such as cooperatives or joint-stock companies. Developed initially as cooperatives at commune levels in most cases, but also as district-level joint stock companies in some cases even at this stage, these companies need to consolidate and expand, in order to develop over time into important commercial actors in the overall power system.

KEY ISSUES IN POWER SECTOR

Meeting Demand

18. Performance of Vietnam's power industry, managed primarily by EVN, has been quite good during recent years. The industry basically kept pace during the last decade with extraordinary increases in demand, maintaining basic service for its customers most of the time. EVN has maintained financial viability while keeping costs to consumers at quite low levels by international standards. Dramatic increases in rural access and steady reductions in transmission and distribution losses have been particularly notable achievements. The central requirement for the future is clearly to meet the rapidly expanding demands of the economy and population by

providing electric power in sufficient quantity and of acceptable quality in as commercially efficient a way as possible. From this stem four key issues for the short and medium term. They are:

- Optimizing power investments – particularly for generation;
- Financing the investments that must be made;
- Implementing the reforms in the power industry and restructuring EVN; and
- Improving access and service quality.

Optimizing Power Investment

19. With electricity demand continuing to increase, Vietnam is facing sharp increases in power sector investment requirements. In the recently-approved Sixth Power Master Development Plan (PMDP6), covering 2005-2015 with a view towards 2025, forecast sector development and investment requirements through the balance of the decade will be substantially higher than originally projected. During 2006-2010, recent base-case forecasts point to energy demand growth rate at an average of 16 percent per year, followed by 11 percent per year during 2011-2015 (see Table A1.4). Peak load and capacity are set to increase at slightly lower rates as system efficiency improves, reserve margins are rebuilt and increasing quantities of power are purchased from neighboring countries, in particular Lao PDR and China, especially Yunnan province.

Table A1.4: Vietnam's Power Sector Demand Growth 2006 – 2020

	2006 Actual	2010	2015	2020	Growth rate 2006–2010, percent pa
Energy requirement (TWh)	59	113	190	294	16
Peak load (MW)	11,000	19,117	31,495	n/a	12
Capacity requirement (MW)	12,357	24,919	40,700	60,300	15

20. On the planning side, the basic institutional arrangements, analytical capacity and analytical tools being used are fundamentally sound. In its review of the PMDP6, while it was being prepared, the Bank recommended: (i) a strengthening of the economic and sensitivity analysis in the planning exercise, especially relating to assessment of the balance between coal-fired and gas-fired thermal power generation; and (ii) increased explicit attention to demand-side management (DSM) investments and benefits. In addition it would also become necessary to explore more sophisticated modeling options appropriate for hydropower projects and the options for increasing the availability of renewable sources of generation, particularly small hydro.

21. On the network side, a basic, stronger transmission backbone for Vietnam's system will be completed during the next few years, including the second north-south 500 kV line, and the two 500-KV urban rings, around Hanoi and Ho Chi Minh City. With the size of the expansion envisaged, however, basic planning must now proceed for further transmission expansion over the longer term, which will need to take into account movements of very substantially larger quantities of power between north and south and links with other countries for imports of power. On the distribution side, steady investment is required to expand and upgrade systems to meet increasing load and minimize losses by replacing outdated, inefficient and overloaded substation

equipment, lines and transformers. Losses in outdated and overloaded rural systems are often over 20 percent.

Financing Power Investments

22. Total power sector investment requirements to meet demand will approach $4 billion per year during the latter half of this decade. This is equivalent to about 14 percent of total national investment. Between 2011 and 2015 the amount will rise to over $4 billion per year (see Table A5).

Table A1.5: Vietnam's Power Sector Investment Needs 2006 – 2020

	Investment requirements[1] $ million		
	2006 - 2010	**2011 - 2015**	**2015 – 2020**
Generation	13,810	14,832	14,900
Transmission	2,668	2,723	2,972
Distribution and other	3,456	4,749	4,535

[1] Not including interest during construction.

23. Plainly EVN cannot meet this level of investment from its own resources. In addition, the government is both unable and unwilling to finance EVN. Current expectations are that about 60 percent of investment will be undertaken by EVN or its successor companies – or about $2.3 billion per year. Of this, about 25 percent will be available from retained earnings, while the balance must be raised from external sources, principally debt. To date debt finance has been raised either from ODA sources, bond issues in the local markets or local banks.

24. ODA will continue to play a substantial and possibly growing role, with three major institutions lending to Vietnam's power sector, Asian Development Bank, Japan Bank for International Cooperation and World Bank. An international bond issue has been contemplated but no firm date has been set. In any event, debt is debt, however raised, and is limited by the strength of the balance sheet which supports it. It is clear that increases in tariffs are unavoidable if retained earnings are to be available for financing and leveraging further debt (see Annex 9).

25. The remaining 40 percent of financing is expected to come from others, including other SOEs, and private investors, both domestic and international. Those already involved – the SOEs, Petrovietnam and Vinacomin; and some of the larger construction companies perhaps in joint ventures are the most likely domestic candidates. The key, however, to long-term and sustained investment be to attract international investors. Following the successful closing of the Phu My BOTs, the GoV expressed its intention to reduce or eliminate the government's guarantee, which, combined with other more attractive opportunities in the region, resulted in a stalling of the program. Although there are now several projects in the pipeline, it is clear that investors will seek further clarity on the shape of the market in the future and a stronger legal and regulatory environment.

Implementing Reforms and Restructuring EVN

26. With the passage of the Electricity Law, Vietnam has embarked on an ambitious long-term program to restructure completely its power sector by discarding its current vertically-integrated electrical utility system in favor of a competitive power market. The objective of the reform is to improve efficiency through competition in the power industry, to minimize costs to consumers, and to expand the mobilization of investment and managerial resources from outside of the current, state-operated system. The first major step, to a single buyer market, known in Vietnam as the Generation Competitive market, is due to be completed in 2009. This will require both wholesale producers of electricity (the generators) and wholesale buyers (the PCs and major industrial users) to contract through a single entity, the Single Buyer. In turn this is likely to require significant restructuring of EVN and other market participants will need to adapt to the new order. Four points are worthy of special emphasis:

- *EVN will need to be broken up into truly separate corporations.* The existing model of EVN as the holding company for all of the state's assets in the power sector cannot be retained if true competition is to be achieved among existing and new generators, and later, in wholesale and retail supply. The market requires independence among players, to avoid perceived conflicts of interest or potential collusion. If commercial, independent generators are asked to compete with state-owned generators, they must be convinced that those generators maintain no special interests with the buyers or they will not trust the system.
- *Reductions in costs to consumers should not be expected soon.* International experience shows that the main gains of competition will only be realized when large consumers and distribution companies are able to contract directly with power generators in a competitive environment. The big benefits from competition come from the power of consumer choice. Although it would be useful to consider introduction of competition for bulk power supply to distribution companies and large consumers earlier than planned in the Road Map (e.g. 2014), large amounts of careful preparation work need to be completed prior to introducing such a market. For the near-term, therefore, costs to consumers can be expected to increase modestly, and the most important factors influencing how much the cost of electricity supply will go up are likely to be: (i) the degree of success in using competitive bidding for IPP contracts; (ii) the extent of increases in fuel prices; (iii) the degree of success in maintaining development according to least-cost plans, despite the pressure of power shortages; (iv) the degree of success in shifting demand during high-cost peak periods to lower cost off-peak periods; and (v) the degree of success in realizing efficiency gains in the power network and dispatch systems, being retained for now under EVN.
- *Current and prospective power shortages provide additional challenges for the reform.* Introduction of competition during times of shortage will tend to drive up prices, which may necessitate specific measures to minimize excessive rent-seeking behavior. With the current plan to focus on an internal "trial" market in the near-term, this may not be a major problem when it comes to introduction of the true market. In addition, if properly designed, the power of consumer choice can be an efficient means to allocate shortage and/or to overcome it. In China in the late 1980s

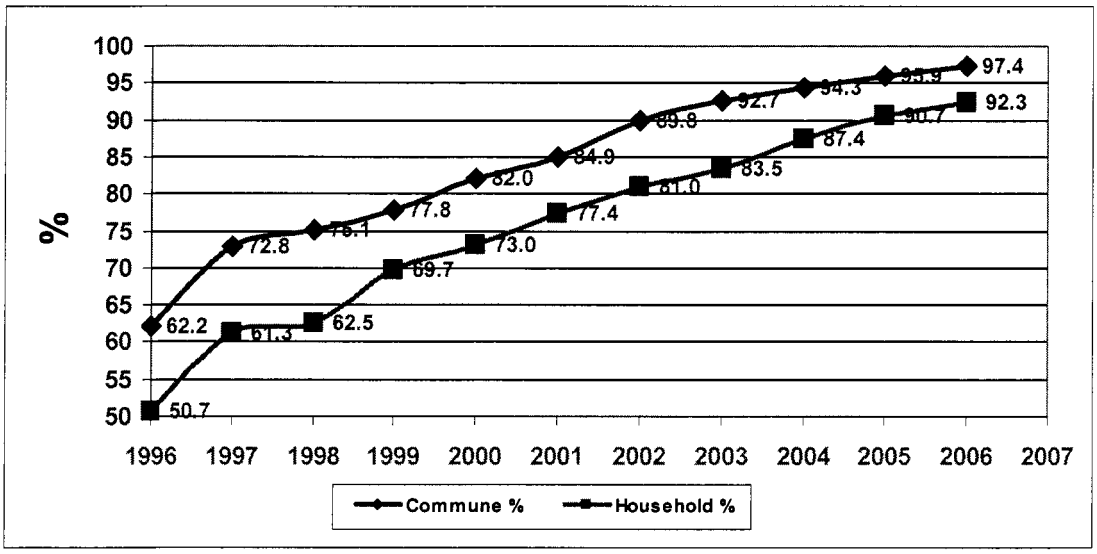
and early 1990s, the willingness of large consumers to pay higher "second-track" prices or make other types of contributions for new power plant investments, in exchange for guaranteed power in time of shortage, was the most important single factor in overcoming national power shortages. Other types of problems may arise if assets which are uneconomic over the long-term are developed under state ownership in the near-term to meet urgent needs for power in time of shortage. When the shortage is overcome, headaches will arise as these new assets will have trouble competing in the market.

- *Increased predictability and flexibility in retail electricity pricing will need to be introduced over time.* With the introduction of a true competitive market for generation, and even more so with the development of competition for bulk supplies, flexibility must be built into the system for setting the retail tariff. Where prices for power supply coming into the system rise and fall following market forces, but end-user prices are inflexibly fixed, the utilities in the middle are in a position where they may be either squeezed into bankruptcy or gain undue profits; international experience provides examples of both.

Improving Access and Service Quality

27. Access to electricity in rural areas increased dramatically during 1996-2006, marking one of the most successful recent rural electrification programs in the world. As shown in Figure 2, the number of rural households with access to electricity has increased from 50.7 percent in 1996 to 92.3 percent in 2006 (Figure A1.1). Rural household access rates are expected to further increase during the next several years, although achievement of access among the final 5 percent of rural households will not be easy. The success of Vietnam's program lies especially with the commitment of the Government to rural electrification, and the definition and systematic implementation of national plans as a matter of priority, with public investment support to match local community funds.

Figure A1.1: Rural Electrification Rate 1996 – 2006



28. Widespread anecdotal evidence points to substantial increases in the quality of electricity service over the last ten years, with service for most customers in urban or peri-urban areas becoming noticeably more reliable. However, there is a basic lack of systematic statistical monitoring of service interruptions and voltage drops, by service area and customer voltage level. This shortcoming needs to be rectified, to develop benchmarks, comparative performance indices between service areas and categories, and monitorable programs for improvement.

29. While there may have been general improvement in recent years, it also is clear further improvement is needed. Investment climate surveys for Vietnam frequently cite shortages and quality as an important issue and rate poor power service as one of the top two infrastructure constraints and one of the top four of all constraints. A pilot survey in rural areas revealed similar results. The World Bank's most recent survey in 2006 found that 19 percent of all manufacturing firms surveyed, although connected to the electricity grid, still described electricity supply as a major or severe constraint for their business. These points to a need for a major and systematic effort to monitor service quality properly, and for improvement in service provision.

30. As a natural monopoly, improvements in power distribution service quality cannot be achieved through competition. A combination of regulatory pressure, and additional outside expertise offers solutions. The pressure will come from ERAV, which will increasingly monitor such data as a basic regulatory tool. PCs will increasingly have incentives to improve performance as service quality is a factor in the tariff methodology hence future earnings are affected by current performance. Outside expertise can be obtained through equitization to bring in strategic investors: companies with expertise from other countries and ability to introduce new management techniques and disciplines may be willing to invest. This will, however, involve marked changes to the current equitization strategy since strategic investors will want to be sure they can achieve strong earnings growth to justify their investment; hence sufficient ability to affect management decisions that stems from a significant shareholding will be a prerequisite.

Annex 2: Major Related Projects Financed by the Bank and/or other Agencies

VIETNAM: Rural Distribution Project

Project	Sector Issue Addressed	Latest Supervision (PRS) Rating (Bank financed project only	
Bank-financed		**DO**	**IP**
Power Sector Rehabilitation and Expansion Project (Cr. 2724-VN, FY96. Project completed.)	Optimizing power investments and financing power transmission; Implementing reforms by improving technical, operational, management and sector efficiency.	S	S
Power Development Project (Cr. 2820-VN FY96). Project completed.	Optimizing power investments and financing generation; Implementing reforms by rationalizing power sector institutions	S	S
Rural Energy Project (CR 3358-VN, FY01). Project completed	Improving access and service quality by financing connections, Implementing reforms to rural access provision.	S	S
Second Rural Energy Project (Cr. 4000-VN, FY05).	Improving access and service quality for rural communities, Implementing reforms; by creation of legal forms of LDUs and supporting their development as businesses.	S	MS
Transmission, Distribution and Disaster Reconstruction (Cr. 3034-VN FY 98). Project completed.	Financing transmission and distribution; Implementing reforms through development of EVN's transmission function, unbundling it from generation and ensuring its efficient development	S	S
System Efficiency Improvement, Equitization and Renewables Project (Cr. 3680-VN FY02)	Optimizing power investments and financing transmission and distribution to improve overall system efficiency; Improving access and service quality though enhancing energy provision for the poor; Sustaining reform of the power sector through separation of generation, transmission and distribution by institutionalizing transfer pricing, improving corporate governance and equitization to develop a creditworthy distribution sector.	S	S
Phu My 2.2 Guarantee Operation (B-004- 0-VN, FY 03)	Financing investment in generation, by mobilize private sector financing	S	S
Second Transmission and Distribution (Cr. 4107 VN FY06)	Financing transmission and distribution for the efficient development of Vietnam's transmission & distribution system	S	S

Project	Sector Issue Addressed	Latest Supervision (PRS) Rating (Bank financed project only	
Other development agencies		**IP**	**DO**
AfD (France) Mekong Rural Electrification (2000)	Improving access and service quality		
Asian Development Bank (ADB) Power Distribution and rehabilitation (LN 1368-VIE of June 1995), Central and Southern Vietnam Power and Distribution (LN 28187-VIE of November 1997); Northern Power Transmission Project	Financing transmission investments		
Japan Bank for International Cooperation (JBIC) Construction of Phu My 1 Power Plant (January 1994), Pha Lai 2 Power Plant (January 1994), Ham Thuan Da Mi Power Plant (January 1994), Da Nhim Power Plant (March 1997), 0 Mon Power Plant (March 1998)	Optimizing power investments and financing generation.		
Swedish International Development Agency (SIDA) Construction of Song Hinh Power Plant (1995), six transmission substations for 110 kV (1998), Extension of transmission substations for 500 kV (1998), Upgrading distribution network in Central Area	Financing transmission and distribution		

IP/DO Ratings: HS (Highly Satisfactory), **S** *(Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)*

Annex 3: Results Framework and Monitoring

VIETNAM: Rural Distribution Project

Results Framework

PDO	Project Outcome Indicators	Use of Project Outcome Information
To improve the reliability and quality of medium voltage service to targeted retail electricity distribution systems	• Reliability of MV supply to LV systems • Quality of MV supply to LV systems • Consumption in rural areas (kWh) • PCs meet performance standards established by ERAV	To monitor achievement of PDO To measure improvements in service quality and progress towards meeting GoV/ERAV-set service standards
Intermediate Outcomes	**Intermediate Outcome Indicators**	**Use of Intermediate Outcome Monitoring**
For each of Components One to Six: Number of distribution systems constructed, expanded, or rehabilitated	• Additional physical 22/35 or 110kV assets created	To monitor implementation progress Used as inputs in dialogue/negotiations with GoV/ERAV such as performance-based ratemaking discussions
For Component Seven: Capacity of PCs to participate in power market built	• Improvements to accounting and financial management practices • Ability to forecast markets and make investment decisions • Establishment of performance monitoring systems consistent with requirements of EVN, ERAV • Sustained dialogue with GoV, ERAV and EVN on sector reform • Plans for completion of universal electrification	To monitor implementation progress To provide supporting evidence of compliance with GoV/ERAV requirements To provide inputs to ensure sector reform remains relevant and of high quality To plan and budget for universal electrification

Arrangements for Results Monitoring

Project Outcome Indicators	Baseline (2008)	Target Values: Mid term (2010)	Target Values: Completion (2013)	Data Collection and Reporting: Frequency and Reports	Data Collection and Reporting: Data Collection Instruments	Data Collection and Reporting: Responsibility for Data Collection
Interruptions in MV service at MV/LV transformer, in the project areas net of interruptions caused by failure of upstream transmission system or power shortage: Number/Duration (hours) • PC1 • PC2 • PC3 • PC Hai Phong • PC Hai Duong • PC Dong Nai	 285/ 570 1,954/5,519 110/48 10/22 309/78.5 48/19	 260/ 520 1,572/4,491 80/40 10/20 284/70 46/18	 250/ 490 1,283/3,957 50/20 0 250/60 38/14	At project appraisal, mid term and completion	Survey on rural consumption patterns, load analysis. Semi-annual progress reports of IAs, and EVN operations report	PC1, PC2, PC3, PC Hai Phong, PC Hai Duong, PC Dong Nai, overseen by EVN Rural Electrification Department
Losses of MV system in the project areas (percent) • PC1 • PC2 • PC3 • PC Hai Phong • PC Hai Duong • PC Dong Nai	7 percent 5.42 percent 6.84 percent 7.9 percent 6.4 percent 4.9 percent	6 percent 4.66 percent 6.04 percent 6.3 percent 5.6 percent 4.7 percent	6 percent 4.11 percent 5.24 percent 5.0 percent 5.6 percent 4.4 percent	At project appraisal, mid term and completion	Survey on rural consumption patterns, load analysis. Semi-annual progress reports of IAs, and EVN operations report	PC1, PC2, PC3, PC Hai Phong, PC Hai Duong, PC Dong Nai, overseen by EVN Rural Electrification Department
Voltage excursions outside 200-240 Volts at MV/LV transformer, in the project areas: Number, duration • PC1 • PC2 • PC3 • PC Hai Phong • PC Hai Duong • PC Dong Nai	 600/ 4,800 2,232/3,150 214/205 112/20 150/35 50/2.5	 300/ 3,200 793/1,106 120/80 80/15 120/20 48/2.2	 30/ 240 381/655 70/20 50/10 80/15 38/1.9	At project appraisal, mid term and completion	Survey on rural consumption patterns, load analysis. Semi-annual progress reports of IAs, and EVN operations report	PC1, PC2, PC3, PC Hai Phong, PC Hai Duong, PC Dong Nai, overseen by EVN Rural Electrification Department
Consumption in the project rural areas (KWh) • PC1 • PC2 • PC3 • PC Hai Phong • PC Hai Duong • PC Dong Nai	 $1.7x10^9$ $4.6x10^9$ $211x10^6$ $278x10^6$ $350x10^6$ $172x10^6$	 $1.8x10^9$ $6.2x10^9$ $313x10^6$ $320x10^6$ $420x10^6$ $227x10^6$	 $2.4x\ 10^9$ $8.1x10^9$ $464x10^6$ $360x10^6$ $550x10^6$ $345x10^6$	At project appraisal, mid term and completion	Survey on rural consumption patterns, load analysis. Semi-annual progress reports of IAs, and EVN operations report	PC1, PC2, PC3, PC Hai Phong, PC Hai Duong, PC Dong Nai, overseen by EVN Rural Electrification Department

Project Outcome Indicators	Baseline (2008)	Target Values		Data Collection and Reporting		
		Mid term (2010)	Completion (2013)	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
Percentage of MV lines overloaded in the project areas • PC1 • PC2 • PC3 • PC Hai Phong • PC Hai Duong • PC Dong Nai	 25 percent 15 percent 6 percent 15 percent 12 percent 2 percent	 17 percent 13.5 percent 3 percent 0 percent 7 percent 1.6 percent	 10 percent 10 percent 0 percent 0 percent 5 percent 1 percent	At project appraisal, mid term and completion	Survey on rural consumption patterns, load analysis. Semi-annual progress reports of IAs, and EVN operations report	PC1, PC2, PC3, PC Hai Phong, PC Hai Duong, PC Dong Nai, overseen by EVN Rural Electrification Department
Percentage of MV transformers overloaded in the project areas • PC1 • PC2 • PC3 • PC Hai Phong • PC Hai Duong • PC Dong Nai	 34 percent 15 percent 8 percent 12 percent 15 percent 0.61 percent	 15 percent 13.5 percent 5 percent 0 percent 8 percent 0.52 percent	 12 percent 10 percent 0 percent 0 percent 5 percent 0.45 percent	At project appraisal, mid term and completion	Survey on rural consumption patterns, load analysis. Semi-annual progress reports of IAs, and EVN operations report	PC1, PC2, PC3, PC Hai Phong, PC Hai Duong, PC Dong Nai, overseen by EVN Rural Electrification Department

Intermediate Outcome Indicators	Baseline	Target Values					Data Collection and Reporting		
		2009	2010 (Mid Term)	2011	2012	2013 (Completion)	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
Distribution lines rehabilitated or newly constructed (km) under project • PC1[3] • PC2[4] • PC3[5] • PC Hai Phong • PC Hai Duong • PC Dong Nai			 472.7 617.4 387.3 50 29.99 124	 472.7 617.4 387.3 50 29.99 124	 472.7 617.4 387.3 50 29.99 124	 472.7 617.4 387.3 74.4 29.99 124	Annual	Semi-annual progress reports of IAs, and EVN operation reports	PC1, PC2, PC3, PC Hai Phong, PC Hai Duong, PC Dong Nai, overseen by EVN Rural Electrification Department
Distribution substations rehabilitated or newly constructed (KVA), under projects • PC1 • PC2 • PC3 • PC Hai Phong • PC Hai Duong • PC Dong Nai			 139,511 17,888 39,875 0 10,440 7,920	 139,511 17,888 39,875 0 10,440 7,920	 139,511 17,888 39,875 0 10,440 7,920	 139,511 17,888 39,875 0 10,440 7,920	Annual	Semi-annual progress reports of IAs, and EVN operation reports	PC1, PC2, PC3, PC Hai Phong, PC Hai Duong, PC Dong Nai, overseen by EVN Rural Electrification Department

[3] The target value of the PC1 will be updated after F/S of project subcomponents of phase II are prepared
[4] The target value of the PC2 will be updated after F/S of project subcomponents of phase II are prepared
[5] The target value of the PC3 will be updated after F/S of project subcomponents of phase II are prepared

Annex 4: Detailed Project Description

VIETNAM: Rural Distribution Project

1. Outline

1. The project will have seven components. Six components are aimed at improvement of the medium voltage service in the territory of a participating PC. The territory of each PC covers one or more provinces. A seventh component will support the corporate development of the three largest PCs through the provision of technical assistance. A description of each component is provided below, and detailed costs are provided in Annex 5.

