

# Vietnam's Power Sector: An Overview

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Power Sector Experience Sharing  
Event  
Dhaka February 9, 2011

# Outline

- Vietnam's power sector
- The reform program
- Investment planning



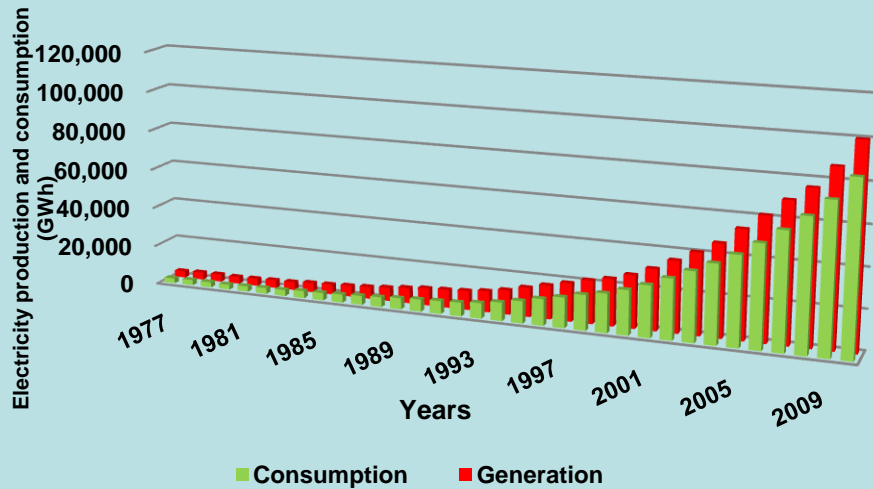
# Who Does What in the Power Sector

- Office of Government
- Ministry of Industry and Trade
  - Sector policy
  - Sponsor of EVN
  - Sponsor of Institute of Energy
- Ministry of Planning and Investment
- Ministry of Finance (and VDB)
- Ministry of Natural Resources and Environment
- State Bank of Vietnam
- Provincial, District and Commune People's Committees

