Vietnam: Electric Power Industry

By Le Son, Commercial Specialist
U.S. Commercial Service
U.S. Consulate General
Ho Chi Minh City, Vietnam
Phone: 848-825-0490
Fax: 848-825-0491

www.buyusa.gov/vietnam
E-mail: Le.Son@mail.doc.gov

As of March 2008

Where is Vietnam on Asia's Electric Map ?

Vietnam still in a dark area that will need massive development to match other major Asian cities

Source: Mekong Energy - 2006

Presentation Overview

- Electric power industry structure
- Vietnam's demand for electricity
- Vietnam's supply of electricity
- Investment requirements
- Independent power plants
- Establishment of competitive power market
- Best prospects for U.S. companies
- Prospective buyers and competitors
- Market entry
- Market challenges
- Trade events
- Q & A session

Vietnam's Total Mainland Area: 329,560 km^2
Similar to the Size of Arizona State
Total Coastline: 3,444 km

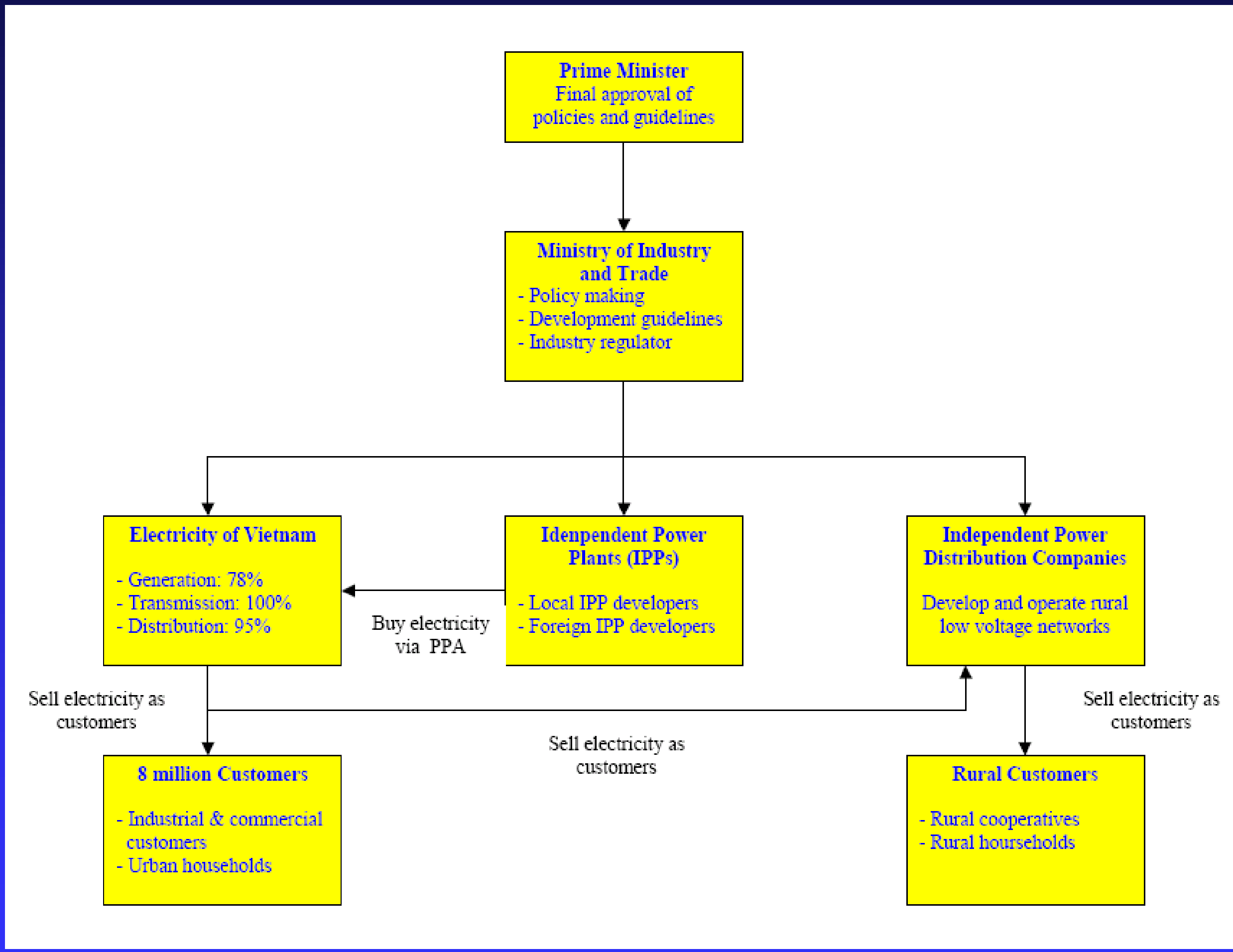
Vietnam's Location in Southeast Asia
Source: DPI HCMC