Investment Components

2. Each of the six investment components will contain one or more subprojects, each subproject involving new construction, rehabilitation, strengthening or a combination of any of the three, of: (i) all parts of the 22 or 35 kV system requiring improvements within a single province falling in the territory of a participating PC; or (ii) a single substation and/or line at the 110 kV level feeding the 22/35 kV systems in rural areas within a province or provinces falling in the territory of a participating PC.

3. Each subproject at the 22 or 35kV level will include procurement of necessary goods and works, construction, commissioning and energizing of lines and substations to step down from 22/35kV to 0.4kV. New construction will include clearance of rights of way, construction of foundations and erection of poles, assembly of fittings, stringing of conductors and installation of transformers and control and protection equipment.

4. Rehabilitation will use existing rights of way but in general will require the replacement of most or all of the equipment with newly-procured goods, and similar works to that for new systems. In some provinces rehabilitation may include upgrading older parts of the system running at obsolete non-standard voltages (such as 6kV and 10kV) to the standard voltages of either 22kV in the more populous areas and 35kV in the mountainous and less populated areas where power must be distributed over longer distances. Strengthening may include supplementing existing systems or replacing low capacity equipment such as transformers with higher capacity equipment.

5. Subprojects at the 110kV level will consist of procurement of goods, construction commissioning and energizing new 110kV lines or new 110/35/22kV substations, or a combination of the two. The 110kV lines will connect an existing 220kV/110kV substation which in some cases may have additional feeders and control and protection equipment installed as part of the subproject.

Phasing

6. Each investment component will be implemented in two phases. The first phase will consist of subprojects that have been appraised and are ready for implementation upon approval by the World Bank's Board of Executive Directors.

7. The second phase will consist of subprojects that are brought forward by implementing agencies when their preparation is complete. Each such subproject brought forward for financing in Phase two will be appraised by IDA when the Investment Report, EMP, RP, and, if required, EMDP are ready. Financing for each subproject will be made available when appraisal has been satisfactorily completed. Subprojects will be financed on a first-come, first-appraised basis until all IDA funds allocated to the component have been committed and thus the number of subprojects to be financed will depend on the total IDA funds allocated to the component.

8. To be eligible for the financing, each subproject must meet the following criteria:

- The subproject will contribute to the objective of the project, namely to improve the level of service to targeted retail electricity distribution systems;
- The subproject meets National Technical Standards for rural networks;
- The subproject should have an economic rate of return of at least 10 percent, and a financial rate of return not less than 1.6 percent;
- If the retail electricity distribution system is not operated by the participating PC, a written commitment from the LDU that it would use the connection points provided by the upgraded MV systems resulting from subprojects at 22/35 kV;
- Subproject EAs, RPs, and EMDPs have been prepared and disclosed, satisfactory to IDA, according to the frameworks and guideline approved by the GoV, and adopted by EVN and PCs;
- All necessary clearance/ approvals for the implementing the subproject, including the Investment Report and environmental certificates, have been given by the relevant agencies or authorities; and
- Procurement and implementation plans satisfactory to IDA have been prepared.

9. Candidate subprojects for the second phase have been identified for some PCs, however changing priorities and availability of alternative sources of financing may be expected to result in changes to the list of Phase two projects during implementation.

Items to Be Financed by IDA

10. In each subproject, IDA will finance the supply of goods and installation works. Other costs such as engineering, compensation and administration will be financed by the PC from its own resources, or by local borrowing.

2. Component 1: Improvement of rural distribution system in the Northern Region

11. Total cost $66.83 million of which $47.44 million proposed to be financed by IDA. The first phase consists of seven subprojects and, based on current information the second phase will consist of eight subprojects. Table A4.1 lists the subprojects to be included under the component.

Table A4.1: Subprojects in Component 1

		PC1 (US$ million)	**IDA** (US$ million)	**Total** (US$ million)
Phase 1				
1	Improvement of 22/35 kV system of Nam Dinh	2.12	4.62	6.75
2	Improvement of 22/35 kV system of Thanh Hoa	2.21	4.57	6.78
3	Improvement of 22/35 kV system of Thai Binh	1.01	2.29	3.31
4	Improvement of 22/35 kV system of Bac Giang	0.68	1.35	2.03
5	Improvement of 22/35 kV system of Vinh Phuc	0.90	2.70	3.59
6	110 kV Sơn Tay – Pho Vàng T/L	2.55	4.87	7.42
	Sub-total for Phase 1	**9.48**	**20.40**	**29.87**
Phase 2				
7	Improvement of 22/35 kV system of Nghe an	2.06	4.62	6.69
8	Improvement of 22/35 kV system of Ha Nam	0.58	1.30	1.88
9	Improvement of 22/35 kV system of Tuyen Quang	0.35	0.78	1.13
10	Improvement of 22/35 kV system of Quang Ninh	1.39	1.57	2.96
11	110 kV Thanh Nong - Kim Boi T/L	2.35	9.46	11.81
12	110 kV Pho noi- Tien Son T/L	0.95	2.80	3.75
13	110 kV Phu Chuan Substation	0.95	2.80	3.75
14	110 kV Dong Hoa – Thai Binh T/L	1.27	3.73	5.00
15	110 kV Phu Ninh substation	tbd	tbd	tbd
	Sub-total for Phase 2	**9.92**	**27.04**	**36.96**
	Total for PC1	**19.40**	**47.44**	**66.83**

3. Component 2: Improvement of rural distribution system in the Southern Region

12. Total cost $36.99 million of which $27.73 million proposed to be financed by IDA. The first phase consists of five subprojects and, based on current information the second phase will consist of 15 subprojects. Table A4.2 lists the subprojects to be included under the component.

Table A4.2: Subprojects in Component 2

		PC2 (US$ million)	IDA (US$ million)	Total (US$ million)
Phase 1				
1	Improvement of 22/35 kV system of Ben Tre	1.17	3.31	4.47
2	Improvement of 22/35 kV system of Binh Duong	0.51	1.80	2.31
3	Improvement of 22/35 kV system of Đong Thap	0.29	0.81	1.10
4	Improvement of 22/35 kV system of Ba Ria Vung Tau	0.26	0.91	1.17
5	Improvement of 22/35 kV system of Vinh Long	0.30	0.71	1.00
	Sub-total for Phase 1	**2.52**	**7.53**	**10.05**
Phase 2				
6	Improvement of 22/35 kV system of An Giang	0.46	1.39	1.85
7	Improvement of 22/35 kV system of Bac Lieu	0.37	1.09	1.46
8	Improvement of 22/35 kV system of Binh Phuoc	0.32	0.95	1.27
9	Improvement of 22/35 kV system of Binh Thuan	0.58	1.73	2.31
10	Improvement of 22/35 kV system of Ca Mau	0.78	2.32	3.09
11	Improvement of 22/35 kV system of Can Tho	0.34	1.02	1.36
12	Improvement of 22/35 kV system of Hau Giang	0.19	0.58	0.78
13	Improvement of 22/35 kV system of Kien Giang	0.84	2.51	3.35
14	Improvement of 22/35 kV system of Lam Dong	0.37	1.12	1.49
15	Improvement of 22/35 kV system of Long An	0.48	1.42	1.90
16	Improvement of 22/35 kV system of Ninh Thuan	0.09	0.28	0.37
17	Improvement of 22/35 kV system of Tay Ninh	0.44	1.33	1.77
18	Improvement of 22/35 kV system of Soc Trang	0.64	1.91	2.55
19	Improvement of 22/35 kV system of Tien Giang	0.46	1.39	1.85
20	Improvement of 22/35 kV system of Tra Vinh	0.39	1.15	1.54
	Sub-total for Phase 2	**6.75**	**20.19**	**26.94**
	Total for PC2	**9.26**	**27.73**	**36.99**

4. Component 3: Improvement of rural distribution system in Central Region

13. Total cost $63.14 million of which $46.53 million proposed to be financed by IDA. The first phase consists of seven subprojects and, based on current information the second phase will consist of five subprojects. Table A4.3 lists the subprojects to be included under the component.

Table A4.3: Subprojects in Component 3

		PC3 (US$ million)	IDA (US$ million)	Total (US$ million)
Phase 1				
1	Improvement of 22/35 kV system of Quang Tri	1.39	3.47	4.86
2	Improvement of 22/35 kV system of Binh Dinh	3.11	10.14	13.25
3	110 kV Chan May SS	1.27	3.25	4.52
4	110 kV Duy Xuyen SS	1.30	2.81	4.11
5	110 kV Son Hoa SS	1.20	3.79	4.99
6	110 kV Chu Prong SS	1.62	4.86	6.48
7	110 kV Hoa Binh- Krong Ana SS	1.03	2.74	3.77
	Sub-total for Phase 1	**10.92**	**31.06**	**41.98**
Phase 2				
8	Improvement of 22/35 kV system of TT Hue	1.60	4.84	6.44
9	Improvement of 22/35 kV system of Quang Ngai	0.79	2.39	3.19
10	Improvement of 22/35 kV system of Phu Yen	0.41	1.24	1.65
11	Improvement of 22/35 kV system of Quang Binh	0.67	2.02	2.69
12	110 kV Krong Buk - Cu Mga T/L	2.23	4.97	7.20
	Sub-total for Phase 2	**5.70**	**15.47**	**21.16**
	Total for PC3	**16.62**	**46.53**	**63.14**

5. Component 4: Improvement of rural distribution system in the area of Hai Phong City

14. Total cost $17.85 million of which $13.16 million proposed to be financed by IDA. The first phase consists of two subprojects and, based on current information there will be no subprojects in the second. Table 4.4 lists the subprojects to be included under the component.

Table A4.4: Subprojects in Component 4

		PCHP (US$ million)	IDA (US$ million)	Total (US$ million)
Phase 1				
1	110 kV Dong Hoa Long Boi T/L	3.04	7.77	10.82
2	110 kV Cho Roc Cat Ba T/L	1.64	5.39	7.03
	Total for PC Hai Phong	**4.69**	**13.16**	**17.85**

6. Component 5: Improvement of rural distribution system in Hai Duong Province

15. Total cost $6.45 million of which $5.06 million proposed to be financed by IDA. The first phase consists of two subprojects and, based on current information there will be no subprojects in the second. Table A4.5 lists the subprojects to be included under the component.

Table A4.5: Subprojects in Component 5

		PCHD (US$ million)	IDA (US$ million)	Total (US$ million)
Phase 1				
1	Improvement of 22/35 kV system of Hai Duong	0.52	1.45	1.97
2	110 kV Tien Trung SS	0.57	2.51	3.08
	Sub-total for Phase 1	**1.09**	**3.96**	**5.05**
Phase 2				
3	Improvement of 22/35 kV system of Hai Duong Phase 2	0.30	1.10	1.40
	Total for PC Hai Duong	**1.39**	**5.06**	**6.45**

7. Component 6: Improvement of rural distribution system in Dong Nai Province

16. Total cost $11.38 million of which $8.59 million proposed to be financed by IDA. The first phase consists of two subprojects and, based on current information there will be no subprojects in the second. Table A4.6 lists the subprojects to be included under the component.

Table A4.6: Subprojects in Component 6

		PCDN (US$ million)	IDA (US$ million)	Total (US$ million)
Phase 1				
1	Improvement of 22/35 kV system of Dong Nai	0.33	2.07	2.40
2	100 kV Dau Day System	1.91	3.40	5.31
3	110 kV Xuan Loc- Cam My T/L	0.55	3.12	3.67
	Total for PC Dong Nai	**2.79**	**8.59**	**11.38**

8. Component 7: Corporate Development of PCs

17. Total cost $4.5 million of which $1.5 million proposed to be financed by IDA and $3.0 million by AusAID. The component will not be phased, but will consist of the following activities, designed to support the three large PCs so that they can in the future act as independent participants in the power market as it develops according to the Government's road map for reform.

18. Developing PCs' financial management practices for greater autonomy. This would address current weaknesses in PCs' finance and accounting departments, brought on partly because PCs' financial performance has effectively been controlled by EVN. Historically, these

departments have been dependent on central services provided by EVN and have been little more than book-keeping units. Activities to be undertaken in this will include:

- Assisting the move towards the use of International Accounting Standards (IAS) through building the knowledge of financial managers of the difference between them and Vietnam Accounting Standards (VAS). Through training and consultant support, PCs will be assisted in preparing full IAS accounts;
- Developing asset valuation and transfers procedures. VAS gives no guidance on asset valuation, and the PCs have no experience of how to do this, although it will be required as part of equitization. Support will be given to the PCs to value the assets consistent with IAS; and
- Improving financial analysis and medium term financial forecasting. Training will be provided to build on the work undertaken during project preparation so that PCs have both the tools and the skills for financial management.

19. Improving PCs' capacity to forecast market development and to undertake commercially-based investment and financing decisions. With unbundling of EVN's functions and with equitization, PCs must work more autonomously and in a more commercial environment. Effectively this requires the creation of a marketing function within each PC. Skills that must be developed include:

- Load research, which will be developed initially based on EVN's existing load research program but aimed at developing skills within the PCs and, eventually, autonomous load research programs in each of the major PCs. Consultants will support the PCs through training and directly in the development of appropriate research protocols, specification of load research equipment and software, and analysis;
- Demand forecasting, initially based on the Institute of Energy's demand forecasting which is done at a national level. Training will be provided to PC staff in the basic techniques and application of demand forecasting, leading to the preparation of individual demand forecasts; and
- Network planning. Training to technical personnel will be provided on existing national standards for rural electrification. The planning standards will be reviewed and further refined, as necessary. Training will also be provided in network planning techniques.

20. Developing PCs' capacity to monitor and report on performance. PCs must develop capacity to monitor their performance and report on it in line with the requirements set out by Electricity Regulatory Authority of Vietnam (ERAV) under its planned performance-based ratemaking (PBR) system. Consultants would train PCs in PBR, and then assist PCs to set up systems to measure and monitor their performance against benchmarks set by ERAV. The work would include helping PCs to understand how performance improvements will affect their tariff bases and help them to prepare for ratemaking hearings with the regulator.

21. Supporting PCs during further reform of power sector. PCs will not only be required to participate in the power market, but they will also be equitized. Consultant support and training will be provided for:

- Power purchasing, through both long term bilateral contracts and through the spot market;
- Preparing and presenting themselves to potential investors during the equitization process, by using the information generated in other parts of this component, through the preparation of a prospectus; and
- Undertaking dialogue with government on legal and regulatory reform.

22. Preparation of plans for completing GoV's program of universal electrification. The government plans to connect 95 percent of rural households to the grid by 2010 and to ensure 'almost all' households have access to electricity by 2020. A substantial burden will thus fall on the PCs and this component will support the objective through:

- Preparation of a review of technical options, costs and financing sources and discussion of the options with government.
- On the assumption that government selects and agrees a viable option, detailed planning, budgeting and project preparation.

23. The component will be implemented by PCs 1, 2 and 3. Costs and financing by PC are shown in Table A4.7.

Table A4.7: Component 7 Costs and Financing

Implementing Agency	**IDA** (US$ million)	**AusAID** (US$ million)	**Total** (US$ million)1
PC1	0.5	1.0	1.5
PC2	0.5	1.0	1.5
PC3	0.5	1.0	1.5
Total Technical Assistance Costs	**1.5**	**3.0**	**4.5**

Annex 5: Project Costs

VIETNAM: Rural Distribution Project

	Project Costs by Components and/ or activities	Local Cost	Foreign Cost	Total
		$ million	$ million	$ million
1	Improvement of Rural Distribution Systems in the Northern Region	34.78	16.27	51.05
2	Improvement of Rural Distribution Systems in the Southern Region	19.25	11.73	30.98
3	Improvement of Rural Distribution Systems in the Central Region	35.44	17.38	52.82
4	Improvement of Rural Distribution Systems in Dong Nai Province	5.16	4.37	9.54
5	Improvement of Rural Distribution Systems in Hai Duong Province	2.07	2.17	4.24
6	Improvement of Rural Distribution Systems in Hai Phong City	11.75	5.42	17.17
7	Corporate Development of PCs	0.12	4.38	4.50
	Total Baseline Cost	108.57	61.72	170.29
	Physical Contingencies	4.84	3.72	8.56
	Price Contingencies	9.67	6.19	15.86
	Total Project Cost	123.08	71.63	194.71
	IDC	12.43		12.43
	Total Financing Required	135.51	71.63	207.14

Identifiable taxes and duties are $16.5 million, and the total project cost, net of taxes, is $190.34 million. Therefore, the share of project cost net of taxes is 92 percent.

Annex 6: Implementation Arrangements

VIETNAM: Rural Distribution Project

1. Overview

1. The project will be implemented by the six participating PCs: PC1, PC2, PC3, PC Hai Phong, PC Hai Duong and PC Dong Nai. Each PC is a subsidiary company of the EVN and is responsible for electricity distribution in a fixed territory. Ministry of Industry and Trade has delegated responsibility for approval of subproject feasibility studies to EVN, under the supervision of the Vice President for Rural Electrification and Business. He will be supported by the International Cooperation Department (ICD) and the Rural and Business Department at EVN corporate level. While EVN does not have a formal project implementation role, as the holding company owning each of the PCs, it has supervisory and coordination functions in line with normal corporate practice. The organizational structure entities involved in the project is given in Figure A6.1.

2. In general implementation of physical investment will be carried out by the participating PCs independently of one another, each using specialist PMBs as necessary. PC Hai Duong will use its existing Investment Management Department rather than a PMB. Institutional arrangements will remain the same for both phases of the project. For each subproject, project detailed designs and bidding documents have been or will be prepared by reputable Vietnamese engineering consulting companies hired by the implementing agencies. Goods will be procured in packages designed to optimize speed of implementation with economies of scale in purchasing; in some cases goods from several subprojects may be purchased under a single package of similar goods. Works will be procured in a single package for a whole subproject or part of it, with each contract including civil works, erection of poles and towers and fitting them with insulators and other accessories, stringing of conductors and assembly of substations. Upon completion, the PMB will hand 110 kV lines and substations to the PCs' 110 kV operations unit while PSD operations units will take over the new, rehabilitated or strengthened 22/35 kV systems for operation.

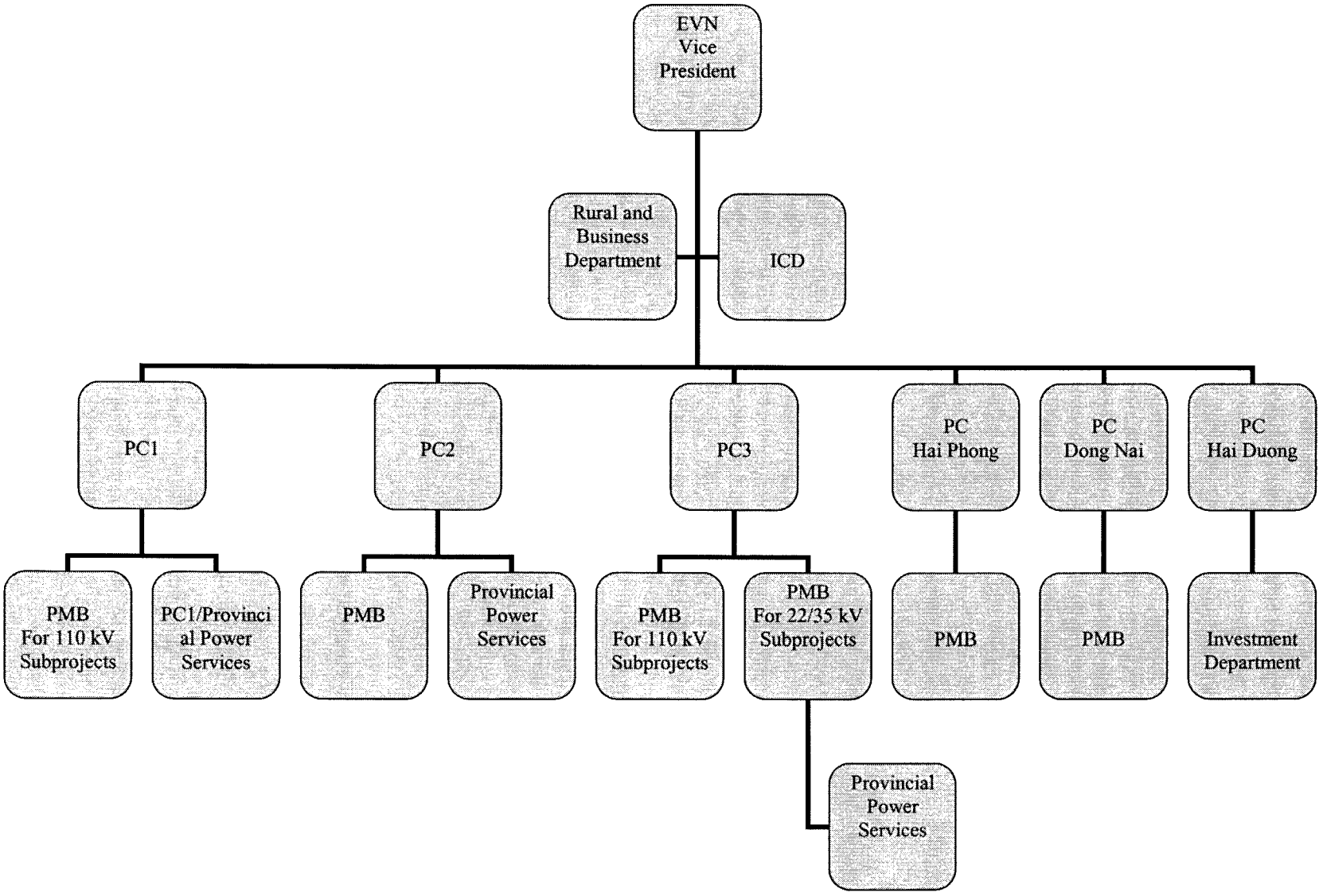
3. The technical assistance component will be implemented by PCs 1, 2 and 3 with some support from EVN headquarters.

