Suruhanjaya Tenaga

INDUSTRY REFORM INITIATIVES IN MALAYSIA

International Energy Regulatory Forum

11 Oct 2011

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Content

- Energy Commission and its Roles
- Overview of Malaysian Electricity Supply Industry
- Historical Development of Electricity Industry in Malaysia
- Current Reform Initiatives

ENERGY COMMISSION MALAYSIA

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KEY ROLES OF EC

Responsibilities of EC, under the Energy Commission Act 2001 are as follows:

- Advise Minister on all matters concerning energy supply activities
- Implement, enforce and review energy supply laws (Electricity Supply Act 1990, Gas Supply Act 1993 and regulations)
- Promote efficiency, economy and safety in electricity and piped gas supply industries
- Promote competition and prevent misuse of monopoly power in electricity and piped gas supply industries
- Promote renewable energy and conservation of non- renewable energy
- Promote research and development of new techniques relating to supply and use of electricity and piped gas
- Promote self-regulation

OVERVIEW OF MESI
Legal Framework

Act of Parliament

1. Energy Commission Act 2001 (Act 610)
2. Electricity Supply Act, 1990 (Act 447) + Amendment 2001
3. Gas Supply Act 1993

Regulations – Power of the Minister

4. Electricity Regulations, 1994 + Amendment 1998
5. Licensee Supply Regulations, 1990 + Amendment 2002
6. Electricity Supply (Exemption) Notification 1994
7. Exemption Order Under Section 54
8. Efficient Management Of Electrical Energy Regulations 2008

Licences – Issued by the Energy Commission

9. Licences issued to Utilities, Generators, Distributors and Others

Licence Standards – Licence Conditions

10. Generation, Transmission and Distribution Standards

Industry Codes – Issued By Energy Commission

11. Grid Code / Distribution Code

Other Contracts / Agreements – Between Parties

12. Power Purchase Agreements (PPAs)
13. Fuel Supply Agreements

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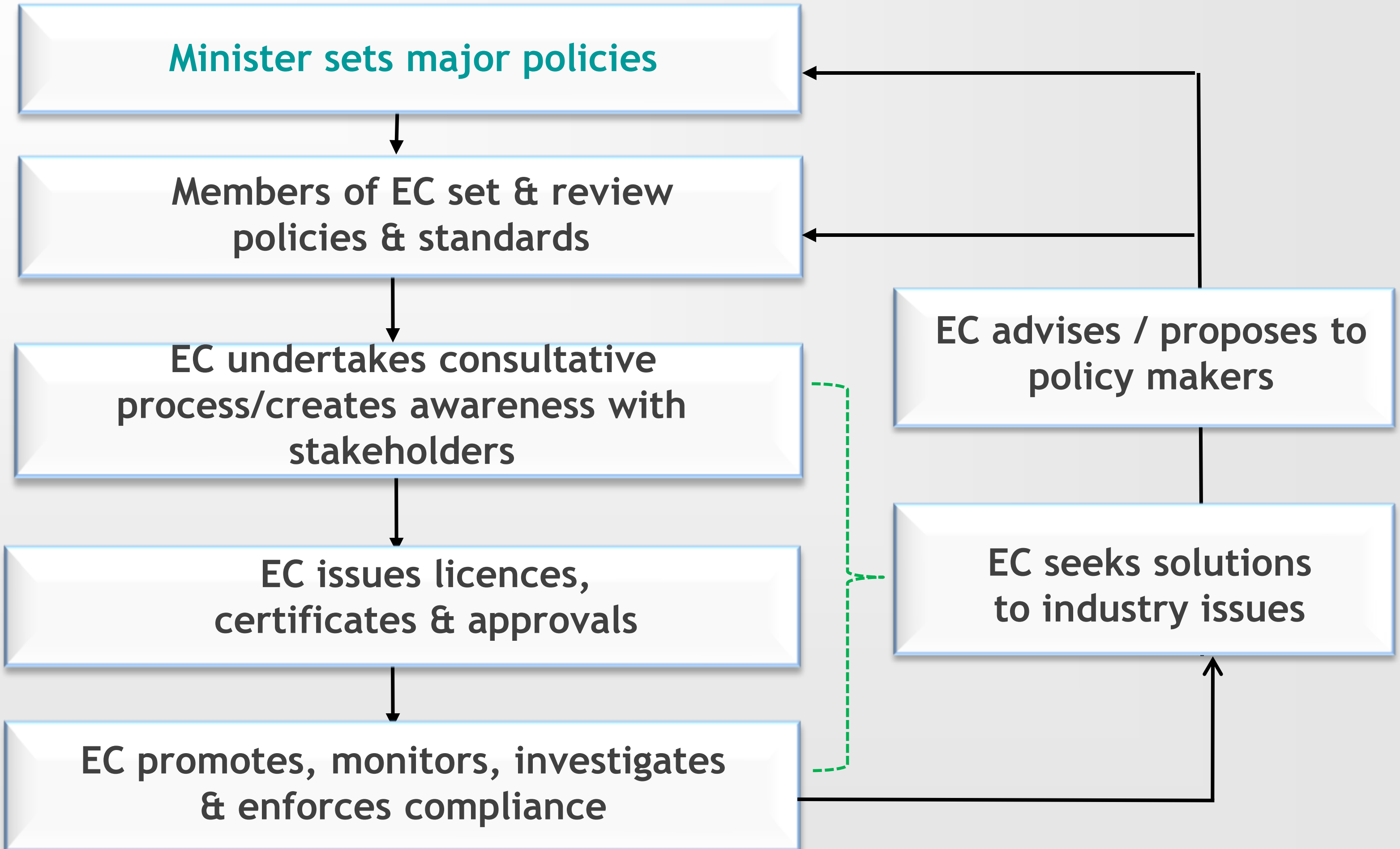
OVERVIEW OF MESI