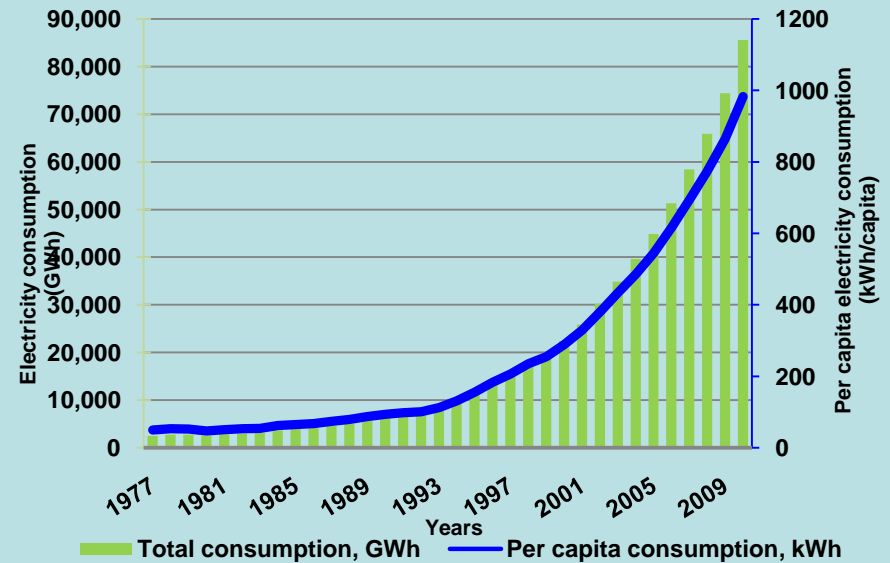


# Demand is Growing!

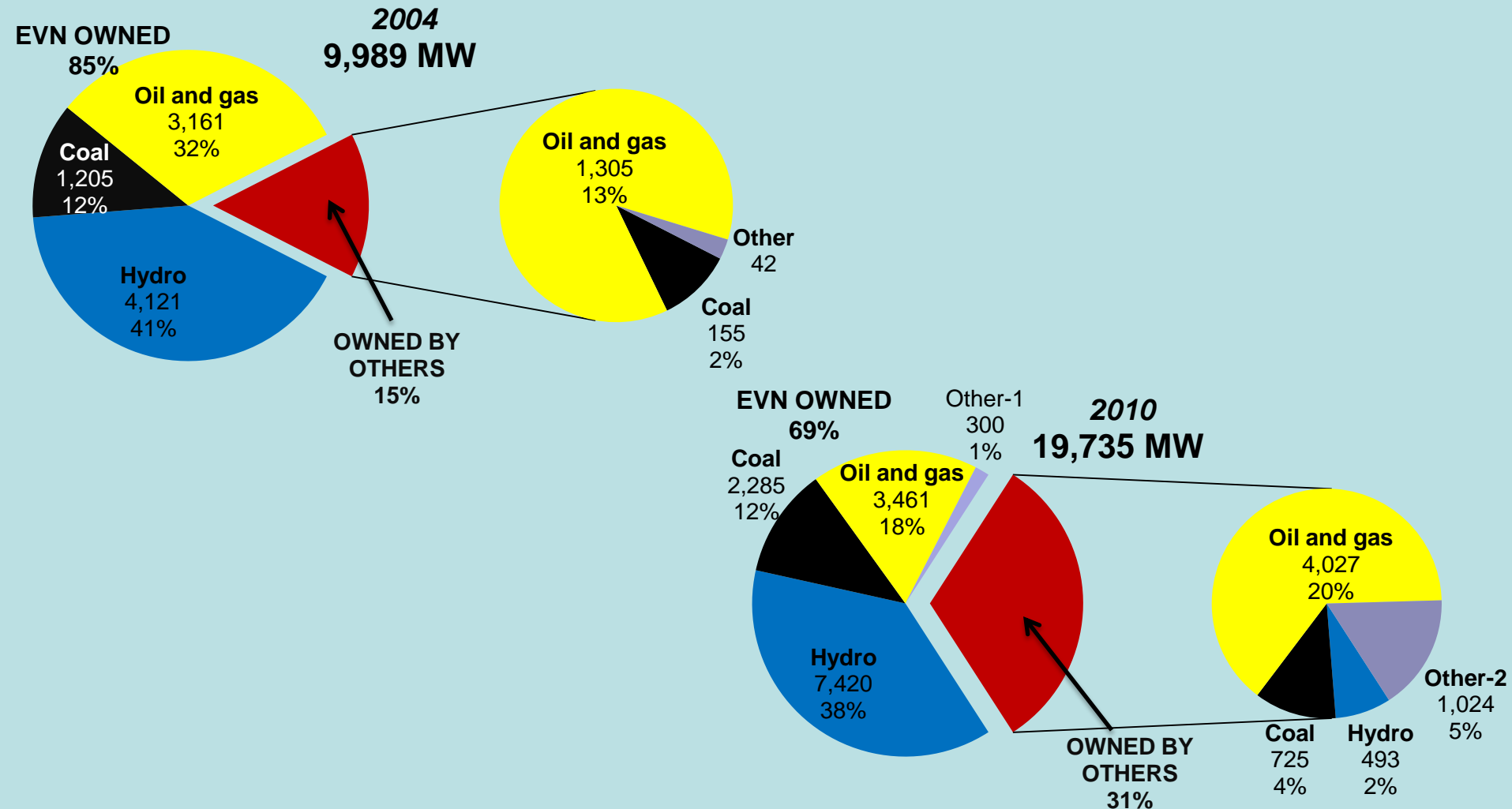
## Electricity Production and Consumption 1976 - 2009