2. Component 1: Improvement of Rural Distribution System in Northern Region

4. This component will be implemented by PC1. PC1 is responsible for electricity distribution in 25 provinces in the northern region of Vietnam, except Hanoi and Hai Phong cities, and Hai Duong and Ninh Binh provinces.

5. PC1 will use its existing PMB for all 110kV subprojects. 22/35kV subprojects will be implemented by with core staff from head office and existing project implementation units in PSDs. The PMB for 110kV and the PSDs for 22/35kV will prepare project documentation, carry out land acquisition and compensation, procurement and supervision of contracts and hire independent consultants to monitor the implementation of RPs, EMPs and EMDPs. PC1's head office will clear project and bidding documents and the bid evaluation and make all

Figure A6.1 Organization Structure for Project Implementation



payments to contractors, and be responsible for financial management, project monitoring and reporting to IDA, including the hiring of independent consultants to monitor the implementation of RPs, EMPs and EMDPs. Upon completion, the PMB will hand over the 110kV systems to PC1's 110kV operations unit. PSDs will retain new, rehabilitated and strengthened 22/35 kV systems for operation.

6. Although the component will be implemented in phases, the arrangements for implementation will remain unchanged throughout the project.

3. Component 2: Improvement of Rural Distribution System in Southern Region

7. This component will be implemented by PC2. PC2 is responsible for electricity distribution in 20 provinces in the southern region of Vietnam, except Ho Chi Minh City and Dong Nai province.

8. PC2, which has only 22/35kV subprojects, but with large numbers of participating PSDs, will decentralize project management to existing project implementation units in PSDs, with direct support and supervision from central departments of PC2. The project implementation units in PSDs will carry out land acquisition and compensation, procurement of contracts under NCB (likely to cover civil works and construction only), and supervision of contracts. PC2's Procurement Department will prepare project documents and carry out all ICB procurement. PC2's head office will make payments to contractors and be responsible for financial management, project monitoring and reporting to IDA including hiring of independent consultants to monitor implementation of RPs, EMPs and EMDPs. Upon completion, PSDs will retain the rehabilitated and expanded 22/35 kV systems for operation.

4. Component 3: Improvement of Rural Distribution System in Central Region

9. This component of the projects will be implemented by PC3. PC3 is responsible for electricity distribution in 11 provinces in the Central Region of Vietnam, except Da Nang City, and Khanh Hoa province.

10. PC3 has two PMBs, one for networks up to 35 kV, and the other for projects in the 110 kV system. As this component includes both types of subproject, PC3 will use both of its PMBs for project implementation. For their respective subprojects, PMBs will carry out land acquisition and compensation, procurement and supervision of contracts. PC3's head office will supervise the work of the PMBs, clear bidding documents and bid evaluation and make all payments to contractors, and be responsible for financial management, project monitoring and reporting to IDA, including the hiring of independent consultants to monitor the implementation of RPs, EMPs and EMDPs. Upon completion, the PMB will hand over the 110kV systems to PC3's 110kV operations unit and the new, rehabilitated and strengthened 22/35 kV systems to the relevant PSD.

5. Component 4: Improvement of Rural Distribution System in the area of Hai Phong

11. This component will be implemented by PC Hai Phong. PC Hai Phong is responsible for electricity distribution in Hai Phong City and the surrounding area, including several islands.

12. Hai Phong PC has assigned the implementation of this project component to its PMB which is in charge of the implementation of all investment projects. For the subprojects for which it is responsible, the PMB will carry out land acquisition and compensation, procurement and supervision of contracts and mobilize external consultants to monitor the implementation of RPs, EMPs and EMDPs. PC Hai Phong's management will supervise the work of the PMB, and be responsible for financial management, project monitoring and reporting to IDA. Specialized PC Hai Phong departments will make payments to contractors. Upon completion, the PMB will hand subprojects over to the operations department of PC Hai Phong.

13. Although no second phase projects have yet been identified, the institutional and implementation arrangements would remain unchanged if any were subsequently implemented.

6. Component 5: Improvement of Rural Distribution System in Hai Duong

14. This component will be implemented by PC Hai Duong. PC Hai Duong is responsible for electricity distribution in Hai Duong Province.

15. PC Hai Duong will rely on its Investment Management Department (IMD), composed of a group of experts who are currently in charge of the investment projects being undertaken by the company. For the subprojects for which it is responsible, the Department will carry out land acquisition and compensation, procurement and supervision of contracts and mobilize external consultants to monitor the implementation of RPs, EMPs and EMDPs. PC Hai Duong's management will supervise the work of the IMD, and be responsible for project monitoring and reporting to IDA. Specialized PC Hai Duong departments will undertake financial management and make payments to contractors. Upon completion, the IMD will hand subprojects over to the operations department of PC Hai Duong.

7. Component 6: Improvement of Rural Distribution System in Dong Nai

16. This component will be implemented by PC Dong Nai. PC Dong Nai is responsible for electricity distribution in Dong Nai Province.

17. PC Dong Nai has decided to establish a PMB, based on the group of experts which are currently in charge of the investment projects being undertaken by the company. For the subprojects for which it is responsible, the PMB will carry out land acquisition and compensation, procurement and supervision of contracts and mobilize external consultants to monitor the implementation of RPs, EMPs and EMDPs. PC Dong Nai's management will supervise the work of the PMB, and be responsible for project monitoring and reporting to IDA. Specialized PC Dong Nai departments will make payments to contractors. Upon completion, the PMB will hand subprojects over to the operations department of PC Dong Nai.

8. **Component 7: Technical Assistance to PCs**

18. This component will be implemented by PCs 1, 2 and 3. Studies and delivery of training will be conducted by consultants to be hired by the PCs and by other training providing such as universities and professional associations. Training and personnel departments of PCs will be responsible for selection and contracting of consultants, and their management and quality control during the contractual period, including providing access to the necessary information for the consultants to carry out their assignments.

19. Where possible, training will be provided through existing academic and other specialist training courses and study tours. If no suitable course exists, customized training packages will be prepared and delivered by specialist consultants. To the extent possible such training needs will be coordinated between the PCs, for economies of scale.

Annex 7: Financial Management and Disbursement Arrangements

VIETNAM: Rural Distribution Project

Summary

1. An assessment of the financial management arrangements for the Project was conducted in December 2007 and updated in January 2008. The assessment sought to ensure that arrangements are in place that: (i) are capable of correctly and completely recording all transactions and balances relating to the project; (ii) facilitate the preparation of regular, timely and reliable financial statements; (iii) safeguard the project's assets; and (iv) are subject to auditing arrangements acceptable to the Bank.

2. The capacity assessment was conducted through discussions with the financial management personnel of PC1, PC2, PC3, PC Hai Phong, PC Hai Duong, and PC Dong Nai, analysis of Financial Management Questionnaire surveys and review of the financial management of other energy projects (System Efficiency Improvement, Equitization and Renewables Project, Cr 3680 VN, SEIER; Second Rural Energy Project, Cr. 4000 VN, RE2; and Second Transmission and Distribution Project, Cr. 4107 VN, TD2) which are being implemented by these entities.

3. The six participating Power Companies will be responsible for project implementation including financial management of their project component. The PCs have adequate financial management staff capacity and four of the PCs have experience in implementing World Bank funded investment projects and the financial management of these projects has been satisfactory. Two of the PCs will require training on Bank FM requirements and disbursement procedures. The budgeting procedures and practices, accounting system including accounting policies, procedures and software, and internal controls procedures of EVN and the PCs are adequate for project financial management.

4. The project will use the report based disbursement method with the template of IFRs (including cash flow forecast reports) to support this method. EVN and each of the PCs will maintain a Designated Account (DA) in US dollars at a commercial bank with the terms and conditions acceptable to IDA. Counterpart funds will be arranged by the PCs which are assessed as having the capacity to mobilize the required counterpart funds.

5. Vietnam Development Bank (VDB) will be the certifying agency for the project and there have been disbursement delays due to complicated procedures in past projects. A recent MOF Circular issuing simplified verification procedures has improved disbursement processes and the project team will work closely with MOF and VDB during the project to ensure proper implementation of the Circular and to monitor processing and to provide suggestions for further improvement.

6. Quarterly financial reporting, based on the government's Aligned Monitoring Tool (AMT), will provide information for monitoring the use and management of funds. Each PC will appoint independent auditors acceptable to IDA. The project financial statements and the PCs'

Financial Statements will be audited on an annual basis in accordance with international auditing standards, with statements and audit reports to be submitted to IDA within six months of the close of the fiscal year. The annual financial statements and audit reports will be made publicly available through the website of the PCs.

7. The FM risk is assessed as moderate. In addition to training carried out during preparation, further capacity building will be provided during supervision.

Country Issues

8. The 2001 Country Financial Accountability Assessment (CFAA) for Vietnam concluded that the public financial management system represented some level of fiduciary risk. The 2005 Public Expenditure Review- Integrated Fiduciary Assessment (PER- IFA) recognized improvements in transparency and accountability arising from: (i) an audit law (May 2005) which will enhance oversight by the National Assembly and Provincial People's Committees over public finances and increase public access to information on government finances; (ii) the decree on independent audit (March 2004) which regulates the status of auditors and audit firms and defines the value of audit results; and (iii) the accounting law (2003) which establishes the legal framework for Vietnamese Accounting Standards for public and private sectors on the basis of international standards.

9. The PER-IFA identifies a large agenda for improvement in public financial management. The key challenges include: (i) implementation of the legislative frameworks which are largely in place; (ii) strengthening the effectiveness of the State Audit of Vietnam; (iii) streamlining the internal control framework; (iv) building financial management capacity, particularly at the sub-national level; and (v) adopting international public sector accounting standards.

10. Following allegations of fraud and corruption against officials of the Project Management Unit 18 (of the Ministry of Transport based in Hanoi), a Detailed Implementation Review (DIR) of two bank funded road transport projects was conducted. The DIR showed that there was no evidence supporting the corruption allegations, and that the two projects have achieved their expected results with positive socio-economic impacts. However, the DIR revealed shortcomings in transparency and accountability controls in the PMU's financial management arrangements such as lack of integrated accounting systems, inadequate and out-of-date financial procedures, weak reconciliation controls, and duplicate records for different reporting purposes.

11. The financial management assessment for the Rural Distribution Project did not reveal weaknesses that are likely to lead to fraud. The PCs responsible for the financial management of this project have competent financial management personnel, established integrated financial management systems for accounting and reporting, and adequate procedures and internal controls. Continuing strengthening of the financial management arrangements will be undertaken during this project to help further reduce the risk of fraud and corruption.

Risk Assessment and Mitigation

12. The inherent risk to the project from the financial environment is assessed moderate. The project specific control risk taking into account the risk mitigation measures that are to be implemented for the project is assessed as moderate. Overall FM risk is moderate. A summary of the risk assessment is given in Table A7.1.

Table A7.1: Financial Management Risk Assessment Summary

Risk	Risk Rating	Risk Mitigation Measures Incorporated into Project Design	Risk After Mitigation
Inherent Risk			
Country level: Overall Fiscal Environment	Moderate	Capacity building in Medium Term Expenditure Framework (MTEF), and Public Financial Management reform with focus on planning and budgeting, implementation and monitoring, commitment control and debt management.	Moderate
Entity and Project level: Funds may not be used efficiently and economically and for purposes intended	Moderate	(i) Annual financial audit by external auditor, (ii) Strengthened expenditure verifying procedures by the VDB	Moderate
Entity and Project level: The simplified regulations of MOF on expenditure verification may not be followed by VDB	Moderate	Providing continuous review/support to VDB to ensure the efficient verifying procedures are in place.	Moderate
Overall Inherent Risk	**Moderate**		**Moderate**
Control Risk			
1. Budgeting	Moderate		Moderate
2. Funds Flow	Moderate	Providing continuous review/support to VDB to ensure the efficient verifying procedures are in place.	Moderate
3. Staffing	Moderate	Training on Bank requirements on FM and disbursement procedures for FM personnel of Provincial Electricity Services of PC1, PC Hai Phong and Hai Duong on IDA's requirements on FM and disbursements.	Low
4. Accounting Policy & Procedures	Low		Low
5. External Audit	Low		Low
6. Reporting & Monitoring	Low		Low
7. Information Systems	Low		Low
Overall Control Risk	**Moderate**		**Moderate**

I. Implementation Arrangements

13. Except for PC Hai Duong, the PCs will manage the project through one or more PMBs which are departments of the PCs or Project Implementation Unit (PIU) of the PSDs. They are responsible for all investment projects in the PCs and PSDs, and as such there is no separate dedicated PMU/PMB for this project. In Hai Duong, there is no PMB and project management

will be integrated into the management functions of the PC. A specialist with accounting background from the Accounting and Finance Department of the PC has been assigned the task of accounting for the project while the overall FM will be the responsibility of the relevant functions and divisions of the PC.

14. Each PMB/PIU and Hai Duong's relevant divisions (including the Accounting and Finance Departments) will be responsible for overall coordination, quality assurance, procurement, financial management, monitoring and reporting, and day-to-day supervision of project activities of their component of the Project. Effective financial management to ensure the project funds are used for the intended purposes in an economic manner is the responsibility of the management of each PC.

1. Staffing

PC1, PC2 and PC3, PC Dong Nai

15. PC1, PC2, PC3, and PC Dong Nai are involved in implementing a number of IDA financed energy projects. PC1 and PC2 are implementing agencies for RE2 and SEIER; PC3 is an implementing agency for RE2, SEIER and TD2; and PC Dong Nai is an implementing agency for SEIER. The majority of the personnel of the PMBs have project management experience and familiarity with IDA requirements. The accounting and financial division of the PMB/PIUs and the PCs have staff with adequate accounting education background and experiences.

PC1 and PC2- Impact of Decentralization of Project Management

16. PC1 and PC2 will partially decentralize project management to the Provincial Power Supply Departments (PSDs) in the same way as for RE2 whereby responsibility for procurement of civil works, implementing and monitoring of all contracts, will be delegated to the PSDs. PC1 will also delegate preparing claims, getting them verified by the provincial VDB, and submitting claims for payment to the PC. The PCs will retain responsibility for procurement of goods and services and the disbursements, payments, accounting, financial budgeting and reporting; PC2 will also retain responsibility for preparing claims and getting them verified by VDB. Decentralization will help improve efficiency of project implementation and division of financial management responsibility between the PC, PMB and PSD is clearly stated in the PCs' Implementation Plans. Guidance and training on payment procedures for the FM staff at the PSDs was conducted by an IDA FM specialist during preparation.

PC Haiphong and PC Hai Duong

17. The financial management personnel PC Haiphong and PC Hai Duong, in the PMB and the relevant departments do not have experience with IDA financed projects. Training on Bank requirements conducted by the IDA's specialist therefore was provided for FM personnel in Hai Phong and Hai Duong during preparation.

2. Budgeting

18. Budgeting procedures and practices are adequate for the purpose of project financial management. For the project, the annual disbursement plan is prepared by the FM function which is linked with the physical work plan and procurement plan completed by the PMB. This plan will be approved by the management of the PC and consolidated in the PC's corporate budget which will be acknowledged by EVN. Budgeting variances are calculated and analyzed in the periodical management reports (and progress reports) prepared by the PMB and reviewed by the management of PCs.

3. Accounting

19. The accounting system including accounting policies, procedures and software of the PCs are adequate for the project FM. The current accounting system used in PCs (and for the project accounting) is the Accounting System for Enterprises which is regulated under Decision 15 of Ministry of Finance and based on Vietnamese Accounting Standards (VAS). VAS when issued were based on IAS prevailing at the time however there have been no updates of VAS and so they are no longer in line with recognized international financial reporting standards. The Chart of Accounts required under Decision 15 has been revised to meet the project financial management needs for reporting by project components, activities and disbursements.

20. The details of the accounting systems and procedures including document flow and retention, system records and access are stated in Decision 15 and detailed in the internal procedures of EVN and PC and these are considered adequate.

21. The computerized accounting system used in the PCs (and PMBs) is the Financial Management Information System, which is adequate for the project financial management, with the extension of the use of spreadsheet for contract managements.

4. Internal Controls

22. Current internal controls procedures at the PCs are adequate for project financial management. The management of the PCs will be responsible for ensuring that an adequate internal control framework and internal controls are in place and operating. The internal control procedures such as: (i) defined FM responsibilities and reporting structures; (ii) segregation of duties; (iii) defined and documented financial processes and procedures; (iv) security and safeguarding of cash and assets; (v) timely reporting, review and monitoring; and (vi) proper documentation and retention of project financial records and documents have been documented as internal policies and procedures of each PC. No separate manual or guidance for the internal controls relating to the Projects is considered necessary.

23. Audit reports of the financial statements of PC2 for the year ended December 31, 2006 revealed weaknesses in internal controls of PC2, where the internal balances between branches could not be reconciled resulting in an audit qualification. PC2 is fully aware of this and has committed to improve internal reconciliation procedures to address this weakness.

24. The audit report for SEIER for the year ended December 31, 2006 indicated several cases where the equipment purchased for SEIER by PC1 were diverted to projects not financed by IDA. The funds (amounting to approximately $1.1 million) relating to those cases were refunded to the Project Special Accounts by August 2007. PC1 is committed to ensure that similar instances, which occurred by reason of emergency, will not recur.

5. Financial management anti-corruption measures

25. To continue to strengthen the financial management arrangements for the project (and for the PCs) and to help further reduce the risk of fraud and corruption, particular emphasis during preparation has been given to the financial management arrangements in the following areas. Supervision will also focus on them.

- Clear FM responsibilities with avoidance of gaps and overlaps and clearly delineated roles and responsibilities for project personnel for FM personnel included in the Project Implementation Plan;
- Adequate FM capabilities with training in financial management and reporting;
- Integration of financial monitoring within the results orientated M&E framework; and
- Enhanced disclosure and transparency of financial information.

II. Funds Flow and Disbursement Arrangements

26. Table A7.2 details the allocation of IDA Credit.

Table A7.2: Allocation of the IDA Credit

Expenditure Category	**Amount of Credit Allocated (million US$)**	**percent of Expenditures to be Financed** (inclusive of taxes)
Goods, works and services for subprojects to build new, rehabilitate and strengthen distribution systems	148.50	100 percent
Of which:		
PC1	47.44	
PC2	27.73	
PC3	46.53	
PC Hai Phong	13.16	
PC Hai Duong	5.06	
PC Dong Nai	8.59	

Expenditure Category	Amount of Credit Allocated (million US$)	percent of Expenditures to be Financed (inclusive of taxes)
Consulting services for technical assistance and training for PC corporate development	1.50	100 percent
Of which:		
TA consulting services for:	0.40	
PC1	0.40	
PC2	0.40	
PC3		
And:		
Training and related costs for:		
PC1	0.10	
PC2	0.10	
PC3	0.10	
TOTAL	**150.00**	

Note: the Financing Agreement only presents aggregate amounts and does not allocate the amounts between PCs

6. Disbursement Methods

27. The project will use the report based disbursement method. Financial management is assessed as satisfactory so that the Report Based disbursement method can be used. Training on report based disbursement will be provided before negotiations.

28. The project will use the following disbursement methods:

- *Reimbursement* - The Bank may reimburse the borrower for expenditures eligible for financing pursuant to the Credit Agreement ('eligible expenditures') that the borrower has prefinanced from its own resources;
- *Advance* - The Bank may advance loan proceeds into a designated account of the borrower to finance eligible expenditures as they are incurred and for which supporting documents will be provided at a later date;
- *Direct Payment* - The Bank may make payments, at the borrower's request, directly to a third party (e.g., supplier, contractor, and consultant) for eligible expenditures; and
- *Special Commitment*: The Bank may pay amounts to a third party for eligible expenditures under special commitments entered into, in writing, at the borrower's request and on terms and conditions agreed between the Bank and the borrower.

29. The Disbursement Deadline Date will be four months after the Closing Date of the project.

30. Supporting documentation required under the reimbursement and advance methods are the Interim Financial Reports (IFRs) and other documentation supporting the 6 month forecast of the cash flow requirement; under the direct payment method is the records; or any other supporting documentation that the Bank may request by notice to the borrower. The template of IFRs will be agreed between the representatives of GOV and IDA ***at negotiation.***

31. The supporting documentation for the withdrawal applications will be reviewed by the Financial Management Specialist and the Task Team Leader of the Bank before being processed by the Bank's Loans Department.

7. Designated Accounts and Ceiling

32. A segregated Designated Account (DA) in US dollars will be maintained by each PC (6 DAs for 6 PCs) at a commercial bank under terms and conditions acceptable to IDA. The ceiling of the DA for each PC is the 6 month forecast of the cash flow requirements.

8. Application for Advances

33. PCs may apply for an advance in an amount up to the Ceiling less the aggregate amount of those advances previously received for which the PCs has not yet provided supporting documentation (IFRs).

9. Frequency of Reporting Eligible expenditures paid from the DA

34. PCs will report on the use of the loan proceeds advanced to the DA at least on a quarterly basis with the submission of IFRs.