Institutions in the Sector

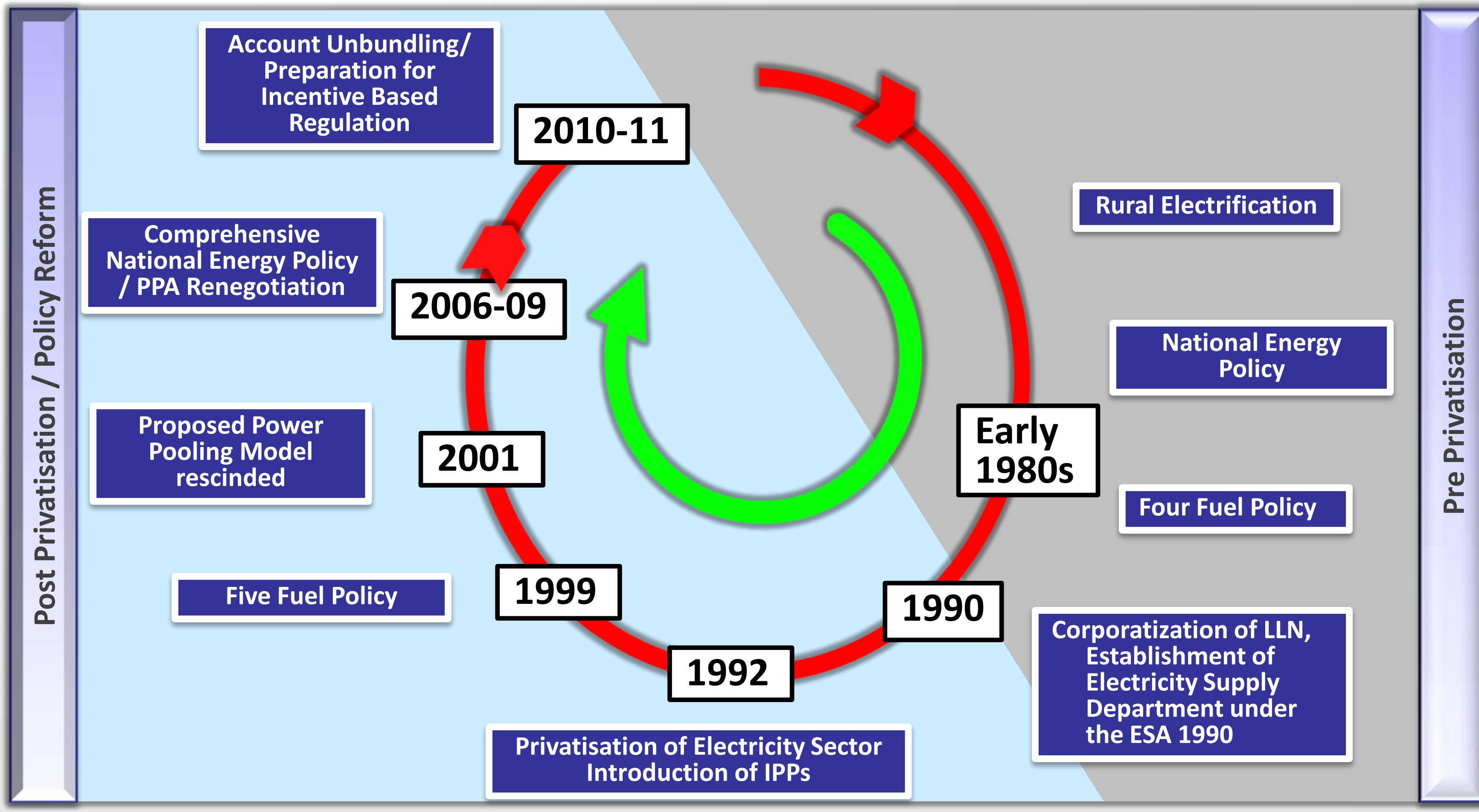
Economic Planning Unit	• Formulates macro national energy policy
KeTTHA	• Initiates, develops & implements energy policy and programmes
UKAS (Public Private Partnership Unit)	• Private Finance Initiatives in major project
Energy Commission	• Electricity and piped gas industry regulation
National Green Technology Centre	• Formulating green technology development plan. This centre function as the focal point to set standards and promote green technology
Petronas	• Oil and Gas exploration, production, processing, manufacturing and marketing
Petronas Gas	• Processing and transmission of natural gas
TNB, SESB, SESCO	• Electricity generation, transmission, distribution and supply
Gas Malaysia, Sabah Energy Corp, Sarawak Gas	• Distribution and reticulation of gas
Sustainable Development Authority	• Development of RE/ EE Initiatives and Implementation of FIT
MyPOWER Corp	• MESI Reform Initiatives