## Per Capita and Total Consumption 1976 - 2009

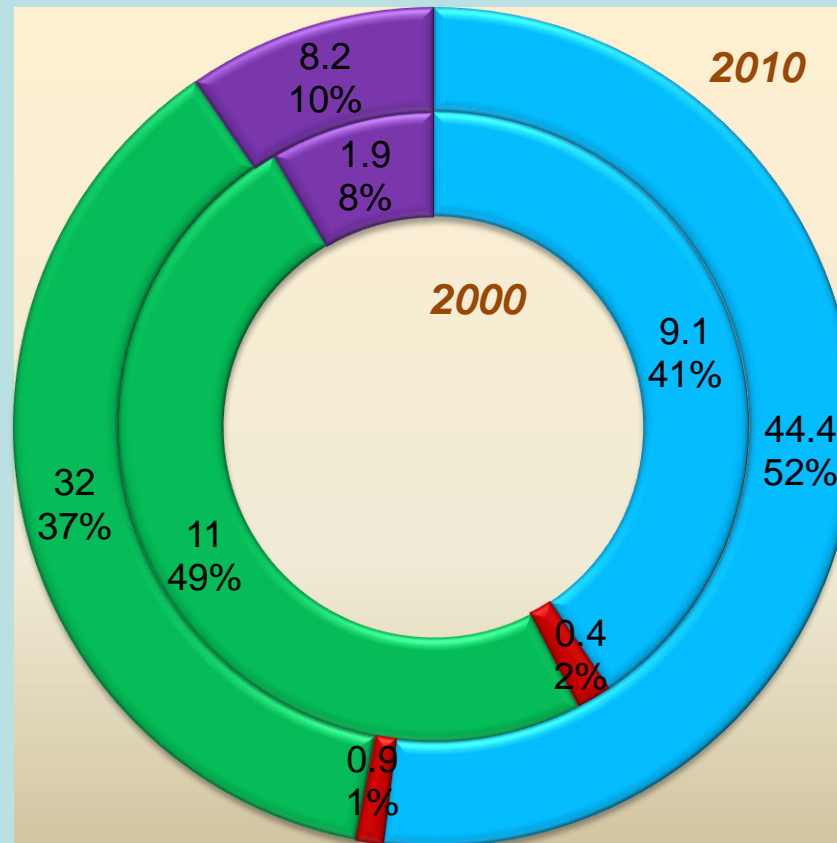


# How It's Being Met is Changing



# So Is Where It's Being Used

Power Consumption by Sector, 2000 and 2010 Compared, TWh

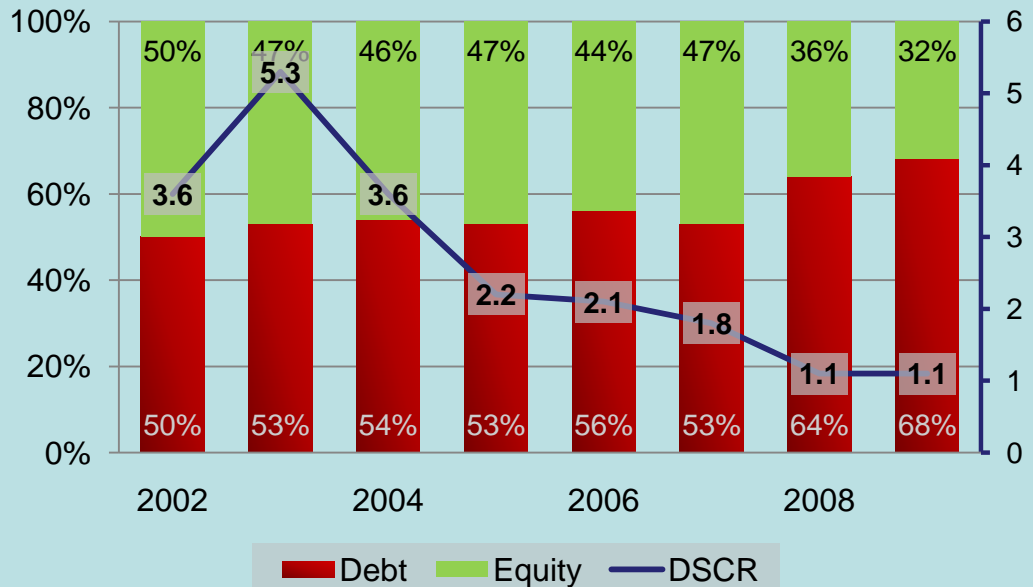
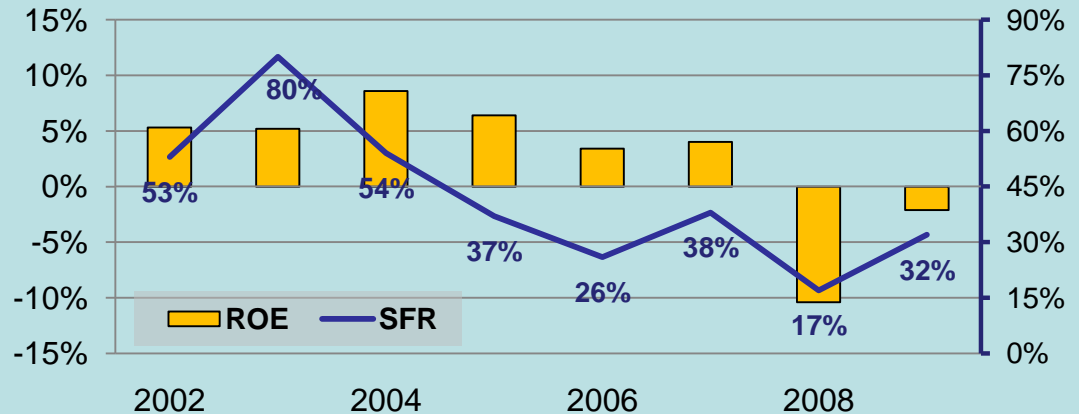