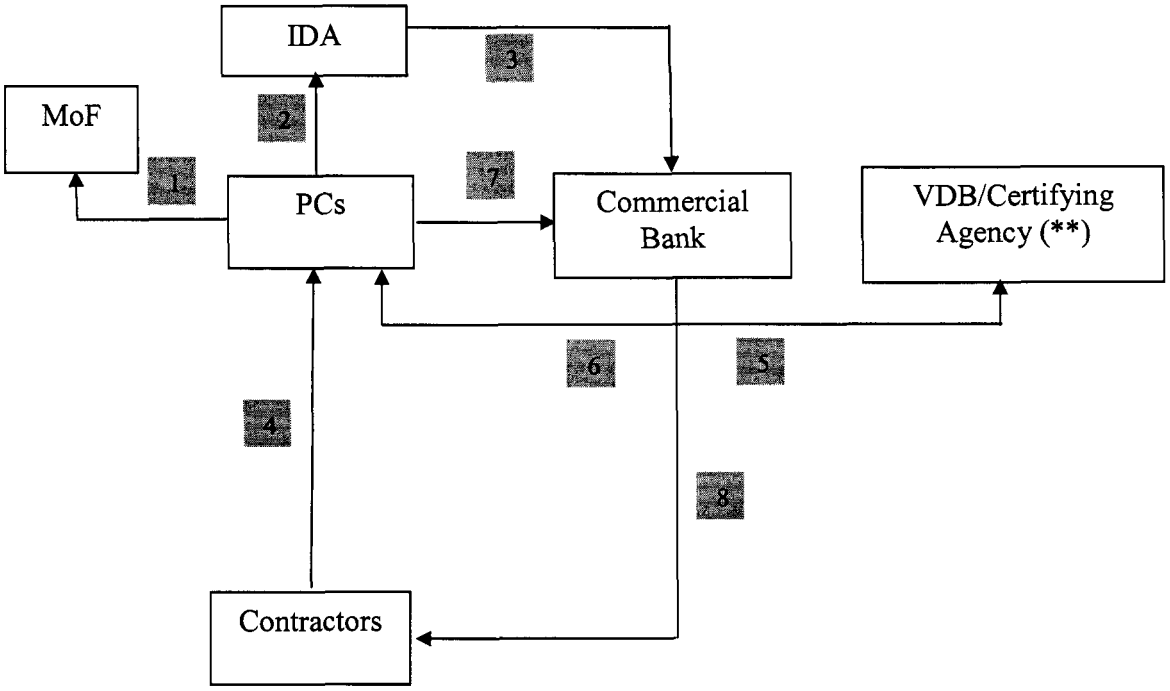
10. Counterpart Funds

35. Counterpart funds are arranged by the PCs. The PCs are assessed as having the capacity to mobilize the counterpart funds needed for the project.

11. Funds flow to Contractors and Beneficiaries from the Designated Accounts

36. Funds flow arrangements for payments from the designated accounts to suppliers and beneficiaries is proposed as in the figure 1.

Figure 1: Funds flow



1. PCs prepare the withdrawing application and send to MoF/EFD for co-signature
2. PCs submit withdrawing application to IDA
3. IDA disburses monies to the Designated Accounts of the PCs at commercial bank
4. Contractors submit claim for expenditure to PCs
5. PC reviews, certifies and then submit to VDB/Certifying Agency
6. VDB/Certifying Agency checks, approves and send back to PCs *(*) (**)*
7. PCs send the request for payments to the commercial bank
8. The commercial bank makes payment to the Contractors

(*) In PC1, the verification procedure will be done at the provincial branches of VDB corresponding to the PSDs implementing subprojects. Once claims for expenditure are verified, supporting documentation will be sent to PC1 for processing payments.

(**) Currently, VDB is the certifying agency for the on-lending projects in Vietnam including other IDA financed projects to EVN. In the past, the verifying procedures of VDB were unnecessarily complicated and did not add value to the control processes. In November 2007, the MOF issued Circular 130 (amending Circular 27) on simplified procedures for all verifying agencies (including VDB). As a result, the process of verification has improved in general and particularly for energy projects. IDA will work closely with MOF and VDB during the course of the project to ensure the proper implementation of the Circular as well as to monitor disbursement performance and provide suggestions for further improvement.

III. Financial Reporting and Monitoring

1. Quarterly Interim Financial Reports (IFRs)

37. Each PC will be required to submit to IDA a quarterly IFR within 45 days of the end of the quarter. EVN will prepare and submit a consolidated IFR for the project within 45 days of the end of the quarter.

38. In PC1, PC2 and PC3, for the period up to June 2007, the quarterly financial monitoring reports (FMRs- the former name of the Interim Financial Reports- IFRs) were not submitted to IDA within 45 days to the end of the reporting quarter. This has improved with the timely submission of the FMRs for Q4 2007. One of the reasons for previous delays in IFR submission was that the template of the FMRs was different from what the PCs were preparing for local agencies resulting in multiple reports needing to be prepared at the end of each quarter. To resolve this issue in this project, the IFRs will be based on the AMT which is regulated under Decision 803 of Ministry of Planning and Investment.

39. For this project, the IFRs will cover all project activities, including counterpart funding. The IFRs therefore include the following forms (with the reference number as indicated in the AMT package).

Financial reports (analyzing expenditures against budgets)

- IFR1: Sources and Uses of Funds by expenditure category;
- Form 4: Disbursement of ODA Fund (by component);
- Form 6: Disbursement of Counterpart Fund (by component); and
- IFR3: Statement of Designated Account Reconciliation.

Contract monitoring reports

- Form 12: Contract Progress; and
- 11 Forms (Form 7- Form 11): Reports on Procurement Monitoring.

40. The IFRs are not required to be audited.

2. Annual Project Financial Statements

41. Each PC will prepare annual financial statements covering the portion of the project components and activities for which they are responsible. The financial statements must be prepared on a modified cash basis in accordance with international accounting standards.

42. The Project Financial Statements will consist of:

- A Statement of Sources and Uses of Funds / Cash Receipts and Payments which recognizes all cash receipts, cash payments and cash balances controlled by the entity; and separately identify payments by third parties on behalf of the entity.
- The Accounting Policies Adopted and Explanatory Notes. The explanatory notes should be presented in a systematic manner with items on the Statement of Cash Receipts and Payments being cross referenced to any related information in the notes. Examples of this information include a summary of fixed assets by category of assets, and a schedule of credit / grant withdrawals, listing individual withdrawal applications; and
- A Management Assertion that Bank funds have been expended in accordance with the intended purposes as specified in the relevant World Bank legal agreement.

43. The annual project financial statements are required to be audited and submitted to the Bank within 6 months of the end of each financial year.

44. The PCs' annual financial statements which must be based on IFRS are required to be audited and submitted to the Bank within six months of the end of the financial year.

IV. Audit Arrangements

45. The 2006 audit reports for the project financial statements of other energy projects implemented by PC1, PC2, PC3 and PC Dong Nai were submitted by the deadline of June 30, 2007. However, the audit reports on the entity's financial statements were submitted later than the deadline of June 30, 2007. There has been improvement: the audit reports (for entity financial statements) for 2004 were submitted in the first week of August 2005, audit reports for 2005 were submitted in the last week of July and audit reports for 2006 were submitted in the third week of July 2007. Corrective actions to address this issue undertaken by EVN and the PCs include earlier preparation and planning for producing and auditing of the annual financial statements, and arranging for additional audit resources (through a group audit arrangement to be devoted to EVN audits).

46. The review of the audit reports for 2006 revealed no significant issues, except for the issue mentioned in Section I.4. Internal Control above, concerning the diverted use of equipment procured for SEIER in PC1 which has already been resolved by PC1.

47. For this project, each PC will appoint independent auditors acceptable to IDA. The project financial statements and the PCs' Financial Statements will be audited on an annual basis in accordance with international auditing standards and acceptable TORs. The auditors' reports will be made available to IDA within six months of the close of the fiscal year. Each audit report will have a single audit opinion covering Project Accounts and Designated Accounts (including adequacy of IFRs for disbursement purposes). The auditor will also provide a management letter addressing internal control weaknesses of implementing agencies.

48. The annual financial statements and audit reports will be made publicly available through the website of the PCs.

V. Strengths and Weaknesses

Strengths

i. All PCs have competent financial management personnel who have accounting background. PC1, PC2 and PC3 and their PMBs accountants have experiences with IDA funded project financial management, procedures and requirements;
ii. The Accounting system has been set up which is based on the accounting system under the Decision 15 of MoF incorporating all regulations of VAS; the Chart of Accounts are adequately structured to reflect the disbursement by sources, category, components;
iii. The internal control procedures are in place, documented and complied with; and
iv. The accounting software (FMIS) is adequate for the project financial management, which can generate accounting reports.

Weaknesses

i. In PC Hai Phong, PC Hai Duong and PC1 (where some aspects of financial management are decentralized to PSDs), financial management personnel do not have experience with IDA's requirements on financial management and disbursement. Each of these groups received training during preparation and capacity building will be further provided during project supervision.

VI. Supervision Plan

49. As the FM risk is assessed as Moderate, supervision of project financial management (with site visits to implementing agencies) will be performed at least once a year. The supervision will review the project's financial management system, and include but not be limited to operation of Designated Account, internal controls, reporting and follow up of audit findings and mission's findings. The selection of entities and PSDs for annual on-site visit review will be discussed with the TTL and will be based on the assessment of capacity, issues raised by the auditor and supervision and the status of disbursement. The financial management supervision will be conducted by IDA's financial management specialist staff.

Annex 8: Procurement Arrangements

VIETNAM: Rural Distribution Project

A. General

1. Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004, revised October 2006; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, revised October 2006, and the provisions stipulated in the legal agreements. The different procurement categories are described in general below. For each contract to be financed by the Credit, the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frame have been agreed between the Borrower and the Bank in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity. A supplemental Annex to the Procurement Schedule in the Credit Agreement for NCB to waive those areas in Vietnam's public procurement regulations that are inconsistent with the Bank Procurement Guidelines was agreed at negotiations.

2. **Procurement of Works**: Works to be procured under the project are estimated to cost $81.7 million equivalent of which the IDA Credit will finance $81.7 million. Works procured under this project will include: civil works, supplying and erection of concrete poles or steel towers, installation of steel structures (including. crossarms, guys, anchors, fittings), conductor stringing, installation of transformers and substation equipment. Procurement will use the most up-to-date Bank's Standard Bidding Documents (SBD) for Goods for all ICB and the Sample Bidding Documents for NCB for Procurement of Works which have been agreed with the Borrower.

3. One to three works contracts will be procured for each 110kV subproject for ease of implementation and to attract contractors with the necessary skills and capacity; each such contract will cost in the range of $500,000 to $1.5 million. For 22/35 kV subprojects, which will consist of all the rehabilitation and expansion work in one project province, several works contracts will be procured, each one covering one or two districts and estimated to cost in the range of $30,000 to $500,000 equivalent. As all works contracts are estimated to cost below $2 million, NCB is expected be the dominant method of procurement.

4. **Procurement of Goods:** Goods to be procured under this project are estimated to cost $66.8 million of which IDA will finance $66.8 million. Goods to be procured will include: transformers; substation equipment, concrete poles and steel towers, conductors, insulators, control, protection and other electrical equipment and communications equipment for 22, 35, and 110 kV systems. Procurement will use the Bank's SBD for all ICB and Sample Bidding Documents for NCB for Procurement of Goods which has been agreed with the Borrower.

5. ICB procedures will be used for contracts for goods estimated to cost more than $150,000 per contract. NCB procedures will be used for contracts estimated to cost less than $150,000 per contract, while shopping would be used for contracts estimated to cost less than $50,000.

6. In evaluation of the bids following ICB procedures, qualified domestic manufacturers of goods will be eligible for a margin of preference.

7. **Selection of Consultants:** Consultant services to be procured under this project are estimated to cost $3 million, of which IDA will finance $1.2 million and AusAID $1.8 million. Consultant services will cover assignments to review and improve accounting and financial management practices, forecast market development, improve monitoring and evaluation and to prepare PCs for further market reform. Shortlists for consultants for services estimated to cost less than $200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

8. **Training:** Standard training courses offered by specialized institutions will be selected by implementing agencies by comparison of the course offered with the identified training needs of managers and staff. Fees and costs of travel and subsistence of those attending the courses will be reimbursed based on reasonable costs supported by SOEs. Costs of travel and subsistence of staff participating in study tours will also be reimbursed based on reasonable costs supported by SOEs. Total cost of these activities is expected to be $1.5 million.

B. Assessment of the agency's capacity to implement procurement

9. Procurement activities will be carried out by PC1, PC2, PC3, PC Hai Phong, PC Hai Duong, and PC Dong Nai. Each PC is under the management of a Director, with several Deputy Directors with responsibility for different aspects of the PCs' operations. The project will be implemented by PMBs (see Annex 6 for detailed description). The PMBs of larger PCs – PCs 1, 2 and 3 – have had wide experience of implementing IDA-financed projects as well as those financed from other sources. They have adequate and experienced procurement staff, and are supported by staff from the procurement department of their parent PCs. The smaller PCs – PC Hai Phong, PC Hai Duong and PC Dong Nai – have fewer staff but sufficient numbers with experience of local procedures and some limited exposure to IDA procurement.

10. An assessment of the capacity of the PCs to implement procurement actions for the project was carried out by Thang Chien Nguyen, Senior Procurement Specialist in November 2007. The assessment reviewed the organizational structure for implementing the project and the interaction between the project's staff responsible for procurement.

11. The key issues and risks concerning procurement for implementation of the project have been identified and include: (i) potential understaffing in all PMUs given their other procurement workload; and (ii) the PIUs under PC1's PSDs, PC Hai Phong, PC Hai Duong and PC Dong Nai do not have adequate knowledge and experience of Bank-funded procurement for their respective components.

12. The corrective measures which have been agreed are: (i) procurement training will be carried out for all implementing agencies at project launch by a World Bank procurement specialist; (ii) PC1 will undertake procurement training for its PSDs; (iii) PC Hai Phong, PC Hai Duong and PC Dong Nai will hire procurement consultants for support; and (iv) the World Bank procurement specialist will provide ad hoc procurement training during supervision missions and through comments and advice on procurement documents submitted to the Bank for prior review.

13. The overall project risk for procurement is moderate.

C. Procurement Plan

14. The Borrower, at pre-appraisal, developed a procurement plan for project implementation which provides the basis for the procurement methods. This plan was agreed between the Borrower and the Project Team at negotiations and is available at the offices of the PCs. It will also be available in the project's database and in the Bank's external website. The Procurement Plan will be updated in agreement with the Project Team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

D. Frequency of Procurement Supervision and Bank Review

15. In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the Implementing Agency has recommended annual supervision missions to visit the field to carry out post review of procurement actions.

16. Procurement methods and prior review thresholds are summarized in Table A8.1.

Table A8.1: Procurement Methods and Prior Review Thresholds

Procurement Method		Thresholds of Procurement Methods	Prior Review Thresholds
Works:	ICB	≥$2 million	All contracts
	NCB	<$2 million	First contract by each agency, all contracts above $300,000
Goods:	ICB	≥$150,000	All contracts
	NCB	>$50,000 <$150,000	First contract by each agency
	Shopping	<US$50,000	First contract by each agency. Maximum aggregate of $200,000 per agency
Consulting services:	QCBS/QBS	≥$200,000	All contracts above $100,000
	CQS	<$200,000	All contracts above $100,000
	Single Source Selection	Assignments meeting requirements set out in paragraphs 3.9 – 3.13 of the Guidelines	All contracts

Procurement Method		Thresholds of Procurement Methods	Prior Review Thresholds
	IC	Assignments meeting requirements set out in paragraphs 5.1 and 5.3 of the Guidelines	All contracts above $50,000 and all sole source selections
	ToR		All ToR

E. Procurement Environment

17. Experience in other projects shows that most procurement of the kind of goods required for the project, namely transformers, and substation equipment, conductors, insulators, towers and poles, specified for the 22, 35 and 110kV level will be subject to ICB. There is a number of domestic suppliers capable of supplying the goods required for the project, but in addition several international firms maintain offices and in some cases production facilities in Vietnam. Many do so in large part to participate in procurement of goods financed by IDA and other international financial institutions. Almost all goods procurement packages attract bids from one or more international firms. In general there is sufficient competition among suppliers, as evidenced by the closeness of bids in single packages and the relative consistency of unit prices among bidders across the range of goods to be supplied. Based on supervision of implementation of Rural Energy Project and Second Rural Energy Project, goods procured are generally of acceptable quality and in conformation with the requirements set out in bidding documents.

18. Works contracts are expected to be procured using both NCB and ICB. Although power system construction is relatively specialized, experience in other projects suggests that there are numerous national and provincial level firms with sufficient skills. Competition is generally strong among works contractors.

19. Consultant services that are envisaged to be required for this assignment will mainly be available only from international firms and selection will usually use international competition. Major consultant assignments financed by the Bank and implemented by EVN attract considerable international interest and short lists of six well-qualified consultants are easily compiled. Competition is strong, conflict of interest and eligibility requirements are respected and evaluations of consultants rigorous.

20. The Bank has received twelve procurement complaints since October 2005 (when records started to be kept), across the five energy projects that have been in the portfolio over that period. All have been concerning procurement procedures or technical specifications. Of these complaints, seven were either dropped by the complainant or found not to be substantiated, the Bank upheld the Borrower's decision in two, and in one case each, the Borrower conducted re-evaluation and rebidding, taking into account the complaint. At the time of writing one complaint is still under review. Two complaints were about procurement undertaken by implementing agencies of the proposed project. This should be compared with a total of 437 contracts subject to the Bank's prior review that were procured in IDA-financed energy projects over the same period.

F. Details of the Procurement Arrangements Involving International Competition for First Phase of Project

1. Goods, Works, and Non Consulting Services

(a) List of contract packages to be procured following ICB and direct contracting:

Ref. No.	Contract (Description)	Estimated Cost (US$)	Procurement Method	Prequalification (yes/no)	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date
PC1-MV-BG-G01	Transformers for MV system of Bac Giang	435,313	ICB	no	Yes	Prior	Jun-08
PC1-MV-TH-G01	Transformers for MV system of Thanh Hoa	1,193,589	ICB	no	Yes	Prior	Aug-08
PC1-MV-TH-G03	Distribution Board for MV system of Thanh Hoa	359,222	ICB	no	Yes	Prior	Aug-08
PC1-MV-TH-G04	Conductors for MV system of Thanh Hoa	284,744	ICB	no	Yes	Prior	Aug-08
PC1-MV-TB-G01	Transformers for MV system of Thai Binh	813,649	ICB	no	Yes	Prior	Jun-08
PC1-MV-TB-G04	Conductors for MV system of Thai Binh	189,872	ICB	no	Yes	Prior	Jun-08
PC1-MV-VP-G01	Transformers for MV system of Vinh Phuc	821,875	ICB	no	Yes	Prior	Jun-08
PC1-MV-ND-G01	Transformers for MV system of Nam Dinh	2,222,591	ICB	no	Yes	Prior	Aug-08
PC1-MV-ND-G04	Conductors for MV system of Nam Dinh	287,448	ICB	no	Yes	Prior	Aug-08
PC1-110-TN-G01	Conductors for 110 kV Thanh Nong SS	1,199,188	ICB	no	Yes	Prior	Jun-08
PC1-110-TN-G02	Insulators and fittings for 110 kV Thanh Nong SS	540,625	ICB	no	Yes	Prior	Jun-08
PC1-110-TN-G03	Transformers for 110 kV Thanh Nong SS	571,938	ICB	no	Yes	Prior	Jun-08
PC1-110-TN-G04	Steel Towers for 110 kV Thanh Nong SS	2,114,188	ICB	no	Yes	Prior	Jun-08
PC1-110-TN-G05	Optic cable for 110 kV Thanh Nong SS	223,750	ICB	no	Yes	Prior	Jun-08
PC1-110-TN-G07	Communication Equipment for 110 kV Thanh Nong SS	301,938	ICB	no	Yes	Prior	Jun-08
PC1-110-ST-G01	Conductors for 110 kV Son Tay- Pho Vang T/L	561,625	ICB	no	Yes	Prior	Jun-08
PC1-110-ST-G02	Insulators and fittings for Son Tay- Pho Vang T/L	162,063	ICB	no	No	Prior	Jun-08
PC1-110-ST-G03	Substation Equipment Son Tay- Pho Vang T/L	299,563	ICB	no	Yes	Prior	Jun-08
PC1-110-ST-G04	Steel Towers for Son Tay- Pho Vang T/L	1,434,250	ICB	no	Yes	Prior	Jun-08
PC1-110-ST-G05	Optic cable for Son Tay- Pho Vang T/L	275,438	ICB	no	Yes	Prior	Jun-08
PC2- BT/VL/DT G-01	Bare Aluminum Conductors Steel Reinforced for MV systems of Ben tre, Vinh Long, Dong Thap	1,546,876	ICB	no	Yes	Prior	Jun-08
PC2- BT/VL/DT G-03	Distribution Transformer for MV systems of Ben tre, Vinh Long, Dong Thap	224,872	ICB	no	Yes	Prior	Jun-08
PC3-110-P1-G01	Transformers for 110 kV system of Chan May, Duy Xuyen, Son Hoa, Chuprong, Krong Ana	2,833,813	ICB	no	Yes	Prior	May-08
PC3-110-P1-G02	Protection equipments for 110 kV system of Chan May, Duy Xuyen, Son Hoa, Chuprong, Krong Ana	3,402,125	ICB	no	Yes	Prior	May-08
PC3-110-P1-G03	Insulators for 110 kV system of Chan May, Duy Xuyen, Son Hoa, Chuprong, Krong Ana	305,750	ICB	no	Yes	Prior	May-08