Electric Power Industry Structure

- Ministry of Industry and Trade (MoIT): Industry regulator and policy maker
- Electricity of Vietnam (EVN):
  State owned monopoly
- EVN: 3th largest SOE in terms of revenue (about US$ 2.5 in 2005)
- EVN reports directly to Prime Minister
- EVN: Single buyer of electricity from power plants

Industry Legal Framework

- Electricity Law 2004
- Sixth Power Development Master Plan (Decision 110/2007)



Electric Power Industry Organization

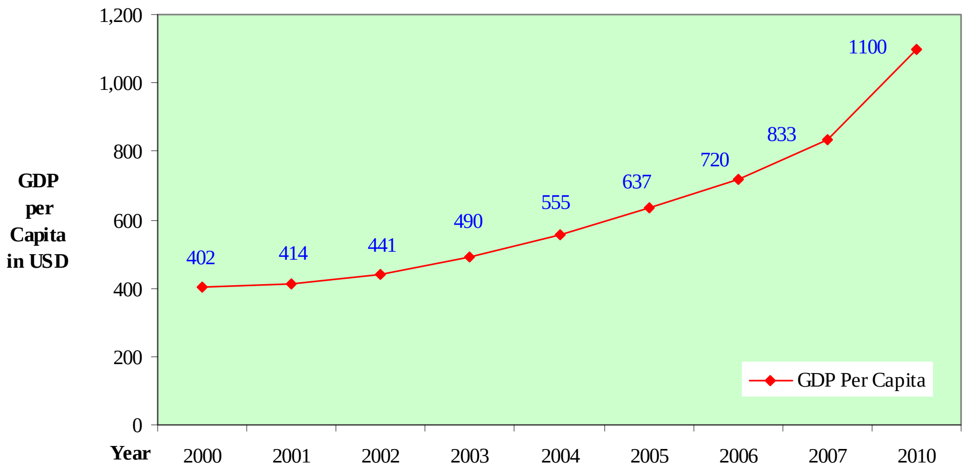
Source: EVN – November 2007

Vietnam's Demand for Electricity

- Actual demand for electricity grew 15% per annum during 1995 - 2005
- GDP growth: 8% - 9% during 2006 - 2015
- Electricity demand forecasted to grow by 17% - 20% per year during 2007 – 2015
- Power shortage since 2006 till 2009

Chart 1 – Vietnam's GDP per Capita 2000- 2007

(2010 figure is a forecast) - Source: VET, February 2008



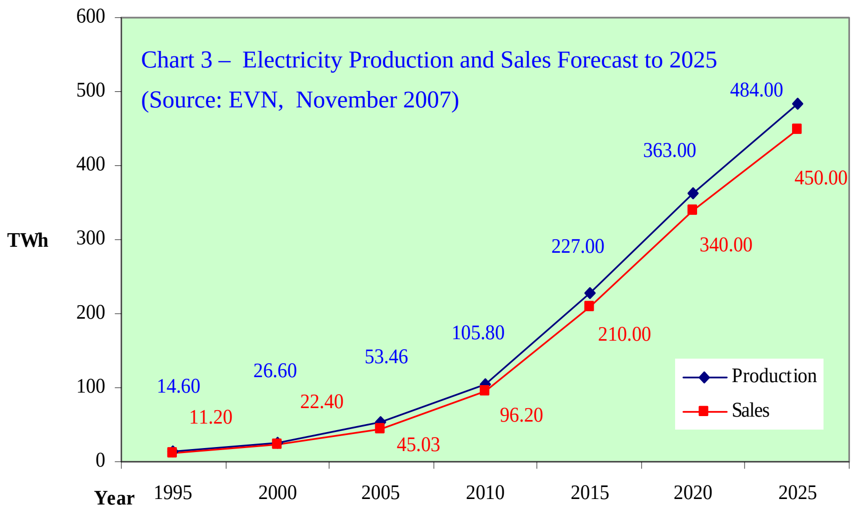


Chart 3 – Electricity Production and Sales Forecast to 2025

(Source: EVN, November 2007)

