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To G/ENV/EET, Samuel Schweitzer  
From/Location EPDF, Pedro Domínguez  
Date April 5, 1995  
Re Independent Power Seminar in Panama - March 20-23, 1995

Through the Energy Project Development Fund, USAID sponsored an introductory seminar on the principles of soliciting and contracting for power from independent power projects for the Instituto de Recursos Hidráulicos y Electrificación (IRHE). The seminar was presented by Price Waterhouse LLP with the assistance of Commonwealth Power Corporation and Virginia Power Corporation during the period March 20 to 23, 1995 at the Hotel Plaza Paitilla Inn in Panama City, Panama.

There were 63 participants at the seminar which included utility representatives from El Salvador, Guatemala, Honduras, Colombia, and Costa Rica. A listing of participants at the seminar is included as Appendix A.

The seminar was conducted over a 4 day period under the guidance of Edward Monahan of Price Waterhouse LLP. Peter Lalor and Bill Daley of Commonwealth Power Corporation led the presentation and discussions on legal and project development issues. Mr. Gary Edwards, Vice President of Virginia Power Corporation, handled issues and policies involved in solicitations for new power supplies. Mr. Jon Saiger of Price Waterhouse LLP discussed international limited recourse financing structures.

In addition to the five consultants, four individuals with hands-on experience in independent power provided timely knowledge based on their recent projects. Mr. Javier Matamoros led the case study of his Costa Rican project Hidroeléctrica Platanar. Dr. Abel Mercado of Banco Ganadero de Colombia discussed successful power project financing experiences in Colombia and explained bank risk evaluation procedures. Mr. Omar Alvarado of Vitibank, N.A. discussed foreign bank project finance capabilities regarding Panama's capital markets. Mr. Knut Simonsen, of Texaco, Inc. explained foreign investor approach to country risk evaluation.

A copy of the seminar presentation schedule is included as Appendix B. In addition, a copy of the slides and presentation materials is included as Appendix C. Appendix D are materials prepared by Price Waterhouse in a brochure form. A thank you letter from the General Director of the IRHE, Dr. Ramón Argote, is included following this report.

Samuel Schweitzer

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April 5, 1995

The response from the participants was excellent. There were questions directed at the session leaders throughout the seminar. The highlight of the seminar was on the fourth day when the private power developers explained their experiences. The case studies discussed were for the development of hydro and thermal projects by independent developers. Feedback from the participants indicates that the seminar has provided valuable information and knowledge for their future use.



REPUBLICA DE PANAMA

*Instituto de Recursos Hidráulicos y Electrificación*

DIRECCION CABLEGRAFICA  
2158 IRHE PA

APARTADO 5265  
PANAMA S. R. P.

DEAR-DDRH-SC-085-95  
23 de marzo de 1995

Mr. Eduardo T. Monahan  
Director Ejecutivo del Grupo  
Internacional de Consultoría  
Price Waterhouse LLP  
E. S. D.

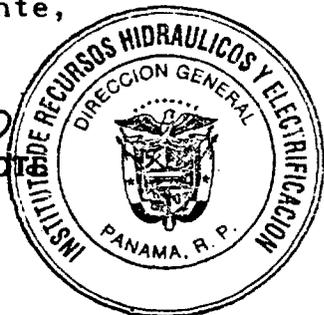
Señor Director:

Nos es grato expresarle nuestro agradecimiento por todo el apoyo brindado para la realización del seminario sobre "Elaboración y Negociación de Contratos de Compra-Venta de Energía Eléctrica con Participación Privada", que se desarrolló desde el 20 al 23 de marzo del presente año, en el Hotel Plaza Paitilla Inn.

Fue una magnífica oportunidad para conocer los aspectos más importantes que se deben tomar en cuenta en los procesos de solicitud, negociación y administración de contratos. Mantenemos nuestro objetivo de lograr que la participación de la inversión privada en la generación de electricidad sea de beneficio de los consumidores con un producto de alta calidad y bajo precio.

De usted atentamente,

  
Ing. RAMÓN O. ARGOTE  
Director General



**SEMINARIO: ELABORACION Y NEGOCIACION DE COMPRA Y VENTA DE ENERGIA ELECTRICA CON PARTICIPACION PRIVADA  
PANAMA, DEL 20 AL 23 DE MARZO DE 1995**

No	NOMBRE-CARGO	EMPRESA-PAIS	DIRECCION	TELEFONO	FAX
1	Edward Monahan	Price Waterhouse LLP	Estados Unidos	202-822-8568	203-467-4405
2	Peter Lalor	Common Wealth Power Corp.	Estados Unidos	804-461-5681	804-461-3857
3	Gary L. Edwards	Virginia Power Corp.	Estados Unidos	804-771-3548	
4	William Daley	Common Wealth Power Corp.	Estados Unidos	804-461-5681	804-461-3857
5	Jonathan Saiger	Price Waterhouse LLP	Estados Unidos	415-477-0159	415-477-0165
6	Javier Matamoros Agüero	Hidroeléctrica Platanar S.A	Costa Rica	505-460.0597	505-460.0028
7	Abel Mercado Jarava	Banco Ganadero S.A.	Colombia	69-0659	63-8985
8	Luz Amalia González	I.R.H.E.-Dirección General	Panamá	27-2381	62-9294
9	Margarita Aguilar	I.R.H.E.-Informática	Panamá	25-8051	27-0478
10	Rogelio González Palma	I.R.H.E.-Recursos Humanos	Panamá	27-3775	
11	Ricardo Muñoz Tejeira	Cámara de Comercio e Industria	Panamá	20-6037	20-1793
12	Jorge Navarro	Comisión Nacional de Valores-MICI	Panamá	27-1808	27-3727
13	José A. Ardila A.	I.R.H.E.-Finanzas	Panamá	27-9329	62-4247
14	Hernán Castro-Sierra	ENEE	Honduras	38-6291	38-6474
15	Luis Aristides Bulnes	ENEE	Honduras	38-3801	37-2353
16	María Del C. Pereira	I.R.H.E-Distribución y Comercialización	Panamá	27-1642	62-7383
17	Heriberto Pinilla	I.R.H.E.-Auditoría Interna	Panamá	27-1844	27-2469
18	Eryx Tejada Him	Comisión Nacional de Valores-MICI	Panamá	25-9758	27-3927

No	NOMBRE-CARGO	EMPRESA-PAIS	DIRECCION	TELEFONO	FAX
19	Douglas A. Lowe	Sindicato de Industriales de Panamá (Texaco)	Panamá	29-2383	29-3564
20	Knut A. Simonsen	Sindicato de Industriales de Panamá (Texaco)	Panamá	29-2383	29-3564
21	Luis Camacho	I.R.H.E.-Desarrollo e Ingeniería	Panamá	27-2564	27-0360
22	Nicanor Ayala R.	I.R.H.E.-Finanzas	Panamá	27-8386	62-9993
23	Isabel de Ibáñez	I.R.H.E-Finanzas	Panamá	27-7644	62-9632
24	Jorge Prado	MIPPE	Panamá	63-4311	64-2620
25	Martha P. de González	MIPPE	Panamá	69-3596	69-2781
26	Miriam C. de Guerra	I.R.H.E.-Finanzas	Panamá	27-7115	62-9993
27	Jaime L. Torres	CEL 271 2182 / 271-2038	El Salvador	503-71-1836	503-222-0966
28	Rafael Sanson	I.R.H.E.-Desarrollo e Ingeniería	Panamá	27-8220	62-9993
29	Rafael Mc Clen	I.R.H.E.-Finanzas	Panamá	27-7194	62-4247
30	Fernando Alvarez	MINA	Guatemala	502-2-763182	502-2-766378
31	Alfredo Acuña	MIDA	Panamá	32-5074	
32	Germán Cruz	I.R.H.E.-Desarrollo e Ingeniería	Panamá	27-2564	27-0360
33	Ismael Fernández	I.R.H.E.-Administración	Panamá	27-7447 27-7304	62-3526
34	Roberto Martínez	Proprivat-Ministerio de Hacienda y Tesoro	Panamá	25-4387	
35	Gabriel Despaigne	I.R.H.E.-Desarrollo e Ingeniería	Panamá	25-7197	27-2324
36	Oscar Rendoll	I.R.H.E.-Desarrollo e Ingeniería	Panamá	27-7370	62-9993

No	NOMBRE-CARGO	EMPRESA-PAIS	DIRECCION	TELEFONO	FAX
37	Bolívar Santana	I.R.H.E.-Distribución y Comercialización	Panamá	27-8160	62-9993
38	Juan Raúl De La Guardia	Bolsa de Valores	Panamá	23-7222	64-4770
39	Luis D. Ortíz	I.R.H.E.-Operaciones	Panamá	27-4755	27-4643
40	Jacinto Donoso	I.R.H.E.-Operaciones	Panamá	27-4755	27-4643
41	Norberto Delgado	I.R.H.E.-Operaciones	Panamá	27-4755	27-4643
42	Aderito P. Cabrera	I.R.H.E.-Operaciones	Panamá	29-3555	29-1600
43	Humberto González	I.R.H.E.-Operaciones	Panamá	27-4755	27-4643
44	Ricardo Barranco	I.R.H.E.-Operaciones	Panamá	29-3555	29-1600
45	Jorge Rodríguez	I.R.H.E.-Dirección General	Panamá	27-4966	62-9294
46	Alvin A. Ruíz G.	I.R.H.E. -Operaciones	Panamá	29-4185	29-1600
47	Eric Jaramillo	I.R.H.E. -Asesoría Legal	Panamá	27-3282	25-5145
48	Iván Díaz	Bolsa de Valores de Panamá	Panamá	69-1966	69-2457
49	Nelly de Valdivieso	I.R.H.E.-Auditoría Interna	Panamá	27-1844	27-2469
50	Julio C. De León	I.R.H.E.-Asesoría Legal	Panamá	27-3591	25-5145
51	Omar Alvarado V. P.	Citibank	Panamá	64-8505	69-4171
52	Giovanna King Figueroa	I.R.H.E.-Desarrollo e Ingeniería	Panamá	62-8339	62-3614
53	Francisco Guinard	General Electric	Panamá		
54	Gloria de Alvarado	I.R.H.E.-Desarrollo e Ingeniería	Panamá	62-7552	62-3614
55	Rafael Iriarte	I.R.H.E.-Finanzas	Panamá	27-9329	62-4247
56	Claudio Escalona	Sindicato de Trabajadores del I.R.H.E.	Panamá	27-2138	25-7369
57	Angel Hernández	I.R.H.E.-	Panamá	30-1227	

No	NOMBRE-CARGO	EMPRESA-PAIS	DIRECCION	TELEFONO	FAX
58	Abdiel Ramírez	I.R.H.E.-Informática	Panamá	27-0478	
59	Fernando Aramburn P.	PTP-Petroterminal	Panamá	63-7777	63-9949
60	Rosalía de Simons	Banco Nacional de Panamá	Panamá	63-5151	69-4832
61	Eric Rivera	Banco Nacional de Panamá	Panamá	63-5151	69-4832
62	Azael Caballero	PTP-Petroterminal	Panamá	75-6513	75-4958
63	Jorge Tovar	PTP-Petroterminal	Panamá	63-7777	63-9949

**SEMINAR: THE ELECTRICITY GENERATION SYSTEM IN PANAMA -  
FINANCIAL AND CONTRACTING ISSUES**

**Price Waterhouse LLP  
International Consulting Group**

**Hotel Plaza Paitilla Inn**

**Panama City, Panama  
March 20-23, 1995**

**AGENDA**

**Monday, March 20**

08:00 - 08:30 Attendance List Sign-In  
08:30 - 09:30 Inauguration Ceremony  
09:30 - 10:45 Presentation: Overview of Independent Power Options for Panama  
10:45 - 11:00 Recess  
11:00 - 12:30 Presentation: The Role of the Panamanian Government  
12:30 - 02:00 Recess  
02:00 - 03:00 Presentation: The Roles and Goals of the Participants  
03:00 - 03:15 Recess  
03:15 - 03:45 Questions / Discussion  
03:45 - 04:45 Presentation: Small Hydro and Its Implications for the Development /  
Procurement Process  
04:45 - 05:15 Questions / Discussion

**Tuesday, March 21**

09:00 - 09:30 Discussion and Summary of Previous Presentations  
09:30 - 10:30 Presentation: The Development Process  
10:30 - 10:45 Recess  
10:45 - 11:15 Questions / Discussion  
11:15 - 12:15 Presentation: The Solicitation Process  
12:15 - 12:45 Questions / Discussion  
12:45 - 02:00 Recess  
02:00 - 03:00 Presentation: Negotiating Power Purchase Contracts  
03:00 - 03:15 Recess  
03:15 - 03:45 Questions / Discussion  
03:45 - 04:45 Presentation: Negotiating Power Purchase Contracts (Cont.)  
04:45 - 05:15 Questions / Discussion



**SEMINAR: THE ELECTRICITY GENERATION SYSTEM IN PANAMA -  
FINANCIAL AND CONTRACTING ISSUES**

**Price Waterhouse LLP**

**AGENDA (Cont.)**

**Wednesday, March 22**

09:00 - 09:30	Discussion and Summary of Previous Presentations
09:30 - 10:30	Presentation: Risk and Risk Allocation
10:30 - 10:45	Recess
10:45 - 11:15	Questions / Discussion
11:15 - 12:15	Presentation: Elements of Financing
12:15 - 12:45	Questions / Discussion
12:45 - 02:00	Recess
02:00 - 03:00	Presentation: The Mechanics of the Closing
03:00 - 03:15	Recess
03:15 - 03:45	Questions / Discussion
03:45 - 04:45	Presentation: The Mechanics of Closing (Cont.)
04:45 - 5:15	Questions / Discussion

**Thursday, March 23**

09:00 - 09:30	Discussion and Summary of Previous Presentations
09:30 - 10:30	Presentation: Panel Discussion: The Private Project Promotion Experience in Costa Rica
10:30 - 10:45	Recess
10:45 - 11:15	Questions / Discussion
11:15 - 12:15	Presentation: Financing Electricity Generating Projects in Panama - Macroeconomic Profile
12:15 - 12:45	Questions / Discussion
12:45 - 02:00	Recess
02:00 - 03:00	Presentation: Lessons Learned in Other Countries - Success and Failure
03:00 - 03:15	Recess
03:15 - 03:45	Questions / Discussion
03:45 - 04:15	Summary and Conclusions
04:15 - 05:00	Closure



**Public / Private Power Development**

**Price Waterhouse LLP  
International Consulting Group**

**Hotel Plaza Paitillo  
March 20-23, 1995**

**Critical Elements in  
Financial Structuring**

**USAID / Panamá  
Energy Project Development Fund**

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# Agenda

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- Financing Mechanisms
    - Project Evaluation
    - Sources and Instruments of debt & equity
    - Evaluation of cost of capital
  
  - Risk Management
    - Types of risk
    - World Bank guarantees
    - Risk allocation
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## Elements of Worldwide Project Financing

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- Most project financing is "non-recourse"
    - used for greenfield investments and capital expansion programs
    - lenders repaid only from project cash flow
    - If project fails, lenders may claim the project's assets, not those of the parent company
  - "Limited recourse" financing offers lenders some claim on parent company's assets
  - Project financing requires a clear delineation of risks
-

# Sources of Equity

- **Local Equity**
  - Local investors
  - Local strategic investor
  - Local financing institutions
- **Foreign Equity**
  - Foreign strategic investor/operator
  - Institutional investors
  - Development banks

# Sources and Instruments of Equity Financing

	Sources	Instruments
<b>Equity</b>	Institutional investors (e.g., pension/mutual funds, insurance)	-ADRs, "144 A" equities, Portfolio equity positions
	Infrastructure investment funds (e.g., Quantam Industrial Holdings, GE Capital)	-Strategic and portfolio equity positions
	Development Banks (e.g., IFC)	-Direct (portfolio) equity participation; guarantees
	Employees	-Portfolio equity position via ESOP
	Infrastructure finance conglomerates, contractors and suppliers (e.g., GE capital, ABB Funding Partners)	-Strategic equity positions --Issuing stock in their own name

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# Initial Public Offering

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1. Select underwriter
  2. Due diligence (Audit, valuation, corrections)
  3. Research market timing and conditions
  4. Registration and listings
  5. Develop prospectus
  6. Road show/marketing
  7. Issue securities
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## Factor Affecting Structure of Financing: Pros and Cons of Debt

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- Debt is cheaper source of financing
  - Lenders have priority over shareholders
  - Lenders may impose risk controls to ensure project's success
  - Loan maturities typically shorter than project life
    - short maturities make debt service difficult
  - The 30-40 banks who dominate international lending fear regional overexposure
-

## Commercial Risk: Economic Environment and Mitigation

Risk	Who Controls	Instrument
Currency/Interest rate risk	Partly gov't	Currency hedging; WB convertibility guarantee; project contingency funds to cover ER risk (e.g. Mexico's Toluca Road)
Inflation	Partly gov't	Tariff linked to inflation index; buying futures contracts on raw materials

## Non-Commercial Risk: Project Specific Risk and Mitigation

Risk	Who Controls	Instrument
Regulatory	Host gov't	A strong regulatory framework in the concession agreement; an established system of legal recourse
Expropriation	Host gov't	Expropriation insurance (e.g., OPIC); include a broad-based team of domestic and international investors
Obligation of Concessionaire	Concessionaire	Performance bond (e.g., to ensure non-commercial covenants met)

## Risk Allocation

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- Strategic Investor
  - Financial Investor
  - Government
  - Consumer/Public
  - Suppliers and Sub-contractors
  - Third Parties, Other
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## Transferring Risk to Government

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- Assurances
    - Currency
    - Permitting
    - Supporting Infrastructure
  - Termination provisions and other contractual compensation
  - Indexation provisions
  - Revenue guarantees
-

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## Transferring Risk to Suppliers and Subcontractors

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- Fixed-price, turnkey contracts
- Penalties
- Liquidated damages
- Completion and performance guarantees
- Equipment warranties
- Feedstock contracts
- Contractor equity

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## Guarantees - Debt or Equity

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- Local Government
  - World Bank
  - MIGA
  - IFC
  - Export Agencies
-

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## World Bank Guarantees: Contractual Compliance

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- Covers only those risk pertaining to government's contractual performance
  - Will not cover commercial risk
  - Must have government's counter-guarantee
  - Some examples include:
    - User fee indexation formula specified in legal document
    - Government company's contractual obligation to take or pay for a minimum quantity of output
    - Concession company's right to purchase foreign exchange needed to service debt
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## World Bank Guarantees: Late Maturity Guarantee

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- Bank guarantees a portion of debt-service payments
    - e.g., private lender bears all risks during the first 7 years, while Bank guarantees debt service payments due in years 8 to 15
  - Allows lenders to provide loans with longer maturities, thereby easing debt-service payments
  - Must have government's counter-guarantee
  - If guarantee called, Bank pays principal and interest as it comes due
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## Export Financing Agencies in the United States

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- Export-Import Bank
- Overseas Private Investment Corporation
- Private Export Funding Corporation

# Model Security Package



## Review of Hopewell Navotas

- Background
- Project structure
- Sponsorship and management
- Risk issues and allocation
- The security package