Ref. No.	Contract (Description)	Estimated Cost (US$)	Procurement Method	Prequalification (yes/no)	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date
PC3-110-P1-G04	Conductors for 110 kV system of Chan May, Duy Xuyen, Son Hoa, Chuprong, Krong Ana	591,000	ICB	no	Yes	Prior	May-08
PC3-110-P1-G06	Steel Towers for 110 kV system of Chan May, Duy Xuyen, Son Hoa, Chuprong, Krong Ana	826,375	ICB	no	Yes	Prior	May-08
PC3-110-P1-G07	Optical Cable for 110 kV system of Chan May, Duy Xuyen, Son Hoa, Chuprong, Krong Ana	402,813	ICB	no	Yes	Prior	May-08
PC3-110-P1-G08	SCADA for 110 kV system of Chan May, Duy Xuyen, Son Hoa, Chuprong, Krong Ana	821,000	ICB	no	Yes	Prior	May-08
PC3-MV-QT-G01	Conductors for MV system of Quang Tri	506,560	ICB	no	Yes	Prior	Jul-08
PC3-MV-QT-G03	Transformers for MV system of Quang Tri	319,579	ICB	no	Yes	Prior	Jul-08
PC3-MV-BD-G01	Conductors for MV system of Binh Dinh	1,204,847	ICB	no	Yes	Prior	Jul-08
PC3-MV-BD-G02	Insulators for MV system of Binh Dinh	642,863	ICB	no	Yes	Prior	Jul-08
PC3-MV-BD-G03	Transformers for MV system of Binh Dinh	894,479	ICB	no	Yes	Prior	Jul-08
PC3-MV-BD-G05	Distribution Boards for MV system of Binh Dinh	203,625	ICB	no	Yes	Prior	Jul-08
HD-TT-G-01	Transformers for 110 kV Tien Trung SS	700,000	ICB	No	Yes	Prior	May-08
HD-TT-G-02	Other electrical Equipments for 110 kV Tien Trung SS	880,000	ICB	No	Yes	Prior	May-08
HD- MV- G-01	Transformers for MV systems of Hai Duong	300,000	ICB	No	Yes	Prior	May-08
HD- MV- G-02	Other electrical Equipments for MV systems of Hai Duong	200,000	ICB	No	Yes	Prior	May-08
DN-110/MV-G-01-Lot 1	110 kV Transformer for Cam My	560,506	ICB	No	Yes	Prior	May-08
DN-110/MV-G-01-Lot 2	110 kV Transformer for Dau Day Substation	613,968	ICB	No	Yes	Prior	May-08
DN-110/MV-G-01-Lot 3	Transformers for MV systems of Dong Nai	227,843	ICB	No	Yes	Prior	May-08
DN-110/MV-G-02-Lot 1	Electrical Equipments and Materials for 110 kV Cam My substation	644,159	ICB	No	Yes	Prior	May-08
DN-110/MV-G-02-Lot 2	Electrical Equipments and Materials for 110 kV Dau Day substation	727,758	ICB	No	Yes	Prior	May-08
DN-110/MV-G-02-Lot 3	Electrical Equipments and Materials for rehabilitation of Dong Nai MV kV system	32,881	ICB	No	Yes	Prior	May-08
DN-110/MV-G-03-Lot 1	Conductors for Xuan Loc Cam My T/L	348,768	ICB	No	Yes	Prior	May-08
DN-110/MV-G-03-Lot 2	Conductors for Dau day T/L	94,028	ICB	No	Yes	Prior	May-08
DN-110/MV-G-03-Lot 3	Conductors for rehabilitation of MV systems of Dong Nai	772,722	ICB	No	Yes	Prior	May-08
DN-110/MV-G-04-Lot 1	Steel Tower for Xuan Loc Cam My T/L	389,380	ICB	No	Yes	Prior	May-08
DN-110/MV-G-04-Lot 2	Steel Tower for Dau day T/L	164,046	ICB	No	Yes	Prior	May-08
HP-110-DH/LB- G01	Conductors for 110 kV Dong Hoa Long Boi T/L	746,304	ICB	No	Yes	Prior	Jul-08
HP-110-DH/LB- G03	Optic Cable and fittings for 110 kV Dong Hoa Long Boi T/L	161,358	ICB	No	Yes	Prior	Jul-08
HP-110-DH/LB- G04	Steel Tower for 110 kV Dong Hoa Long Boi T/L	1,927,740	ICB	No	Yes	Prior	Jul-08
HP-110-DH/LB- G05	Auxiliary electrical equipments for 110 kV Dong Hoa Long Boi T/L	262,591	ICB	No	Yes	Prior	Jul-08
HP-110-CR/CB- G01	Conductors for 110 kV Cho Roc Cat Ba T/L	256,893	ICB	No	Yes	Prior	Jul-08
HP-110-CR/CB- G03	Optic Cable and fittings for 110 kV Cho Roc Cat Ba T/L	262,468	ICB	No	Yes	Prior	Jul-08

Ref. No.	Contract (Description)	Estimated Cost (US$)	Procurement Method	Prequalification (yes/no)	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date
HP-110-CR/CB- G04	Steel Tower for 110 kV Cho Roc Cat Ba T/L	1,802,688	ICB	No	Yes	Prior	Jul-08

2. Consulting Services

(a) List of consulting assignments with short-list of international firms. Some contracts may be split into smaller ones if PCs' needs cannot be coordinated.

Ref No	Description	Estimated Cost	Selection Method	Review	Expected Proposal Submission Date	Comments
1	Support for improved financial management practices	600,000	QCBS	Prior	January 2009	
2	Development of load research program and market forecasting	450,000	QCBS	Prior	January 2009	
3	Studies on National Technical Standards	80,000	IC	Prior	September 2008	One study for whole country
4	Network planning studies for each PC	250,000	QCBS	Prior	March 2009	
5	Performance monitoring and reporting development and system implementation	300,000	QCBS	Prior	June 2009	
6	Support for establishing power purchasing arrangements	250,000	QCBS	Prior	June 2009	
7	Preparation for equitization, including prospectus - PC1	80,000	CQS	Post	tbd	Depends on GoV timetable for equitization
8	Preparation for equitization, including prospectus - PC2	80,000	CQS	Post	tbd	Depends on GoV timetable for equitization
9	Preparation for equitization, including prospectus - PC3	80,000	CQS	Post	tbd	Depends on GoV timetable for equitization
10	Reform advisor for each PC	150,000	IC	Prior	September 2008	May be split into three contracts

Annex 9: Economic and Financial Analysis

VIETNAM: Rural Distribution Project

1. Two sets of analysis have been undertaken during the preparation of the project: (i) economic and financial analysis of investment components and proposed for financing; and (ii) a review of the financial status of EVN and the participating PCs which are the beneficiaries of the project. The findings are reported in separate sections.

Economic and Financial Analysis of Investment Components

A. Project Economic Analysis:

Method

2. The economic analysis for the project components are carried out using two scenarios: (i) with the project; and (ii) without the project. The 'with' project scenario will be the investment in the rural networks resulting in: (i) increase the power supply to the LV retail systems; (ii) reduction in the LV system of losses from 23-34 percent at present to about 11-20 percent after improvements and reductions in the MV systems to 3.5 – 7 percent; and (iii) improvement of the supply quality of power, so that rural customers can use it for production, and avoid spending on quality improvement devices, such as voltage stabilizers or standby diesel units. The 'without' project scenario will mean doing nothing; there would be no investment for the rehabilitation and expansion of the MV networks, and the situation of the existing distribution system would further deteriorate resulting in: (i) further overloading the MV systems; (ii) increased losses; (iii) rural consumers would not use grid power for productive uses due to major voltage fluctuations; and (iv) there would be no opportunity for new connections of households for either domestic or production uses.

3. The economic analysis was done for each subproject, using cost–benefit methodology. For the estimation of the economic indicators, namely EIRR and NPV, the following assumptions were made: (i) all the costs are expressed in constant 2007 prices, making no adjustment for shadow exchange rate or shadow wage rate; (ii) the capital investment costs for the first phase are considered over 2008-2011, and analyses are made over a project economic life of 20 years (2008-2028); (iii) the cost for compensation, land acquisition and environmental mitigation are included in the economic cost of the project; (iv) the operation and maintenance costs are estimated at 2 percent of the investment costs; (v) the input energy bought to the project is estimated to cost 6.0 cents/kWh at LV and 4.5 cents/kWh at MV; and (vi) EIRR of the project component is the discount rate at which the present value of the costs and benefits streams are equal, and the NPV is based on a discount rate of 10 percent, which is approximately the opportunity cost of capital in Vietnam.

4. Given the nature of the subprojects - rehabilitation and expansion of MV distribution networks in rural areas - existing and newly connected consumers will benefit. The benefits will come from: (i) incremental sales; (ii) reduction of losses, the economic value of which are 5.5 cents/kWh; and (iii) increase the reliability of the supply, reflecting through the reduction of the

outage time where outages are estimated to cost 6 cents/kWh. The demand forecast is based on the following factors in areas that the subproject will serve: (i) historical consumption, with the consideration of the suppressed demand due to constraints of the existing system; and (ii) economic development indicated by forecast GDP.

Switching Values and Sensitivity Analysis

5. In each subproject, the demand forecasts and the cost are the most important variables. The switching values that is the percentage increase in cost or decrease in demand variables at which the economic NPV becomes zero, were calculated for each subproject. The results of these analyses are presented in Table A9.1.

Table A9.1: Individual Subprojects' Economic Performance

	NPV@10 percent ($ million)	EIRR (percent)	Switching value of cost increases	Switching value of demand reductions
Power Company 1 (PC1)				
110 kV Transmission line Son Tay - Pho Vang	3.51	18.5 %	166.4 %	69.2 %
110 kV Transmission line Thanh Nong - Kim Boi	0.15	10.2 %	101.6 %	93.3 %
Thai Binh MV subproject	1.58	20.5 %	126.7 %	30.6 %
Bac Giang MV subproject	1.10	21.8 %	173.0 %	28.5 %
Nam Dinh MV subproject	5.80	27.6 %	221.1 %	83.5 %
Vinh Phuc MV subproject	2.05	23.3 %	188.1 %	26.6 %
Thanh Hoa MV subproject	1.48	15.7 %	133.3 %	61.9 %
Power Company 2 (PC2)				
Ben Tre MV subproject	2.22	20.0 %	165.5 %	29.1 %
Binh Duong MV subproject	2.01	23.5 %	207.7 %	30.0 %
Ba Ria - Vung Tau MV subproject	0.20	13.1 %	121.4 %	90.5 %
Dong Thap MV subproject	0.33	15.8 %	138.0 %	78.3 %
Vinh Long MV subproject	0.29	15.5 %	137.7 %	95.5 %
Power Company 3 (PC3)				
110 kV Substation Krong Ana	1.70	17.9 %	155.0 %	14.5 %
110 kV Substation Chan May	2.90	19.1 %	178.1 %	81.6 %
110 kV Substation Duy Xuyen	2.46	19.1 %	172.5 %	76.6 %
110 kV Substation Son Hoa	2.08	17.1 %	153.7 %	68.0 %
110 kV Substation Chu Prong	3.32	17.7 %	163.8 %	79.4 %
Quang Tri MV subproject	0.74	13.1 %	118.0 %	49.4 %
Binh Dinh MV subproject	15.30	29.7 %	236.9 %	75.9 %
PC Hai Phong				
110 kV Transmission line Cho Roc - Cat Ba	0.81	11.5 %	111.5 %	80.9 %

	NPV@10 percent ($ million)	EIRR (percent)	Switching value of cost increases	Switching value of demand reductions
110 kV Transmission line Dong Hoa - Long Boi	4.24	17.5 %	145.2 %	71.9 %
PC Hai Duong				
110 kV Substation Tien Trung	1.96	21.2 %	173.7 %	16.0 %
Hai Duong MV subproject	1.37	21.9 %	180.8 %	13.9 %
PC Dong Nai				
Cam My 110 kV substation	1.88	15.9 %	147.7 %	66.7 %
Dau Day 110 kV substation	2.06	20.1 %	170.5 %	18.0 %
Dong Nai MV subproject	1.06	16.4 %	148.4 %	35.4 %
PC1	16.61	18.0 %		
PC2	4.84	19.1 %		
PC3	28.63	21.2 %		
PC Hai Phong	5.04	14.6 %		
PC Hai Duong	3.29	21.5 %		
PC Dong Nai	6.06	18.6 %		
All first phase projects	**64.47**	**18.9 %**	**113.1 %**	**88.4 %**

6. In addition, a combined sensitivity analysis for all first phase subprojects was carried out for some key parameters, under pessimistic assumptions. The following scenarios have been assumed in the sensitivity analysis: (i) costs increase by 10 percent; (ii) demand decrease by 10 percent; and (iii) the worst case when costs increase by 10 percent together with a demand decrease of 10 percent. The results of this analysis are presented in Table A9.2.

Table A9.2: Sensitivity Analysis on Key Variables in Economic Performance

	Unit	Base Case	Cost increase 10 percent	Demand decrease 10 percent	Combined
EIRR	percent	18	11	10	0
NPV	$ Million	55.22	3.76	-1.763	-53.22
PV Costs	$ Million	514.59	566.05	514.59	566.05
PV Benefits	$ Million	569.81	569.81	512.83	512.83

Results

7. The results show that most subprojects are robust to increases in costs of over 20 percent and decreases in demand of over ten percent. Five subprojects stand out as exceptions. Although these projects are sensitive to substantial changes in costs, it was decided to retain them in the project because they are economically efficient; in addition they include a 10 percent physical contingency and five percent price contingency, giving them some protection against adverse cost movements. In addition, some of them have substantial non-economic benefits, for

example the environmental aspects of the Cho Roc to Cat Ba 110kV transmission line (which is close to a nature reserve) is likely to be more closely supervised if it is IDA financed.

8. PCs will maintain the subprojects under review, and in the event that any becomes unfeasible, it may be dropped from the project at the discretion of the PC.

B. Project Financial Analysis:

Method

9. A financial analysis of the Phase I package of the project from the participating Power Companies' perspective was undertaken by valuing incremental revenues and costs at the prevailing regulated tariffs in rural areas. The real tariff is assumed to remain constant throughout the forecast period while incorporating changes in the composition of total demand served. The estimated levels are VND 620/kWh for residential use, and VND 880/kWh for production, commercial, and irrigation use at the end outlet of the 22/35 kV substation, and of VND 580/kWh at the output of 110kV substations. The following cost assumptions are made: (i) capital costs are baseline costs plus physical and price contingencies; (ii) power purchase prices at the beginning point of 110 kV and 22/35 kV distribution system are estimated based on an average current purchase price of PCs in Vietnam in addition to estimated PCs' losses to the point; power purchase prices are assumed to remain constant throughout the forecast period; (iii) operating and maintenance (O&M) costs for MV lines are estimated at 1.5 - 2 percent of investment costs; (iv) transmission and distribution losses are estimated at 3.5 – 7 percent for MV networks after project implementation; (v) foreign costs are converted to VND at the rate of 16,000 to the US dollar, assuming all investments will be implemented during the first year; (vi) local inflation is estimated at 10 percent; and (vii) average cost of capital to the PCs is 1.6 percent for rural electrification projects, made up from 25 percent of equity at the prevailing rate of return on equity in EVN of 3.4 percent in 2006) and 75 percent debt at the rate at which the government on-lends IDA funds, which is 1 percent.

10. FIRR for the overall project under Phase I package is estimated at about 4.1 percent. The detailed results by subproject are presented in the table below and range from 1.6 percent to 6.8 percent. The value of net financial benefits is significantly less than that of economic benefits because of subsidized retail tariffs and bulk supply tariffs for rural areas and because improvements in efficiency in the LV system does not benefit the PCs directly. Currently, sales tariffs from PCs to LDUs for rural networks are regulated at a subsidized level. The regulated low supply tariffs from PCs result in low financial returns for PCs' investments on MV lines. However, the current customer and tariff structure enables PCs to cross-subsidize rural residential and agricultural consumers with industrial and commercial consumers maintaining robust demand and PCs are expected to absorb the financial burden of capital investment in rural distribution networks.

Sensitivity and Switching Values

11. In addition, the switching values, that is the percentage increase in cost or decrease in demand variables at which the Financial NPV of the project becomes zero was calculated. This

is of importance to the PCs, to ensure that they do not commit themselves to an investment program which bears substantial risks of losses. The findings are presented in Table A9.3

Table A9.3: Individual Subprojects' Financial Performance

	NPV@ 1.6 percent ($ million)	FIRR percent	Switching value of Cost	Switching value of demand
Power Company 1 (PC1)				
110 kV Transmission line Son Tay - Pho Vang	2.89	5.7 %	137.6 %	73.8 %
110 kV Transmission line Thanh Nong - Kim Boi	0.25	1.8 %	101.8 %	90.0 %
Thai Binh MV subproject	0.98	5.0 %	128.2 %	71.1 %
Bac Giang MV subproject	0.32	3.2 %	113.4 %	80.3 %
Nam Dinh MV subproject	0.90	3.2 %	112.8 %	82.0 %
Vinh Phuc MV subproject	0.06	1.8 %	101.8 %	83.8 %
Thanh Hoa MV subproject	0.14	1.8 %	101.9 %	97.7 %
Power Company 2 (PC2)				
Ben Tre MV subproject	1.16	4.1 %	120.0 %	43.8 %
Binh Duong MV subproject	1.01	5.3 %	133.1 %	40.9 %
Ba Ria - Vung Tau MV subproject	0.80	6.8 %	152.0 %	43.1 %
Dong Thap MV subproject	0.44	5.2 %	131.3 %	44.2 %
Vinh Long MV subproject	0.20	3.4 %	115.6 %	65.5 %
Power Company 3 (PC3)				
110 kV Substation Krong Ana	0.43	2.7 %	109.5 %	75.7 %
110 kV Substation Chan May	1.09	3.5 %	118.8 %	92.9 %
110 kV Substation Duy Xuyen	0.73	3.1 %	113.7 %	93.8 %
110 kV Substation Son Hoa	1.34	4.1 %	122.8 %	64.6 %
110 kV Substation Chu Prong	1.41	3.4 %	117.3 %	92.3 %
Quang Tri MV subproject	2.67	6.3 %	141.1 %	49.7 %
Binh Dinh MV subproject	7.77	6.0 %	144.8 %	63.5 %
PC Hai Phong				
110 kV Transmission line Cho Roc - Cat Ba	2.97	4.5 %	130.4 %	58.9 %
110 kV Transmission line Dong Hoa - Long Boi	1.49	2.8 %	111.9 %	80.6 %
PC Hai Duong				
110 kV Substation Tien Trung	0.47	3.2 %	112.0 %	66.3 %
Hai Duong MV subproject	0.29	3.0 %	111.5 %	46.3 %
PC Dong Nai				
Cam My 110 kV substation	1.91	4.7 %	130.7 %	66.0 %
Dau Day 110 kV substation	2.16	7.4 %	153.4 %	28.8 %
Dong Nai MV subproject	0.48	3.3 %	115.6 %	64.9 %

	NPV@ 1.6 percent ($ million)	FIRR percent	Switching value of Cost	Switching value of demand
PC1	6.79	3.4 %		
PC2	3.04	4.5 %		
PC3	14.28	4.4 %		
PC Hai Phong	4.46	3.6 %		
PC Hai Duong	0.68	3.0 %		
PC Dong Nai	4.99	5.5 %		
All first phase projects	**34.25**	**4.0 %**		

12. A combined sensitivity analysis for the whole project was also carried out for the same key parameters, under pessimistic assumptions. In this project, the demand forecasts and the cost of the project are the most important variables. The following scenarios have been assumed in the sensitivity analysis: (i) costs increase by 10 percent, (ii) demand decrease by 10 percent, and (iii) the worst case when costs increase by 10 percent together with a demand decrease of 10 percent.

13. The combined results are shown in Table A9.4

Table A9.4: Sensitivity Analysis on Key Variables in Financial Performance

	Unit	Base Case	Cost increase 10 percent	Benefits decrease 10 percent	Combined
FIRR	percent	4	0	0	0
NPV	$ Million	34.25	-83.58	-79.23	-119.23
PV Costs	$ Million	400.04	440.04	400.04	440.04
PV Revenues	$ Million	356.46	356.46	320.81	320.81

Results

14. The results show that each PC has an incentive to carry out the subprojects within its area, but that several subprojects are close to being financially unviable and are sensitive to changes in cost and demand or both. Notwithstanding this sensitivity, and possible risk to the investment, the participating PCs have elected to retain the projects and have the option to drop them if they appear to be unprofitable. They consider that these subprojects should be included because (a) the costs on which the financial rates of return are calculated include a ten percent physical contingency and a five percent price contingency. Hence each subproject has a 15 percent cushion within it; and (b) under Vietnamese regulations, at the procurement stage, if costs are higher than the original estimate, the PCs are obliged to get the costs re-approved. This will be an opportunity to reassess project viability.

C. Financial Assessment of EVN and PCs

1. Financial Performance of EVN

15. Revenue & Tariffs. Driven by Vietnam's rapidly developing economy, EVN experienced strong growth in both sales and revenues over the 2001 – 2006 period. Sales doubled over this period, equivalent to an average annual rate of almost 15 percent, from 25.8 TWh to 51.3 TWh. Growth in revenue from electricity sales was even greater, more than doubling over this same period, from US$1.26 billion to US$2.57 billion. This higher rate of revenue growth was due to a 15 percent tariff increase in 2002, as well as to a shift in the customer mix toward the commercial and industrial groups, which pay higher tariffs. Tariffs were again increased in January 2007, by 8 percent, which brought the average retail tariff to VND 842/kWh (5.3¢/kWh).

Table A9.1: EVN - Financial Summary (VND billions)

	2001	2002	2003	2004	2005	2006
A. Financial Results						
Net Revenue	19,210	23,566	30,246	34,530	37,274	43,766
Net Profit	999	1,672	1,828	3,331	2,839	1,692
Capital Expenditures	9,219	9,930	13,348	16,298	18,741	20,906
Long-Term Debt	28,222	34,287	42,128	48,532	53,705	68,510
Net Cash Flow	960	3,139	2,062	(623)	(2,792)	2,944
Cash Balance	7,653	10,792	12,855	12,232	9,440	12,385
B. Key Financial Indicators						
Operating Margin as % Net Sales	10.1%	12.4%	21.2%	16.9%	7.1%	8.0%
Return on Equity (%)	3.5%	5.3%	5.2%	8.6%	6.5%	3.4%
Current Ratio	1.5	1.9	1.9	1.9	1.5	1.7
C. Covenant Compliance						
DSCR (at least 1.5)	1.9	3.6	5.3	3.6	2.2	2.1
SFR (at least 25%)	100%	53%	80%	54%	37%	26%
DER (not greater than 70:30)	50:50	50:50	53:47	54:46	53:47	56:44

DSCR - Debt Service Coverage Ratio SFR - Self-Financing Ratio DER - Debt Equity Ratio

16. Profitability. EVN has been profitable over the entire 2001 – 2006 period. However, with no tariff increase between October 2002 and January 2007, inflation has eroded EVN's profitability over the past two years (Table A9.1). Net profit increased from US$72 million in 2001 to US$217 million in 2004, before dropping to US$179 million in 2005 and then to US$106 million in 2006. The operating margin on net sales declined sharply, from its peak of 21.2 percent in 2003 to only 8.0 percent in 2006. EVN's return on equity (ROE) was only 3.4 percent in 2006, down from 8.6 percent in 2004.

17. Capital Investments. To meet the rapid growth in demand, EVN has had to increase its annual investments in new and expanded facilities significantly. Between 2001 and 2006, EVN's capital investments totaled US$5.85 billion. Over this period, annual expenditures

doubled, from US$660 million in 2001 to US$1.31 billion in 2006. EVN's own internal cash generation has funded about 40 percent of these investments but its capacity for such self-financing has weakened as capital expenditures have increased and profitability declined. As a result, EVN has been increasingly dependent on long-term debt to fund its investment program. Between the end of 2001 and 2006, EVN's total debt more than doubled, from US$2.03 billion to US$4.36 billion.