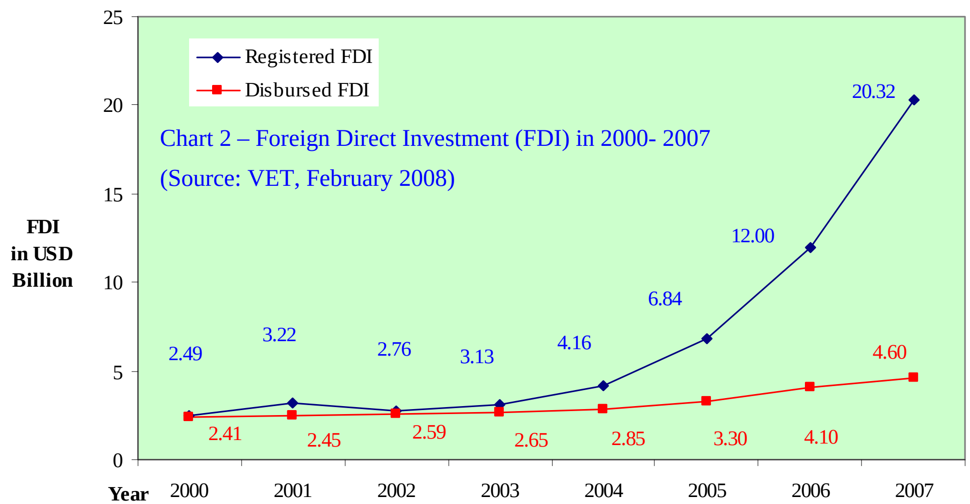


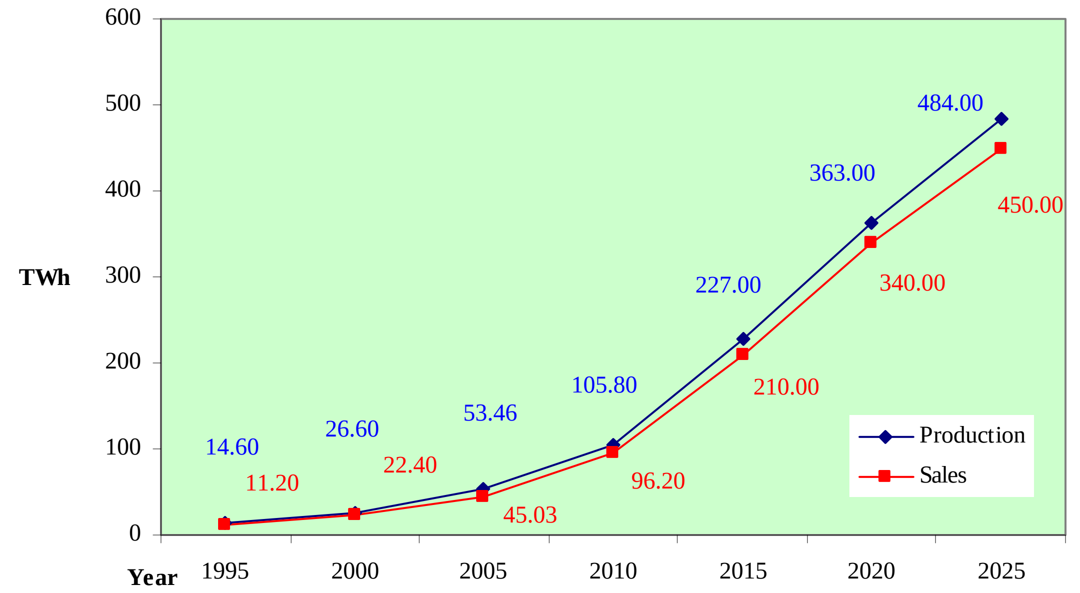
Chart 2 – Foreign Direct Investment (FDI) in 2000- 2007

(Source: VET, February 2008)