■ Industry and construction  
■ Residences and Administration

■ Agriculture, Forestry and Aquaculture  
■ Commerce, Hotels and Other

# EVN Finances

- Increasing size of investment program not matched by tariff increases, risking a spiral of higher borrowing and debt service, further reducing ability to finance own investments
- Capitalization of National Power Transmission Company (too low)
- High proportion of foreign debt requiring revaluation because of exchange rate depreciation
- Vietnam's own macro instability in 2007 (before financial crisis) increasing costs not matched by tariff increases





# Key Challenges

Above all: improving the quantity and quality of electric power for economic growth, inclusion and the environment

- Surging demand – 15% annual growth
- Limited financing
- Reducing energy security
- Increasing carbon intensity
- Substantial State involvement



A major reform program

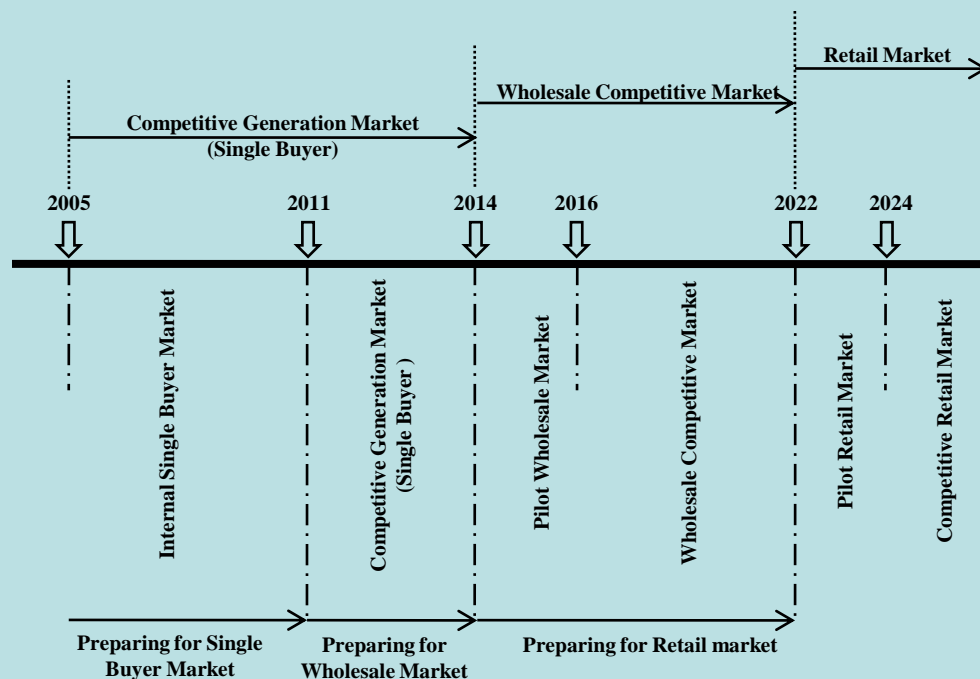




# The Reform Program

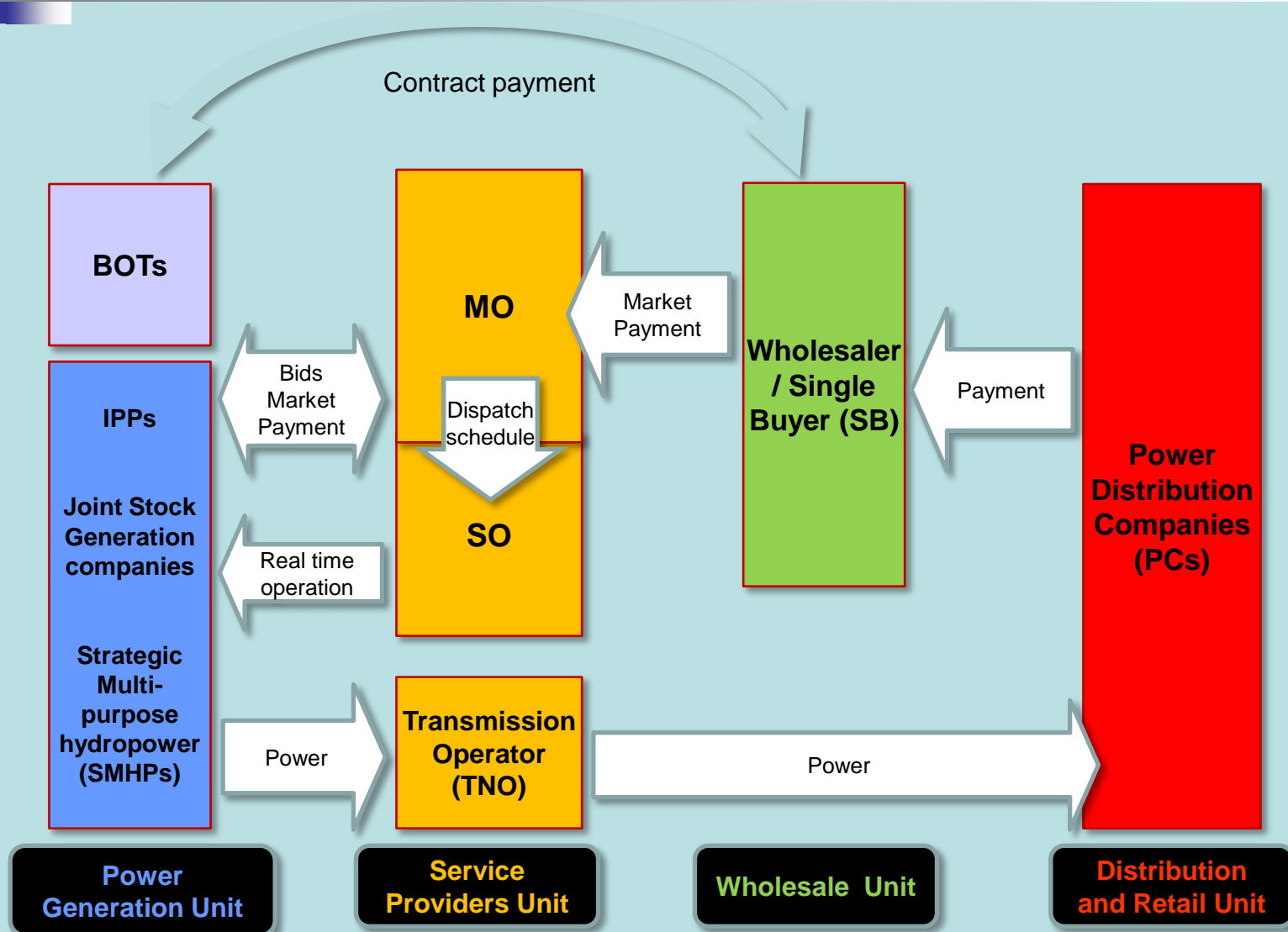
Aimed at ensuring that there is adequate financial resource to support continued growth in demand