18. Covenant Compliance. Despite its weaker financial performance and the impact of much greater capital expenditures, both the shorter term liquidity position and longer-term capital structure of EVN have remained satisfactory. EVN has continued to meet the covenanted financial ratios: self financing ratio (SFR) of 25 percent or more; debt service coverage ratio (DSCR) of 1.5 times or more and debt:equity ratio of no more than 70:30 required under existing project legal agreements with IDA (see Table A9.1).

2. Financial Performance of PCs

19. Profitability. The six participating PCs are wholly-owned subsidiaries of EVN, responsible for electricity distribution within their respective operating jurisdictions. The PCs own and operate distribution networks at 110 kV and below and are treated as independent accounting units. While PCs 1, 2 and 3 have long operating histories, PCs Hai Phong, Dong Nai, and Hai Duong were established more recently to be responsible for areas previously within the jurisdiction of PCs 1, 2 and 3. PCs Hai Phong and Dong Nai were both established in 1999, while PC Hai Duong was established in 2005. EVN manages the financial performance of the PCs through their purchases of bulk power from EVN. Reflecting the trend in EVN's overall financial performance, the profitability of the PCs has generally weakened over the past 2 – 3 years (Table A9.2). On the basis of International Accounting System (IAS), three of the six PCs actually incurred small net losses in 2006. Based on the Vietnamese Accounting Standards (VAS) which EVN and the PCs use for domestic reporting purposes, all of the PCs earned net profits in 2006, albeit at lower levels than in 2004 and 2005.

20. Covenant Compliance. Four of the six participating PCs, PC1, PC2, PC3, PC Dong Nai, have participated in previous or ongoing IDA funded projects under which the same covenants for SFR, DSCR and debt:equity have been agreed with the PCs. All four of the PCs have met these requirements over the entire 2001 – 2006 period (Table A9.2). PC Hai Phong and PC Hai Duong would have also met these requirements had they been applied to them. In a number of cases, the margin of compliance is very wide. Compared to EVN as a whole, the PCs' capital investment programs have been smaller relative to their revenue and asset bases. As a result, over the past five years, most of the PCs have maintained high SFRs and DSCRs. With relatively less borrowing, debt levels have also been low relative to equity. However, as the PCs have begun implementing their own progressively increasing capital investment programs, there has been some weakening in these indicators.

Table A9.2: Power Companies - Financial Summary (VND billions, IFRS basis)

	2001	2002	2003	2004	2005	2006
1. Power Company 1						
A. Financial Results						
Net Revenue	4,073	4,840	6,231	7,034	7,138	8,274
Net Profit	82	52	132	68	128	(104)
Capital Expenditures	955	593	635	909	1,614	1,206
Long-Term Debt	1,332	1,708	2,037	2,450	2,510	2,868
Net Cash Flow	159	157	48	78	(10)	(35)
Cash Balance	583	740	789	866	856	821
B. Key Financial Indicators						
Operating Margin as % Net Sales	4.5%	4.1%	3.6%	2.8%	2.8%	-0.2%
Return on Equity (%)	-	1.7%	3.5%	1.5%	2.6%	-2.0%
Current Ratio	0.7	0.6	0.7	0.7	0.7	0.7
DSCR (at least 1.5)	1.7	2.8	6.9	3.9	3.8	3.1
SFR (at least 25%)	-	118%	130%	90%	79%	32%
DER (not greater than 70:30)	33:67	34:66	33:67	34:66	33:67	36:64
2. Power Company 2						
A. Financial Results						
Net Revenue	3,503	4,483	6,065	7,207	8,257	9,841
Net Profit	207	209	225	211	78	(45)
Capital Expenditures	337	668	1,216	1,273	659	681
Long-Term Debt	957	1,249	1,499	1,815	1,956	2,128
Net Cash Flow	58	135	38	132	274	240
Cash Balance	335	470	508	639	994	1,234
B. Key Financial Indicators						
Operating Margin as % Net Sales	6.2%	4.7%	3.7%	3.3%	1.7%	0.5%
Return on Equity (%)	-	8.6%	7.1%	5.5%	1.9%	-1.0%
Current Ratio	1.3	1.4	1.2	0.9	0.9	1.0
DSCR (at least 1.5)	5.0	17.6	17.1	5.5	5.8	5.9
SFR (at least 25%)	-	64%	81%	118%	142%	91%
DER (not greater than 70:30)	31:69	32:68	29:71	31:69	31:69	31:69
3. Power Company 3						
A. Financial Results						
Net Revenue	1,812	2,202	2,799	3,179	3,568	3,588
Net Profit	66	58	42	29	111	(58)
Capital Expenditures	376	755	756	576	839	573
Long-Term Debt	601	1,130	1,624	1,955	1,983	2,136
Net Cash Flow	96	62	122	126	243	178
Cash Balance	357	419	541	667	909	1,088
B. Key Financial Indicators						
Operating Margin as % Net Sales	6.1%	5.4%	4.9%	3.4%	3.3%	0.9%
Return on Equity (%)	-	3.4%	2.2%	1.4%	4.5%	-2.2%
Current Ratio	1.7	1.5	1.4	1.4	1.3	1.3
DSCR (at least 1.5)	5.6	6.6	7.6	4.9	4.6	2.3
SFR (at least 25%)	-	45%	52%	51%	109%	33%
DER (not greater than 70:30)	28:72	38:62	45:55	47:53	42:58	44:56

Table A9.2 continued: Power Companies - Financial Summary (VND billions, IFRS basis)

	2001	2002	2003	2004	2005	2006
4. Power Company Hai Phong						
A. Financial Results						
Net Revenue	637	754	893	967	1,063	1,253
Net Profit	15	18	15	10	6	6
Capital Expenditures	21	25	25	36	63	120
Long-Term Debt	21	43	44	55	60	132
Net Cash Flow	17	0	3	(3)	11	132
Cash Balance	91	91	94	90	102	235
B. Key Financial Indicators						
Operating Margin as % Net Sales	3.7%	3.4%	2.5%	1.4%	0.8%	0.4%
Return on Equity (%)	-	8.1%	6.2%	3.7%	2.0%	1.9%
Current Ratio	2.5	1.7	0.6	0.7	0.7	0.8
DSCR (at least 1.5)	7.4	23.0	5.2	4.9	4.6	2.1
SFR (at least 25%)	-	328%	1021%	256%	170%	138%
DER (not greater than 70:30)	10:90	15:85	15:85	15:85	17:83	30:70
5. Power Company Hai Duong						
A. Financial Results						
Net Revenue	-	-	-	-	667	828
Net Profit	-	-	-	-	15	21
Capital Expenditures	-	-	-	-	1	13
Long-Term Debt	-	-	-	-	23	41
Net Cash Flow	-	-	-	-	29	(6)
Cash Balance	-	-	-	-	42	35
B. Key Financial Indicators						
Operating Margin as % Net Sales	-	-	-	-	3.2%	3.5%
Return on Equity (%)	-	-	-	-	-	16.0%
Current Ratio	-	-	-	-	0.7	0.4
DSCR (at least 1.5)	-	-	-	-	30.5	30.4
SFR (at least 25%)	-	-	-	-	-	206%
DER (not greater than 70:30)	-	-	-	-	15:85	23:77
6. Power Company Dong Nai						
A. Financial Results						
Net Revenue	-	-	1,713	2,120	2,538	2,999
Net Profit	-	-	35	43	41	22
Capital Expenditures	-	-	56	100	154	97
Long-Term Debt	-	-	304	102	154	158
Net Cash Flow	-	-	29	(2)	(38)	13
Cash Balance	-	-	140	138	101	114
B. Key Financial Indicators						
Operating Margin as % Net Sales	-	-	3.3%	3.3%	2.5%	1.6%
Return on Equity (%)	-	-	-	11.0%	8.9%	4.4%
Current Ratio	-	-	2.3	0.6	0.7	0.5
DSCR (at least 1.5)	-	-	14.2	8.7	5.2	3.5
SFR (at least 25%)	-	-	280%	402%	82%	178%
DER (not greater than 70:30)	-	-	45:55	19:81	24:76	23:77

DSCR - Debt Service Coverage Ratio SFR - Self-Financing Ratio DER - Debt Equity Ratio

3. Key Financial Issues

21. Power Development Plan and Financing. The major challenge facing the power sector is to fund the very significant investments in the generation, transmission and distribution systems needed to meet the demands of Vietnam's rapidly growing economy. Annual capital expenditures doubled over the past six years and under the recently approved Power Master Development Plan 6 (PMDP6), are set to triple over the next five years. To achieve such large increases, EVN has significantly expanded and diversified its funding sources in line with developments in Vietnam's financial markets. ODA, which provided the first significant non-GoV source of funds, have been supplemented with a rapid increase in commercial bank debt, both domestic and foreign. EVN then began accessing the domestic bond market with an initial issue equivalent to about US$13 million in 2005. This was then followed by a series of domestic bond issues totaling almost US$380 million equivalent in 2006. EVN and the Government are presently considering an overseas bond offering, possibly in 2008.

22. The scale of investment required is so significant that the Government has also opened the sector to equity investment from non-state sources. Equitization, the process of converting EVN business units to joint stock companies with subsequent sale of shares to the public, has so far been successful in attracting investment into 20 EVN subsidiaries and associate companies. The proceeds to EVN from such sales totaled US$94 million in 2005 and 2006. Over the next five years, the Government and EVN plan to equitize 44 additional business units, which include most of the PCs and generation facilities. The projected proceeds from these equitizations total almost US$2.9 billion. In addition to equitization, the need for new generation capacity is being met in part by independent power producers and through joint ventures between EVN and other investors, both in the state and non-state sectors.

23. Bulk Power Tariffs. Given the requirement for retail tariffs to be uniform nationally, regardless of regional differences in the cost base and customer mix, bulk pricing is negotiated within EVN in an effort to maintain the financial viability of each PC. The price of power takes account of different costs of supply of the PCs to its customers. The bulk supply tariff as this is known, is thus a cross subsidy mechanism and also a means by which the EVN is able to maintain the PCs' profitability within a fairly narrow band. This is untransparent and does not provide adequate incentives to the PCs to improve cost control and productivity. Furthermore, it is not consistent with the planned transition of the PCs into independent financial and operating entities as part of the Government's equitization program.

24. Consumer Tariffs. The Government sets retail electricity tariffs which are uniform across the country. As result, the tariff structure incorporates various cross-subsidies between customer groups and regions. Tariff adjustments were implemented August 1994, June 1995, April 1996, May 1997, October 1999, October 2002, and January 2007. This most recent increase, which brought the average tariff from 4.9¢/kWh to 5.3¢/kWh, is sufficient to enable the recovery of current operating costs and provide a contribution to capital investments. The next scheduled adjustment is a 5.7 percent increase to be implemented in July 2008. With domestic inflation currently around 20 percent, and increasing international prices for fuel and other inputs, further adjustments in tariff levels are likely to be required over the next 1 – 2 years. Furthermore, the

very significant capital investment program planned for the sector will ultimately need to be funded from tariff revenues. As a result, further tariff increases will be required over the next five years.

25. Prime Minister's Decision 276 of 2006 announces reforms in the way consumer tariffs are to be set. From January 1, 2010, tariffs are to be unbundled. Generation charges will be determined based on the cost of power purchased by the Single Buyer. Transmission and distribution charges will be regulated with the Electricity Regulatory Authority of Vietnam (ERAV) taking the lead. The government has indicated its intention to move to performance-based rate making (PBR), giving greater autonomy to the PCs to control their financial performance. Tariff methodologies are now being determined and are expected to be applied when the next round of tariff increases is determined. Based on required levels of operating and capital expenditures, service standards and other parameters including, probably, the rate of return on investment, an allowable distribution tariff will be established. The PCs will have sufficient autonomy and incentive to reduce costs and improve efficiencies to ensure that they remain in good financial health while meeting the required standards. Expectations of future financial performance and covenanting them must thus be coordinated with the PBR methodology.

4. Projecting Financial Performance

26. Financial projections for EVN and the six PCs participating in the Rural Distribution Project have been prepared for the 2007 – 2015 period using the Independent Creditors Model (ICM), a financial model developed jointly by EVN, its consultants and EVN's main international creditors, IDA, ADB and JBIC. Originally developed in 2003 – 2004, the ICM has been extensively revised to incorporate EVN's equitization program, changes in VAS, and PMDP6. The EVN projections are prepared on a consolidated basis, meaning that they incorporate its internal business units and all subsidiary companies in which EVN holds a majority share. The separate projections prepared for each of the PCs include only the business activities of these PCs.

27. Key Assumptions. The main inputs and assumptions underlying the financial projections for EVN and the PCs are summarized as follows:

(a) Demand & Generation. Projected power demand and generation are based on the PMDP6 growth scenario approved by the Prime Minister under Decision 110 of July 2007. Under this scenario, the average annual rate of growth in generation is 18 percent between 2007 and 2015.

(b) Capital Investments. The capital investment plan is that required to meet the approved demand growth scenario. Over the entire 2007 – 2015 period, capital investments by EVN and its equitized subsidiaries are projected to total US$45.6 billion.

(c) Equitization. The projections incorporate the Government's most recent equitization plan for EVN under which 44 business units would be partially sold to investors over the 2007 – 2011 period. The projected proceeds of these sales, estimated by EVN at US$2.9 billion, are shown as cash inflows to EVN while the book value of the equity sold is recorded as minority interest.

(d) Retail Tariffs. Retail tariffs are set at levels needed to enable EVN and its PCs to achieve adequate financial performance over the forecast period and meet the project financial covenants.

(e) Bulk Tariffs. For the purposes of the financial projections, it is assumed that the existing mechanism for the setting of bulk tariffs for the PCs is maintained over the entire forecast period. Although changes in the bulk pricing mechanism will be implemented by 2010, information regarding the specifics of such changes and their timing are not yet available. It is assumed that increases in the bulk tariff are implemented to coincide with increases in retail tariffs. However, given the relatively greater requirement to fund investments in generation, the increases in the bulk tariff are assumed to be somewhat greater than those for retail tariffs.

(f) EVN is assumed to remain a single entity for the purposes of the financial projections. Although it is likely that EVN will through equitization and reform reduce its ownership certain of its subsidiaries during the projected period, the exact nature of the changes of ownership is not known. The projections are nonetheless useful to give a picture of the bulk of the power sector, even if parts of it may be under different ownership.

28. Financial Covenants. The financial covenants set for EVN and the PCs under existing project legal agreements with IDA will be maintained for this project. These are: (i) achieve a SFR of at least 25 percent based on the annual average of capital expenditures incurred or to be incurred for the current year, the previous year, and the upcoming year; (ii) not incur any debt without IDA's agreement unless a reasonable forecast of revenues and expenditures indicate that the DSCR will be at least 1.5; and (iii) not incur any debt if after the incurrence of such debt, the debt:equity ratio is greater than 70:30. When the tariffs are unbundled in 2010, it may become desirable to revise the covenants so that they are better aligned with the basis on which the tariff is set.

5. Projected Financial Performance of EVN

29. Revenues & Expenses. With annual sales growth of 18 percent in combination with regular tariff increases, EVN's consolidated revenues are projected to increase more than six-fold between 2006 and 2015, from VND 43.7 trillion (US$2.7 billion) to VND 278 trillion (US$14.1 billion) (Table A9.3). Due to improved efficiency levels, the increase in operating expenses is projected to be somewhat lower, just over five-fold, thus improving the operating margin from 8 percent in 2006 to a peak of 21 percent in 2010. Much of the cash generated from this improved margin is allocated to the funding of the very large capital investment program and the associated debt service.

30. Profitability. Driven by sales growth and tariff increases, net profit is projected to increase rapidly, from VND 1.7 billion (US$106 million) in 2006 to VND 20.1 trillion (US$1.2 billion) in 2012. Beyond 2012, net profit is projected to be marginally lower but still within a satisfactory range. This reduction in net profit is due both to higher interest expense as well as the present assumption that capital investment levels are lower over this period. ROE also improves, from 3.4 percent in 2006 to a peak of 10.8 percent in 2010. However, this improvement is less significant when compared profitability prior to 2006, such as the 8.6 percent ROE in 2004.

31. Liquidity. Despite the very significant funding requirements of its capital investment program, the financial projections indicate that EVN will accumulate cash over the forecast period, particularly between 2013 and 2015. The accumulation over this later period is due in large part to capital expenditure levels, which are projected to peak in 2012 and then decline annually thereafter. However, these declining expenditures reflect the tentative nature of the long-term investment program over this period. As more definitive plans are developed and specific projects identified for implementation over this period, expenditure levels may not decline. Should actual expenditures be higher than presently assumed, the accumulation of cash will be more modest than projected.

32. The shorter-term liquidity position of EVN, as indicated by the current ratio, is projected to be at or just above those levels normally considered to be minimally acceptable. Over most of the forecast period, the current ratio is projected to range from 1.0 – 1.3. While the cash balance progressively increases, current liabilities also increase, particularly current portion of long-term debt as well as accounts payable. This increase largely offsets the cash accumulation which in turn keeps the current ratio low.

33. Projected Retail Tariffs. Beyond the upcoming 5.7 percent increase in the average tariff scheduled for July 2008, an additional increase of 6 percent is estimated to be required in mid-2009 followed by 5 percent increases in each of 2010 and 2011. This would bring the average tariff to VND 1,060/kWh (6.2¢/kWh) by the end of 2012, about 24 percent higher than the current level. Beginning in 2012, more modest increases of 3 percent - 4 percent are projected to be required every second year. In part, this is due to the present assumption of lower capital spending over the later part of the forecast period. Therefore, should actual capital expenditure requirements be higher than is presently assumed, there will be a need for more significant tariff increases.

34. In addition to future capital investment levels, the ability to limit tariff increases to the relatively modest levels projected is dependent on a number of other factors. The most of important of these is that the anticipated improvements in sector efficiency levels are actually achieved. Greater operating efficiencies should result from both economies of scale and the ongoing sector reforms. Therefore, should these efficiencies not materialize or be less significant than anticipated; increases in tariffs above those projected will be required. Another important factor is the equitization program, which EVN has estimated will generate US$2.9 billion over the 2007 – 2011 period. If these proceeds are realized, they would be sufficient to fund almost 15 percent of planned capital investments over this period, thus moderating the need for tariff increases. However, if actual equitization proceeds are lower or are delayed, more significant tariff increases will be required.

35. Covenant Compliance. EVN is projected to be able to meet the three main project financial covenants in each year over the forecast period (Table A9.3). The DSCR is projected to be at least 2.0 over the period between 2007 and 2012. As the capital investment program is progressively implemented, debt service increases, which causes the DSCR to decline marginally, to 1.8 – 1.9 over the last three years of the forecast period. However, it remains above the 1.5 minimum set under the covenant. EVN is also projected to meet the requirement

that the SFR be at least 25 percent, but the margin of compliance is narrow during those years in which capital expenditures are highest. In four of the nine forecast years, the SFR is projected to be less than 30 percent.

36. To fund its very large capital investment program, EVN's debt levels increase rapidly, from VND 69 trillion (US$4.4 billion) at the end of 2006 to VND 325 trillion (US$18.6 billion) by 2012 and then to VND 550 trillion (US$28.1 billion) by 2015. Although its capacity to service should remain satisfactory, debt levels increase relative to equity from 56:44 in 2006 to a peak level of 69:31 in 2015, just below the covenanted maximum of 70:30. Based on current assumptions regarding longer term capital expenditures, the ratio should then gradually decline. However, if these longer-term expenditure levels are higher than presently assumed, more significant tariff increases will need to be implemented so that an adequate balance between debt and equity can be maintained.

37. As the Government's sector reform program continues to be implemented, EVN's various business units will become increasingly financially autonomous. As a result, applying financial indicators to EVN on a consolidated basis, such as those presently covenanted, will become less relevant in terms of directly monitoring corporate performance. While they will continue to provide an indication of the overall financial viability and sustainability of the power sector, corporate performance will be increasingly need to be measured at the business unit level.

Table A9.3: EVN – Summary Financial Projections (VND billions, nominal prices)

	Actual	Projected								
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
A. Average Retail Tariff										
VND/kWh	795	860	884	936	988	1,037	1,078	1,094	1,094	1,138
US cents/kWh	5.0	5.3	5.5	5.9	6.2	6.2	6.2	6.0	5.8	5.8
B. Income Statements										
Net Revenue	43,766	55,339	66,920	82,937	104,063	130,391	162,346	193,365	228,562	277,813
Operating Expenses	40,286	48,843	58,750	66,442	78,520	96,608	118,032	142,138	176,252	217,236
Interest Expense	1,863	2,201	2,877	4,196	5,777	8,379	12,045	17,452	21,134	24,534
Other Expenses - Net	(76)	254	108	1,547	3,552	8,626	12,126	13,776	14,758	17,697
Net Profit	1,692	4,042	5,186	10,752	16,214	16,778	20,143	19,998	16,419	18,346
C. Balance Sheets										
Assets										
Current Assets	34,484	44,253	62,206	76,341	86,027	101,113	112,666	135,118	168,483	211,708
Non-Current Assets	103,072	120,464	163,358	214,349	271,588	362,991	464,205	552,262	614,383	649,329
Total Assets	137,556	164,716	225,564	290,689	357,615	464,104	576,872	687,380	782,866	861,037
Liabilities & Equity										
Liabilities	84,294	98,124	121,397	153,583	195,174	271,596	362,307	452,025	531,515	595,803
Equity	53,262	66,592	104,167	137,106	162,441	192,508	214,565	235,355	251,352	265,234
Total Liabilities & Equity	137,556	164,716	225,564	290,689	357,615	464,104	576,872	687,380	782,866	861,037
D. Cash Flow Statements										
Cash Flows from:										
Operating Activities	11,401	14,393	14,860	20,752	34,642	39,918	51,693	67,236	74,843	89,166
Investing Activities	(22,577)	(25,449)	(26,266)	(48,069)	(70,783)	(107,063)	(129,774)	(125,231)	(110,411)	(96,129)
Financing Activities	14,120	13,904	23,653	35,083	42,616	72,430	81,754	78,727	66,179	45,512
Net Cash Flow	2,944	2,847	12,246	7,766	6,475	5,285	3,673	20,732	30,610	38,549
Cash Balance	12,385	15,231	27,478	35,243	41,718	47,003	50,676	71,408	102,018	140,567
E. Key Financial Indicators										
Operating Margin as % Net Sales	8.0%	9.8%	10.5%	17.7%	21.4%	17.7%	17.1%	14.2%	9.8%	9.1%
Return on Equity (%)	3.4%	6.7%	6.1%	8.9%	10.8%	9.5%	9.9%	8.9%	6.7%	7.1%
Current Ratio	1.7	1.0	1.2	1.3	1.2	1.1	1.0	1.1	1.4	1.6
F. Covenant Compliance										
DSCR (at least 1.5)	2.1	2.3	2.0	2.2	2.2	2.1	2.0	1.9	1.8	1.9
SFR (at least 25%)	29%	44%	27%	29%	35%	28%	25%	32%	34%	51%
DER (not greater than 70:30)	56:44	56:44	50:50	50:50	52:48	56:44	61:39	65:35	67:33	69:31

6. Projected Financial Performance of PCs

38. Revenues & Profitability. The combination of rapidly increasing demand and regular tariff adjustments drives very strong revenue growth for all of the PCs, averaging 21 percent – 23 percent per year (Table A9.4). With the increase in the retail tariff at the beginning of 2007, all of the PCs, with the possible exception of PC3 which may incur a very small loss, are estimated to have been profitable in 2007. All would then earn net profits in each year over the forecast period. However, the level of profitability is projected to be somewhat lower for the smaller PCs (PC Hai Phong, PC Hai Duong, PC Dong Nai) than for the larger PCs (PC1, PC2, PC3). Although the smaller PCs operate in relatively more developed service areas with a higher proportion of industrial and commercial customers, they pay more for bulk power under the existing pricing mechanism. Reforms to the bulk pricing structure to be implemented over the next five years may have an impact on the relative profitability levels of the PCs.