Vietnam's Supply of Electricity

Chart 4 – Electricity Production and Sales Forecast to 2025

(Source: Sixth Master Plan – EVN, November 2007)



Power Generation

- Total power generation capacity: 12,270 MW from 27 plants (peak – Dec. 2006)
- About 1,168 MW was put in operation in 2007
- Gas (South) and Hydro (North and Center) play major role
- Trend: Additional 2,700 MW required per year in period 2006 – 2010
- Trend: Coal expected to rise to 20% by 2010

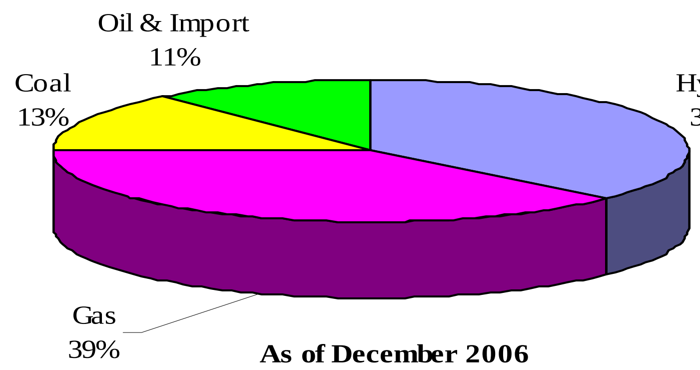
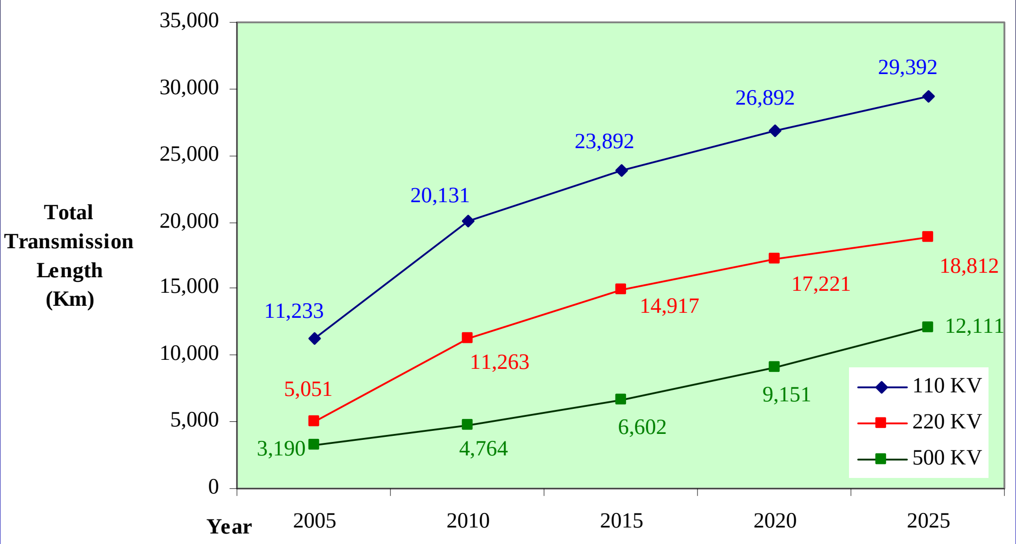


Chart 5 – Composition of Power Generation Capacity

As of Dec. 2006 (Source: EVN, November 2007)

Vietnam's Supply of Electricity

Chart 6 – Projected Expansion of the Power Transmission System to 2025 (Source: EVN, November 2007)



Power Transmission & Distribution (T&D)

500 KV:	3,286 km	6,600 MVA
220 KV:	5,650 km	15,923 MVA
110 KV:	11,053 km	20,656 MVA

- Rural electrification rate: 94.84% of households (Sept. 2007)
- Goal: 100% by 2020
- Expansion of T&D systems required