REGULATORY PROCESS OF EC



HISTORICAL DEVELOPMENT ELECTRICITY SUPPLY INDUSTRY MALAYSIA

EVOLUTION OF MALAYSIA'S POWER SUPPLY STRUCTURE



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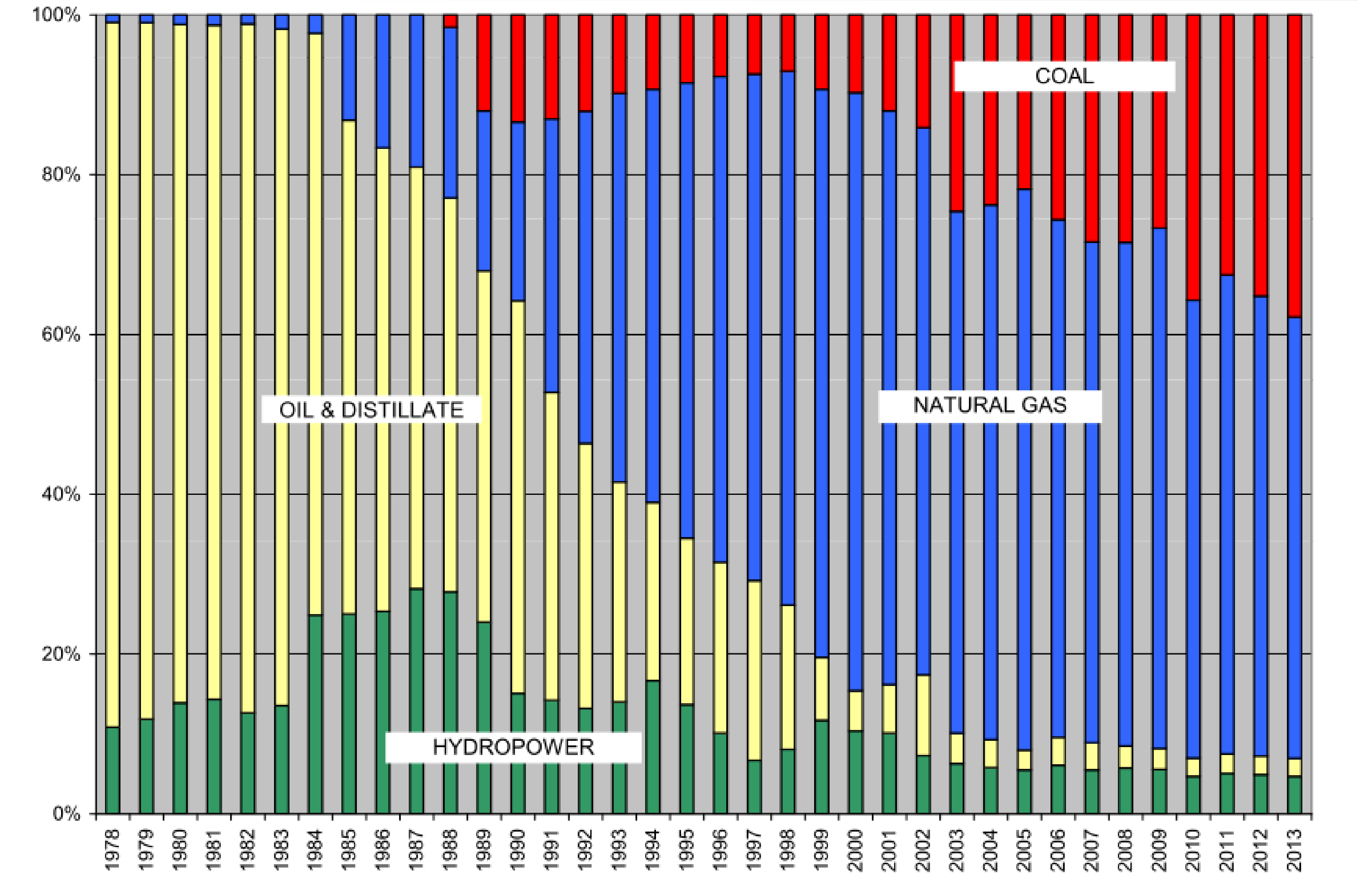
KEY ENERGY POLICIES