## Project Sponsors

**Project Developer:** Hopewell Holdings Limited  
**Project Equity:** Hopewell Project Management Co.  
**Project Sponsor:** Hopewell Energy Corporation  
**Turnkey Contractor:** Slipform Engineering Limited  
**Financial Advisor:** Citibank  
**Implementing Agency:** National Power Corporation

## Project Concept and Development

- 200 MW turbine power plant was expected to act as a standby facility
- NPC would pay a capacity fee and purchase all of the power generated
- The cooperation period would run for twelve (12) years
- In 1987, Hopewell Holdings Limited began discussions
- Hopewell was the only company to submit a bid that conformed to the parameters set by NPC

## Other Parties

<b>Civil Designer:</b>	<b>Ove Arup and Partners</b>
<b>Civil Works:</b>	<b>Local Contractors</b>
<b>Electrical/Mechanical Design:</b>	<b>Ewbank Preece Engineering (HK)</b>

## Engineering & Financial Projections

The gas turbines plant usage range:	0-25%
NPC average plant usage:	15%
Base case plant usage	10%
Usage in years 1992, 1995, 1998, and 2001:	8%
Operating costs	18% of revenue
Capacity fees:	210MW
Return on equity:	17%

## Total Project Cost

<u>ITEM</u>	<u>COST (US\$ Millions)</u>	<u>% OF TOTAL</u>
Gas Turbines	23.50	57.3
Refurbishment, Shipping	5.60	13.7
Switchgear	3.10	7.5
Civil Works	3.10	7.5
Int. During Construction	2.20	5.4
Others	3.50	8.6
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HPMC COSTS	41.00	100.0
NPC COSTS	4.47	

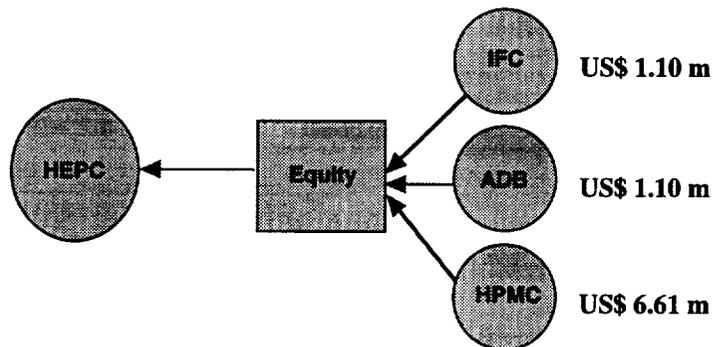
## Project Financing

### Financing Package:

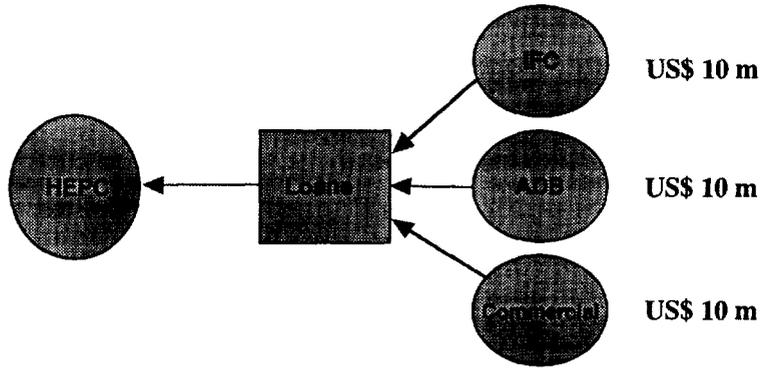
Equity	US\$ 30.0 m
Debt	US\$ 11.0 m
Total capital	US\$ 41.0 m

- In addition, NPC spent US\$ 4.5 Million for construction of fuel oil tanks
- US\$36.6m (81%) was provided in forex
- US\$8.81m (19%) in local currency

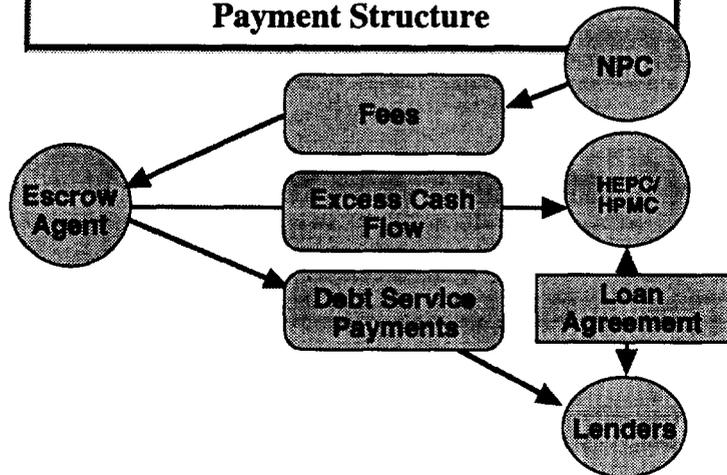
## Project Financing: Equity Component



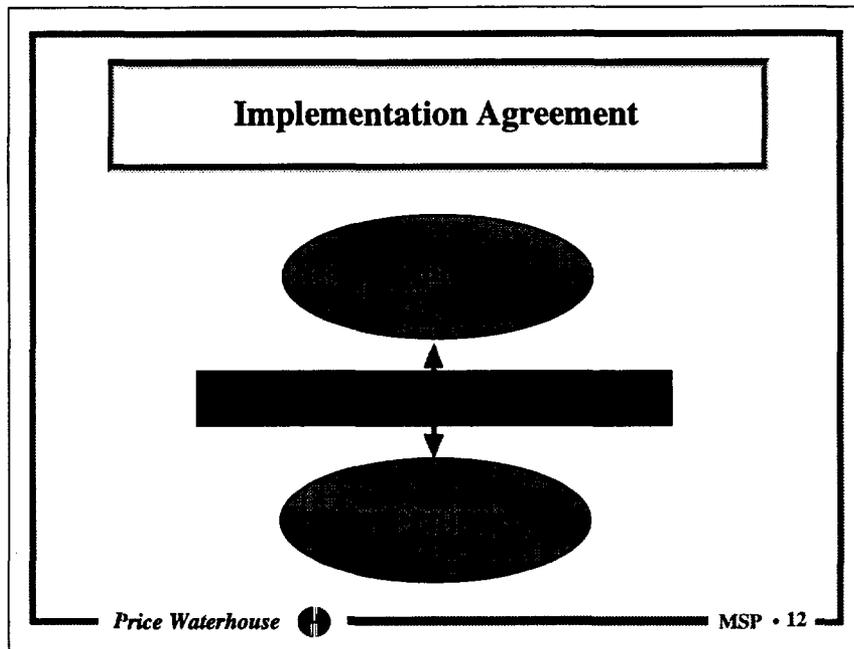
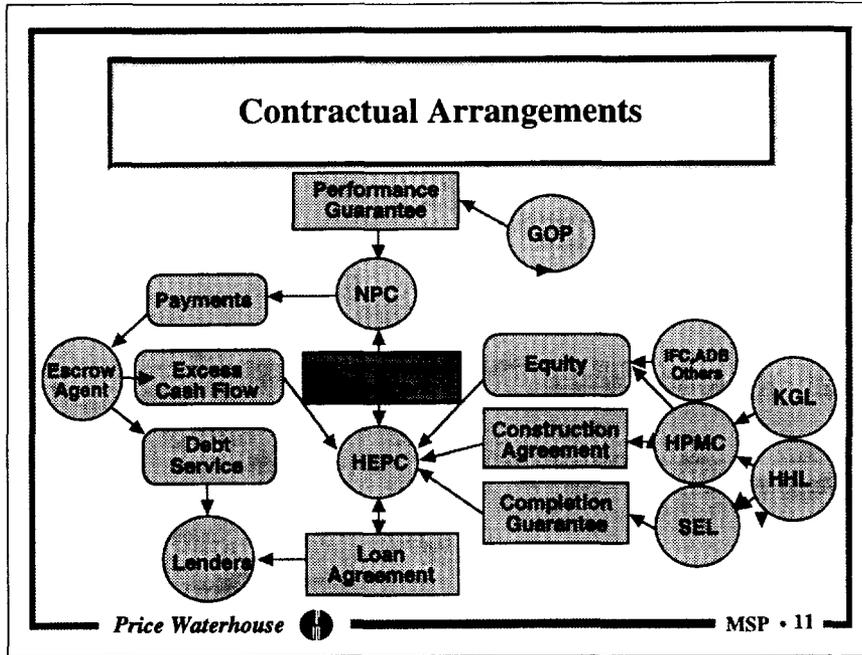
### Project Financing: Debt Component



### Project Financing: Payment Structure



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## Implementation Agreement

### Land/ Construction:

- Site was leased by NAPOCOR from the Fisheries Development Authority
- NAPOCOR was responsible for supplying land, on-site roads, transmission lines, fuel free of charge, start-up electricity, site, water, telephone transmission lines, drainage, fire protection, security services, estate taxes and assessments
- Hopewell was responsible for obtaining all permits
- Hopewell was responsible for designing, constructing, testing, commissioning and operating the 200MW gas turbine power plant



## Implementation Agreement (2)

### Financing:

- Hopewell was responsible for financing any project costs overruns
- The lenders charged Hopewell's debt service account
- A retention account for three months forward debt service provides additional security to lenders
- NAPOCOR could decide to buy out the project after five years by paying the remainder of the present value of the capacity fee
- Of the funding: US\$36.66m (80.62%) was provided in forex and US\$8.81m (19.38%) in local currency



### **Implementation Agreement (3)**

#### **Energy Sales:**

- NPC paid a monthly capacity fee to HEPC
- NPC paid a monthly energy fee based on electricity actually generated and supplied to NPC
- NPC's payment obligations to be guaranteed by the Government of the Philippines



### **Implementation Agreement (4)**

#### **Equipment**

- Hopewell purchased 3x75 MW Westinghouse gas turbines from Tri-State Corporation
- The units were approximately twelve (12) years old, however, they had been used for only two thousand (2,000) running hours
- Shanahan Engineering carried out the dismantling, shipping and commissioning of the turbines to SEL



## Implementation Agreement (5)

### Abandonment and Buyout

- The project agreement provides that HPMC must abandon the facility if physical completion is not achieved at the end of a period of ten (10) months after target completion date
- Should abandonment occur due to reasons of *force majeure*, NPC would refund to the company the capital cost incurred plus a ten (10) percent premium
- NPC may buy out the equity holders after five years by paying the remainder of the present value of the capacity fee



## Implementation Agreement (6)

### Operation and Maintenance:

- HEPC was responsible for the management, operation, maintenance and repair of the power station throughout the cooperation period.
- Routine annual, monthly, and weekly system operation programs were prepared by NPC.
- Planned maintenance and downtime were calculated as a function of operating hours and unit starts multiplied by twenty (20) hours.



### **Risks: Pre-Completion**

<b>RISK</b>	<b>RESPONSIBILITY</b>
Damage to turbines during transportation	HHL
Cost overruns	HHL
Cash deficiency	HHL

### **Risks: Abandonment and Buyout**

<b>RISK</b>	<b>RESPONSIBILITY</b>
Abandonment	HPMC
Buyout	NPC

## Risks: Post-Completion

<b>RISK</b>	<b>RESPONSIBILITY</b>
Operating risks	HPMC
No minimum offtake	HEPC
Default risk	GOP
Foreign exchange risk	GOP
Currency risk	GOP



## Security Package: the Loan Agreement

- The security package for lenders included the following provisions in the loan agreement:
  - 1) Maximum debt/equity ratio of 75:25
  - 2) Minimum liquidity ratio of 1.3:1
  - 3) General minimum debt-service ratio of 1.3:1
  - 4) Maintenance of 3 months forward moving balance of debt-service payments
  - 5) Retention of minimum cash dividend balance of \$.95M until co-financing loans are repaid
  - 6) Redemption of share until long-term debt is repaid
  - 7) Payment of dividends will be subject to satisfactory payment of due debt-service and compliance with covenants (1), (2) and (3) above



## Security Package: the Loan Agreement (2)

- The security package for lenders included the following provisions in the loan agreement (*continued*):
  - 1) A real estate and chattel mortgage on all fixed and movable assets of HEPC respectively
  - 2) A special power of attorney to exercise all rights under the Implementation Agreement
  - 3) Charge over the escrow account
  - 4) Assignment of all insurance proceeds including business interruption insurance



## A Look at Hopewell Navotas I in Operation

- Effective date of the contract was postponed from May 31, 1989 to October 1, 1989 due to:
  - Complication in the lease of land
  - Delay in finalizing all legal matters caused time slippage in the purchase of equipment
  - Damage to the equipment occurred during shipping
- Because of these delays, a revised schedule was agreed upon
- Plant availability has averaged 98%
- Average running time per weekday is 13 hours in 1993



# Security Package Review



## Coverage of Risks

- Sovereign guarantees (*public sector*)
- Commercial guarantees (*private sector*)
  - Owner guarantees
  - Third party guarantees

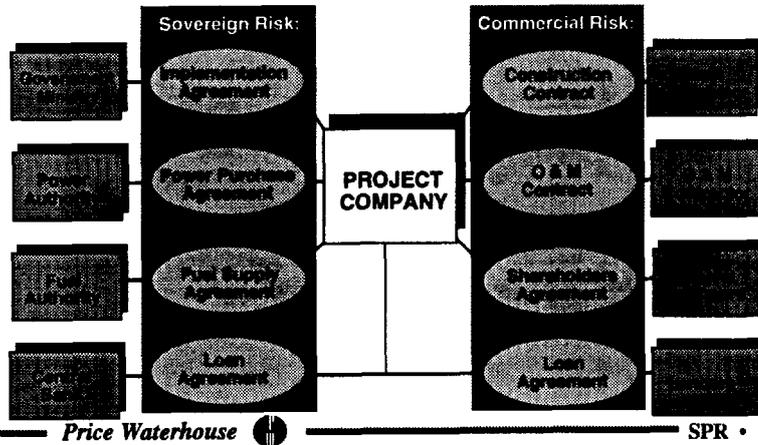


## Sovereign Guarantees

- A sovereign guarantee is an agreement which is backed by the "full faith and credit" of the host country
- This guarantee remains valid regardless of political change
- The basic concession agreement between the host government and the project company - the implementation agreement - will normally contain numerous sovereign guarantees



## Typical Contracts & Associated Risks



## Types of Guarantees

- Unconditional guarantee
- Guarantees that are not all-encompassing:
  - Limited guarantees (*time & amount*)
  - Contingent guarantees
  - Indirect guarantees
  - Completion guarantees
  - Construction guarantees
  - Deficiency guarantees
  - Export credit agency guarantees
  - Take-or-pay, through-put & put-or-pay

## Unconditional Guarantees

- The most common form of guarantee
- A guarantor assumes the responsibility to perform all of the obligations of the guaranteed party

## Guarantees Limited in Amount

- Guarantees may be effective even if they do not cover 100% of the lenders' credit exposure
- Used if a lender believes that the project will have only limited deficits under the worst of circumstances
- Examples of guarantees limited in amount:
  - Joint venture agreement
  - Pre-committed pool of funds to cover contingencies
  - Cost overrun guarantee
  - Cash flow deficiencies

## Guarantees Limited in Time

- Guarantees may be effective even when they do not cover the entire project life
- Used if a lender believes that a project will experience deficits only at a certain period of time
- Examples of guarantees limited in time:
  - Completion guarantee
  - Bridging guarantee



## Completion Guarantees

- These guarantees cover the construction and start-up phases of construction
- The completion guarantor(s) promises to complete the project by a set date and pay for all cost overruns
- The completion guarantors can protect themselves by:
  - Selecting financially responsible contractors
  - Negotiating provisions into the construction contract which meet the terms of the completion guarantee
  - Purchasing performance bonds and/or insurance



## Guarantees and Bonds Under Construction Contracts

- There are a number of types of guarantees and bonds used to guarantee completion and performance under construction contracts:
  - Bid bonds
  - Performance bonds
  - Advance payment guarantees or bonds
  - Retention money guarantees or bonds
  - Maintenance bonds



## Concession Agreements

- A concession agreement can be signed between the contractor and the host government to cover risks that are indigenous to the host country.
- These risks may include:
  - Expropriation
  - Increases in taxes
  - Availability of resources, materials
  - Changing of export restrictions
  - Police and property protection
  - *Force Majeure*
  - Local government harassment, regulations



## Central Bank Guarantees

- **The central bank of the host country may provide protection against:**
  - **Currency convertibility**
  - **Currency devaluation**
  - **Import restrictions**
  - **Restrictions or taxes on dividends and capital distribution**
  - **Export currency restrictions or taxes on debt service**
  - **Foreign exchange restrictions or taxes**



## Guarantees From Export Credit Agencies

- **Export credit agencies (ECAs) provide loan guarantee programs which can be used to cover the cost and installation of manufactured products that are exported from the host country**
- **The fee for the loan guarantees is usually competitive in the market**
- **Some ECAs also provide: inconvertibility coverage, expropriation insurance, and war, revolution and insurrection insurance**



## **Private Insurance Against Political Risk**

- **Private sector coverage of political risk varies depending on regional political stability**
- **Generally, the rates are high and the amounts of insurance coverage available are limited**
- **Currently, Lloyds of London offers the most comprehensive array of private sector insurance against political risk**



## **Take-or-Pay Contracts**

- **Contractual obligation to make periodic payments in the future for quantities of products, goods or services at set prices**
- **The purchaser must make specified payments even if it does not require the delivery of the contracted products or services**
- **The agreement can only be cancelled by mutual consent**
- **Typical projects financed by take-or-pay contracts: generating & distribution systems, mines & refineries**



## Through-Put Contracts

- When the project is to provide a service, such as the transportation of a commodity through a pipeline or transmission lines, the long-term take-or-pay contract for the transmission service is called a through-put contract
- Thus, a client must pay for a service, whether or not it is used (*which represents a de facto guarantee*)
- This type of obligation is sometimes called:
  - a tolling agreement,
  - a cost-of-service tariff, or
  - a deficiency agreement



## Put-or-Pay

- A put-or-pay contract is provided by the suppliers of energy or products to a project which needs an assured supply of such energy or products over a long period, at a predictable price, to meet production cost targets
- Under this contract, a put-or-pay obligor must either supply the energy or products needed, or pay the project company the difference in costs incurred in obtaining the energy or products from another source



## Long Term Put-or-Pay & Take-or-Pay Contracts

- The seller usually enters into such a contract in order to guarantee a stream of revenue. The buyer wants an assured supply of a product at a reasonable price
- Such contracts should include:
  - Amount of energy or product to be delivered
  - Description of liabilities involved in deliveries
  - Quality of product to be sold
  - Provisions for price adjustment



## Take-and-Pay Contracts

- These contracts are similar to take-or-pay contracts, but different in that there is not the unconditional obligation to pay for a service or product whether or not delivered
- Rather, there is an obligation to pay for a product or service only if it is delivered



## Liquidated Damage Clauses

- Liquidated damage clauses specify that a fine will be paid when a certain event occurs
- These fines often allow for the party at fault to remedy the incurred damage within a time period to avoid the fine



# Structuring Loan Agreements

*Price Waterhouse*



## Structuring Loan Agreements

In this presentation we will discuss:

- Generic term loan agreement
- Loan syndication process

## Generic Term Loan Agreement

### Overview

- Loan terms and closing the loan
- Financial covenants
- Affirmative covenants
- Protective covenants
- Defaults and remedies
- "Boilerplate"

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## **Loan Terms and Closing the Loan**

- **Description of the promissory note**
  - **Principal amount, interest rate, date, time and amount of required repayments**
- **Making the loan**
  - **Date, time and place of closing**
  - **Payment of commitment fees**
- **Conditions of closing**
  - **Lender's commitment to lend contingent on fulfillment of conditions**
  - **Lender protections**
  - **Representations and warranties**

## **Conditions of Closing - Lender Protections**

- **Loan documents executed to satisfaction of lender**
- **Requirement that satisfactory expert opinions received from:**
  - **Special counsel of lender**
  - **Borrower's general counsel**
  - **Accountant**
  - **Project engineer**
- **Loan proceeds**

## Representations and Warranties

- **Borrower assures lender that no problems exist towards closing the loan**
  - **Good standing: legal, permits**
  - **Accurate financial statements**
  - **Good title / valid lease for all properties**
  - **All material obligations disclosed**
  - **No material adverse change through closing**
  - **Lender may also make representations and warranties**



## Financial Covenants

Covenants describe how a loan will be repaid under normal circumstances or may be prepaid under special circumstances:

- 1) **Required payments:**
  - **Amortization schedule**
  - **Grace period or blind spot, balloon Payments**
  - **Accelerated prepayments if borrower earnings exceed established limits**
- 2) **Optional prepayments without penalty**
- 3) **Restrictions on refinancing**
- 4) **Optional prepayment under certain Circumstances**
- 5) **Optional prepayment with penalty**



## Affirmative Covenants

- A promise by a borrower to perform certain actions, including to:
  - Provide financial statements and other information
  - Keep full and accurate accounting records
  - Inspect properties and books
  - Comply with laws, tax rules and other regulations
  - Agree to carry adequate insurance
  - Secure note equally with other lenders



## Protective Covenants

- A protective or "negative" covenants protects the lender by limiting the actions and operations of the borrower, including:
  - 1) Minimum working capital requirement
  - 2) Limitation on short-term debt
  - 3) Limitation on long-term debt
  - 4) Restriction on lease obligations
  - 5) Payment restrictions
    - Employees, contractors and other parties
    - Dividends on stock
    - Repurchase of stock



## Protective Covenants (cont.)

- 6) **Restriction on supply and purchase contracts**
- 7) **Limitations on guarantees and contingent liabilities**
- 8) **Limitations on sale and leaseback transactions**
- 9) **Limitations on mortgages, liens and other encumbrances**
- 10) **Limitations on investments**
- 11) **Limitations on subsidiary actions**
- 12) **Limitations on corporate actions, (e.g. mergers, disposition of assets or acquisitions)**



## Defaults and Remedies

- **Conditions whereby loan agreement goes into default, and remedies available to the lender:**
  - 1) **Default on payment of principal**
  - 2) **Default on payment of interest**
  - 3) **Default in observing protective covenants**
  - 4) **Default in any other covenant or agreements**
  - 5) **Set of additional contingencies**
    - **Actions or events outside of loan**
    - **Agreement demonstrating, or leading to, full or partial borrower insolvency**



## Boilerplate

- Provisions that establish definitions and procedures for administering the loan
  - 1) Modification of the agreement
  - 2) Definitions
  - 3) Expenses of the financing



## Loan Syndication Process (Typical Timeframe)

### Week 1

- Transaction manager selected
- Transaction structure, pricing and fees determined

### Week 2

- Transaction manager produces information memorandum and develops marketing strategy
- Meeting with three to six underwriting banks to discuss fee sharing and levels of underwriting. Underwriters approve or decline to participate in underwriting



## Loan Syndication Process (2)

### Week 3

- General bank syndicate approached
- Management and transaction manager meet with banks to discuss credit risk and other issues

### Week 4

- Banks in general syndicate conduct their own individual credit evaluations
- Transaction manager offers additional information and analytical support to syndicate banks
- Preparation of proposed loan documents by transaction manager and law firm

## Loan Syndication Process (3)

### Week 5

- Banks in syndicate accept or decline to participate
- First drafts of proposed loan documents distributed to underwriters and syndicate banks

### Week 6

- Borrower obtains all necessary internal and external approvals
- Negotiation of loan documents conducted through transaction manager

## Loan Syndication Process (4)

### Week 7

- Final allocation of loan commitments among syndicate banks
- Signing
- Fulfill conditions precedent

### Week 8

- Disbursement of funds begins



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# ***VIRGINIA POWER***

## ***Statistics***

***Total Corporate Assets - \$13.3 Billion***

### ***Number of Utility Customers***

***Residential - 1,643,894***

***Industrial - 849***

***Commercial - 177,915***

***Other - 25,645***

### ***System Energy Mix***

***Nuclear - 31%***

***Coal - 39%***

***Oil - 3%***

***Purchased power - 23%***

***Other - 4%***

***Average Cost Per Kilowatthour - 4.5 cents/kWh***

# ***VIRGINIA POWER***

## ***1995 - 2014***

### ***Load And Output Forecast***

***Adjusted Winter Load Growth Rate - 2.0%***

***Adjusted Summer Load Growth Rate - 2.1%***

***Annual Load Factor Range - 58.1% - 59.9%***

### ***Reliability Range***

***Max. and Min. Reserve Margin - 22.89% - 15.4%***

*U. S. Congress  
November 1978*

*Encourage Privately-Owned Cogeneration  
Small Power Production Facilities*

# ***PURPA***

***PURPA required utilities to:***

***Buy any power made available by a QF***

***Pay full avoided cost for new***

***Interconnect with QFs***

***Provide back-up power***

# ***IPP BENEFITS***

*Avoid Contrived Steam Costs*

*Improved Siting Flexibility*

- Transportation*
- Fuel Location*
- Environmental Acceptability*
- Zoning*

*Elimination of Regulatory Risk Costs*

*Possibly Increase Competition*

*Improved Bids for Peaking Capacity*

# ***BUY VERSUS BUILD***

***PRODUCERS FINANCE PROJECTS***

***PRODUCERS BEAR RISKS***

***Completion and Performance***

***CAN MAINTAIN RELIABLE SERVICE***

***REQUEST  
FOR PROPOSAL  
PROCESS***

# ***RFP PROCESS***

***UTILITY MAKE-UP***

***POLITICAL CONCERNS***

***COMPETITION***

***SOLICITATION DOCUMENT***

***PROCESS SCHEDULE***

# ***UTILITY MAKE-UP***

***TERRITORY SERVED***

***UTILITY SIZE***

***CUSTOMER MIX***

***UTILITY'S GENERATION MIX***

***NON-UTILITY GENERATION MIX***

# ***UTILITY MAKE-UP***

## ***FORECAST OF LOAD***

*Existing Reserve Margins*

*Desired Reserve Margins*

*Type of Generation Desired*

## ***TRANSMISSION PLANNING***

*Ability To Interconnect*

*Cost To Interconnect*

*Location Priorities*

# ***DOMESTIC POLITICAL CONCERNS***

***PROCUREMENT POLICY***

***PROPOSED CHANGES TO POLICY***

***COMMITMENT FROM LEADERS***

***ACCEPTANCE BY REGULATORS***

# ***POLITICAL CONCERNS***

***PROCUREMENT POLICY***

***PROPOSED CHANGES TO POLICY***

***COMMITTMENT FROM LEADERS***

***ACCEPTANCE BY REGULATORS***

# ***COMPETITION***

***THE GOAL OF COMPETITION  
IS TO IMPROVE ECONOMIC  
EFFICIENCY IN THE SUPPLY  
OF ELECTRICITY***

# ***THE RFP DOCUMENT***

***PROVIDES FOR THE SELECTION  
OF CAPACITY BY BALANCING LOW  
COST WITH NON-PRICE FACTORS***

***PROVIDES THE BEST MEANS OF  
FOSTERING ECONOMIC  
EFFICIENCY IN FREE AND  
FAIR MARKETS***

# ***THE RFP DOCUMENT***

## ***INSTRUCTIONS TO BIDDERS***

*Intent of Solicitation*

*Capacity Requirements*

*Bid Preparation*

*Contacts*

*Notice of Pre-Bid Meeting*

*Bid Submittal Requirements*

*Evaluation and Selection*

*Information Required*

*Model Agreement*

*Required Copies of Bid*

*Confidentiality*

*Bid Modifications*

*Amendments*

# ***THE RFP DOCUMENT***

## ***PROPOSAL FORM***

***General Requirements***

***Project Schedules Provided***

***Authorized Representative***

***Facility Description***

***Pricing Provisions***

***- Energy***

***- Capacity***

***Terms and Conditions***

***No Collusive Arrangements With Others***

***Prior Project Experience***

***Term and Schedule Commitments***

***Fuel Utilization***

# ***THE RFP DOCUMENT***

***NOTICE OF RECEIPT  
OF  
REQUEST FOR PROPOSAL***

***INTENT TO BID  
FOR POWER PURCHASES***

# **THE RFP DOCUMENT**

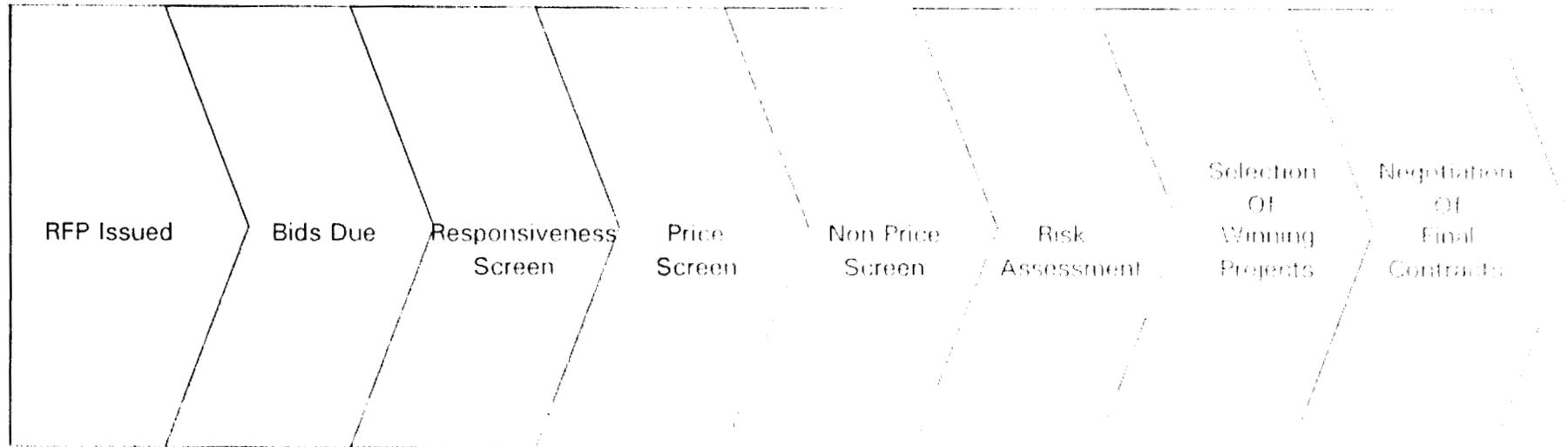
## **MODEL AGREEMENT**

# ***THE RFP DOCUMENT***

## ***TRANSMISSION SYSTEM MAPS***

# ***CAPACITY SOLICITATION PROCESS***

## ***Key Activities***



***Total Process Time Is 11 - 12 Months***

# ***CAPACITY SOLICITATION PROCESS***

***Issuance of RFP***

***Advertisement***

***Pre-Bid Meeting***

# ***CAPACITY SOLICITATION PROCESS***

## ***Bids Due***

***By Specified Date***

***By Specified Time***

***To Specified Location***

***No Short List***

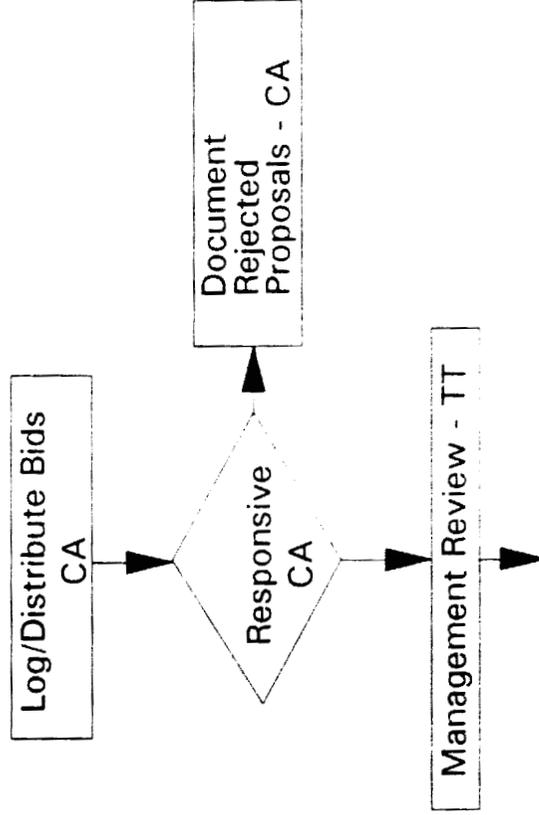
***No Second Chance***

***Bid Fee Enclosed***

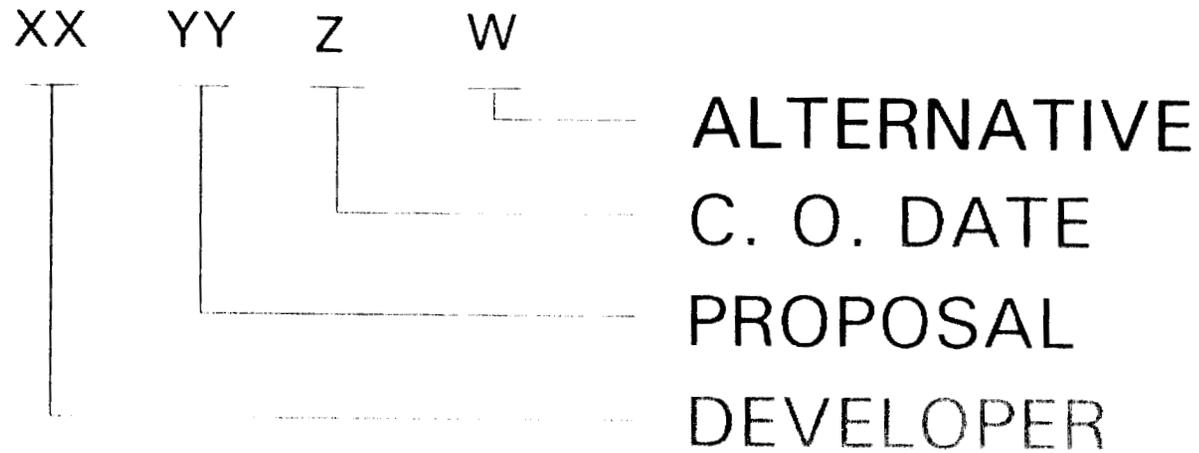
# ***OBJECTIVE***

TO IDENTIFY AND SELECT THE GENERATION EXPANSION PLAN THAT BEST MEETS THE FUTURE NEEDS OF VIRGINIA POWER'S CUSTOMERS AT THE LOWEST EVALUATED TOTAL SYSTEM COST BY SELECTING THE BEST COMBINATION OF ALL AVAILABLE SOURCES OF GENERATING CAPACITY.