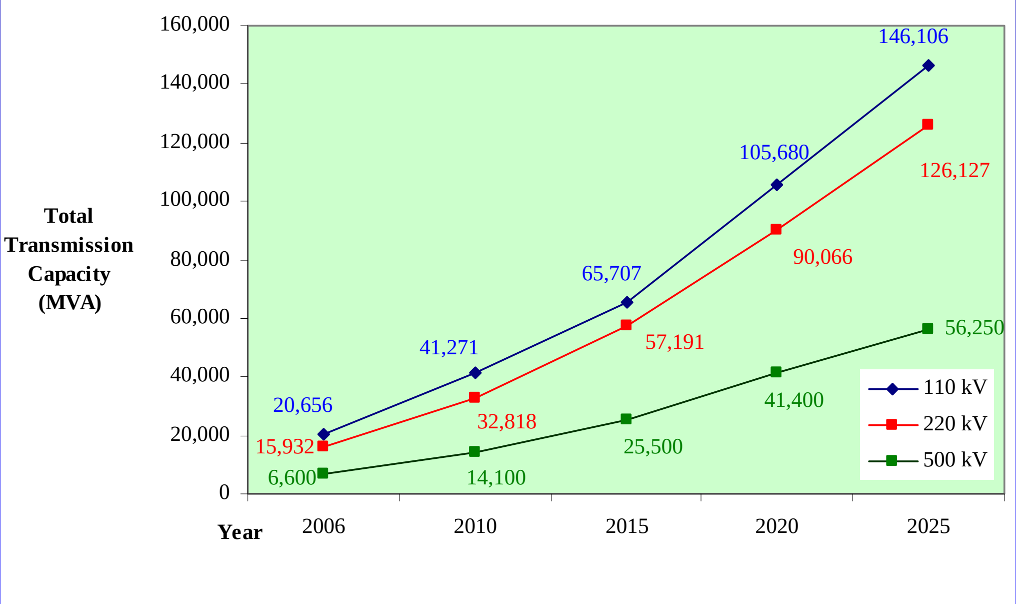


Chart 7 – Projected Expansion of the Power Transmission System to 2025 (Source: EVN, November 2007)

Investment in Electric Power Sector

Estimated Investment:

- US$ 40 billion required until 2015
- US$ 30 billion for power generation
- US$ 10 billion for T&D

Expected Sources:

- EVN's funds
- ODA loans
- State budget
- Commercial loans
- Export credit
- Private funds (IPP projects)

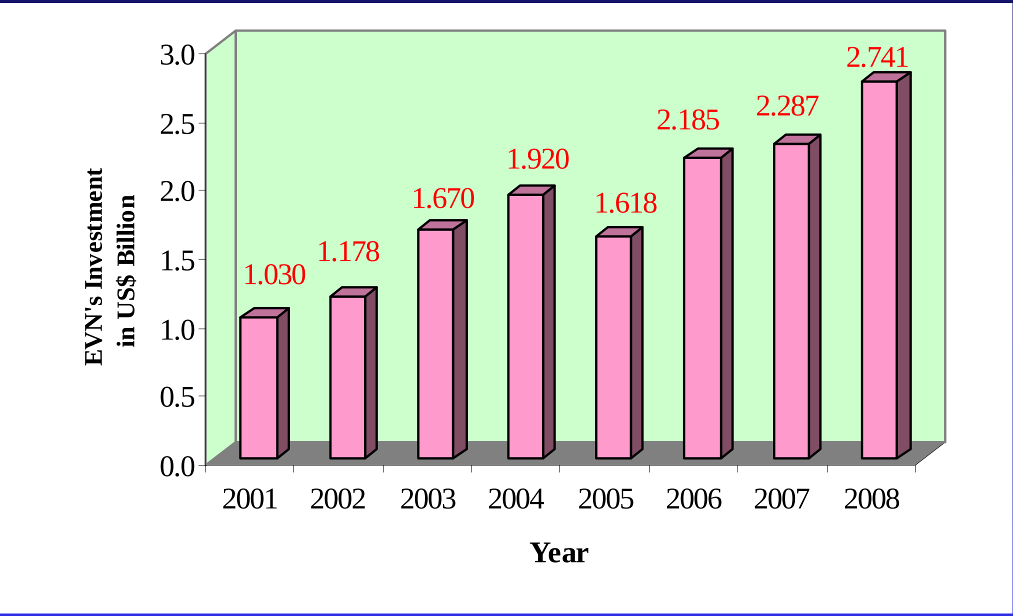


Chart 8 – EVN's Investment in Electric Power Industry 2001 - 2008
(Source: FCS database)

Independent Power Plants (IPPs)

715-MW BOT Phu My 2.2 Gas Combined Cycle Power Plant
(Photo by Mekong Energy Company in 2006)