39. Self-Financing of Capital Investments. With the possible exception of PC Hai Duong in 2007, all of the PCs are expected to have adequate capacity to self-finance a portion of their capital investment programs. Each PC should achieve an SFR of at least 25 percent, the minimum level proposed to be covenanted for the project. Self-financing capacity generally improves over the forecast period as sales grow and tariffs are increased. However, the rate of improvement is uneven, both between PCs and from year to year. Furthermore, since existing capital investment plans over the latter part of this forecast period are not yet fully developed, the assumed expenditure levels over this period may be underestimated. If this is the case, the actual SFRs achieved beyond 2012 may be lower than that presently projected.

40. Debt Service. The capacity of the PCs to service existing and new debt taken on over the forecast period is projected to be generally adequate. Since the PCs do not presently have high levels of debt service relative to their operating cash flows, their capacity to take on new debt is fairly significant. However, the relative capacities of the smaller PCs for new borrowings are more limited, which may strain their debt service coverage over the latter half of the forecast period. For example, the projected DSCR for PC Hai Duong is 1.5 between 2013 and 2015, which would just meet the proposed covenanted minimum. The projected DSCR for PC Dong Nai in 2015 is actually just below 1.5 (Table A9.4). However, relatively small increases in revenue, or reduction in expenditures, would bring the DSCR up to 1.5 or above.

41. Capital Structure. Since existing debt levels are relatively low, the increases in the debt needed to fund the PCs investment programs are not expected to create an imbalance in their capital structures. Even by 2015, only two of the six PCs (PC3, PC Hai Duong) are projected to have debt levels that exceed their equity base. However, their debt: equity ratios are still well below the proposed maximum covenanted level of 70:30.

42. Impact of Sector Reforms. Under the ongoing reform program for the power sector, all of the PCs are to be equitized in phases over the 2009 – 2011 period. This will lead to much greater autonomy by the PCs over their planning, management and financing. Greater autonomy may have important implications for the PCs' capital investment programs as well as the possible entry by the PCs into businesses outside their existing power distribution operations. Existing business units within the PCs will also be equitized leading to further changes in the PCs'

operations. To support equitization, the existing bulk tariff pricing mechanism will be reformed. Since bulk power purchases presently account for between 65 percent and 90 percent of the PCs direct cost of sales, any significant changes to bulk pricing will have a major impact on their financial position. Within this rapidly evolving business environment, financial projections and plans can quickly become obsolete if they are not being continually revised to incorporate these changes. Indicative of their present lack of autonomy, the capacities of the PCs to undertake multi-year financial planning is limited. Therefore, it is important that the PCs strengthen their financial planning functions as well as to implement revisions to these plans as they occur. The project will support a strengthening of these functions through the provision of technical assistance to the PCs.

Annex 10: Safeguard Policy Issues

VIETNAM: Rural Distribution Project

1. Social Aspects

1. Like the other rural electrification projects, the rural distribution project causes modest land acquisition for the individual project affected household and small community-wide socio-economic impacts. Many of the subprojects will upgrade systems based on an existing right of way (ROW). The project will not cause culturally specific impacts on ethnic minority communities. The Borrower has met IDA's requirements with respect to social safeguards. EVN and the participating PCs have prepared: (i) a Social Assessment; (ii) a Policy Framework for Resettlement Plans (PFRP); (iii) a Strategy for Ethnic Minorities (SEM); and (iv) 26 separate Resettlement Plans (RP) and 7 Ethnic Minority Development Plans (EMDP) for the first phase subprojects.

2. All subproject RPs and EMDPs in the first phase are based on the PFRP and SEM which was developed by the Borrower and which fully satisfy the requirements of the World Bank's OP 4.12 on Involuntary Resettlement and OP 4.10 on Indigenous People. The RPs and EMDPs have been prepared in close consultation with displaced persons (DPs), ethnic minority communities in project areas, relevant local authorities and key stakeholders. The RPs and EMDPs of the subsequent phases will be prepared separately in the implementation phase for each subproject and the same RPF and EMPF will be followed.

Resettlement Plans for Phase 1

3. Every effort has been made through consultation, design, construction measures and construction schedules to minimize involuntary resettlement and adverse impacts on assets. Resettlement and compensation programs are designed so as to allow the improvement or at least the maintenance of the DPs' pre-project living standards. All RPs incorporate agreements reached with the projects provinces on the route alternatives and substation locations.

Socioeconomic Survey and Inventory of the Project Impacts

4. To assess project impacts, a socio-economic survey of more than 20 percent and a census/inventory of all DPs were carried out from September 2006 to September 2007. The surveys obtained key information for preparing and evaluating the implementation of RPs and EMDPs. At the beginning of project implementation, a detailed measurement survey (DMS) will be carried out by district Resettlement Committees, at that time the number of DPs and impacted assets will be reviewed, confirmed and adjusted as necessary; more adjustments are likely when there has been a lag between RP preparation and implementation.

5. The number of DPs is high because they are scattered along the lines. However, each of the subprojects will have low-intensity impacts. Most of impacts on land will be temporary, and permanent acquisition will occur only for tower foundations and substations. Impacts on houses will be mostly partial and generally will not require the relocation of families outside their

residential plots. By the nature of the project and based on the surveys, impacts are classified by eight categories as follows:

Category 1: Temporary acquisition of productive land in the ROW.

Category 2: Temporary acquisition of residential and garden land in ROW without houses or other structures built therein.

Category 3: Temporary impact on residential or garden land, or both. House or other building partially within ROW but with the area in ROW less than 10 percent of the total and the demolished area does not impact to the remaining house/building. Residential and garden land outside of ROW is sufficient for re-organizing, taken to be more than 60 m^2 in urban areas and 100m^2 in rural areas.

Category 4: Temporary impact on residential or garden land or both. Impact on more than 10 percent or less than 10 percent of total house/building area if the demolished area will impact the remaining house/structure. Residential and garden land outside of ROW is sufficient for re-organizing, taken to be more than 60 m^2 in urban areas and 100m^2 in rural areas.

Category 5: Temporary impact on residential or garden land or both in ROW. Full or partial house/building impacted and land outside of ROW is not sufficient for re-organizing, taken to be more than 60 m^2 in urban areas and 100m^2 in rural areas.

Category 6: Permanent acquisition of land for tower foundations, substation and access roads etc.

Category 7: DP's business or other services are impacted.

Category 8: Permanent impacts on rented houses.

The number of DPs and type of impact are summarized in Table A10.1 below.

Costs and Budgets

6. The total resettlement cost for RPs in phase 1 is estimated at VND 66.9 billion, equivalent to US$ 4.18 million, including contingencies. The costs of RPs for each components and total cost for RPs-Phase 1 of project is summarized in Table 10A.1 below. The source of the budget for RP implementation will be from counterpart funds

Table A10.1: Number of DPs Affected and Compensation Costs of First Phase

Project Component	Number of Affected Families	Number of Families to be Relocated	Permanent Land Acquisition (m^2)	Temporary Land Acquisition (m^2)	Cost (thousand VND)
1	4,924	-	47,101	1,993,858	15,480,397
2	1,876	-	14,029	1,236,440	8,163,054
3	3,441	-	133,399	1,437,227	19,002,467
4	1,312	-	34,827	267,033	12,699,597
5	1,238	-	15,420	242,638	2,089,851
6	260	-	16,730	1,004,062	7,843,341
Total	**13,051**	**N/A**	**261,506**	**6,181,258**	**65,278,707**

Note: these numbers may vary following the detailed measurement survey (DMS) by PCs and local authorities.

Implementation Arrangements

7. Each RP will be implemented independently by the participating PC, its PMB and relevant local authorities. Compensation and resettlement programs will be implemented to ensure that local authorities and DPs representatives participate in the planning and decision making processes. The PCs and their PMBs will continue the dialogue with local authorities and DPs during RP implementation.

Monitoring and Evaluation

8. PCs and their PMBs are responsible for internal monitoring. Monitoring indicators are included in the RPs. The PCs and PMBs will collect information from provinces and districts regularly. The database will be updated regularly. Every six months, the PCs will submit progress reports to EVN and IDA.

9. The implementation of RPs will also be monitored by external monitoring consultants. The consultants will be financed and hired by the PCs, and selected following the submission of the technical and cost proposals based on terms of reference acceptable to the Bank. The external monitoring consultants will prepare their inception reports and semi-annual reports on monitoring and submit them to PCs, and then to IDA.

Complaints and Grievances

10. The PMBs and commune authorities will first deal with complaints and grievances regarding compensation and rehabilitation. If no amicable solution can be reached, the complaints may be appealed to the district authorities and then to provincial authorities. As a last resort, the complainants may appeal to District or Provincial Courts. At each level, the complaint must be redressed within 15 days. If the complaints are not redressed satisfactorily, complaints must be submitted to the next higher level no later than 15 days after the complainants have been informed, complaints submitted later will not be considered. The claim will be dealt with in accordance with the Ordinance on Complaints and Denunciation of Citizens. All grievance procedures including those at the Courts will be free of charge to Complainants.

Ethnic Minority Peoples

11. The subprojects do not cause any culturally specific impacts on ethnic minority households and their communities. The nature of impacts does not result in community-wide socio-economic effects. However, in order to ensure compliance with Bank OP 4.10 on Indigenous People, seven separate Ethnic Minority People Development Plans (EMDPs) were prepared based on the feedback from ethnic minorities in the project areas through consultation and participation in the period of project preparation. Main activities proposed in EMDPs are: (i) EM were and will continue to be consulted, fully informed (in their languages) and will participate in RP/EMDP preparation and implementation; and (ii) DPs of EM who are affected by land acquisition will be compensated and assisted according to the entitlement policy defined in RPF and RPs.

12. For the seven subprojects in areas with members of ethnic minorities in the first phase, every effort has been made through consultation, design, construction measures and construction schedules to reduce unnecessary involuntary resettlement and other adverse impacts on. Nevertheless, some adverse resulting from land acquisition is unavoidable. The impacts on ethnic minorities are summarized in Table A10.2.

Table A10.2: Summary of Land Acquisition Impact and Costs on Ethnic Minorities

Component	Number of Ethnic Minority Household	Acquired Land (m^2)		Costs (thousand VND)
		Permanently	Temporarily	
1	280	6,454	257,411	442,350
2	-	-	-	-
3	605	14,730	106,169	435,380
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
Total	**885**	**21,184**	**363,580**	**877,730**

13. Table A10.2 shows that the land acquisition impact is on individuals and of low intensity. Most land impacts will be temporary. No families will have to be relocated to another place. Very few ethnic minority families will be affected by the need to permanently acquire land for constructing of towers foundations and substations, and no households will lose more than 10 percent of their total productive land holdings.

Measures to Prevent Fraud and Collusion in Resettlement

14. There is some risk of fraud by local government staff and some risk of corruption among government staff and people receiving resettlement payments. In both cases the most likely form

of fraud and corruption would be to overstate the amounts or rates of resettlement compensation, and individuals would retain the surplus payments over that which is properly due.

15. Preparation of project resettlement requirements and setting of compensation rates is carried out jointly by the implementing agency (in this project, the PCs) and the government of the District affected by the project. Power Companies are responsible for the establishment of the routing of lines and siting of poles and other installations; they also carry out the planning survey that establishes the resettlement and compensation requirements. PCs also bear the cost of resettlement. The District People's Committee's compensation committee is responsible for the detailed measurement survey which verifies the items for which compensation is due, and the rates of compensation for each item (denominated, for example, as the compensation rate for each square meter of paddy lost). Rates of compensation and amounts to be paid are published in the District. Payment is made in the presence of representatives of the PC and of the District People's Committee.

16. The combination of separation of the main tasks between the PCs and the District People's Committees and the publication of the amounts and rates of compensation which are open to scrutiny by local people provide reasonable checks against the most likely sources of fraud, or the use of public office for private gain. This system has worked well in the past, and is independently monitored by consultant hired by the PCs. No additional measures are considered necessary to ensure avoidance of fraud and corruption.

2. Environmental Aspects

17. ***The Project is rated as category B.*** Participating PCs have prepared 26 EA/EMPs, one for each subproject in the first phase. The EA/EMPs have been prepared using guidance from an environmental assessment template for all energy projects and an Environmental Guideline and Framework which was developed for this project. The development of the subproject-specific EA/EMPs has followed technical guidance provided at a hands-on training for EVN and PCs and their in-house consultants. EA/EMPs for subsequent project phases will be prepared using the template and Guideline.

18. The first phase subprojects' EAs/EMPs address all environmental issues satisfactorily, and in compliance with Vietnamese and Bank environmental regulations, policies and procedures. During project preparation the task team has conducted field visits to environmentally sensitive sites. Site observations, meetings with local authorities, local communities and relevant agencies have been conducted to confirm the boundaries of the protected areas and to evaluate the potential impacts on these sensitive sites. Field visits confirmed that there are no project sites located in strictly protected areas of any national park.

Impacts

19. The EAs' analysis has shown that during construction most of the impacts are minor, temporary and mitigable. Common impacts identified through environmental screening for individual subprojects are: (i) tree clearance and limited rice or vegetable crop loss due to construction of poles and conductor stringing; increased localized noise, dust and vibration levels

during construction; (ii) disturbance to local traffic and rural road/infrastructure damage; (iii) increased erosion or landslide risks where poles are sited on slopes; (iv) increased turbidity in water bodies near construction sites; (v) increase localized noise, dust and vibration levels at and near construction sites; (vi) increased burdens in local areas due to wastes generated from construction sites and worker's camps; and (vii) safety risks for workers as well as local communities.

20. Notably, part of the ROW under the Cho Roc - Cat Ba 110kV subproject will run on Cat Ba island. The entire island has been a World Biosphere Reserve since 2004 and the majority of the island, except two kilometer strip along the western edge, belongs to Cat Ba National Park.

21. Houses lie in the ROW of three 110kV subprojects. These are Dong Hoa – Long Boi (37 houses and one secondary school), Hoa Binh-Krong Ana (4 houses), ChuProng (13 houses). The EMPs have adequately proposed the measures to ensure safety by: (i) ensure that roof and wall of the houses are made of fireproof materials; (ii) proper earthing for roof and house frames; and (iii) the distance from houses to the power lines is sufficient to ensure safety.

22. Among the first phase subprojects, Quang Tri and Nam Dinh have proposed to replace 30 and 38 transformers, respectively. This work needs to be carried out for upgrading the existing substations from 6kV to 22kV. The transformers being taken out of service are old and thus may contain oil contaminated with levels of PCBs greater than 50 parts per million. PCBs are hazardous to human and animal health.

23. Subprojects covering the provinces in the central of Viet Nam (Quang Binh, Quang Tri, Phu Yen, Dak Lak and Gia Lai) may have unexploded mines and ordnance left from the war and clearance of construction sites may be needed.

Mitigation

24. The mitigation plan includes specific measures, identifies institutional responsibility and provides the mitigation costs, which will be included in the installation and construction cost for the project. The impacts will be mitigated by the measures proposed in the Environmental Management Plans (EMPs). The mitigations proposed include:

(i) Optimizing the ROW to minimize impacts (and trading it off with resettlement aspects);
(ii) Only cutting trees currently or potentially higher than three or four meters, depending on the height of the poles, to ensure the minimal clearance required for safety of the lines;
(iii) Limiting damage to vegetation by forbidding burning of felled trees at the site;
(iv) Building structures such as dykes and drainage paths for sites located on slopes, limiting excavation areas, prohibiting excavation work during heavy rain, binding excavated soils to make sure that they do not fall into water bodies nearby and reusing excavated materials for leveling;
(v) Covering trucks, loads of excavated soils and granular construction materials;
(vi) Limiting access to heavy vehicles on rural roads, and repairing roads promptly

when they are damaged;

(vii) Cooperating with local authorities and police when necessary, for example when stringing conductors that cross highways;

(viii) Fencing and warning at places that may have accident risks, conducting health and safety for construction staff, providing safety equipment and safe tools and equipment

25. For Cho Roc - Cat Ba 110kV Subproject the ROW will run along the strip of land outside the National Park. Additional mitigation measures including restricting tree clearance within the ROW, using an experienced contractor to clear the ROW, prohibitions on workers to hunt on the island and requirements on the contractor to limit noise generation are proposed in the EMP. Adequate consultations with local authorities, communities, and the management of the National Park and the Biosphere Reserve have been carried out.

26. For the Dong Hoa – Long Boi, Hoa Binh-Krong Ana and ChuProng110kV subprojects, the EMPs have adequately proposed the measures to ensure safety by ensuring: (i) the roof and wall of the houses are made of fireproof materials; (ii) proper earthing for roof and house frames; and (iii) the distance from houses to the power lines is sufficient to ensure safety.

27. The Project Environmental Management Framework requires that retired transformers must be stored safely until PCB concentration is tested. Specific guidance on safe storage has also been provided in the Framework document. No transformers will be allowed to be removed from storage areas until tests have been carried out and confirms that PCB is less than 50 ppm. Similar guidance has also been included in a document dated 28 May 2007 by EVN and addressed to its entire member Power Companies. The EMPs for Quang Tri and Nam Dinh have included measures for safe storage and identify institutional responsibility and estimated budgets for implementing the mitigation measures (mostly included in construction contract values), monitoring plan and building up the capacity for environmental management and supervision. A separate project will address generic issues of PCB management and safe disposal.

28. The EMPs for the central region have proposed that army bases shall be contracted to do mine clearance at the substation and pole sites prior to construction start.

Monitoring of Environment Management Plans

29. Environmental impacts during construction will be regularly monitored (visually) by the technical supervision staff of each PMB or PSD in compliance with the site EMP that has been developed in the EA/EMPs. An independent safeguard consultant, hired by PCs, will provide semi-annual reports on the general implementation of EMP (it is proposed that the same consultants that monitor the EMPs will also monitor the RPs). The monitoring plan has identified parameters including dust, noise, trees clearance, control of access roads and soil erosion, oil leakage/spillage and hygienic conditions surround workers' camps. Monitoring will be carried out mainly by visual observation.

30. Environmental monitoring data will be provided to IDA and the local authorities as part of the progress reports. Local authorities and provincial Departments of Natural Resources and

Environment will be kept informed of progress and the findings of IDA supervision missions. PCs are required to report on compliance with the environmental certificates to local authorities (the District Environmental Division or provincial Departments of Natural Resources and the Environment) and they are subject to environmental inspection when required.

31. The cost for the implementation of the mitigation measures shall be included in construction contract. The EMPs under phase 1 have estimated the cost for monitoring the implementation of EMP at VND 1,663,200,000. The cost for capacity building for the implementation of EMPs was estimated at VND 1,146,610,000.

3. Public Consultation and Disclosure

32. *Public Consultation*. Initial consultation was conducted by the Borrower in the form of discussion and agreement with the respective local government agencies and communes with regard to the route alternatives. Further public consultation involving DPs and representatives of local NGOs (e.g. Women's Union, Youth Union, Farmer's Union, Fatherland Front and Association of Elderly People), as required by the Bank safeguard policies, were conducted before pre-appraisal. No objections to the project or environmental concerns other than those addressed in the EAs have been raised during the consultation process. However, the DPs suggested some additional mitigation measures that have been incorporated in the EMPs. Records of those discussions and written agreements are attached to the EA reports.

33. DPs have been, and will continue to be, fully informed of the details of compensation and resettlement policy; compensation-relocation processes; complaint and grievance mechanisms, and monitoring and evaluation throughout the resettlement process. In particular: (i) they have already been consulted about the subproject and the selection of alternative routes; (ii) at the beginning of subproject implementation, DPs will receive information about the details of the project policy and implementation (using resettlement pamphlets, group meetings, and posters posted in public places); and (iii) DPs have, and will continue to, participate in the preparation and implementation of the resettlement and rehabilitation programs.

34. *Public disclosure*: The Borrower has displayed EAs, RPs, EMDPs as required by World Bank policy. Display of these documents has taken place in the PSDs and at the customer services points of the District Power Services. Copies of these documents in English and Vietnamese have been displayed in the Hanoi Vietnam Development Information Centre prior to appraisal and sent to the InfoShop in Washington DC.

35. *Environmental certificate*: According to the Circular 80/2006/TT-BTNMT, an environmental certificate will be obtained from relevant district/provincial Departments of Natural Resources and Environment for each province. The environmental certificate for each subproject is required from relevant local environmental authority before the Borrower's submission of the EA/EMP final draft to the Bank. This arrangement will also facilitate the responsibility of the local environmental authority over the implementation of EMP. All the environmental certificates and permissions are attached to the EA reports.