Petroleum Development Act 1974	National Petroleum Policy 1975	National Energy Policy 1979	National Depletion Policy 1980	Four-Fuel Diversification Strategy 1981	Five-Fuel Diversification Strategy 2001
• Vested on PETRONAS the exclusive rights to explore, develop and produce petroleum resources of Malaysia	• To regulate downstream oil & gas industry via the Petroleum Regulations 1974	• To ensure adequacy, security and cost-effectiveness of energy supply • To promote efficient utilization of energy • To minimize negative environmental impacts in the energy supply chain	• To prolong lifespan of Malaysia's oil reserves for future security & stability of oil supply	• To pursue balanced utilization of oil, gas, hydro and coal	• Renewable Energy/ EE included as the "fifth fuel" in energy supply mix

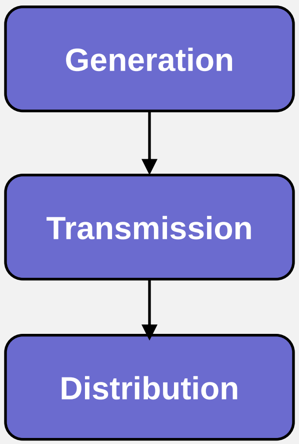
POWER GENERATION MIX: Oil to Gas Dependency



Including Sabah & Sarawak

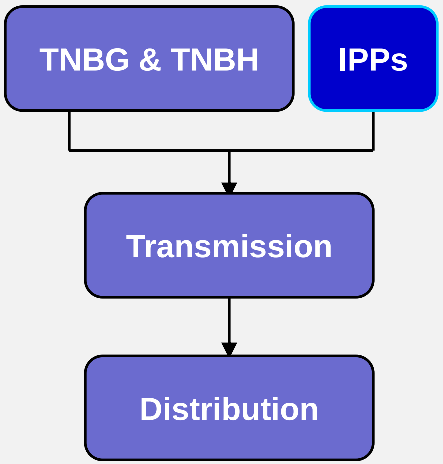
HISTORICAL DEVELOPMENT OF MESI STRUCTURE