Overview:

- IPPs: 22% of total output capacity
- IPPs play increasing role
- IPPs developed by local and foreign companies
- Two major foreign IPPs:
  Phu My 3 (716 MW, Gas, US$ 412 million)
  Phu My 2.2 (715 MW, Gas, US$ 410 million)
- Active IPP developers: EDF, Sumitomo, Sojitz, BP, Semcorp, Petrovietnam, Vinacomin
- Large number of upcoming IPP projects
- PPA with EVN: 4.0 – 4.5 US Cent per KWh

Legal Framework:

- Electricity Law 2004
- Sixth Power Development Master Plan
- Decree 78/2007 on BOT projects
- Decision 30/2006 on IPP projects

Challenges:

- Legal and regulatory issues
- Lack of transparent competitive market
- Access to fuel (gas and coal)
- Coordination among government agencies

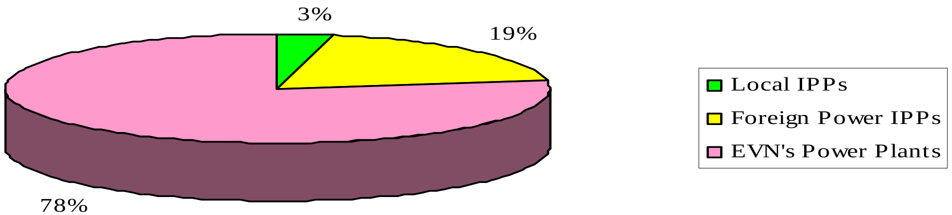


Chart 9 – Composition of Power Generation Capacity
As of Dec. 2006 (Source: EVN, November 2007)

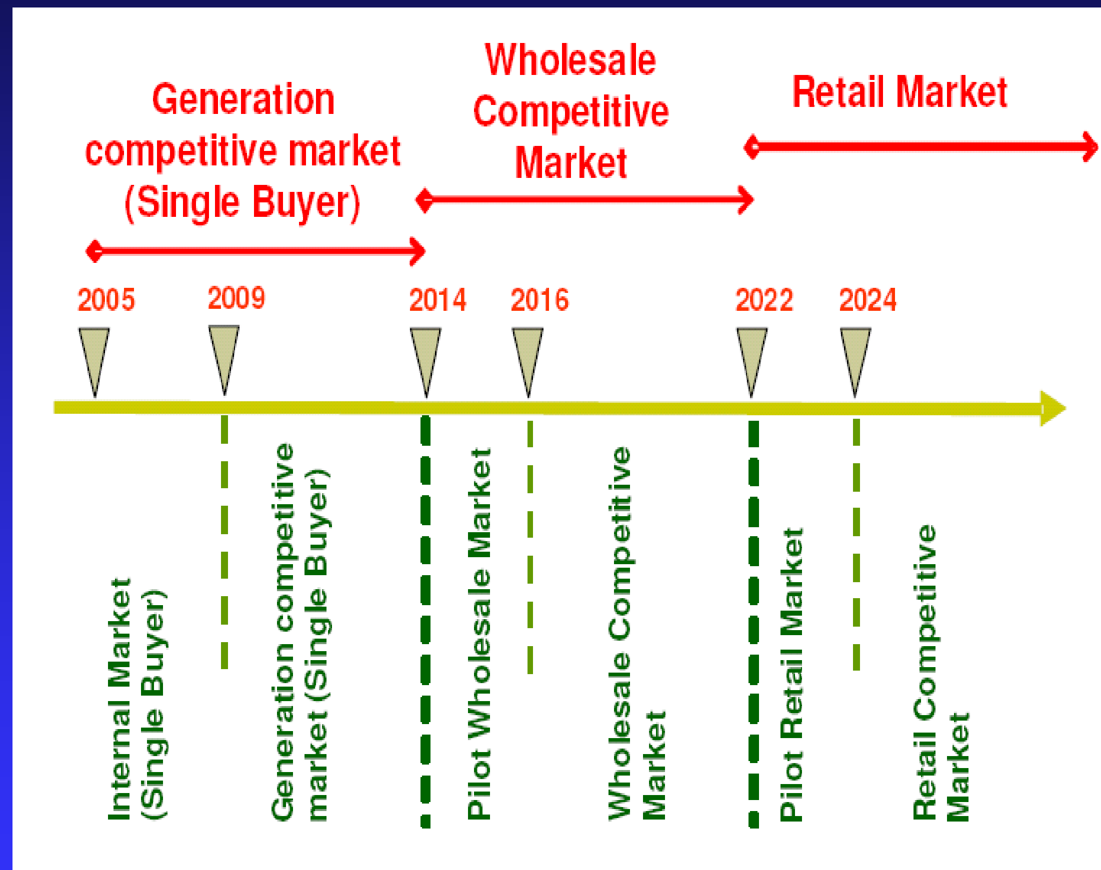
Establishment of a Competitive Electricity Market