# STEP 1



# ***BIDDER IDENTIFICATION***



# ***CAPACITY SOLICITATION PROCESS***

## ***Responsiveness Screen***

***Bid Received By Due Date***

***Bid Accompanied By Bid Fee***

***Bid Submitted In Required Form***

***Bid Identified Specific Site***

***Bid Complies With Corporate Policy***

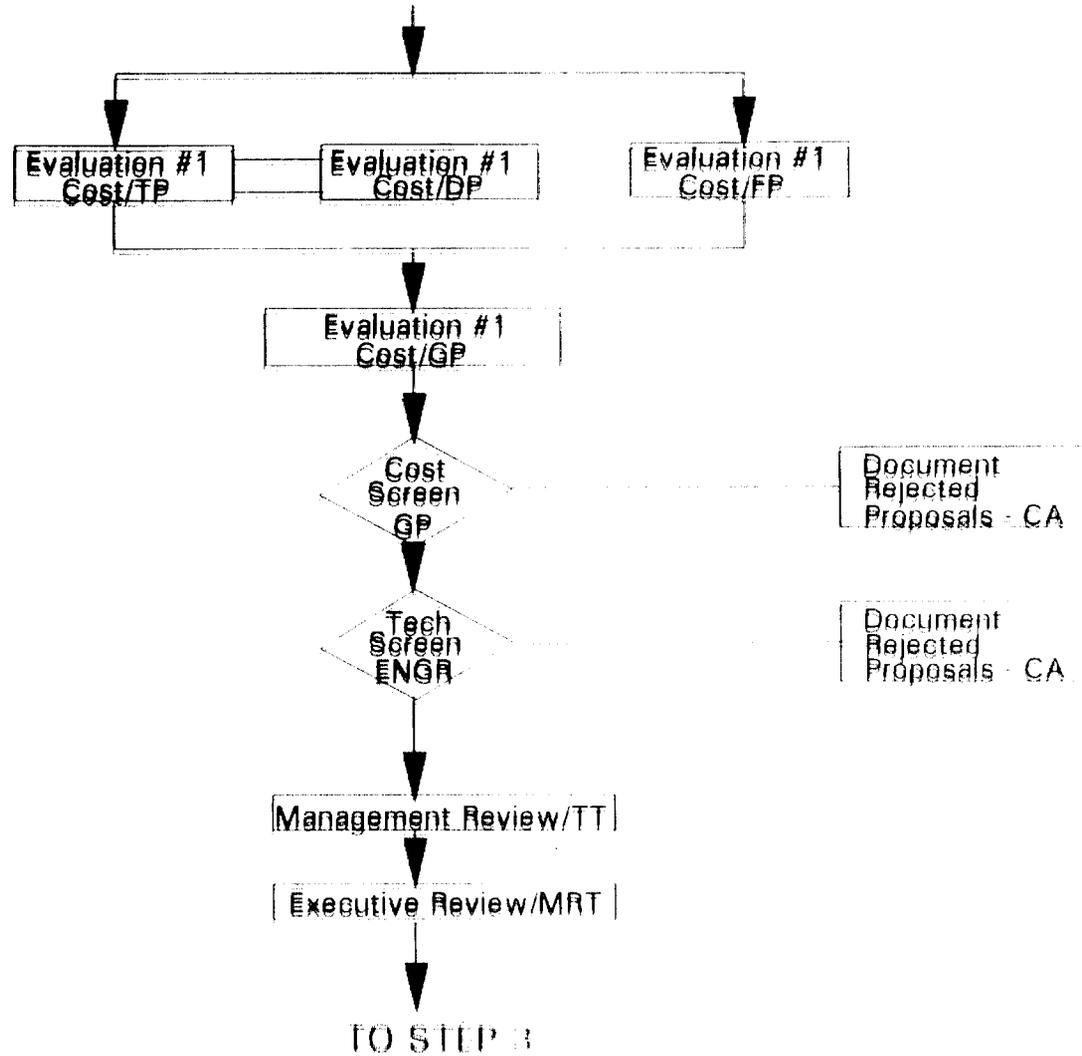
***Bid Is A Firm Offer***

***Bidder Accepts Required Provisions***

***Sufficient Information To Evaluate***

# STEP 2

FROM STEP 1



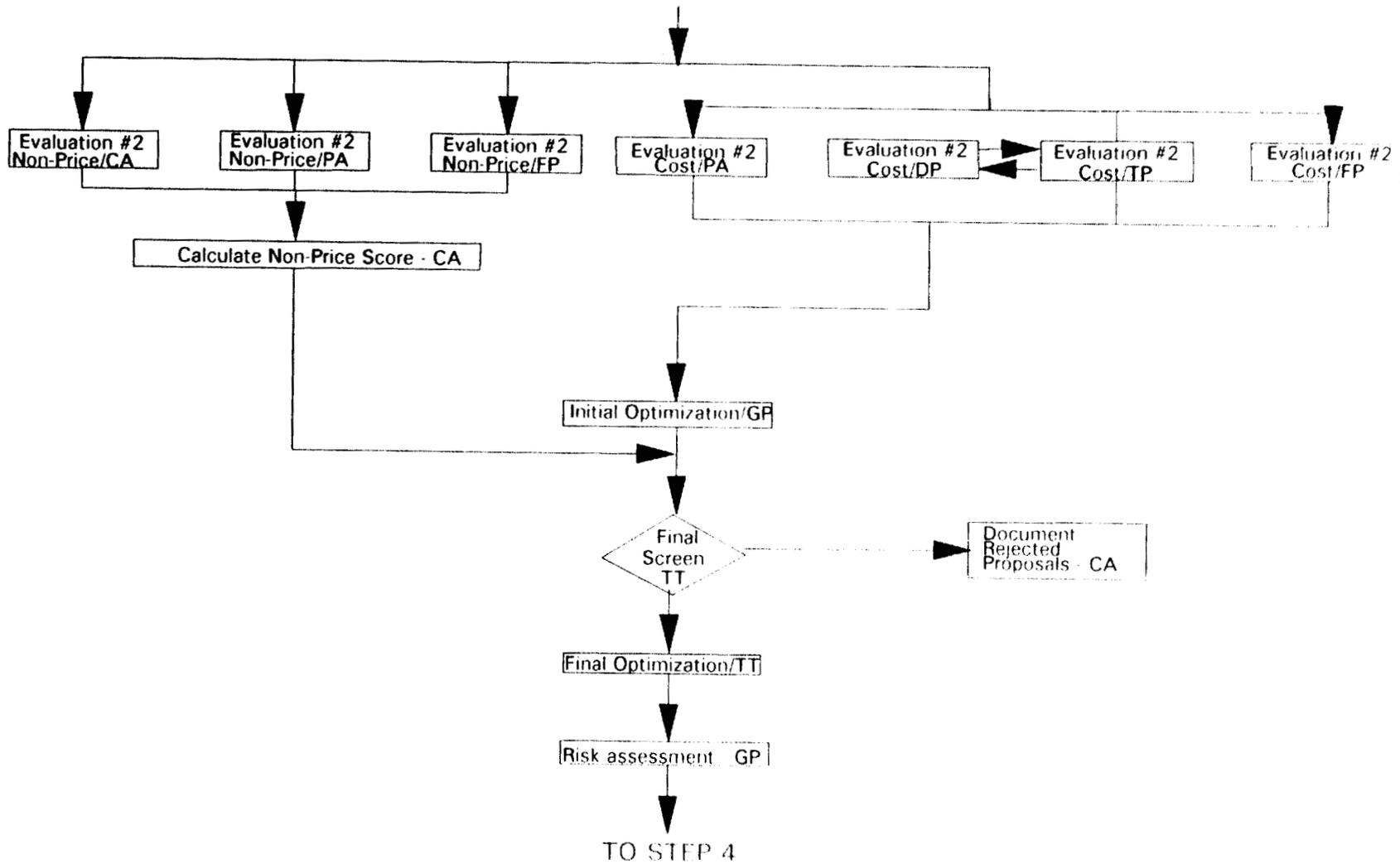
# ***CAPACITY SOLICITATION PROCESS***

## ***Price Screen***

***Proposed Capacity Payment Stream  
Proposed Energy Payment Stream  
Dispatch Of The Facility  
Cost To Interconnect***

# STEP 3

FROM STEP 2



# *NON-PRICE FACTORS*

## *Project Viability*

*Financial Capability*  
*Level of Development*  
*Experience*  
*Security*

## *Fuel & Fuel Diversity*

*Origin*  
*Market Stability*  
*Multi-Fueled Plants*  
*System Fuel Diversity*

## *Other Factors*

*Societal/Economical Benefits*  
*Use of Local Resources*  
*Steam Commitment To Host*  
*Operating Flexibility*  
*Location*

# ***CRITERIA FOR NON-PRICE EVALUATION***

<b>CRITERIA</b>	<b>WEIGHTING</b>
■ PROJECT VIABILITY	10%
LEVEL OF DEVELOPMENT	15%
SECURITY	10%
FINANCIAL STATUS	25%
EXPERIENCE	25%
TECHNICAL ASPECTS	25%
■ FUEL AND FUEL DIVERSITY	10%
PRICE STABILITY	60%
SYSTEM FUEL MIX	15%
MULTI-FUEL CAPABILITY	10%
VIRGINIA/NORTH CAROLINA FUELS	15%
■ OTHER FACTORS	10%
DISPATCHABILITY	40%
OWNERSHIP	15%
LOCATION	15%
CAPACITY PAYMENT STRUCTURE	15%
QUALIFYING FACILITY STATUS	15%

# ***CALCULATION OF NON-PRICE SCORE FOR EACH PROJECT***

## **PROJECT VIABILITY (for illustration only)**

	SCORE		WEIGHT		PRODUCT
LEVEL OF DEV'T	9.0	X	0.15	=	1.35
SECURITY	7.0	X	0.10	=	0.70
FINANCIAL STATUS	5.0	X	0.25	=	1.25
EXPERIENCE	6.0	X	0.25	=	1.50
TECHNICAL ASPECTS	3.5	X	0.25	=	0.86
			PROJECT VIABILITY SCORE	=	5.66

***CALCULATION OF NON-PRICE SCORE  
FOR EACH PLAN***  
(for illustration only)

PROJECT	SCORE		MW		PRODUCT
1	6.52	X	200	=	1,304
2	3.49	X	200	=	698
3	9.20	X	600	=	5,520
4	1.11	X	200	=	222
5	5.73	X	400	=	2,292
			1,600		10,036

NON-PRICE SCORE FOR THIS PLAN =

$$\frac{10,036}{1,600} = 6.27$$

# ***CONVERSION OF PLAN COSTS TO COST SCORES***

(for illustration only)

	PLAN	TOTAL SYSTEM COST (\$MILLION)	COST SCORE
LOW COST	A	12,912	10.00
	B	13,068	9.40
	C	13,481	7.80
	⋮	⋮	⋮
⋮			
⋮			
CUTOFF	N	15,500	0.00

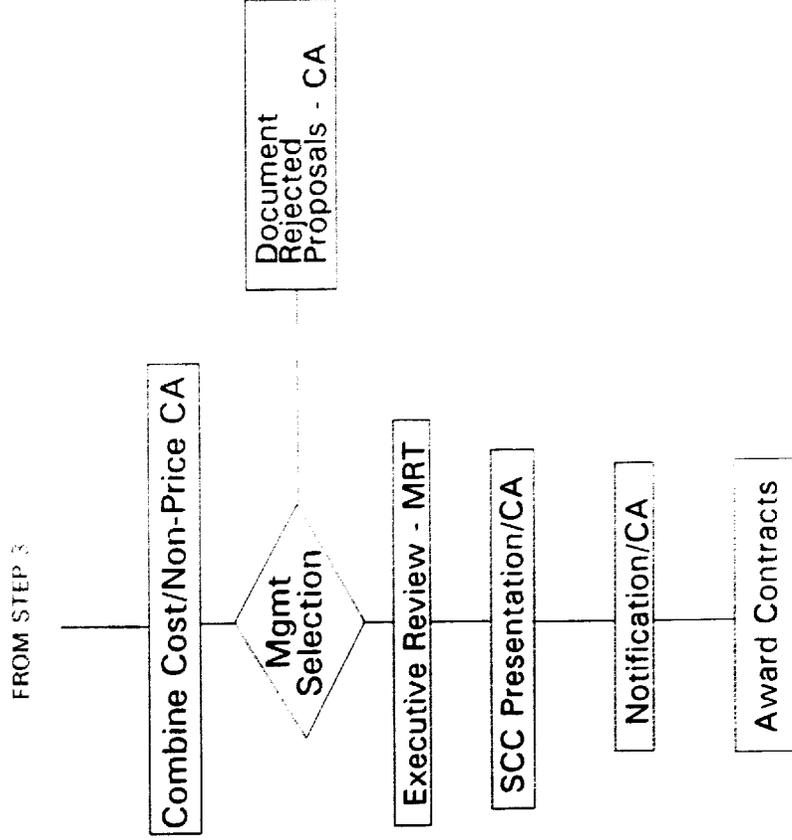
$$\text{SCORE} = \left[ 1 - \frac{(\text{PLAN COST} - \text{LOW COST})}{(\text{HIGH COST} - \text{LOW COST})} \right] \times 10$$

# *CAPACITY SOLICITATION PROCESS*

## *Risk Assessment*

*Higher Than Expected Load Growth*  
*Lower Than Expected Load Growth*  
*Deterioration Of Existing Units*  
*Demand Side Programs Reflected*  
*Unstable Fuel Prices Of Some Plants*

# STEP 4



# ***COMBINING COST SCORES AND NON-PRICE SCORES***

(for illustration only)

<b>PLAN</b>	<b>COST SCORE</b>	<b>x 0.7</b>	<b>NON-PRICE SCORE</b>	<b>x 0.3</b>	<b>COMBINED SCORE</b>
A	10.00	7.00	0.00	0.00	7.00
B	9.40	6.58	9.40	2.82	9.40
C	7.80	5.46	10.00	3.00	8.46
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
N	0.00	0.00	7.20	2.16	2.16

# ***CAPACITY SOLICITATION PROCESS***

## ***Selection Of Winning Plan***

***Review Top 3 - 6 Plans***

***Projects Common To All Plans***

***Determine Least Sensitive Plan***

***Make Selection***

***Notify Project Winners***

# *CAPACITY SOLICITATION PROCESS*

## *Negotiation Of Contracts*

*Negotiations Should Be Limited  
5 - 10 Days To Complete Each Contract  
Execute Final Contract*

# ***VIRGINIA POWER'S SOLICITATIONS***

<i><b>SOLICITATION</b></i>	<i><b>MW REQUESTED</b></i>	<i><b>RESPONSE</b></i>		<i><b>CONTRACTS AWARDED</b></i>		
<i><b>-----</b></i>	<i><b>-----</b></i>	<i><b>BIDDERS</b></i>	<i><b>PROJECTS</b></i>	<i><b>MW</b></i>	<i><b>NUMBER</b></i>	<i><b>MW</b></i>
<i><b>-----</b></i>	<i><b>-----</b></i>	<i><b>-----</b></i>	<i><b>-----</b></i>	<i><b>-----</b></i>	<i><b>-----</b></i>	<i><b>-----</b></i>
<i>12-23-86</i>	<i>700</i>	<i>27</i>	<i>53</i>	<i>5,083</i>	<i>7</i>	<i>1,264</i>
<i>03-01-88</i>	<i>1,750</i>	<i>43</i>	<i>95</i>	<i>14,653</i>	<i>19</i>	<i>2,086</i>
<i>11-15-88</i>	<i>300</i>	<i>17</i>	<i>26</i>	<i>2,139</i>	<i>0</i>	<i>0</i>
<i>08-15-89</i>	<i>1,100</i>	<i>38</i>	<i>78</i>	<i>11,600</i>	<i>3</i>	<i>442</i>

# ***VIRGINIA POWER'S SOLICITATIONS***

<i><b>SOLICITATION</b></i>	<i><b>MW REQUESTED</b></i>	<i><b>RESPONSE</b></i>		<i><b>CONTRACTS AWARDED</b></i>		
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# ***KEYS TO AGREEMENT NEGOTIATIONS***

*Agreement must be complete*

*All exceptions should be noted by Developer*

*Be prepared for negotiating sessions*

*No piecemeal negotiations*

*Maintain document control*

*Ambiguity will be expensive*

# ***POWER PURCHASE AGREEMENT***

*Definitions*

*Exclusive Rights to Output*

*Communications*

*Operating Procedures*

*Default Provisions*

*Warranties*

*Right to Inspect Financial Data*

*Interconnection*

*Right of First Refusal*

# ***PENALTIES AND LIQUIDATED DAMAGES***

***Noncompliance and Guaranties***

***Dependable Capacity Compliance***

***Testing Facility's Dependable Capacity***

***Force Majeure***

***Regulatory Out***

***Dispatch of Facility***

***Capacity Payment Reduction***

# ***CAPACITY PAYMENT REDUCTION OPTIONS***

## ***OPTION 1***

***Allowed "x" Days of Forced Outages (FO)***

***Dispatched Missed by More Than 5% = FO***

***If FO > Allowed, Then Payment Reduction***

# ***CAPACITY PAYMENT REDUCTION OPTIONS***

## ***OPTION 2***

Deviation from <u>Dispatch</u>	Summer/Winter Demonstration Period		Non-Demonstration Period	
	Hourly Payment Reduction		Hourly Payment Reduction	
	<u>On Peak Hour</u>	<u>Off Peak Hour</u>	<u>On Peak Hour</u>	<u>Off Peak Hour</u>
> ± 5 - ± 10%	25%	20%	15%	10%
> ± 10 - ± 25%	45%	40%	35%	30%
> ± 25 - ± 50%	80%	65%	60%	55%
> ± 50 - + 75%	100%	90%	85%	80%
> + 75	125%	100%	90%	85%

# ***CAPACITY PAYMENT REDUCTION OPTIONS***

## ***OPTION 3***

***Allowed "x" MWH of Forced Outages (FO)***

***Compare Actual Output to Dispatched Output***

***Convert Capacity Payment to Cents/kWh***

***Reduce Capacity Payment***

# ***KEYS TO AGREEMENT NEGOTIATIONS***

***Obligations of Seller and Buyer***

***Consequences of Failure to Perform***

***Recipe for Success***

*HIDROELECTRICA  
PLATANAR S.A.*

*Javier Matamoros Agüero  
(506) 460-05-97  
San Carlos - Costa Rica*

## **INFORME HIDROELECTRICA PLATANAR S.A.**

1) La EMPRESA ELECTRICA MATAMOROS S.A., es una empresa familiar de generación de energía eléctrica fundada en 1932, aprovechando el Río Platanar en el Cantón de San Carlos, Provincia de Alajuela, Costa Rica.

Actualmente cuenta con una capacidad instalada de 3.4 MW, distribuidos en siete unidades de generación a filo de agua, en un sistema de cascada, la energía y potencia producidas, se vende a Coopelesca R.L., Cooperativa de Electrificación Rural de la Zona Norte del país, las ventas promedio anuales son de 20.0 GWH, aproximadamente un 15% del mercado de demanda de energía de dicha Cooperativa.

2) Creación del sector privado de generación de energía eléctrica (Ley 7200, del 18 de octubre de 1990.)

Para que una institución financiera decida apoyar un proyecto de inversión, tiene que existir toda una estructura legal y técnica que regule la actividad que se desea desarrollar, es así como en Costa Rica existen tres instituciones gubernamentales, que regulan todos los aspectos energéticos del país, para crear esta base legal y técnica fue necesario que el incipiente sector privado de generación privada, coordinara esfuerzos con estas tres instituciones para definir y crear un proyecto de ley que amalgamara y resguardara en un solo documento todas las funciones para las que estas instituciones fueron creadas:

# ESQUEMA N° 1

**MIRENEM**  
**(Ministerio de Recursos**  
**Naturales Energía y Minas)**

**Ente Encargado de dictar políticas**  
**energéticas**

- i) Conservación energía
- ii) Conservación del Medio Ambiente
- 1) Comisión Interinstitucional de Estudios de Impacto Ambiental
- 2) Dirección General Forestal
- iii) Disponibilidad energía

**SNE**  
**(Servicio Nacional de**  
**Electricidad)**

**Ente, eminentemente técnico,**  
**encargado del uso racional de todas**  
**las aguas nacionales, mediante**  
**concesiones, además de la**  
**regulación producción, distribución y**  
**tarifación de la electricidad**

- i) Concesión de aguas
- ii) Referendum Contrato ICE Productor

**ICE**  
**Instituto Costarricense de**  
**Electricidad.**

**Institución creada con la finalidad de**  
**proveer los Servicios Eléctricos a**  
**todos los Costarricenses**  
**específicamente con la construcción**  
**de redes de transmisión y**  
**distribución así como los grandes**  
**proyectos de generación eléctrica.**

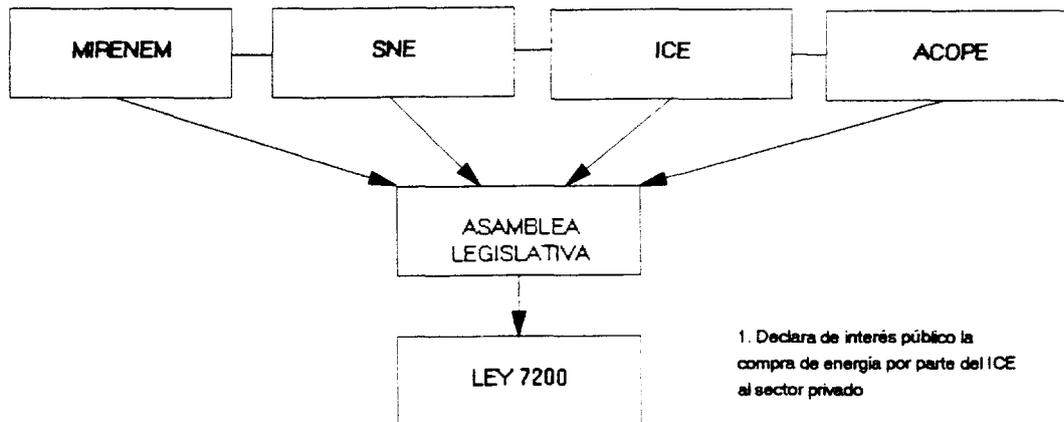
- i) Elegibilidad
- ii) Viabilidad
- iii) Contrato

**ACOPE**  
**Asociación Costarricense**  
**de Productores de**  
**Energía Eléctrica.**

**Asociación creada para representar**  
**los intereses de todos los**  
**productores privados de electricidad**  
**ante las instituciones**  
**gubernamentales.**

- i) Coordinación Interinstitucional
- ii) Relaciones públicas
- iii) Comisión Técnica Tarifaria
- iv) Socios: Generadores, G. Potencial: Consultores, Constructores, Proveedores, financistas

## ESQUEMA N° 2



1. Declara de interés público la compra de energía por parte del ICE al sector privado

2. Limita a un 15% de la capacidad total instalado al Sector Privado  
Actualmente la capacidad total instalada en Costa Rica es de 1100 MW, a nivel de contrato existen 155 MW y en cola 300 MW

3. Limita la participación extranjera a un máximo del 35% del capital de la empresa generadora.

4. Tope máximo por proyecto 20 MW

5. Tarifa en ¢ indexada al \$ cada vez que el producto combinado entre la inflación local y la devaluación varían en un 3%, opera una fórmula de ajuste automático.