Early 1990's - Fully Regulated



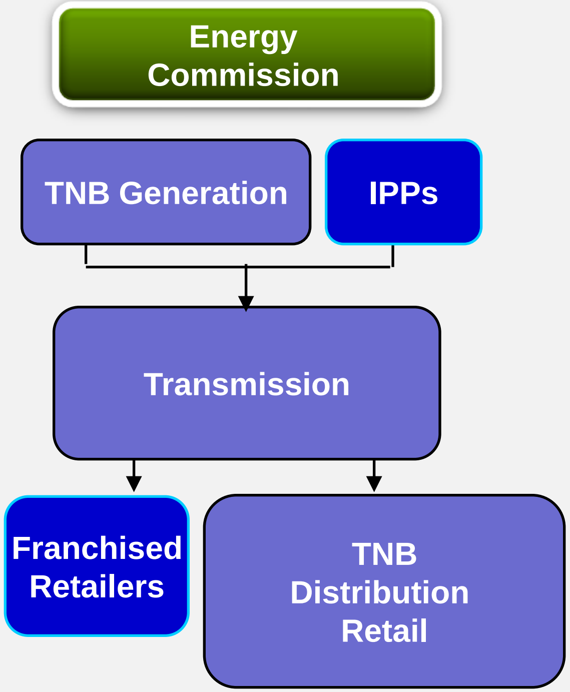
- "Vertically Integrated"
- Dominated by National Utility-TNB

Mid 1990's - Multiple Generation Players



- Transmission and Distribution by TNB
- Privately-owned IPPs allowed to participate in the generation sector

Present



- Transmission and Distribution by TNB
- Privately-owned IPPs allowed in generation and franchised retailers in limited areas for distribution

MALAYSIAN ELECTRICITY SUPPLY INDUSTRY: CURRENT REFORM INITIATIVE

Key Issues for Industry Sustainability

1. **Governance / Policy**
   - Fragmented governance and policies formulation
   - Lack of transparency over utility's operations (G/T/D)

2. **Fuel**
   - Depleting gas reserves, subsidized gas prices, cap on supply
   - Increase in import of coal
   - Increasing risk / uncertainty over future supply of fuel

3. **Tariff**
   - Lack of explicit and transparent tariff pass-through mechanism
   - For Sabah, unsustainable tariff, low investment and poor reliability

4. **Market Structure**
   - IPPs benefiting from non-competitive award of PPAs
   - Uncertainty over investment in new capacity

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KEY OBJECTIVES FOR REFORM

- To ensure provision of secure & reliable supply with quality services
- To enhance efficient utilisation of energy & to ensure competitive electricity price with public acceptable
- To promote environmental friendly & safe Electricity Supply Industry for future generation
- To ensure economic sustainable Electricity Supply Industry with increase in value add