Competitive Market:

- Electricity Law 2004 outlines development of competitive power market
- Decision 26/2006: detailed roadmap for the competitive power market
- Phase 1 (2005-2014): competitive generation with single buyer (EVN)
- Phase 2 (2015 – 2022): competitive wholesales directly to major end-users
- Phase 3 (after 2022): competitive retail
- EVN restructured into a shareholding company

Electricity Retail Prices:

- Electricity retail prices regulated by government
- Decision 276/2006 approved price increase roadmap and price deregulation
- Jan 2007: 5.3 US Cent per KWh
- July 2008: 5.6 US Cent per KWh
- 2010: Retail price determined by market



Roadmap for a Competitive Electricity Market
Source: EVN – November 2007

Best Prospects, Prospective Buyers and Competitors

Best prospects:

- Consulting and engineering services for thermal power plants
- Equipment for thermal power plants
- Spare parts and overhaul services for thermal power plants
- Investment in IPP projects

Prospective buyers:

- Foreign IPP developers
- Coal and gas fired project developers
- Foreign contractors (Chinese, Japanese, French and German)
- Vietnamese contractors

Competitors:

- Equipment: Chinese, Japanese and European
- Services: Chinese, Japanese and European

750-MW IPP Ca Mau Gas Combined Cycle Power Plant 1 with Siemens Turbines
developed Petrovietnam with USD 436 million in investment
Commercial Operation: October 2007

Challenges and Barriers to American Suppliers

Challenges:

- Project delay
- Red-tape and lack of transparency
- Complicated bidding procedures
- Corruption
- Flexibility and adaptability to local business environment
- Price competition
- Finding good local partners

Barriers:

- Import documentation
- Payment terms (L/C versus TTR)
- Metric system
- Trading right restrictions

Can Don Hydro Power Project – IPP
Developed by Song Da Construction Corporation
Source: Song Da Corp.

Market Entry Recommendations

- Long term approach and patience
- Flexibility and adaptability
- Competitive prices
- Suitable equipment
- Sales channels:

  - Agents/distributors for aftermarket

  - Direct sale with assistance from local agents to end users in large scale projects
- Promotion: trade events, sales calls, workshops and orientation visits
- Financing strategies:

  - Export credit

  - Foreign commercial banks

Ben Thanh Market in HCMC

U.S. COMMERCIAL SERVICE
United States of America Department of Commerce

Local Electricity Trade Events

Vietnam Energy 2008:
- Date: October 28-31, 2008
- Venue: Hanoi, Vietnam
- About 115 exhibitors from 22 countries
- Features: Power generation and T&D
- Organizers: CP Exhibition
- Supported by: MoIT, EVN & Vinacomin
- www.cpexhibition.com/energy08

Vietnam Electricity 2009:
- Date: November 29-31, 2009
- Venue: HCMC, Vietnam
- About 114 exhibitors from 22 countries
- Features: T&D
- Organizers: CP Exhibition
- Supported by: MoIT, EVN and VCCI
- www.vfabric.com/electric

Vietnam Oil & Gas and Power Summit:
- Date: Not yet determined
- Venue: HCMC
- Feature: Conference on energy
- www.cmtevents.com

Local Trade Show

Thank You & Welcome to Vietnam

By Le Son, Commercial Specialist
U.S. Commercial Service
U.S. Consulate General
9/F, Saigon Center
65 Le Loi Boulevard, District 1
Ho Chi Minh City, Vietnam
Phone: 848-825-0490 (Ext. 33)
Fax: 848-825-0491

www.buyusa.gov/vietnam
Le.Son@mail.doc.gov

As of March 2008