- Key legislation – Electricity Law
  - Started preparation in 1998, passed in 2004
  - Move to competition in electricity sector
  - Planning process retained but oversight shifted to MoIT
  - Creation of ERAV
- Roadmap for Market Development
  - Three phases (see adjacent diagram)
  - Two step ‘trial and implement’ approach in each phase
- Restructuring of actors

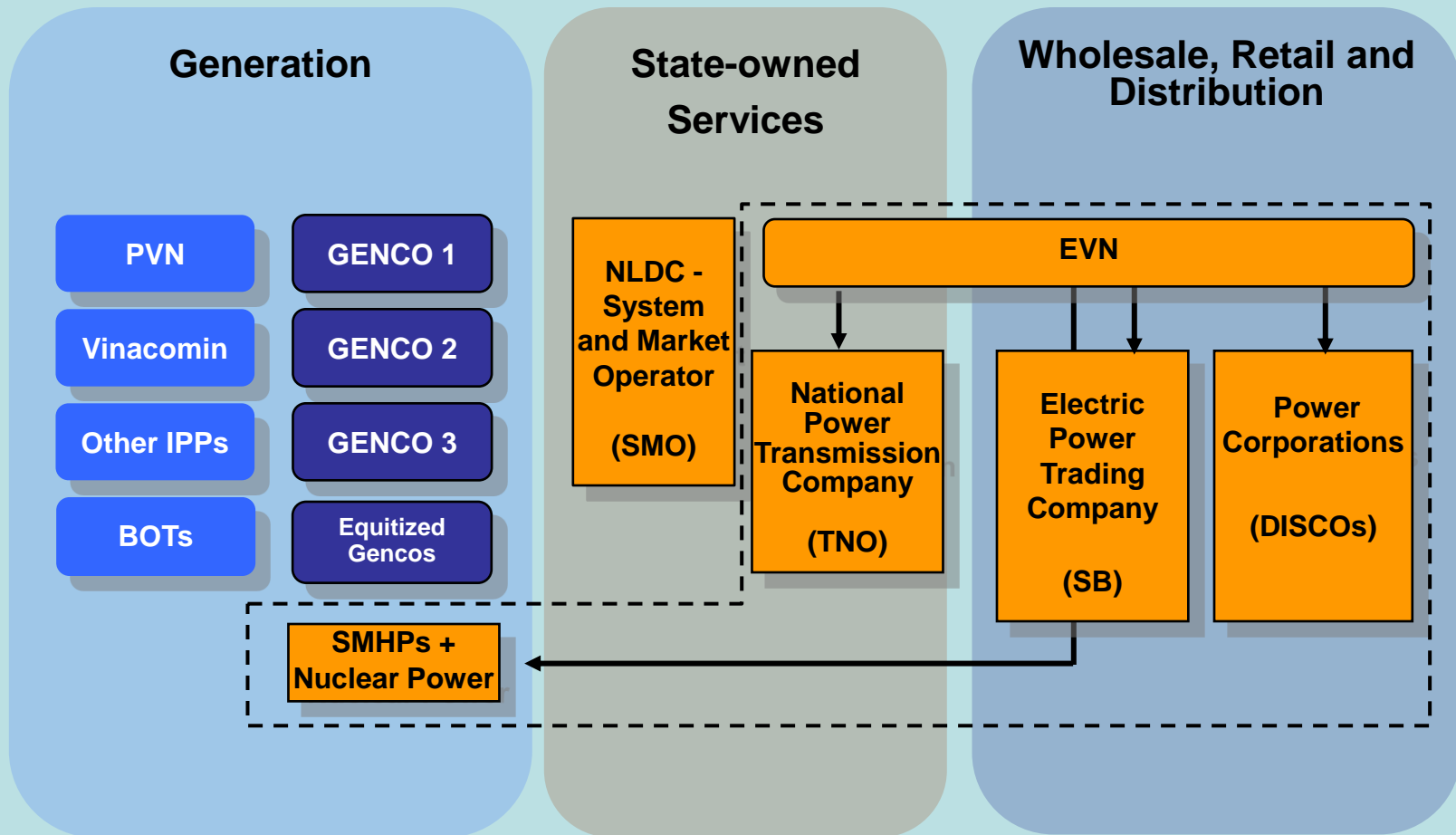


**Consensus driven – slow but sure**

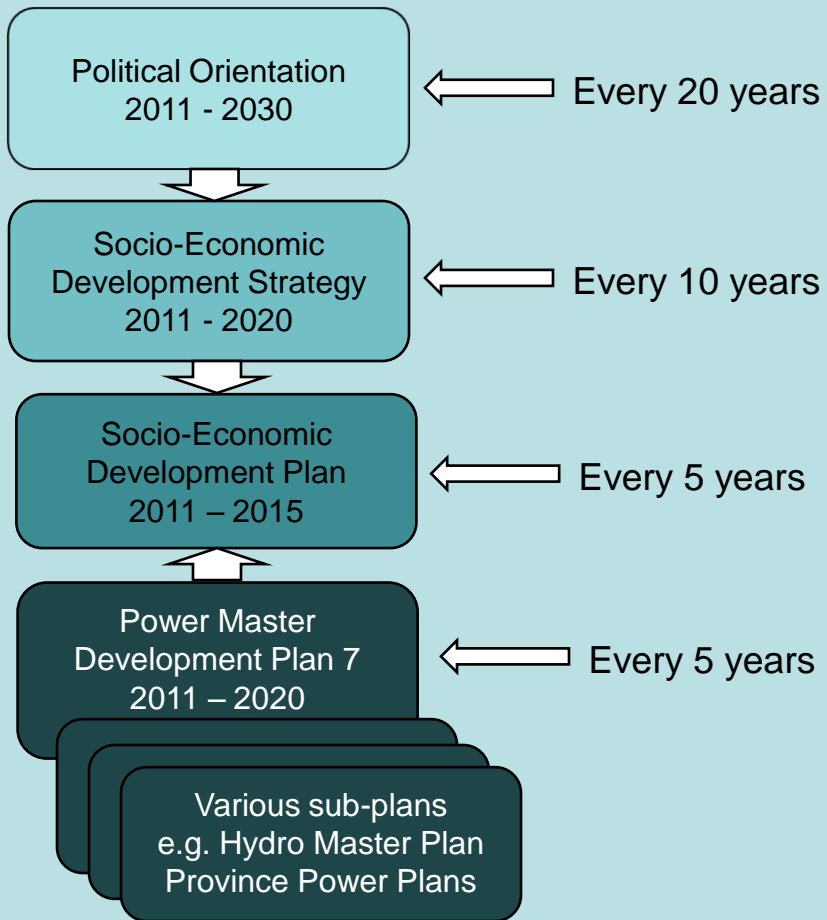
# Market Design



# Expected Sector Structure



# The Planning System



# Power Master Development Plan 7

- Prepared by IoE on behalf of MoIT: still 'Master Plan' for VCGM, not yet indicative
- Two somewhat conflicting objectives
  - Investment planning
  - Investment approval
- Principles
  - Least economic cost for a given level of reliability
  - Limit impact on security of supply of transmission reliability (build generation in N, C and S)
  - Diversify power sources, in particular start to build coal
  - Accelerate regional integration (Lao and Cambodia)
  - Plan for renewables



# Power Master Development Plan 7

- Planning tools:
  - WASP III (with limits on hydro simulation)
  - Strategist (optimizes expansion)
  - PDPAT (treats system as interconnected subsystems and simulates operation of expansion system)
  - Slow!
- Load forecasting based on GDP, regional/province plans, sector plans