Annex 11: Project Preparation and Supervision

VIETNAM: Rural Distribution Project

	Planned	Actual
PCN review	09/11/2006	11/09/2006
Initial PID to PIC		12/28/2007
Initial ISDS to PIC		01/06/2008
Appraisal	12/10/2007	12/19/2007
Negotiations	04/09/2008	04/09/2008
Board/RVP approval	05/22/2008	
Planned date of effectiveness	11/2008	
Planned date of mid-term review	09/2010	
Planned closing date	06/30/2013	

Bank staff and consultants who worked on the project included:

Name	Title	Unit
Hung Tien Van	Senior Operations Officer	EASVS
Richard Spencer	Senior Energy Specialist	EASVS
Robert Taylor	Lead Energy Specialist	EASTE
Ky Hong Tran	Operations Officer,	EASVS
Hoi-Chan Nguyen	Senior Legal Counsel	LEGEA
Ly Thi Dieu Vu	Environment Specialist	EASVS
Quang Ngoc Bui	Social Specialist	EASVS
Thang Chien Nguyen	Senior Procurement Specialist	EAPCO
Cung Van Pham	Financial Management Specialist	EAPCO
Dan O'Hearn	Financial Analyst	Consultant
Teri Velilla	Program Assistant	EASTE
Lien Thi Bich Nguyen	Program Assistant	EACVF
Christophe de Gouvello	Peer Reviewer	AFTEG
Chrisantha Ratnayake	Peer Reviewer	Consultant

Bank funds expended to date on project preparation:

Bank resources:	$198,475
Trust funds:	0
Total:	$198,475

Estimated Approval and Supervision costs:

1. Remaining costs to approval: $20,000
2. Estimated annual supervision cost: $75,000

Annex 12: Documents in the Project File

VIETNAM: Rural Distribution Project

1. Social Assessment Report
2. Resettlement and Compensation Frameworks
3. Ethnic Minority Development Frameworks
4. Environmental Assessment Guideline
5. 26 Investment Report and Basic Design for 26 subproject of Phase 1
6. 26 Resettlement Plans for 26 subproject of Phase 1
7. 26 Environment Assessment and Environment Management Plans for the 26 subprojects of Phase 1
8. 7 Ethnic minority Development for phase 1 subprojects

Annex 13: Statement of Loans and Credits

VIETNAM: Rural Distribution Project

Operations Portfolio (IBRD/IDA and Grants)
As Of Date 02/20/2008

Proj ID	Project Name	FY	Original Amount in US$ Millions					Difference between Expected and Actual Disbursements [a]	
			IBRD	IDA	Grants	Cancel.	Undisb.	Orig.	Frm Rev'd
P085071	Customs Modernization	2006		65.90			69.96	21.33	
P082627	Payment System and Bank Modernization 2	2005		105.00			101.90	65.66	60.24
P075399	Public Financial Management Reform Proj.	2003		54.33			51.64	43.83	4.06
P099376	Tax Administration Modernization Project	2008		80.00			81.27	0.00	
P065898	VIETNAM WATER RESOURCES ASSISTANCE	2004		157.80			150.99	53.67	
P062748	VN - COMMUNITY BASED RURAL INFRA.	2001		102.78			29.46	8.72	
P066051	VN - Forest Sector Development Project	2005		39.50			35.58	15.47	5.99
P074414	VN - GEF Forest Sector Development Proj	2005			9.00		8.37	4.24	1.31
P083593	VN - National CFC & Halon Phaseout Pr	2006			1.26		0.68	(0.03)	
P072601	VN - Rural Finance II Project	2002		200.00			0.03	(54.80)	
P079344	VN -ICT Development	2006		93.72			92.11	10.73	
P073361	VN -Natural Disaster Risk Mngt Project	2006		86.00			83.77	0.68	
P079665	VN-2ND HIGHER EDUCATION	2007		59.40			61.61	1.02	
P051553	VN-3 CITIES SANITATION	1999		80.50		7.40	10.60	10.97	3.00
P101608	VN-Avian & Human Influenza Control &Prep	2007		20.00			20.46	2.07	
P082295	VN-COASTAL CITIES ENVMT SANIT.	2007		124.70			128.41		
P085260	VN-EFA Support Program	2005		50.00			15.87		
P071019	VN-GEF DEMAND SIDE MGMT & ENERGY	2003			5.50		2.23	2.23	
P085393	VN-GEF-Hanoi Urban Transpt Dev	2008			9.80				
P080074	VN-GEF-RURAL ENERGY 2	2005			5.25		4.89	(0.16)	
P073778	VN-GEF-System Energy Equitization-Renewa	2002			4.50		3.05	3.05	
P083581	VN-HANOI URBAN TRANSPORT	2008		155.21			161.62		
P052037	VN-HCMC ENVMTL SANIT.	2001		166.34			142.00	103.93	100.68
P104848	VN-HIFU DEVELOPMENT	2007		50.00			51.82		
P082604	VN-HIV/AIDS Prevention Project	2005		35.00			21.62	(2.19)	
P083588	VN-MKG DELTA TRANSPORT INFRA DEV	2007		207.70			217.23		
P079663	VN-Mekong Regional Health Support Proj	2006		70.00			73.71	(1.09)	
P042927	VN-Mkg Transp & Flood Protection	2001		135.00			70.74	25.28	(11.49)
P044803	VN-PRIMARY EDUC FOR DISADVANTAGED CHILRE	2003		138.76			107.71	45.35	11.24
P059663	VN-ROAD NETWORK IMPROVT	2004		225.26			209.49	153.11	
P085080	VN-ROAD SAFETY	2005		31.73			30.01	15.28	
P077287	VN-RRD RWSS	2006		45.87			45.77	5.17	
P075407	VN-RT3	2006		106.25			112.30	26.67	
P074688	VN-RURAL ENERGY 2	2005		220.00			208.10	86.44	
P073305	VN-Regional Blood Transfusion Centers	2002		38.20			36.91	27.26	(1.20)
P066396	VN-SYSTEM ENERGY, EQUITIZATION & RENEWAB	2002		225.00			147.05	97.58	97.58
P084871	VN-TRANS & DISTRIB 2	2006		200.00			191.24	32.78	
P070197	VN-URBAN UPGRADING	2004		222.47			201.27	15.10	
P073763	VN-WATER SUPPLY DEV.	2005		112.64			113.57	21.79	
Overall Result				3,705.06	35.31	7.40	3,095.02	836.90	271.41

VIETNAM
STATEMENT OF IFC's
Held and Disbursed Portfolio
In Millions of US Dollars

Vietnam
Committed and Disbursed Outstanding Investment Portfolio
As of 11/30/2007
(In USD Millions)

		Committed					Disbursed Outstanding				
FY Approval	Company	Loan	Equity	**Quasi Equity	*GT/RM	Partici pant	Loan	Equity	**Quasi Equity	*GT/RM	Partici pant
03/07/2003/07	Acb-vietnam	0	20.04	5	0	0	0	20.04	5	0	0
2002/02	Cybersoft	0	0.12	0	0	0	0	0.12	0	0	0
2002/02	Dragon capital	0	0	2.1	0	0	0	0	2.1	0	0
2002/02	F-v hospital	10	0	6	0	0	10	0	6	0	0
2005/05	Khai vy	10.23	0	0	0	0	10.23	0	0	0	0
1997/97	cement	11.68	0	0	0	0	11.68	0	0	0	0
2005/05	Paul maitland	10	0	0	0	0	10	0	0	0	0
2001/01	Rmit vietnam	14.5	0	0	0	0	7	0	0	0	0
2006/06	Sabco	40	0	0	0	0	14	0	0	0	0
7/07	Sacombank	62.34	49.72	0	0	0	31.19	49.72	0	0	0
03/07/2003/07	Veil	0	32.8	0	0	0	0	32.8	0	0	0
Total Portfolio:		**158.75**	**102.68**	**13.1**	**0**	**0**	**94.1**	**102.68**	**13.1**	**0**	**0**

* Denotes Guarantee and Risk Management Products.

** Quasi Equity includes both loan and equity types.

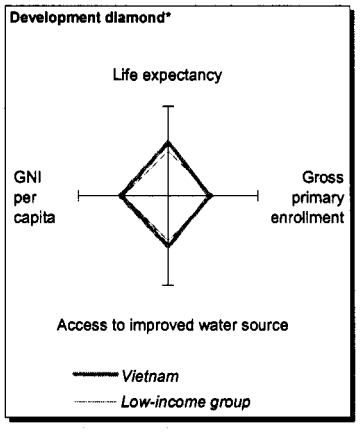
Annex 14: Country at a Glance

VIETNAM: Rural Distribution Project

Vietnam at a glance

9/28/07

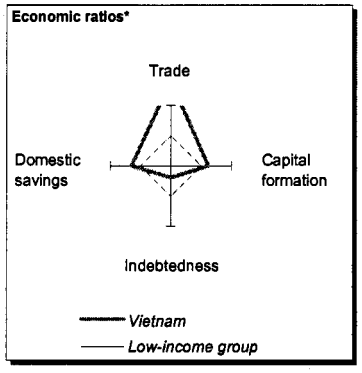
POVERTY and SOCIAL	Vietnam	East Asia & Pacific	Low-income
2006			
Population, mid-year *(millions)*	84.1	1,900	2,403
GNI per capita *(Atlas method, US$)*	690	1,863	650
GNI *(Atlas method, US$ billions)*	58.0	3,539	1,562
Average annual growth, 2000-06			
Population *(%)*	1.3	0.9	1.9
Labor force *(%)*	2.1	1.3	2.3
Most recent estimate (latest year available, 2000-06)			
Poverty *(% of population below national poverty line)*	29	..	..
Urban population *(% of total population)*	27	42	30
Life expectancy at birth *(years)*	71	71	59
Infant mortality *(per 1,000 live births)*	16	26	75
Child malnutrition *(% of children under 5)*	28	15	..
Access to an improved water source *(% of population)*	85	79	75
Literacy *(% of population age 15+)*	..	91	61
Gross primary enrollment *(% of school-age population)*	95	114	102
Male	98	115	108
Female	91	113	96



KEY ECONOMIC RATIOS and LONG-TERM TRENDS

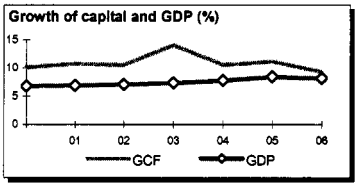
	1986	1996	2005	2006
GDP *(US$ billions)*	26.3	24.7	52.5	59.3
Gross capital formation/GDP	14.4	28.1	35.6	35.7
Exports of goods and services/GDP	6.6	40.9	69.4	73.5
Gross domestic savings/GDP	4.5	17.1	31.4	32.4
Gross national savings/GDP	..	19.8	35.8	36.9
Current account balance/GDP	-2.5	-10.5	-0.9	-0.3
Interest payments/GDP	0.0	0.4	0.6	..
Total debt/GDP	0.7	106.5	36.7	..
Total debt service/exports	..	3.9	2.6	..
Present value of debt/GDP	..	..	32.5	..
Present value of debt/exports	..	..	46.2	..

	1986-96	1996-06	2005	2006	2006-10
(average annual growth)					
GDP	7.2	7.0	8.4	8.2	8.2
GDP per capita	5.0	5.7	7.0	6.9	7.0
Exports of goods and services	28.1	16.2	20.7	22.7	17.9

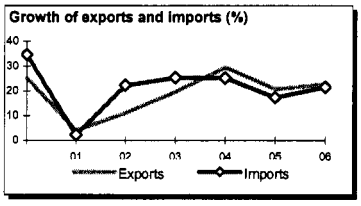


STRUCTURE of the ECONOMY

	1986	1996	2005	2006
(% of GDP)				
Agriculture	38.1	27.8	21.0	20.4
Industry	28.9	29.7	41.0	41.6
Manufacturing	22.4	15.2	20.6	21.3
Services	33.1	42.5	38.0	38.1
Household final consumption expenditure	..	74.5	62.5	61.8
General gov't final consumption expenditure	..	8.4	6.2	5.9
Imports of goods and services	16.6	51.8	73.5	76.8



	1986-96	1996-06	2005	2006
(average annual growth)				
Agriculture	3.7	4.0	4.0	3.4
Industry	8.3	9.4	10.7	0.3
Manufacturing	5.1	11.1	13.7	12.4
Services	9.1	6.1	8.5	8.3
Household final consumption expenditure	..	7.5	13.0	-40.7
General gov't final consumption expenditure	..	4.8	8.2	8.5
Gross capital formation	25.2	10.0	11.2	9.3
Imports of goods and services	28.1	16.8	17.2	21.5



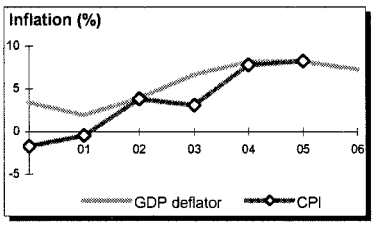
Note: 2006 data are preliminary estimates.

This table was produced from the Development Economics LDB database.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

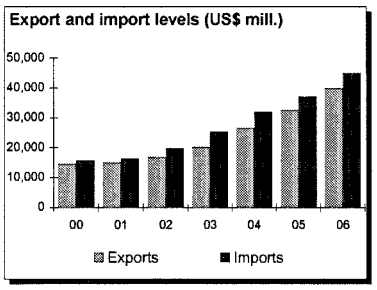
PRICES and GOVERNMENT FINANCE

	1986	1996	2005	2006
Domestic prices				
(% change)				
Consumer prices	..	5.7	8.3	..
Implicit GDP deflator	398.1	8.7	8.2	7.3
Government finance				
(% of GDP, includes current grants)				
Current revenue	13.9	22.8	25.9	27.1
Current budget balance	-0.5	5.4	7.4	8.5
Overall surplus/deficit	..	-0.2	-1.2	-0.3



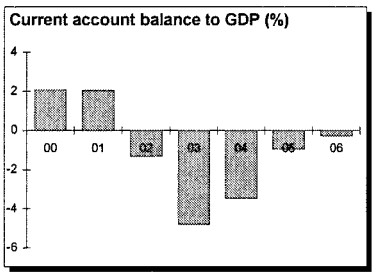
TRADE

	1986	1996	2005	2006
(US$ millions)				
Total exports (fob)	595	7,256	32,442	39,826
Rice	..	855	1,407	1,276
Fuel	..	1,346	7,373	8,265
Manufactures	..	2,710	16,341	19,360
Total imports (cif)	1,162	11,144	36,978	44,891
Food	..	1	4	..
Fuel and energy	..	1,238	5,024	5,970
Capital goods	..	3,075	9,285	10,800
Export price index *(2000=100)*	..	126	98	100
Import price index *(2000=100)*	..	120	102	103
Terms of trade *(2000=100)*	..	105	96	97



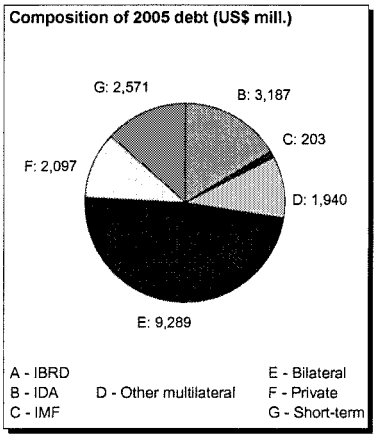
BALANCE of PAYMENTS

	1986	1996	2005	2006
(US$ millions)				
Exports of goods and services	..	10,042	36,623	44,926
Imports of goods and services	..	13,255	39,281	47,710
Resource balance	..	-3,213	-2,658	-2,784
Net income	-94	-428	-1,219	-1,430
Net current transfers	57	1,046	3,380	4,049
Current account balance	-655	-2,591	-497	-165
Financing items (net)	..	3,012	2,740	3,093
Changes in net reserves	..	-421	-2,243	-2,928
Memo:				
Reserves including gold *(US$ millions)*	..	1,797	8,557	11,485
Conversion rate *(DEC, local/US$)*	22.7	11,032.6	15,987.1	16,409.5



EXTERNAL DEBT and RESOURCE FLOWS

	1986	1996	2005	2006
(US$ millions)				
Total debt outstanding and disbursed	175	26,255	19,287	..
IBRD	0	0	0	0
IDA	59	412	3,187	3,663
Total debt service	2	396	954	..
IBRD	0	0	0	0
IDA	0	3	44	56
Composition of net resource flows				
Official grants	65	230	486	..
Official creditors	5	147	1,207	..
Private creditors	0	217	681	..
Foreign direct investment (net inflows)	0	2,395	1,954	..
Portfolio equity (net inflows)	0	0	0	..
World Bank program				
Commitments	0	502	659	0
Disbursements	5	189	391	341
Principal repayments	0	1	14	23
Net flows	5	188	378	318
Interest payments	0	2	31	33
Net transfers	5	186	347	285



Note: This table was produced from the Development Economics LDB database. 9/28/07

Annex 15: Map

VIETNAM: Rural Distribution Project

IBRD 35990

VIETNAM
RURAL DISTRIBUTION PROJECT

PROJECT PROVINCES:

12 PHASE 1

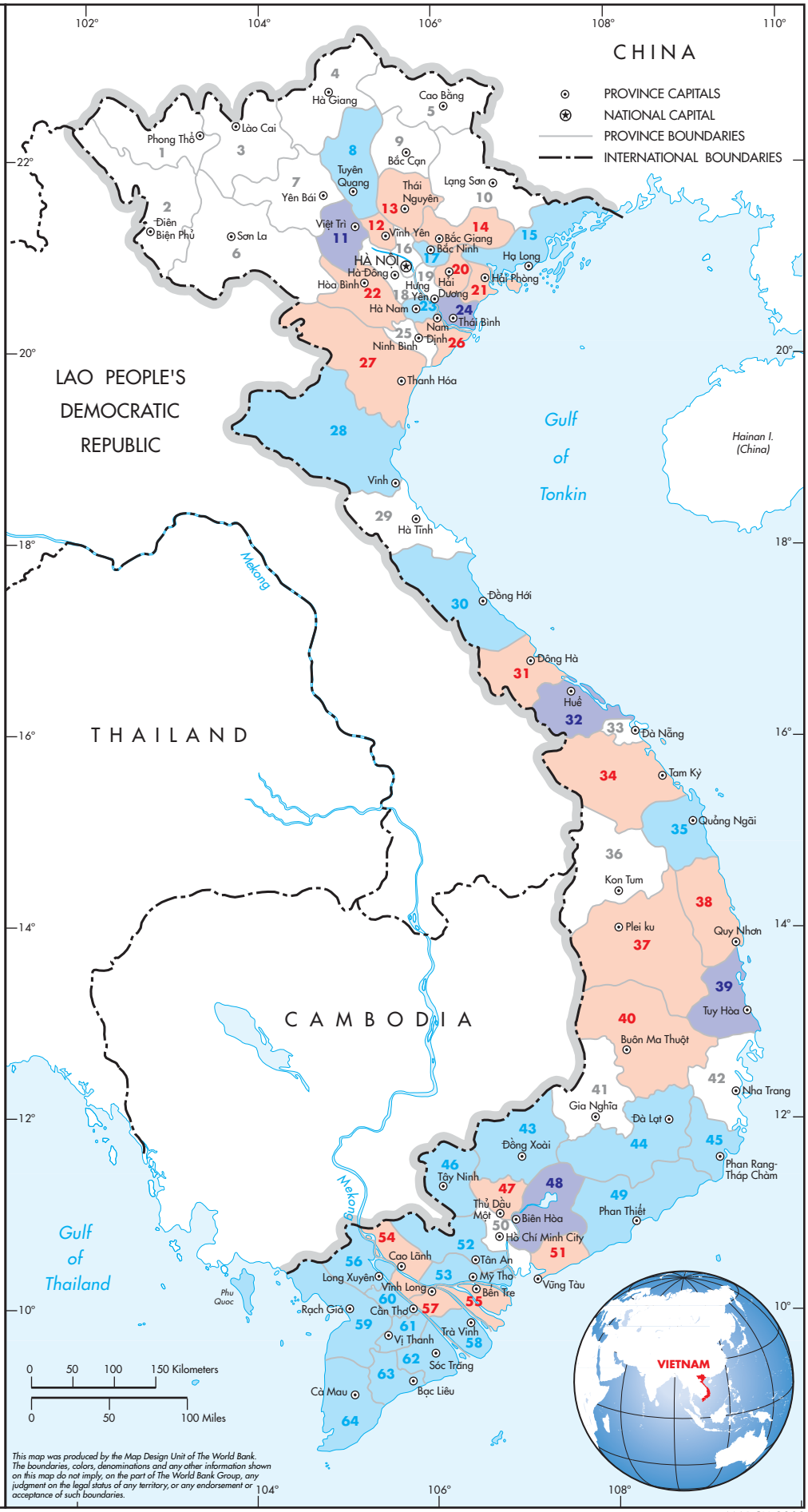
8 PHASE 2*

11 PHASES 1 & 2*

* Phase 2 Project Provinces and works are subject to change.

	Provinces	Project Systems: 22/35 kV	110 kV
1	Lai Châu		
2	Điện Biên		
3	Lào Cai		
4	Hà Giang		
5	Cao Bằng		
6	Sơn La		
7	Yên Bái		
8	Tuyên Quang	•	
9	Bắc Cạn		
10	Lạng Sơn		
11	Phú Thọ		•1&2
12	Vĩnh Phúc	•	
13	Thái Nguyên		
14	Bắc Giang	•	
15	Quảng Ninh	•	
16	Hà Nội		
17	Bắc Ninh		•
18	Hà Tây		
19	Hưng Yên		
20	Hải Dương	•	•
21	Hải Phòng		•
22	Hòa Bình		•
23	Hà Nam	•	
24	Thái Bình	•1	•2
25	Ninh Bình		
26	Nam Định	•	
27	Thanh Hóa	•	
28	Nghệ An		•
29	Hà Tĩnh		
30	Quảng Bình		•
31	Quảng Trị	•	
32	Thừa Thiên Huế	•2	•1
33	Đà Nẵng		
34	Quảng Nam		•
35	Quảng Ngãi	•	
36	Kon Tum		
37	Gia Lai		•
38	Bình Định	•	
39	Phú Yên	•2	•1
40	Đắk Lắk		•
41	Đắk Nông		
42	Khánh Hòa		
43	Bình Phước	•	
44	Lâm Đồng	•	
45	Ninh Thuận	•	
46	Tây Ninh	•	
47	Bình Dương	•	
48	Đồng Nai	•1&2	•1
49	Bình Thuận	•	
50	Hồ Chí Minh City		
51	Bà Rịa – Vũng Tàu	•	
52	Long An	•	
53	Tiền Giang	•	
54	Đồng Tháp	•	
55	Bến Tre	•	
56	An Giang	•	
57	Vĩnh Long	•	
58	Trà Vinh	•	
59	Kiên Giang	•	
60	Cần Thơ	•	
61	Hậu Giang	•	
62	Sóc Trăng	•	
63	Bạc Liêu	•	
64	Cà Mau	•	

•1 to be implemented in Phase 1 only.
•2 to be implemented in Phase 2 only.
•1&2 to be implemented in both Phases.



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MARCH 2008