## CONTRATO ICE

Una vez que la ley 7200 fue creada y que se considera como un avance histórico en el desarrollo energético del país, porque legitima a todo un sector empresarial deseoso de incursionar en ese campo, que además envía una señal positiva a las entidades financieras minimizando el riesgo para el inversionista.

Otro paso de igual importancia fue el de asegurar el mercado, las condiciones técnicas de los equipos, las líneas de transmisión, los puntos de interconexión y medición de la energía vendida y el precio de dicha energía.

Así pues el precio de cada Kwh, se determinó con base al costo evitado de construcción, operación, transmisión y distribución del plan de expansión del ICE, a largo plazo, traído a valor presente, actualmente la tarifa promedio por cada Kwh es

de aproximadamente \$0.06, y el compromiso del ICE mediante este contrato de comprar por un plazo de 15 años toda la energía producida por un proyecto privado, con una tarifa fijada de previo e indexada al tipo de cambio y a la inflación local, un aspecto importante es que la tarifa piso es decir, si el cálculo del costo evitado que se hace anualmente fuera inferior en un periodo de la vida del contrato, dicha tarifa inicial indexada siempre se mantendría con la finalidad de que esta situación no afecte los flujos de caja y por ende la sanidad financiera del proyecto.

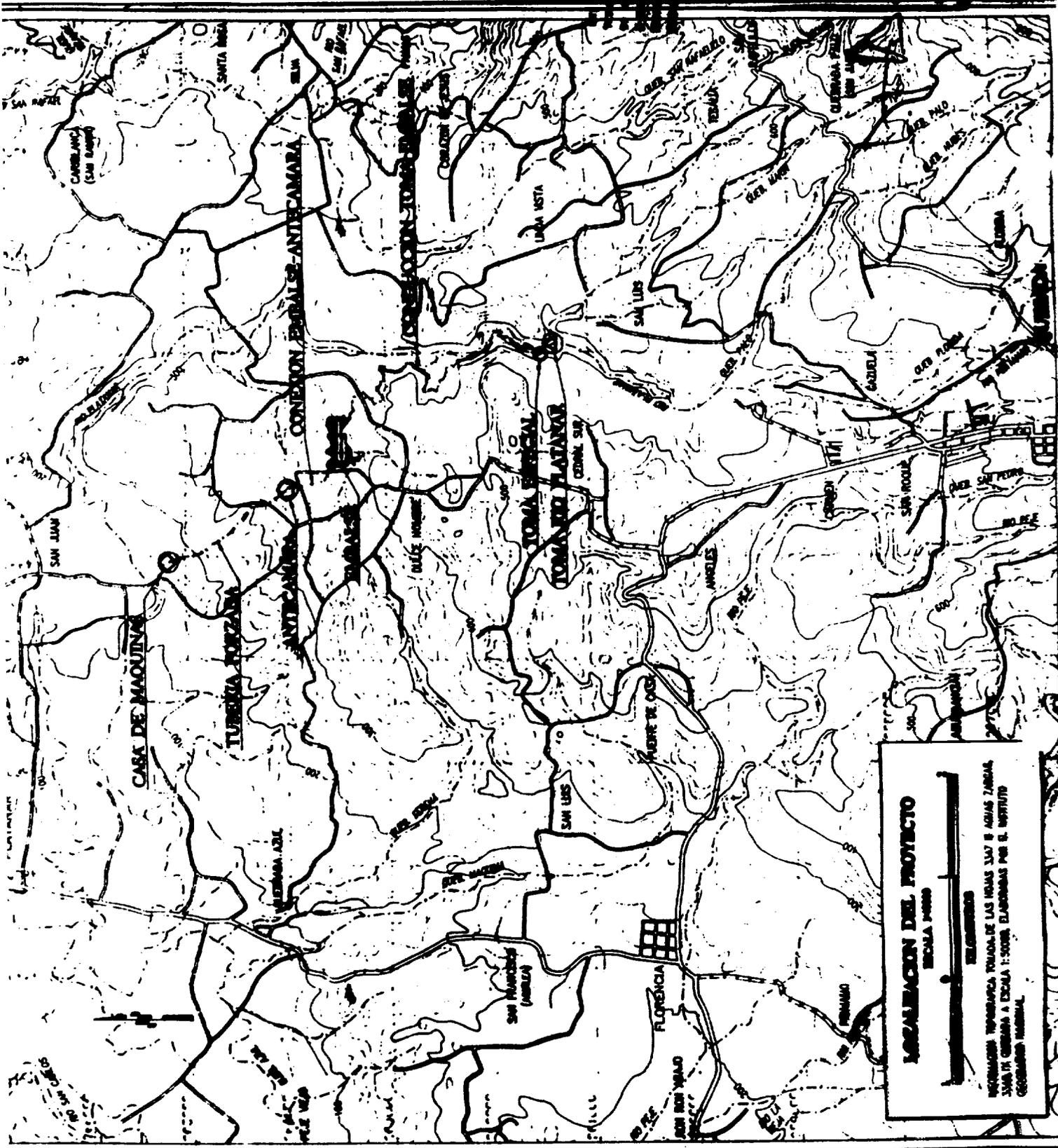
### **ESQUEMA N° 3**

**Contrato de Compra-Venta de Energía Eléctrica.**

**Principales Características.**

- 1.- Plazo de 15 años
- 2.- Asegura un mercado
- 3.- El costo de la energía para el ICE es aceptable porque se calcula con base al costo evitado.
- 4.- El precio para el vendedor le permite evaluar financieramente su proyecto y dependiendo de las condiciones de este alcanzar niveles de rentabilidad aceptables.
- 5.- Tarifas indexadas.

De tal forma toda esta estructura legal y técnica al final lo que hace es crear la confiabilidad del sector financiero nacional e internacional para que apoyen los proyectos de generación privada de energía eléctrica.



**LOCALIZACION DEL PROYECTO**  
 ESCALA 1:5000

INFORMACION TOPOGRAFICA TOMADA DE LAS HOJAS 1347 B Y AGUAS ZARCA 1348 IV QUE CORRESPONDEN A ESCALA 1:5000. ELABORADAS POR EL INSTITUTO GEOGRAFICO NACIONAL.

## **HIDROELECTRICA PLATANAR S.A.**

El Proyecto Hidroeléctrico Platanar es ubicado y conceptualizado en la década de los 60, como una ampliación de la capacidad instalada de la Empresa Eléctrica Matamoros S.A., pero por la envergadura de dicha obra así como por la falta de esa base jurídica y técnica no se encontraron los recursos financieros necesarios. En 1986 se decide, confeccionar un estudio de factibilidad para dicho proyecto y se encarga a la firma consultora BEL Ingeniería S.A., que goza de amplio prestigio a nivel nacional en este tipo de trabajos ya que sus ingenieros principales trabajaron en tareas similares para el ICE así mismo se implementa todo un plan de promoción de este proyecto en los medios empresariales altamente consumidores de electricidad tanto nacionales como extranjeros, que estuvieran dispuestos a financiar la obra tales como:

- 1.- Industria Papelera
- 2.- Industria Cementera
- 3.- Industria Cervecera
- 4.- Cooperativas de Electrificación Rural

A nivel externo se firmaron cartas de intención con Intermediarios Financieros Norteamericanos especialistas en desarrollo y gestión de financiamiento de proyectos hidroeléctricos, compañías productoras de equipo electromecánico, en Alemania, Austria, España, Estados Unidos, México, Argentina, Brasil y Japón, así como también Instituciones Multilaterales de Financiamiento como Banco Interamericano de Desarrollo (BID), Banco Mundial, Corporación Financiera Internacional (IFC), Fondos 936 (Puerto Rico) e inversionistas pasivos.

Todo este proceso comprendido entre el año 86 al 90 nos sirvió para moldear el esquema técnico jurídico, empresarial y financiero, que el Proyecto Hidroeléctrico requería para su implementación definitiva.

Después de la promulgación de la LEY 7200 el 18 de octubre de 1990, el problema jurídico estaba resuelto así como el problema técnico con el contrato entre el ICE y el generador, pensamos que ya todo estaba resuelto, pero tal vez el problema que seguía adelante era el más difícil de resolver; como hacer que una institución financiera

apoyara un proyecto de más de US\$20.0 millones a una pequeña empresa privada costarricense.

En 1989, se crea una razón social HIDROELECTRICA PLATANAR S.A., totalmente independiente a EMPRESA ELECTRICA MATAMOROS S.A. y se retoman nuevamente los contactos con las instituciones financieras más interesadas en apoyar un programa de generación privada en Costa Rica, de esta forma se identifica a la Corporación Interamericana de Inversiones, (CII), ente financiero con sede en Washington adscrito al BID, con el mandato entre otras cosas de apoyar iniciativas privadas de desarrollo, en la que la participación de Empresarios Latinoamericanos en el capital de estas empresas sea como mínimo un 51%, algo muy interesante en la que no exista ninguna otra alternativa de financiamiento ya que como se sabe los proyectos hidroeléctricos requieren altas sumas de capital y que se amortizan a muy largo plazo, es decir que se requieren condiciones financieras no muy corrientes en los mercados financieros internacionales tales como periodos de gracia iguales al periodo de construcción del proyecto como mínimo diez años o más para amortizar y tasas de interés favorables, además de esto para minimizar el riesgo financiero, la CII se impuso una restricción que era la de no financiar más del 25% del costo total de la obra y que los empresarios o patrocinadores aportaran como mínimo un 30% Costo Total de Obra (CTO), el 45% restante por medio de un contrato de asesoría financiera suscrito con la CII, ésta se comprometió a encontrar otra y otras instituciones financieras dispuestas a participar en el desembolso del proyecto, de esta forma se identifica el interés de la Commonwealth Development Corporation (CDC) de Londres y el Banco Centroamericano de Integración Económica (BCIE).

Otro problema de igual importancia el 30% aproximadamente US\$6,0 millones de contrapartida de parte del patrocinador o dueño del proyecto era una suma muy elevada, por lo que se decidió también buscar socios inversionistas, pero con la particularidad de que tuvieran experiencia en las tres diferentes fases del desarrollo de un proyecto de generación eléctrica, después de haber alcanzado el financiamiento.

## **FASE N° 1**

### **Construcción**

- i) Obra civil
- ii) Tubería de Presión

Empresa escogida y dispuesta a participar "SARET de Costa Rica S.A." Empresa netamente costarricense, especialista en el desarrollo y construcción de Zonas Francas, construcción de obras civiles en general y altamente especializada en construcción de obras metalmecánicas, específicamente tuberías de presión.

## **FASE N° 2**

Proveedor del equipo Electromecánico de Generación Eléctrica.

Empresa escogida y dispuesta a participar "STEEL Technologies S.A.", Empresa Francesa especialista en conformar, diseñar y proveer equipos de generación eléctrica de hasta 20 Mw incluyendo el montaje de los mismos. Esta empresa decidió tomar una pequeña participación en HIDROELECTRICA PLATANAR S.A., con dos finalidades:

- 1- Hacer un buen negocio evidentemente por la venta de equipos que hace y porque su participación de capital se espera que le reditúe dividendos a partir del tercer año de operación del proyecto.
- 2.- Establecer por así decirlo una cabeza de playa en América Latina para ensanchar el mercado de sus productos y servicios.

## **FASE N° 3**

Operación, Administración y Mantenimiento durante la vida útil del proyecto, empresa contratada "EMPRESA ELECTRICA MATAMOROS S.A.", sesenta años de experiencia en estas mismas labores que a su vez es patrocinadora y socia principal de HIDROELECTRICA PLATANAR S.A.

## ESQUEMA N° 4

### ESTRUCTURA FINANCIERA

#### HIDROELECTRICA PLATANAR S.A.

<b>Costo Total del Proyecto</b>		<b>US\$20.03 millones</b>
Préstamo Principal		
	1- CII	
	2- CDC	
	3- BCIE	
	3.1- Banco Continental	US\$13.0 millones
Préstamo Subordinado		
	1- CII	
	2- CDC	
		US\$3.0 millones
Equity (Capital)		
	1- Empresa Eléctrica Matamoros S.A.	
	2- SARET de Costa Rica S.A.	
	3- STEEL Technologies S.A.	
	4- Efraín Matamoros C.	
		US\$4.03 millones
<b>Total del Proyecto</b>		<b>US\$20.03 millones</b>

Una vez estructurado el esquema financiero el siguiente problema por solventar fue el de las garantías que los patrocinadores debían darle a las Instituciones Financieras, tales como:

1- Hipoteca en primer grado de todos los terrenos propiedad de HIDROELECTRICA PLATANAR S.A. y específicamente donde se ubican todas las obras del proyecto, así como si se producen nuevas adquisiciones de terreno, estos automáticamente quedan hipotecadas.

2- Prenda de todos los equipos electromecánicos, obras civiles y activos menores.

3- Pólizas de seguro todo riesgo de construcción.

a) Seguro de todo riesgo cubriendo toda la construcción civil, fijas y demás instalaciones permanentes incluyendo las adiciones, ampliaciones; incluyendo los canales de conducción, tubería de presión, subestación, antecámara, casa de máquinas, diques, por daño físico, errores en diseño o construcción, daños o desperfectos mecánicos. También incluiría daños por: explosión, tormentas, fuegos, terremotos, huracanes, inundaciones, erupciones de volcán.

b) Seguro de responsabilidad civil por un mínimo de \$100,000.00 por persona por el constructor

c) Seguro por transporte e instalación del equipo incluyendo; las turbinas, generadores, transformadores, reguladores, equipo electromecánico.  
Indemnización mínimo 120% del costo más cargos.

4- Pólizas de seguro todo riesgo de operación.

a) Lucro cesante para un mínimo de 3 meses de ingresos.

b) Seguro de todo riesgo cubriendo todas las construcciones fijas y demás instalaciones permanentes, incluyendo las adiciones, ampliaciones, equipo, incluyendo los canales de conducción, tubería de presión, transformadores, subestación, generadores, turbinas, antecámara, casa de máquina, diques, por daño físico, errores en diseño o construcción, daños o desperfectos

mecánicos. También incluiría daños por: explosión, tormentas, fuego, terremotos, huracanes, inundaciones, erupciones de volcán.

c) Seguro por responsabilidad civil (aceptable a la CII)

d) Seguro de construcción y mantenimiento por SARET.

5- Garantías Bancarias tipo "Stand By" por un monto de US\$1.0 millón, en caso de que el presupuesto original del proyecto no alcance, para finalizar la obra.

#### 6- Fideicomiso Platanar

Mediante la creación del Fideicomiso Platanar, se designa a un Banco Agente o Representante de todas las instituciones financieras participantes para que administre y custodie los siguientes contratos relacionados.

Concesión de Aguas

Contrato Compra Venta de Energía

Contrato de Construcción de Obra.

Contrato de Administración Operación y Mantenimiento

Contrato de Servicios Profesionales para fiscalización de las Inversiones

Contrato de Préstamo con la CII.

Contrato de Préstamo con la CDC

Contrato de Préstamo con el BCIE

Contrato de Préstamo con el Banco Continental.

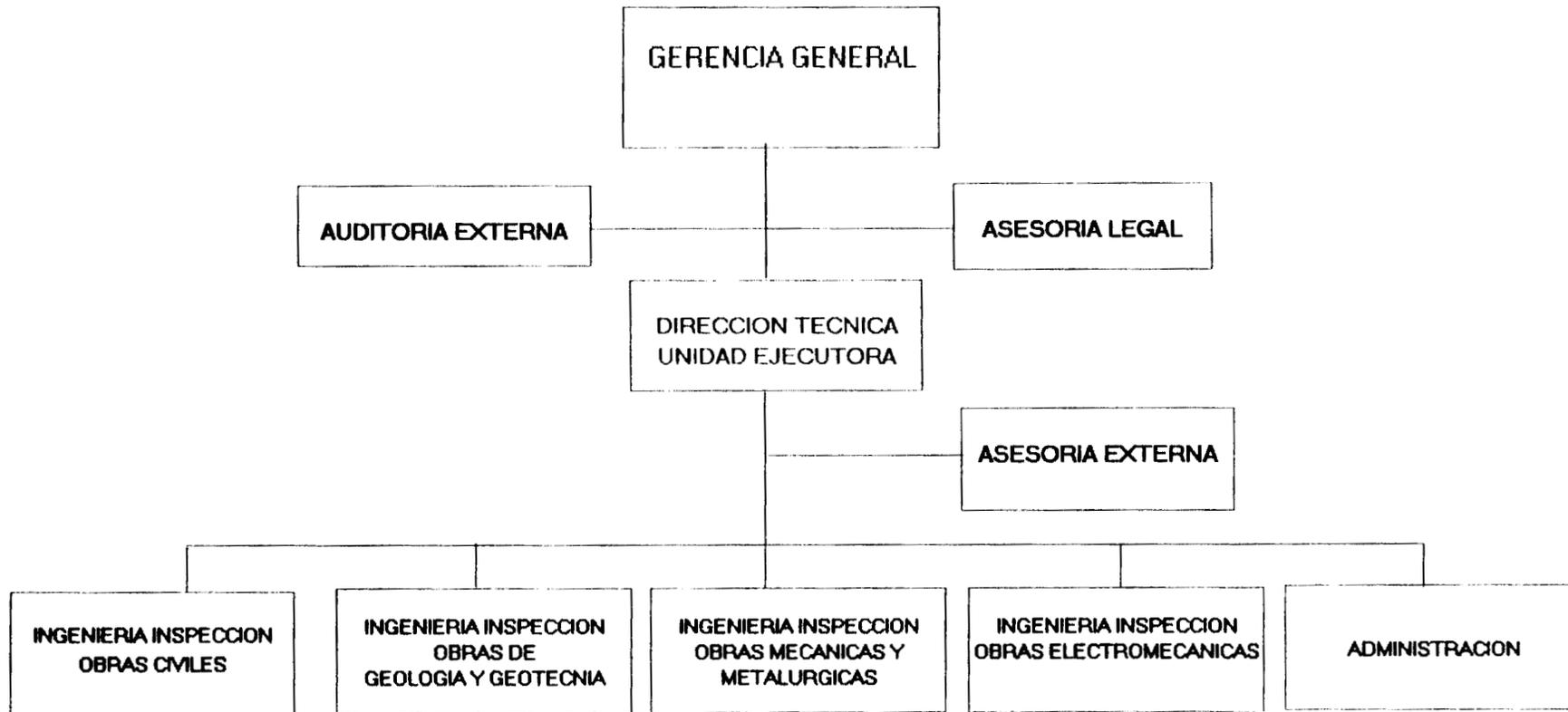
Depósito y cesión de las acciones de capital de los dueños y patrocinadores.

Estos contratos y sus derechos fueron cedidos a las Instituciones Financieras Participantes.