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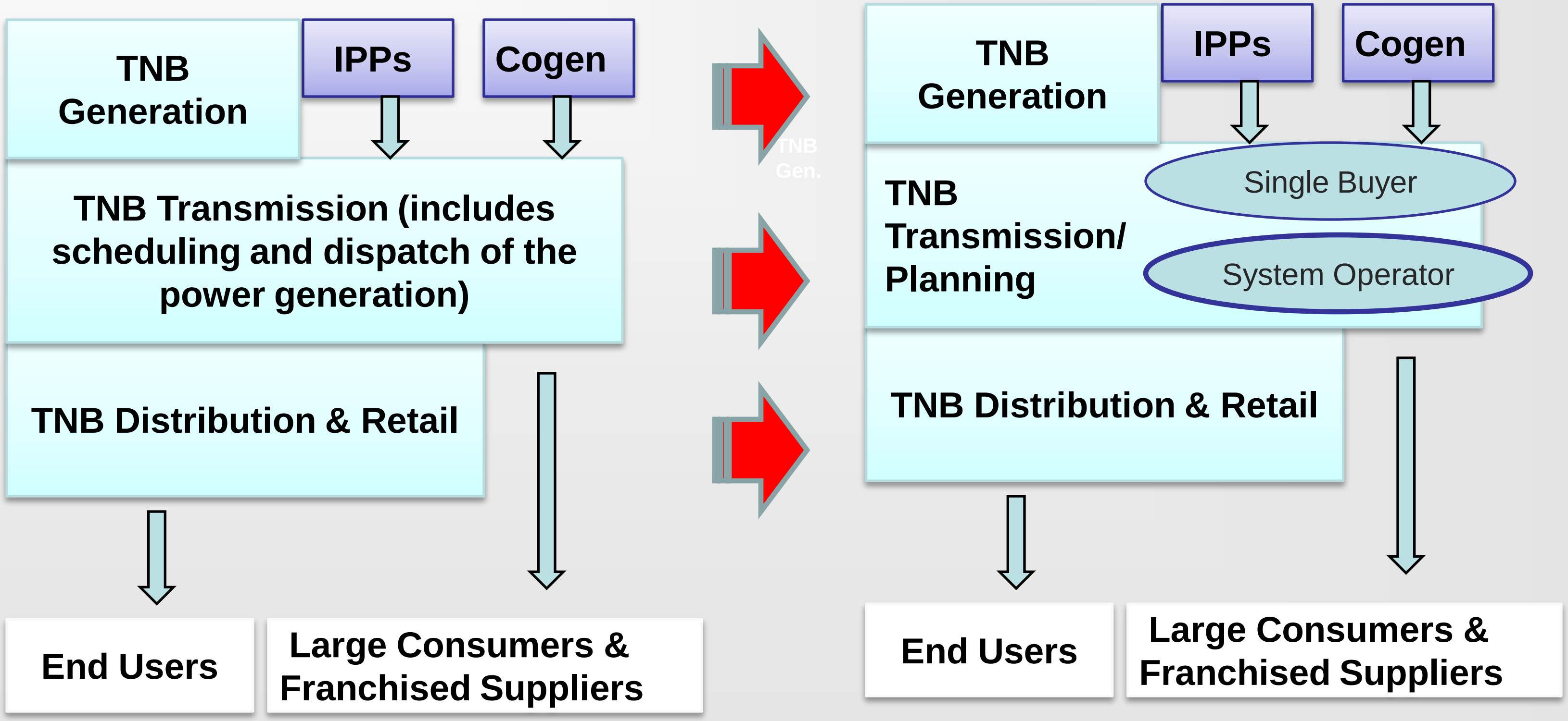
REFORM INITIATIVE
Ring Fencing

Present

Proposed



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REFORM INITIATIVE

Ring Fencing

- Strengthening the planning process, increasing transparency of power purchase settlements and establishing arms-length relationships for power purchase
- Increasing transparency of dispatch to enable compliance audits by regulators, and preparing for automated tariff pass-through mechanism
- Ring fencing is an intermediate step, versus a complete separation of System Operation activities: ISO does have higher perceived independence due to legal and ownership unbundling, however, ring-fencing can be viewed as first step towards full independence

REFORM INITIATIVE

Competitive Bidding

Previous

- More than 15 PPAs in Peninsula Malaysia were directly negotiated and awarded in the past 15 years
- The direct award resulted public accusations of government awarded "unreasonably high returns" PPA to IPPs

Current

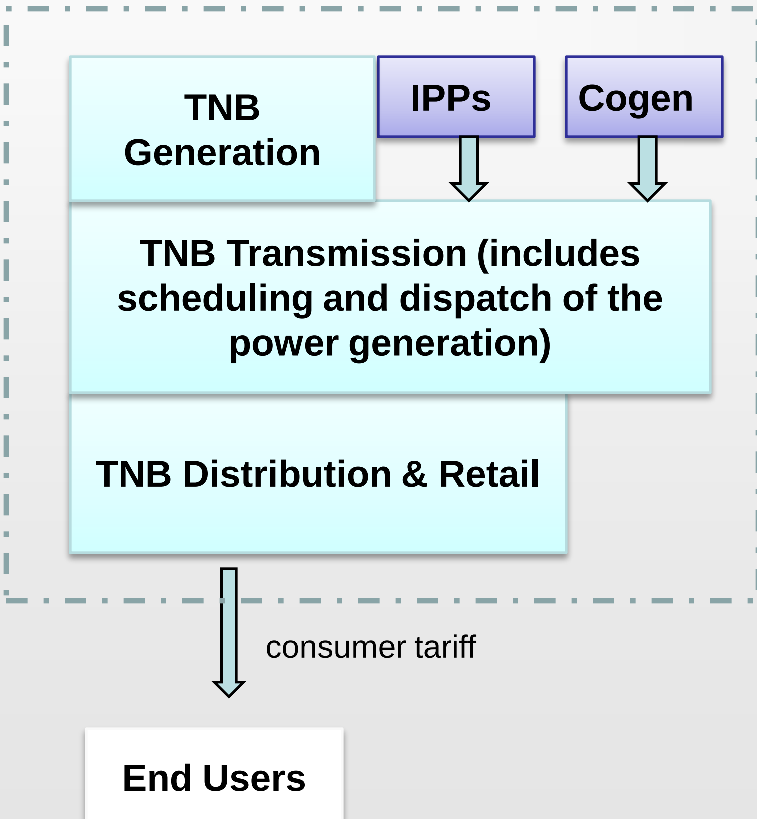
- First competitive bidding launched by the Energy Commission in Nov 2010 for award of the 1,000 MW Coal-fired Power Plant Project in Peninsula
- Bidder submit bid proposals according to the requirements in the Request for Proposal
- All bid proposals evaluated according to the pre-set evaluation criteria
- Project awarded on 9 June 2011.