Además dicho Fideicomiso tiene la obligación de retirar y depositar los dineros producto de las ventas de electricidad y potencia en las cuentas bancarias establecidas y de girar y administrar estos recursos para el pago de las operaciones financieras contraídas, así como la de crear los fondos establecidos para alcanzar ciertos indicadores financieros tales como: Coeficiente de Deuda a Largo Plazo a Capital Coeficiente de liquidez, cancelar mensualmente la gestión de Operación, Administración y Mantenimiento y posteriormente hacer la distribución de las utilidades a los dueños del proyecto.



**ESTRUCTURA ORGANIZATIVA**

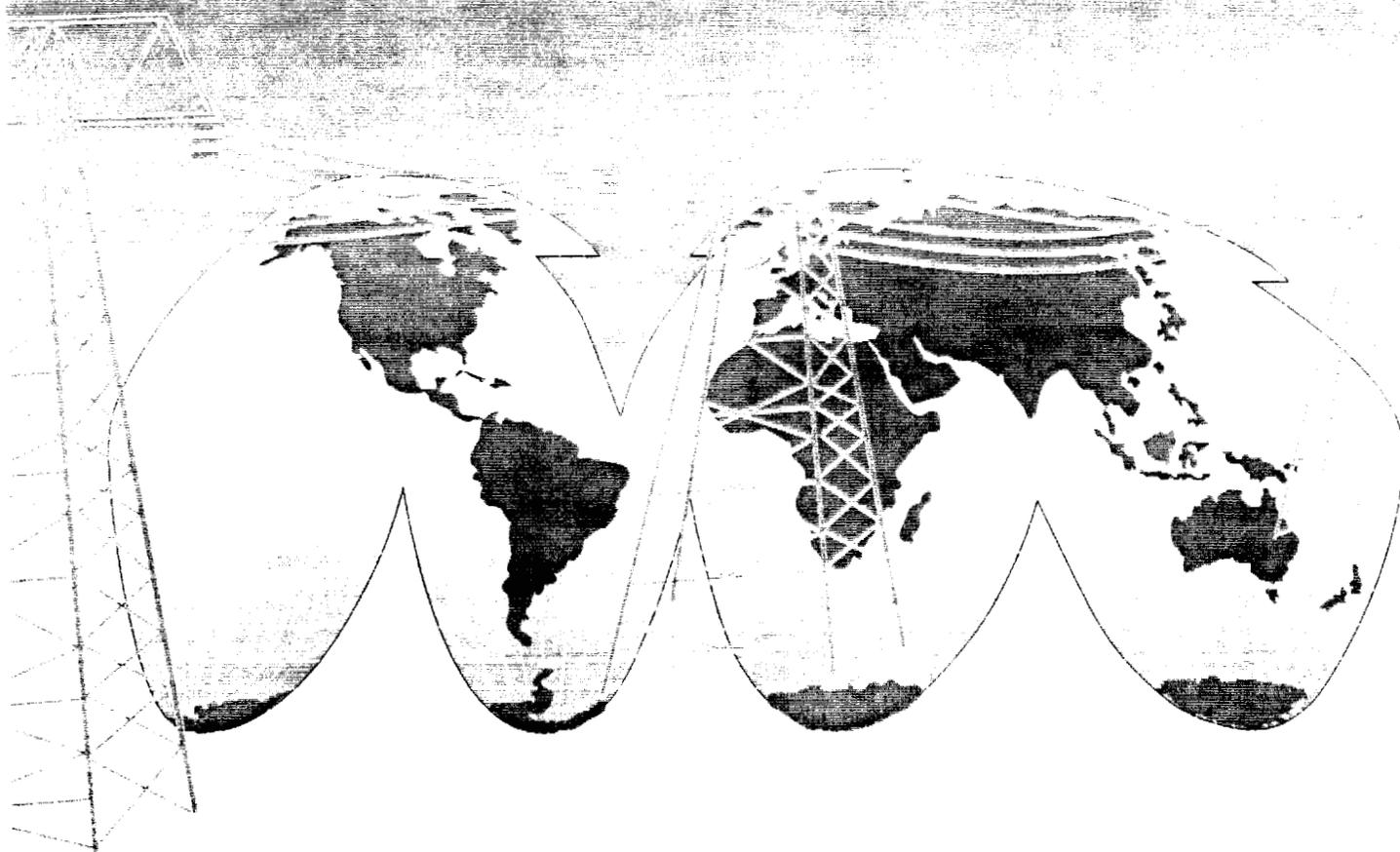


# Desarrollo del Sector de la Energía Eléctrica

## Seminario Sobre la Privatización

Ciudad de Panamá, Panamá

20-23 Marzo 1995



*Price Waterhouse LLP*

Grupo Internacional de Consultoría  
Servicios de Asesoría para Privatización y  
Financiamiento de Proyectos



# Price Waterhouse LLP

Price Waterhouse LLP es una organización de servicios profesionales internacional con una reputación por su objetividad y su servicio al cliente. Sus 49,000 profesionales alrededor del mundo suministran consultoría administrativa y servicios de contabilidad, auditoría y tributarios a clientes a través de oficinas en más de 110 países.

## Servicios Financieros de Infraestructura y Privatización

Los gobiernos alrededor del mundo se encuentran con un crecimiento dramático en necesidades en la infraestructura, tanto para instalaciones nuevas como para reparaciones y reposiciones de las ya existentes. Al mismo tiempo, el compromiso del sector financiero público para el desarrollo de la infraestructura ha sido perturbado por falta de ingresos tributarios y las necesidades en otras áreas.

Los gobiernos están respondiendo a esta limitación volcando al sector privado en la financiación, construcción, operación y mantenimiento de instalaciones de infraestructura. Por ejemplo, plantas energéticas existentes se están vendiendo a compañías privadas, y los aeropuertos están siendo administrados y expandidos por operadores privados.

Price Waterhouse ofrece servicios de asesoría financiera en este innovativo campo de infraestructura pública-privada. Asesoramos a gobiernos y clientes privados interesados en el desarrollo, reparación, u operación de infraestructuras a través de acuerdos cooperativos entre los sectores público y privado. Nuestros clientes incluyen gobiernos nacionales, gobiernos locales, agencias internacionales y multilaterales, e instituciones para el desarrollo internacional.

Nuestros servicios se dividen en tres grandes categorías:

- análisis financiero y económico, incluyendo cálculos de factibilidad, valuación de empresas, y estimaciones de impacto económico;
- implementación de planeamiento, incluyendo diseño regulatorio y análisis institucional;
- apoyo en transacciones, incluyendo negociación de acuerdos y contratos públicos y privados, y asistencia en la venta de instalaciones de infraestructura existentes.

Mientras que este paquete se centra en la energía eléctrica, Price Waterhouse también ha prestado servicios de asesoría en transporte, otros servicios energéticos derivados del petróleo y del gas, servicios de agua y alcantarillado, telecomunicaciones, vivienda, instalaciones correccionales, industria aeroespacial, y otros tipos de proyectos. Nuestros socios y personal tienen profundo conocimiento de estas industrias además de amplia experiencia en análisis financiero, económico, y regulatorio.



# **Servicios de Price Waterhouse**

## **Análisis de Factibilidad Financiera y Planeamiento Maestro**

Price Waterhouse presta servicios de asesoría en la factibilidad financiera de proyectos propuestos, identifica las fuentes potenciales para el financiamiento de proyectos, y evalúa las principales cuestiones para la implementación del proyecto. Price Waterhouse también desarrolla planes detallados financieros para la implementación de proyectos públicos y privados de infraestructura.

## **Apoyo en Negociaciones**

Price Waterhouse suministra servicios de asesoría financiera a agencias públicas y privadas durante las negociaciones de acuerdos para el desarrollo público y privado. Las cuestiones discutidas en estas negociaciones incluyen las tasas de rendimiento apropiadas en proyectos privados de infraestructura, mecanismos reguladores para imponer limitaciones a las tasas de rendimiento, y los términos de acuerdos de arrendamiento y compra de energía pública y privada.

## **Asistencia en la Privatización y Valorización**

Price Waterhouse estima el valor del mercado de instalaciones públicas existentes, y presta servicios de asesoría a gobiernos sobre los métodos apropiados de privatización, y solicita ofertas de inversionistas potenciales. Price Waterhouse participa en la valuación y venta de empresas estatales en Africa, Asia, Europa y Latinoamérica.

## **Análisis de Políticas y Regulación**

Price Waterhouse asiste a gobiernos en la reforma de los sectores de servicios públicos, definiendo el marco regulatorio y normativo, y desarrollando empresas reguladoras. Además, Price Waterhouse analiza y diseña estructuras tarifarias, incluyendo estudios de costos de capital detallado.

## **Análisis del Impacto Económico**

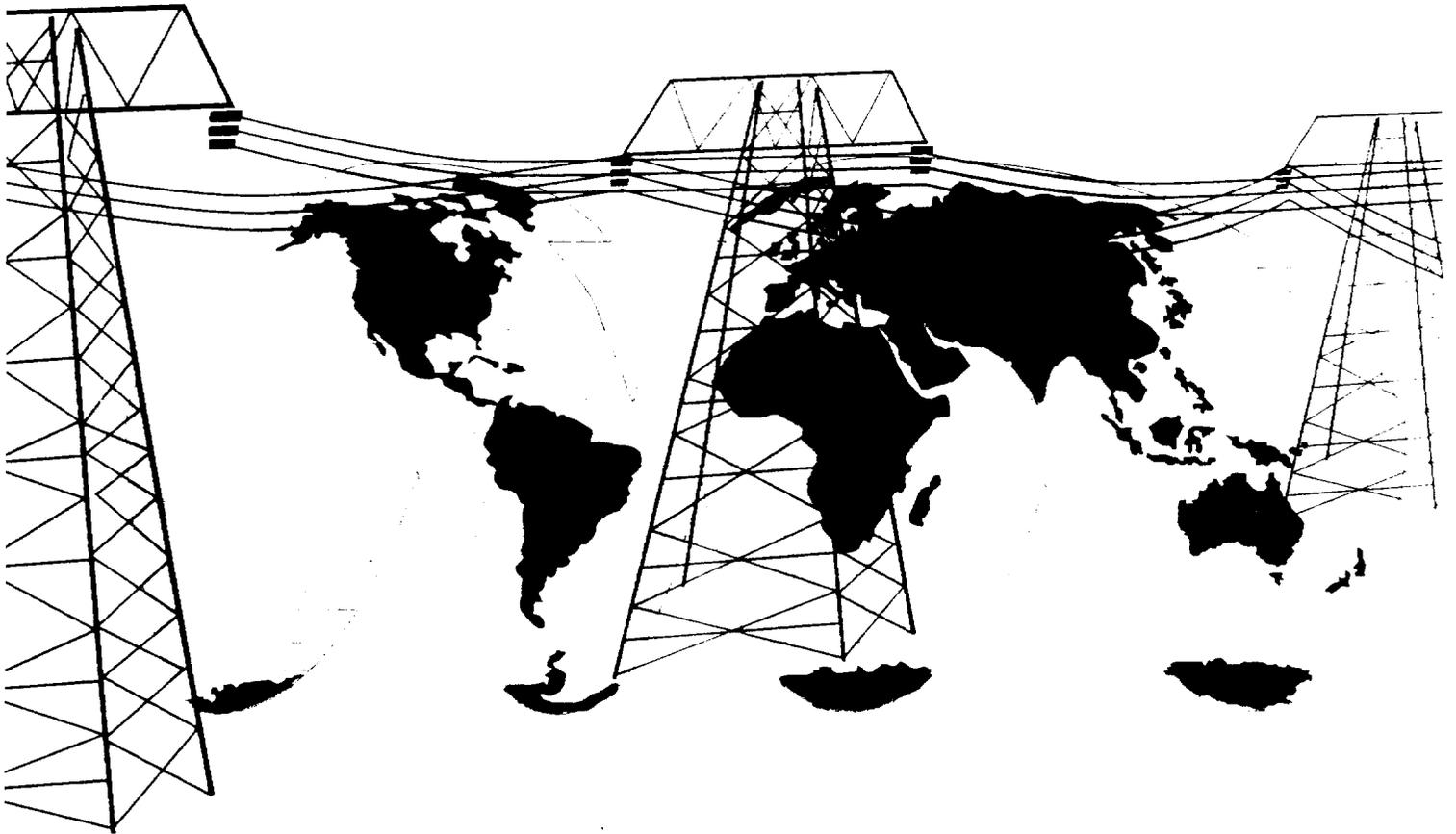
Price Waterhouse evalúa el impacto económico de proyectos de infraestructura en las economías regionales. Los beneficios económicos del desarrollo de la infraestructura son, en muchas ocasiones, utilizados para apoyar la inversión pública en estos proyectos.

## **Servicios Globales de Price Waterhouse**

Price Waterhouse tiene amplias calificaciones como organización de servicios profesionales mundialmente. En particular, los conocimientos tributarios, de asuntos políticos locales, y de asuntos en el desarrollo de bienes inmuebles de Price Waterhouse en mas de 110 países es un importante complemento para nuestro grupo en Washington, DC.



# Calificaciones de la Firma



*Price Waterhouse LLP*



**PROJECT NAME: CORPORACIÓN DOMINICANA DE ELECTRICIDAD -  
STRUCTURAL ANALYSIS AND PRIVATE SECTOR  
PARTICIPATION (DOMINICAN REPUBLIC)**

**DATES OF  
PERFORMANCE:** June 1991 - September 1991

**PROJECT  
DESCRIPTION:** In the Dominican Republic, Price Waterhouse was contracted by USAID to provide technical assistance to the Corporación Dominicana de Electricidad (CDE) to assess the CDE's organization and operations as well as to prepare for contracting-out CDE functions to the private sector in the short-term and for privatization in the long-term. CDE is the sole entity responsible for the generation, transmission, and distribution of electric service in the Dominican Republic. Price Waterhouse provided technical assistance to CDE in reviewing and preparing a statement of work for contracting-out selected functions of CDE; identifying other potential, non-primary functions of contracting-out; and formulating an action plan and options for privatizing CDE.

**PROJECT NAME: ELECTRIC DISTRIBUTION UTILITY OF GUATEMALA -  
ASSET STRUCTURING, VALUATION, AND PRIVATIZATION  
STRATEGIES**

**DATES OF  
PERFORMANCE:** September 1989 - December 1989

**PROJECT  
DESCRIPTION:** Price Waterhouse provided advice to the Government of Guatemala on the public sale of its shareholdings in the country's electric distribution utility. In order to develop an appropriate privatization strategy for the utility, Price Waterhouse is assessing the market acceptance and pricing range of the utility's shares, performing a market valuation of the utility's assets, conducting a regulatory and operation environment review and preparing a share sales strategy.

**PROJECT NAME: GRENADA ELECTRICITY SERVICES, LTD. (GRENLEC):  
TECHNICAL ASSISTANCE AND PRIVATIZATION**

**DATES OF  
PERFORMANCE:** December 1992 - Ongoing

*Price Waterhouse LLP*



**PROJECT**

**DESCRIPTION:**

Another ongoing assignment involves technical assistance to Grenada Electricity Services, Ltd. (GRENLEC). Price Waterhouse conducted a valuation analysis and advised on the legal and regulatory changes which would have to be accomplished prior to privatization of the entity. The project team:

- drafted solicitation documents;
- identified potential bidders;
- developed evaluation criteria;
- recommended an evaluation process

Currently, Price Waterhouse is advising the Government of Grenada on the selection of bidders for GRENLEC and will be assisting GOG in negotiating the concession agreement.

**PROJECT NAME: CHILEAN NATIONAL ELECTRIC POWER COMPANY VALUATION STUDY**

**PROJECT**

**DESCRIPTION:**

Price Waterhouse was engaged by the National electric Power Co., ENESA, to conduct a valuation study of the government entity which generates and distributes all electricity supplied in Chile to see if assets were overvalued and therefore generating a lower rate of return, impeding the receipt of further development loans by international funding agencies. The job involved two steps in valuing fixed assets, which in December 1976 had a book value of \$1.5 billion:

- Establishment of the value of all fixed assets at replacement cost less effective usage;
- Adjustment of usage figures by applying diverse criteria.

**PROJECT NAME: HAITI: ELECTRICITÉ D'HAÏTI - INSTITUTIONAL STRENGTHENING**

**PROJECT**

**DESCRIPTION:**

Price Waterhouse (PW) reviewed this utility's regional organization and reviewed its internal auditing, internal controls, financial planning and management information systems and procedures. Following the reviews, we designed and implemented new information systems



including training utility personnel to operate the new systems and follow new procedures. Additionally, the project team prepared administrative and accounting manuals.

In a separate engagement, PW provided financial/ administrative/accounting assistance to this project in the following areas:

Computerization:

- Reception, installation and implementation of comptroller's micro-computer;
- Audit of central computer's performance;
- Conception and installation of interface;
- Upgrading of internal controls systems to be integrated to client's invoicing system;
- Adaptation, translation and installation of accounts payable;
- Introduction of project control and planning system;
- Interface between project control and planning system and payroll;
- Upgrading of computerized general ledger system;
- Computerization of file control of meters.

Stock Control:

- Drafting of all procedures for stock control, receiving, shipping, transfer, delivery, etc.;
- Computerization of inventory control;
- Overall assistance in department reorganization.

Planning and Control of Projects:

- Work order procedures;



- Control of work load, progress reports and costs;
- Integration of the planning and project control system with the preventive maintenance system.

Computerized Preventive Maintenance System:

- Conception and implementation of procedures to establish preventive maintenance of materials and buildings;
- Control systems for above.

**PROJECT NAME: ORGANIZATIONAL REVIEW OF THE EGYPTIAN ELECTRICITY AUTHORITY**

**PROJECT DESCRIPTION:** Price Waterhouse, as a subcontractor to the Bechtel Power Group, conducted organizational reviews of the Egyptian Electricity Authority, the Rural Electrification Authority and the Electricity Distribution Companies. The project team assessed the organizational structures of the power companies and made recommendations for the organizational development of their staffs and the overall improvement of the companies.

**PROJECT NAME: INDIA: DESIGN AND IMPLEMENTATION OF COSTING SYSTEM FOR NATIONAL HYDROELECTRIC POWER CORPORATION LTD. (NPHC)**

**DATES OF PERFORMANCE:** 1981 - 1982

**PROJECT DESCRIPTION:** Price Waterhouse was asked to design and implement a costing system for the National Hydroelectric Power Corporation Ltd.

The objective of this systems was:

- Comparison of unit rates for individual items of work as per the project estimate with the actual costs.
- Extension thereafter to cover the operational phase and relate the amounts budgeted and/or projected with those incurred and/or committed. Further, relating the deviations with the attributory factors and the levels accountable.



- Compilation of suitable statements covering both Financial and Cost Systems thereby allowing through a single document and underlying individual performance indicators for monitoring through the "financial/cost reporting system" and thereby catering to the corporation as a whole and all the concerned levels of the NHPC hierarchy.

**PROJECT NAME: INDIA: STUDY OF REGULATORY FRAMEWORK OF POWER SECTOR**

**DATES OF PERFORMANCE:** January 1988 - June 1988

**PROJECT DESCRIPTION:** Price Waterhouse (PW) was engaged by Japan's Overseas Economic Cooperation Fund (OECF) to conduct a study of the regulatory and statutory framework of the power sector of India. PW defined the roles and authority of the various institutions involved in policy and regulation; set out the procedures for obtaining government clearances, and recommended policy revisions to encourage additional private sector involvement.

In a subsequent engagement for the OECF, PW conducted a financial and operational analysis of the National Thermal Power Corporation (NTPC) and its various plants. The team studied the plants' capacity utilization, plant load factor, output and relative productivity. The team also examined the financial statements and accompanying tariff data for the last five years. PW's recommendations were used as focal points for discussion and follow up measures between OECF and the Government of India.

**PROJECT NAME: INDIA: CALCUTTA ELECTRIC SUPPLY CORPORATION LTD. - EXPANSION FEASIBILITY STUDY**

**DATES OF PERFORMANCE:** 1993 - Ongoing

**PROJECT DESCRIPTION:** Price Waterhouse (PW) was appointed by the Calcutta Electric Supply Corporation Ltd. (CESC) to conduct a feasibility study for CESC's program for expansion at Budge and Balagarh, financed by the Asian Development Bank and other leading financial institutions. On this ongoing assignment, PW is advising on financial, organizational and operational issues, including the following:



- Organizational structure and the development of separate profit centers for the generation, transmission and distribution functions;
- Financial accounting systems, particularly those relating to the recording and accounting of plant load factors and distribution loss and their consequent impact on returns on capital;
- Levels of tariffs likely to be realized and performance incentives which could encourage demand supply management measures; and
- Capital structure and options for joint ventures with the Government of West Bengal.

**PROJECT NAME: INDIA: KERALA STATE ELECTRICITY BOARD - STRATEGIC REVIEW OF STRUCTURE AND SYSTEMS**

**DATES OF PERFORMANCE: 1986 - 1988**

**PROJECT DESCRIPTION:**

Under a program instituted by the World Bank to assist the Government of India in Power Sector development, Price Waterhouse conducted a study of the organization, operations and systems of the Kerala State Electricity Board (KSEB). The study was commissioned with a view to the development and introduction of a commercial accounting system in accordance with World Bank covenants. PW developed recommendations in the following principal areas:

- Organizational structure, staffing patterns, delegation of authority and flow of information;
- Staff training program;
- Accounting systems and procedures; and
- Integrated management information system.

PW prepared, and subsequently was involved in monitoring, an implementation plan and schedule.

**PROJECT NAME: INDIA: DISHERGARH POWER SUPPLY CO - FINANCIAL & ORGANIZATIONAL DIAGNOSTIC**

**DATES OF**



PERFORMANCE: 1988 -1989

**PROJECT**

**DESCRIPTION:** For the Government of West Bengal, Price Waterhouse (PW) conducted a diagnostic study of the financial accounting system and organizational structure of the Dishergarh Power Supply Co. (DPSC) in preparation for the renewal of the utility's license. PW reviewed the DPSC's existing systems, working methods and procedures and assessed the company's prospective earnings potential. Areas of focus included tariffs, returns on capital employed, the bases and modes used for forecasting, the performance of fixed assets and the efficiency of the units in respect of generation and distribution. PW recommended various measures to improve the performance of the financial systems and organizational structure.

**PROJECT NAME:** **INDIA: CAPITAL STRUCTURE AND ORGANIZATION FOR NORTH EASTERN ELECTRIC POWER CORPORATION LTD. (NEEPCO)**

**DATES OF PERFORMANCE:** 1984 - 1985

**PROJECT**

**DESCRIPTION:** Price Waterhouse (PW) was appointed to perform a review and propose subsequent recommendations with regard to the capital and organizational structure for the expansion being envisaged.

PW provided a detail assessment for the following:

- NEEPCO's Mission and Objectives;
- Adequacy of the capital in light of the enhancements being executed;
- Reorientation of the organizational structure to allow for commensurate reflection of the levels and tiers.
- Examination of the systems and provision of suggestions for modifications;
- Assessment of the tariffs being levied and the suitability for recoveries of outlays under consideration.



**PROJECT NAME: INDIA: STRATEGIC REVIEWS AND TARIFF STUDIES FOR THE ELECTRICITY BOARDS OF WEST BENGAL, GUJARAT, ANDHRA PRADESH AND KARNATAKA**

**DATES OF PERFORMANCE:** 1981 - 1982 and 1984 -1985

**PROJECT DESCRIPTION:** Under the Rural Electrification Program, financed by the World Bank to strengthen India's Power Sector, Price Waterhouse was appointed to study in-depth the operations of the program and to advise the Central Electricity Authority. Price Waterhouse advised with reagrads to the following issues:

- On the modus operandi to be employed there, i.e. separate corporation;
- The organizational structure to be created;
- The independent systems to be constituted; and
- The tariffs to be instituted.

The pilot study was conducted for the West Bengal State Electricity Board. Following a review of the study the World Bank commissioned further studies in Gujarat, Karantaka, and Andhra Pradesh.

**PROJECT NAME: PAKISTAN: PRIVATE SECTOR POWER PROJECT (NDFC)**

**DATES OF PERFORMANCE:** February 1990 - June 1994

**PROJECT DESCRIPTION:** Through USAID's Private Sector Power Project, a Price Waterhouse consortium provided support to the Government of Pakistan's efforts to increase private sector involvement in power generation in Pakistan. The project focused on the Private Sector Energy Development Fund (PSEDF), by which World Bank funds are on-lent on a concessional, subordinated basis to private sponsors of large scale power projects. The GOP entity responsible for administering the PSEDF is the Private Energy Division (PED) of the National Development Finance Corporation (NDFC). PED is tasked with (i) appraising the financial, banking, technical and management viability of proposed private sector



power projects, and (ii) monitoring the construction and implementation of the projects until the loans are repaid to PSEDF.

Price Waterhouse was contracted by USAID to (i) strengthen the capabilities of PED to appraise potential projects and monitor outstanding loans, and (ii) to provide general technical assistance in the development of private sector power initiatives in Pakistan.

Two resident advisors and numerous short-term specialists provided substantial assistance to PED in the review and analysis of potential private sector power projects, with a particular focus on the HUBCO Project. This assistance included advising PED on a wide variety of project contracts and documents related to the provision of funds (e.g., loan agreements, implementation agreements, fuel supply agreements, power purchase agreements).

Through active, on-the-job interaction, Price Waterhouse advisors assisted PED staff in developing their analytical, technical and communications skills. In addition, the following formal seminars were conducted:

- Workshop on "Private Sector Power Insurance Requirements" (2 days, July 1991)
- Workshop on "Evaluation of Private Sector Power Proposals for Power Generation" (5 days, October 1991)
- Seminar on "Accessing International Capital Markets" (5 days, May 1994)
- Seminar on "International Procurement Policies and Procedures" (3 days, May 1994)
- Seminar on "Marketing Debt Securities Abroad" (4 days, June 1994)

The following technical assistance activities were also conducted in support of the Private Sector Power Project:

- Prepared a detailed feasibility study for the development of a Modaraba Fund to finance private energy projects;
- Developed an implementation plan for the privatization of the Faisalabad Area Electricity Board (FAEB);
- Prepared a feasibility study for the privatization of the Karachi Electricity Supply Corporation (KESC) through a public share offering;
- Provided support to the corporatization of the Jamshoro Thermal Power Station (JTPS);



- Updated the financial records of Jamshoro and Kot Adu power plants in anticipation of their privatization;
- Provided technical assistance to the Government of Sindh in analyzing a proposal for the development of an integrated coal mining and power plant project.

**PROJECT NAME: HUB RIVER PRIVATE POWER PROJECT - FINANCIAL ADVISORY WORK (PAKISTAN)**

**DATES OF PERFORMANCE:** January 1988 - January 1990

**PROJECT DESCRIPTION:** Price Waterhouse acted as financial advisor to the Ministry of Water and Power and the Government of Pakistan (GOP) on a proposed project to build a 1,292 MW thermal power plant on the Hub River near Karachi. The project was a first-of-its-kind public-private partnership for electric power within Pakistan. A private company was formed to build, own and operate the plant.

PW assisted the GOP throughout negotiations with the private consortium up to finalization of the Implementation Agreement and the Power Purchase Agreement. Major project finance issues reviewed by the project team during these negotiations included:

- Appropriate return on equity and debt/equity structure for the project;
- Bonus and penalty clauses for extra generation, delays, availability, outages, etc.;
- Project costs and the tariff paid for each kilowatt-hour of electricity;
- Indexation of the tariff for inflation and exchange rate changes; and
- Foreign exchange guarantees and international lending terms.

**PROJECT NAME: JAMSHORO THERMAL POWER STATION - CORPORATIZATION AND RESTRUCTURING ASSISTANCE (PAKISTAN)**

**DATES OF**



PERFORMANCE: April 1992 - December 1992

PROJECT

DESCRIPTION: Price Waterhouse provided technical assistance to the Government of Pakistan (GOP) in the restructuring and corporatization of the Jamshoro Thermal Power Station (JTPS). PW reviewed and evaluated the GOP's accounting policies and procedures for recording liabilities and capitalizing assets. The scope of work included:

- Review of policies and procedures to determine proper values;
- Development of a chart of accounts according to standard industry practice;
- Review of GOP liabilities for JTPS and restructuring of JTPS assets for recalculation of the value of assets to be transferred as part of the process.

PROJECT NAME: **FAISALABAD AREA ELECTRICITY BOARD -  
CORPORATIZATION ASSISTANCE (PAKISTAN)**

DATES OF

PERFORMANCE: June 1992 - August 1992

PROJECT

DESCRIPTION: For the Government of Pakistan, Price Waterhouse developed an implementation plan for the corporatization and privatization of the Faisalabad Area Electricity Board (FAEB). The assignment involved an assessment of the FAEB's current management and operational structure and financial performance as well as a review of legal, regulatory and policy issues relevant to private sector participation. PW's recommendations included measures relating to load forecasting, pricing, marketing, procurement, standards and system interface, service area boundaries and voltage "cut-offs." PW identified and scheduled the tasks required to achieve the corporatization and privatization of the FAEB.

PROJECT NAME: **PAKISTAN: PRIVATIZATION OF THE KARACHI ELECTRIC  
SUPPLY CORPORATION (KESC)**

DATES OF

PERFORMANCE: January 1992 - March 1992

PROJECT



**DESCRIPTION:** Price Waterhouse conducted a study for the Government of Pakistan (GOP) on the feasibility of privatizing the Karachi Electric Supply Corporation (KESC) through a public share offering.

In an effort to improve the performance of the company through increased private sector participation, increase the quality of service to consumers and promote the development of the local capital markets, the Ministry of Water and Power began to consider the quick sale of between 13% and 18% of the GOP's shareholding in the company to the general public.

A team of consultants from Price Waterhouse, assisted by a consultant from International Resources Group, evaluated the feasibility of the proposed share offer. The objectives were as follows:

- Identify and analyze potential structures for a share offering in response to GOP plans. Variables considered included the effect of the sale on share price, the determination of an appropriate price and whether the quality of financial information currently available would be sufficient to conduct the necessary financial analysis for the share offering as well as a strategy for the actual conduct of the offering;
- Develop detailed recommendations on the implementation of the strategy most likely to be successful;
- Develop the terms of reference for a full privatization study of the company.

Price Waterhouse recommended the addressing of several issues including accounting inefficiencies, uncollected receivables, and adequate rates to replace subsidies. Then time frames, placement options and regulatory options were suggested for the public stock offering.

**PROJECT NAME:** PAKISTAN: RURAL ELECTRIFICATION EVALUATION

**DATES OF PERFORMANCE:** 1989

**PROJECT DESCRIPTION:** Price Waterhouse completed this study for USAID to review General Electric's bid to manufacture and install a power plant in Pakistan. The study required extensive research and cost analysis to assess the



reasonableness of the proposed costs. Price Waterhouse also assisted in the logistical review of the proposal.

**PROJECT NAME: PAKISTAN: ENERGY BOND STUDY**

**DATES OF PERFORMANCE:** April 1993 - June 1993

**PROJECT DESCRIPTION:** Price Waterhouse is currently conducting a feasibility study on the flotation of "energy bonds" to finance small and medium size private power projects in Pakistan. The bonds will be denominated in foreign currencies and issued in international markets.

**PROJECT NAME: JABATAN BEKAIAN ELEKTRIK - REGULATORY FRAMEWORK REVIEW AND IMPLEMENTATION (MALAYSIA)**

**DATES OF PERFORMANCE:** March 1992 - October 1992

**PROJECT DESCRIPTION:** Price Waterhouse was appointed by the Jabatan Bekaidan Elektrik (JBE), the regulatory body responsible for the Malaysian power sector, to develop and implement a regulatory framework for the electricity supply industry in that country. The engagement involved a review of the existing regulatory framework, an update of JBE's regulatory financial model and the development of an appropriate pricing policy. PW implemented the tariff control mechanism and trained JBE staff to understand, execute and enforce regulation standards and to undertake the appropriate pricing of electricity supply.

In the implementation phase, PW assisted JBE in understanding, monitoring and enforcing license conditions and standards of performance. In addition, PW assessed the implementation of generation composition recommendations and reviewed staffing requirements and funding methods.

**PROJECT NAME: GOVERNMENT OF MALAYSIA ECONOMIC PLANNING UNIT - REGULATORY FRAMEWORK REVIEW**

**DATES OF PERFORMANCE:** 1991



**PROJECT**

**DESCRIPTION:** In a separate assignment, PW was appointed by the Government of Malaysia Economic Planning Unit to conduct a study of the regulatory framework for privatized monopolies in Malaysia, including the electricity monopolies. The assignment was part of the Government's overall economic plan to achieve the privatization of Government-owned monopolies. PW evaluated the effectiveness of existing and proposed regulatory regimes for nine sectors and made recommendations on necessary changes and implementation strategies.

**PROJECT NAME:** **MALAYSIA: NATIONAL ELECTRICITY BOARD - COMMERCIALIZATION/PRIVATIZATION OF THE MALAYSIAN ELECTRICITY INDUSTRY**

**DATES OF**

**PERFORMANCE:** Late 1989

**PROJECT**

**DESCRIPTION:** Price Waterhouse was requested to take a lead role in an investment consortium formed to advise the Government of Malaysia on the commercialization of the National Electricity Board (NEB). The assignment included preparatory work for the eventual privatization of NEB. Between January and July of 1990 we have delivered three reports to the Government of Malaysia. These reports have addressed the following issues:

- Steps to be taken in preparing the Board for corporatization, including enabling legislation, company formation, transfer of assets and liabilities (loan portfolio and contracts), employee pensions and share ownership schemes and organizational structure;
- The regulatory framework within which the newly incorporated company, TEN, is to operate, including profit or price control, fuel cost pass through, security of supply and quality of service and the establishment of a regulatory body;
- Financial analysis including demand forecasts and capital expenditure requirements for the next ten years, debt analysis including foreign exchange risk, for purposed of designing an appropriate capital structure;



- Privatization options including trade sale, private placement followed by flotation or direct, foreign investor participation and employee shares; and
- Formulation of the overall timetable for commercialization, privatization and project management of all tasks.

**PROJECT NAME: MALAYSIA: CENTRAL ELECTRICITY BOARD - EDP**

**PROJECT**

**DESCRIPTION:** Price Waterhouse was engaged by the Central Electricity Board in Malaysia to perform EDP consulting services. Expanding work volumes and increasing administrative costs at the utility had resulted in the need for office automation. We performed a feasibility study to establish the need for an in-house computer system and identify the likely costs and benefits which would arise from computerization. Proposals from computer manufacturers were evaluated and equipment was installed. Plans were implemented for:

- Computer installation management, including establishment of a steering committee;
- Systems analysis and development;
- Accounting system improvements; and
- Maximizing machine and staff utilization.

Benefits of the study included reduced clerical costs and more efficient office production, which in turn contributed to improved management control and customer service.

**PROJECT NAME: PHILIPPINES: PRIVATIZATION OF THE NATIONAL POWER CORPORATION (NAPOCOR)**

**PROJECT**

**DESCRIPTION:** Price Waterhouse conducted a three month technical study with USAID/Manila and the Government of the Philippines (GOP) to identify options for the privatization of the National Power Corporation (NAPOCOR).

This study aims to develop privatization schemes to improve the Philippines' power sector performance at a time when demand is



growing and further economic development depends on increased capacity of dependable, inexpensive energy sources.

The objectives of the technical approach are as follows:

- Review the Philippine energy sector policies, with particular focus on the power sub-sector's organization and operations. Collect all documents and information from the GOP, NAPOCOR, and related entities regarding tariff policies, regulatory policies, power sector investment plans, current private power policies, and power sector organization.
- Determine privatization objectives with which to develop privatization schemes, analyze the financial condition of NAPOCOR, and identify the most promising assets for privatization.
- Determine the policy and regulatory changes required in the power sector, and determine the most profitable means of privatization, for example: joint venture, direct sale, stock offerings, employee ownership, etc.

Price Waterhouse recommended a comprehensive plan addressing both the need to privatize existing plants and to facilitate the building of new power projects with private financing and ownership.

**PROJECT NAME: PHILIPPINES: FINANCIAL, TECHNICAL AND MANAGEMENT ASSESSMENT OF THE NATIONAL ELECTRIFICATION ADMINISTRATION (NEA)**

**DATES OF PERFORMANCE: 1987**

**PROJECT DESCRIPTION:** For USAID/Manila, Price Waterhouse conducted a financial, technical and management assessment of the National Electrification Administration (NEA) and a selection of 20 rural electric cooperatives (RECs) in the Philippines. The purpose of this project was to assess the present situation, determine the underlying causes of the financial and operating problems in the rural electric cooperative system and prepare recommendations addressing those problems. Recommendations included an action plan for the commercial rehabilitation of the major recipient of USAID funds.



We developed and tested at two field locations, a series of detailed work programs which addressed organizational, financial, and technical areas of NEA and the REC operations, including:

- Organizational
  - management
  - structure
  - personnel policies
  - facilities
  - membership policies
  - training
  
- Financial
  - reporting
  - recordkeeping
  - consumer accounting and policies
  - loans and accounts payable
  
- Technical
  - equipment
  - inventory and controls
  - operations, construction and maintenance
  - system losses and safety

Price Waterhouse also addressed the economic and policy issues impacting NEA, the adequacy of existing financial management systems and financial management training

**PROJECT NAME: ORGANIZATIONS AND INFORMATION SYSTEM FOR THE NEPAL ELECTRICITY AUTHORITY**

**DATES OF PERFORMANCE: 1978 - 1980**

**PROJECT DESCRIPTION:** Price Waterhouse was appointed to study the existing accounting and financial management systems, and to recommend and implement the appropriate suggestions. The areas covered were:

- Cash Management;
- Payroll Accounting;

*Price Waterhouse LLP*



- Billing and Collection of Revenues;
- Stores Accounting;
- Fixed Assets and Depreciation Provision Records;
- Classification and coding of accounts;
- Revenue Accounts and Balance Sheets;
- Periodical Statements for management purposes.

The assignment culminated with PW preparing a manual and providing a broad based Human Resource Development and Training program.

**PROJECT NAME: CEYLON ELECTRICITY BOARD - RESTRUCTURING AND CORPORATIZATION (SRI LANKA)**

**DATES OF PERFORMANCE: May 1994 - Ongoing**

**PROJECT DESCRIPTION:** Price Waterhouse is in the initial planning stage of an assignment to assist the Government of Sri Lanka in the restructuring and corporatizing the Ceylon Electricity Board (CEB). The PW team will develop recommendations for the structure and ownership of the power sector, including the proper role for the Lankan Electricity Company (LECO), and will draft a detailed organizational structure and regulatory framework.

In developing recommendations for the structure and ownership of the power sector, PW will:

- Review energy sector plans and laws and prioritize GOSL objectives;
- Conduct financial and technical reviews of CEB, LECO and the investment framework;
- Analyze and evaluate the experience of other countries;
- Assess and recommend potential sector structures; and
- Prepare a report and conduct a workshop to review and discuss the recommended structure.



PW will examine the financial, legal, regulatory and technical attributes of the current power sector in Sri Lanka, and compare this structure to industry models from other countries to arrive at the most appropriate structure for Sri Lanka. In order to formulate a detailed organizational structure and regulatory framework for CEB, PW will:

- Identify legal, financial, technical and institutional structures for the sector;
- Define the responsibilities and organization of regulatory and private power promotional bodies;
- Draft legislation to implement the new energy sector framework; and
- Prepare a final report and conduct a workshop to review and discuss the recommended structure.

**PROJECT NAME: BURMA: ELECTRIC POWER CORPORATION - ACCOUNTING SYSTEMS REVIEW AND TRAINING**

**PROJECT**

**DESCRIPTION:** Price Waterhouse was engaged by the Electric Power Corporation (EPC) in Burma to design an asset recording system, review the accounting system and provide training to the accounting staff of EPC on the use of the new systems.

**PROJECT NAME: TECHNICAL ASSISTANCE TO THE NATIONAL INVESTMENT BANK OF JAMAICA**

**DATES OF**

**PERFORMANCE:** December 1992 - Ongoing

**PROJECT**

**DESCRIPTION:** Price Waterhouse is providing technical assistance to the National Investment Bank of Jamaica (NIBJ) in the administration of the Private Sector Energy Fund (PSEF), a World Bank-sponsored fund to promote the development of private power projects on the island. The engagement involves:

- Financial appraisal of potential energy projects applying for PSEF financing;
- Preparation and negotiation of PSEF loan documents; and



- Establishment of procedures to institutionalize these capabilities within the NIBJ.

**PROJECT NAME: ROCKFORT POWER PROJECT - PROPOSAL EVALUATION (JAMAICA)**

**DATES OF PERFORMANCE:** January 1993 - Ongoing

**PROJECT DESCRIPTION:** Price Waterhouse is currently assisting the World Bank's Cofinancing and Financial Advisory Services Project Financing Group (CFSPF) in the evaluation of a proposed 60 MW Build-Own-Operate (BOO) private power project at the Rockfort site in Kingston, Jamaica. The plant will sell power to the government-owned Jamaica Public Services Company (JPSCo). PW's assistance includes:

- Developing the financial and indexation sections of bidding document for the project; and
- Reviewing and evaluating proposals received and negotiating with the highest-ranked developer.

**PROJECT NAME: JAMAICA PUBLIC SERVICES COMPANY - PRIVATIZATION AND REGULATORY REFORMS**

**DATES OF PERFORMANCE:** March 1991 - December 1991

**PROJECT DESCRIPTION:** For the Government of Jamaica, PW conducted a study of the options for the privatization and regulatory reform of the Jamaica Public Services Company (JPSCo), a major electric utility. The PW team presented options and recommendations for regulatory structures and mechanisms to be applied to a privatized JPSCo. The assignment also encompassed the design of a regulatory and rate making body for the power sector in Jamaica. Issues considered included corporatization, restructuring, competition, vertical and horizontal integration and ratemaking mechanisms.

**PROJECT NAME: UNITED STATES: ANCHORAGE MUNICIPAL UTILITIES PRIVATIZATION AND DEREGULATION FEASIBILITY STUDY**

**PROJECT**



**DESCRIPTION:** Price Waterhouse was engaged by the Municipal Assembly of Anchorage, Alaska to assess the financial feasibility and costs and benefits of privatizing and deregulating the Anchorage Municipal Utilities. These utilities included: electric power utility, telephone utility, wastewater treatment plant, and refuse collection/disposal department. The study estimated sale values and analyzed the potential loss of federal tax subsidies, repayment of federal grants, and impacts on the local economy. To analyze these issues, Price Waterhouse developed detailed financial valuation models. The local economy impacts analyzed included employment, in the public and private sector, and the general impact on surrounding communities.

**PROJECT NAME:** **UNITED STATES: NIAGRA MOHWAK POWER CORPORATION - REORGANIZATION PLAN**

**DATES OF PERFORMANCE:** January 1994 - Ongoing

**PROJECT DESCRIPTION:** PW assisted this New York combination utility in the development of a business reorganization plan to convert their gas strategic business unit (SBU) into a subsidiary. PW's role was to thoroughly analyze the existing and prospective environment (internal and external) and differentiate between the SBU and subsidiary scenarios.

**PROJECT NAME:** **USA: OGELTHORPE POWER CORPORATION - OPERATIONAL REVIEW**

**PROJECT DESCRIPTION:** Price Waterhouse was engaged by this major generation and transmission electric cooperative to conduct a comprehensive examination of its management and operations. The review addressed all key aspects of the cooperative: executive management and Board governance, system planning and construction, financial management, rate structure and research, personnel management, corporate support services, legal services and contracts, and productivity.

**PROJECT NAME:** **FINANCIAL REVIEW OF THE NORTHERN CANADA POWER COMMISSION AND THE YUKON ELECTRIC COMPANY LTD.**

**PROJECT DESCRIPTION:** Price Waterhouse performed a financial review of the Northern Canada Power Commission and the Yukon Electric Company Limited. The work consisted primarily of a review of relevant data of other electrical



utility companies operating in Alberta and British Columbia, and a review of recent decisions of the Public Utility Boards of those two provinces. Under the project, Price Waterhouse developed an appropriate franchise agreement for the distribution of electrical power in the Yukon Territory, provided information for submission to the Board on proposed rate increases by Yukon Electric and Yukon Hydro, and conducted a study in connection with its public inquiry into electrical rate increases proposed by Northern Canada Power Commission. Price Waterhouse acted as financial advisor during the public hearing, conducted various analyses as requested by the Board, and assisted the Board in formulating its conclusions.

**PROJECT NAME: CANADA: ONTARIO HYDRO CORPORATION - ORGANIZATIONAL ANALYSIS**

**PROJECT**

**DESCRIPTION:** Price Waterhouse was engaged by the Ontario Hydro Corporation to perform organizational studies. Our efforts focused on the:

- Examination of the comptrollership function within the corporation;
- Establishment of the overall objectives, scope and structure of the comptrollership function;
- Establishment of the major responsibilities, accountabilities and interrelationships necessary to maintain an effective comptrollership function; and
- Establishment of differentiated data and system requirements.

**PROJECT NAME: UNITED KINGDOM: PRIVATIZATION OF THE ELECTRICITY INDUSTRY IN ENGLAND AND WALES**

**DATES OF PERFORMANCE:** 1986-1990

**PROJECT**

**DESCRIPTION:** Price Waterhouse was initially appointed to advise the Electricity Council on the restructuring of the electricity industry in England and Wales. This involved identifying the optimum industry structure and the key phases of an implementation plan, based on a review of all aspects of the industry from organization, competition, customer



relations, operations, finance and accounting through to flotation issues. This work concluded with the publication of the Government's White Paper on Electricity Privatization.

In 1988, PW were appointed as privatization and regulation advisers to twelve regional electricity companies. This engagement involved preparing and monitoring progress against a highly complex privatization plan and coordinating the work of the Privatization Steering Committee. Price Waterhouse was represented on the Steering Committee and on a number of working groups reporting to the Committee. Our advice to these groups assisted development of the regulatory framework within which the privatized companies now operate.

In addition to our industry wide appointment, we were appointed as privatization advisers to Eastern Electricity, Manweb, Midlands Electricity and Seaboard and as consultants to Northern Electric, East Midlands Electricity and South Wales Electricity.

**PROJECT NAME: REGIONAL ELECTRICITY COMPANIES - REGULATORY ADVISORY SERVICES (U.K.)**

**PROJECT DESCRIPTION:** Price Waterhouse was appointed as advisor to the twelve Regional Electricity Companies (RECs) in England and Wales to advise on a wide range of issues during the restructuring of the electricity industry. This engagement involved preparing, and monitoring progress against, a highly complex privatization plan and coordinating the work of the Privatization Steering Committee. Price Waterhouse was represented on the Steering Committee and on a number of working groups reporting to the Committee. The firm's advice to these groups enabled development of the regulatory framework within which the privatized companies now operate. Price Waterhouse also played a leading role in the following:

- Formulation of the Companies' policies with respect to capital structure;
- Development of contracts between power generators and distributors;
- Definition of the structure and operation of the electricity market;



- Establishment of a separate transmission company jointly owned by the RECs.

**PROJECT NAME: NORTHERN IRELAND ELECTRICITY - REGULATORY FRAMEWORK DESIGN**

**DATES OF PERFORMANCE:** March 1991 - June 1993

**PROJECT DESCRIPTION:** In Northern Ireland, Price Waterhouse designed a regulatory framework for Northern Ireland Electricity and evaluated its effects on the company. In addition, the firm built financial models for evaluating the risks inherent in project revenue streams and assisted in the negotiation of power purchase and other agreements. Price Waterhouse also advised on a range of other regulatory, financial and contractual matters related to the new framework, including:

- Format of the bulk supply tariff charged to all electricity suppliers;
- Management information systems;
- Regulation;
- Valuation framework;
- Generation planning and the negotiation of a contract for an interconnector link with Scotland; and
- Negotiation of power purchase agreements for oil, gas and coal-fired plants.

**PROJECT NAME: PORTUGAL: ELECTRICIDADE DE PORTUGAL (EDP) - ACCOUNTING AND ADMINISTRATIVE STANDARDIZATION**

**PROJECT DESCRIPTION:** PW has been assisting EDP in Portugal in the harmonization and standardization of the Authority's accounting and administration procedures. The work has been undertaken in three distinct phases.

Phase I of the assignment was carried out between March and June 1982. During this period PW undertook fact-finding and reviews of the Authority's procedures in the following areas:



- Financial and cost accounting;
- Stock accounting;
- Commercial accounting (low tension and medium/high tension customer billing);
- Payroll and personnel procedures;
- Supplier accounting;
- Treasury procedures; and
- Data processing strategy.

Phase II entailed the preparation of user specifications for new computer systems and clerical procedure manuals in each of the areas referred to above. In addition, PW prepared training material and held training seminars for the Authority's staff.

The final phase of the project involved detailed systems design, programming and testing of the new computer systems and the implementation of these new systems and related procedures. PW provided both supervision and direct consultancy assistance to the project teams working in the various functional areas.

**PROJECT NAME: FRANCE: ELECTRICITÉ DE FRANCE - SYSTEM DEVELOPMENT**

**PROJECT DESCRIPTION:** PW's work for the French Electricity Authority involved the development of new distribution and accounting systems, using database design and real-time processing, and covering new billing, customer accounting and receivables systems for high- and medium-tension customers.

The consultancy work covered review, systems development, detailed systems design, programming, testing, integration with existing systems, acceptance trials and user training. In addition, PW provided the French Electricity Authority with a comprehensive operating and procedures manual.

**PROJECT NAME: RUSSIA: DEVELOPMENT OF A LEGAL FRAMEWORK FOR THE RUSSIAN ELECTRICITY SUPPLY INDUSTRY**



DATES OF  
PERFORMANCE: 1994

PROJECT  
DESCRIPTION:

The structure, conduct and performance of the Russian electricity supply industry (ESI) is currently being redefined during this period of transition to a market economy. Price Waterhouse, leading the project and working together with a law firm specializing in energy, is drafting the legal framework necessary for the implementation of the newly-defined structure.

Price Waterhouse is working with the Ministry of Fuel and Energy to complete this two-stage project: The first stage was a know-how transfer program. This comprised a 'Foundation Seminar', organized by Price Waterhouse, where 20 Russian electricity/legal specialists were invited to a week long seminar examining structural and regulatory issues. The 'Foundation Seminar' was followed by a 'Study Tour' to Europe where 10 Mintopenergo representatives met senior industry, governmental and regulatory personnel, and made a first hand comparative analysis of different European ESIs.

The second stage was the formation of four 'work teams' made up from western experts from Price Waterhouse and its western legal associate and members of the Mintopenergo counterpart team. The work teams focused on the areas of: primary legislation, international interfaces, regulation and licensing, and domestic interfaces within the Russian ESI.

For each area the teams are identifying at high level the key legal instruments, including the following: operating codes, regulation and licenses, domestic energy pricing and trading, cross-border energy pricing and trading, consumer protection.

PROJECT NAME: **ELECTRICITY SUPPLY COMMISSION OF MALAWI - TARIFF STUDY AND TECHNICAL REVIEW**

PROJECT  
DESCRIPTION:

Price Waterhouse performed a tariff study for the Electricity Supply Commission of Malawi (ESCOM). The purpose of the study was to derive a tariff structure which reflected as closely as possible the costs to the economy of meeting the demand for electricity. More specifically, it was to consider the financial objectives of the commission as well as the Government of Malawi's development

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objectives (e.g. subsidizing poorer consumers through an income distribution objective). The study encompassed:

- Analysis of marginal costs of the ESCOM system;
- Analysis of demand patterns;
- Analysis of load forecasts;
- Definition of revenue requirements;
- Tariff structure and rates;
- Review of metering and the impact of the proposed tariff on metering;
- Assessments of public relations needs to implement the proposed tariffs as smoothly as possible; and
- Development of an implementation plan.

**PROJECT NAME: UGANDA ELECTRICITY BOARD - MARGINAL COST-BASED TARIFF ESTIMATION**

**PROJECT**

**DESCRIPTION:**

Price Waterhouse undertook an assignment to determine marginal cost-based tariffs for the Uganda Electricity Board (UEB). The purpose of the project was to provide a pricing structure which would cover the economic costs of meeting power demands. The Long Run Marginal Cost (LRMC) approach was adopted, with use of several computer models developed by Price Waterhouse. The scope of work included:

- Demand and load forecast review;
- Computation of marginal economic costs;
- Formulation of tariff outlines which give appropriate signals to consumers;
- Projections of the UEB's financial situation based on its generation and distribution expansion program;
- Assets revaluation and identification of alternative tariff scenarios;



- Comparison of the economic costs of meeting energy demand with electricity and competing energy products;
- Elaboration of specific demand management measures; and
- Modification of preliminary tariff proposals to provide for life-line consumers and to meet government policy on income distribution.

**PROJECT NAME: MANAGEMENT INFORMATION SYSTEM FOR THE ZIMBABWE ELECTRICITY AUTHORITY**

**DATES OF PERFORMANCE: 1989**

**PROJECT DESCRIPTION:** Price Waterhouse developed a requirements study and package implementation of:

- Managements Information System;
- Human Resources Development;
- Financial Accounting;
- Meter Tracking;
- Consumer Information System.

**PROJECT NAME: NIGERIA: NATIONAL ELECTRIC POWER AUTHORITY - ASSET MANAGEMENT**

**PROJECT DESCRIPTION:** Price Waterhouse was engaged by the National Electric Power Authority of Nigeria to:

- Evaluate the capital assets taken over by the Authority.
- Review and report on the recording and evaluation of the fixed assets taken over. This task involved:
  - a review of the existing assets register and make an inspection of all major physical plants;



- a reclassification of fixed assets under a new account code suitable for NEPA's future requirements;
- an evaluation of the fixed assets, under the new code of accounts, on a replacement cost basis and the establishment of accumulated depreciation for these assets; and
- a review of the method of accounting for long-term loans and a list of the long-term debt held by the Authority.

**PROJECT NAME: ZAIRE: SOCIÉTÉ NATIONALE D'ELECTRICITÉ - ACCOUNTING SYSTEMS**

**PROJECT DESCRIPTION:**

Price Waterhouse designed a system of accounts, records and procedures to maintain accounting control over the INGA-SHABA project which was under construction. The project team developed cost accounting and amortization of assets systems for the utility.

**PROJECT NAME: ZAMBIA: MERGER OF ELECTRICAL UTILITIES - ORGANIZATIONAL ANALYSIS**

**PROJECT DESCRIPTION:**

In an effort to establish a unified electricity industry, Zambia's National Energy Corporation contracted Price Waterhouse to plan the organization of operating companies involved in the generation, transmission and distribution of electricity into one national company. Specifically, PW was engaged to:

- Conduct a comprehensive review of the organization of the electricity industry in Zambia;
- Identify existing problems of the industry and analyze proposals to overcome them;
- Determine how best to combine various operating companies into one central organization;
- Develop the structure of the new organization and the implementation plans to achieve it.

WORLDWIDE

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**PROJECT NAME: USAID. OFFICE OF ENERGY & INFRASTRUCTURE -  
IMPLEMENTATION OF THE ENERGY PROJECT  
DEVELOPMENT FUND (WORLDWIDE)**

**DATES OF  
PERFORMANCE: July 1993 - Ongoing**

**PROJECT  
DESCRIPTION:** In Washington, D.C., for USAID.'s Office of Energy & Infrastructure, Price Waterhouse is administering the Energy Project Development Fund (EPDF) Project. In its role as Fund Manager, Price Waterhouse is responsible for reviewing requests made by developers to fund feasibility studies of proposed private power projects in the developing world.

Price Waterhouse also provides advisory services to private developers interested in building, owning, operating and transferring power and other infrastructure projects. The firm is conducting economic, financial and technical assessments of proposed projects for three multinational companies, as well as, assisting the developers in structuring the financing packages and obtaining funding from international financing institutions.

**PROJECT NAME: PRIVATIZATION AND DEVELOPMENT PROJECT (PAD)  
WORLDWIDE**

**DATES OF  
PERFORMANCE: 1991 - Ongoing**

**PROJECT  
DESCRIPTION:** Price Waterhouse (PW) is the prime contractor of the five year contract of the Worldwide Privatization and Development Project. The International Privatization Group (IPG) was formed to manage the technical assistance provided under this contract. PW/IPG has two interrelated objectives:

- To provide technical and financial advisory services that are primarily related to the design, preparation and implementation of privatization transactions.
- To conduct practical, applied research and training on privatization issues that are relevant and useful to PRE, missions and HCGs commitment to the implementation of privatization.

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PW/IPG specialists provide advice in the following areas:

- Legislation to facilitate privatization;
- Design and implementation of public awareness campaigns;
- Financial and operational appraisal of enterprises;
- Enterprise valuation;
- Structuring widespread share offers;
- Managing large share offers, including the establishment of computerized systems, coordinating publicity, preparation of prospectuses, arranging underwriting, and related matters
- Industry-specific economic analysis;
- Enterprise or industry-specific legal issues;
- Strategic planning and management;
- Industry-specific regulatory adjustments;
- Alternative financing techniques;
- Investor identification, selection and negotiations;
- Funds mobilization and capital market development;
- Employee share participation programs;
- Managing and staffing long term technical units in countries for the implementation of privatization.



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