REFORM INITIATIVE
Competitive Bidding

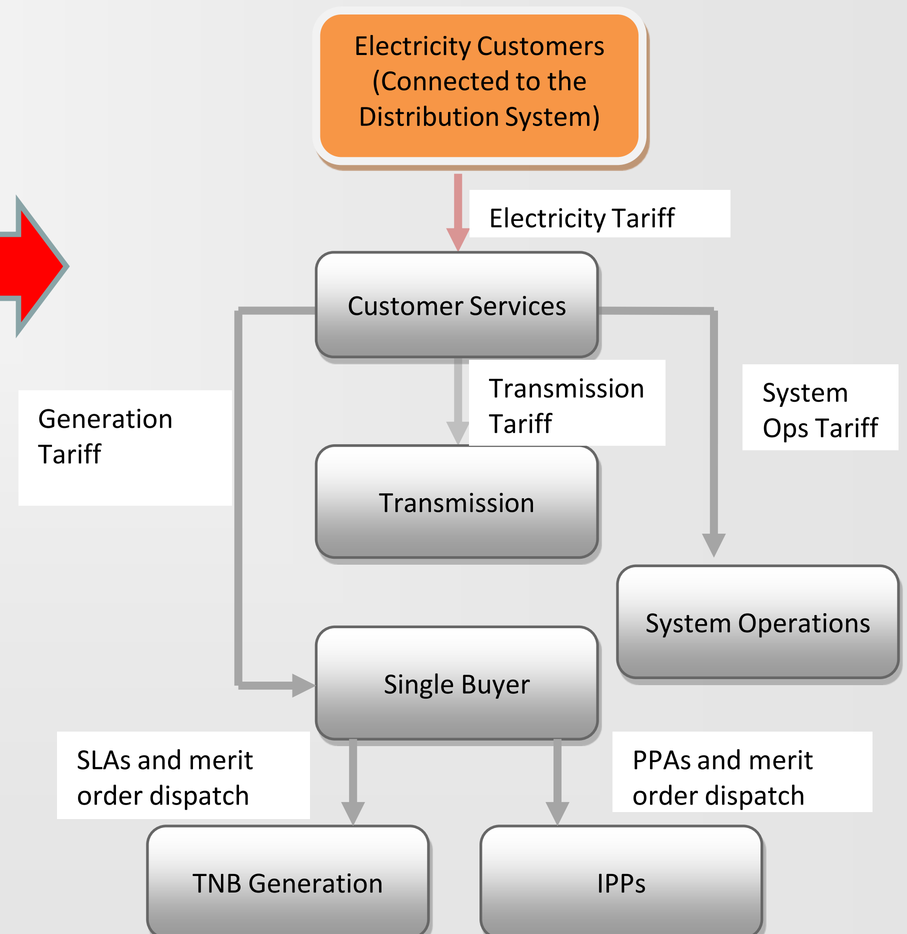
- Restricted bidding on brownfield site due to time limitation
- Transparent and level playing process
- Bid preparation process and evaluation conducted by independent project team
- Improvement on PPAs and CSTA
- Tariff offered by the successful bidder was proven to be competitive and has set the benchmark for other coal-fired power plant project
- All future capacity will be awarded via competitive bidding

REFORM INITIATIVE
Incentive Based Regulation

Present



Proposed



Broadly Two Forms of Regulation

Cost-Plus Regulation	Incentive-Based Regulation
❑ Focus is on recovery of historical costs ❑ No incentives for pursuing efficiency ❑ Emphasis on asset growth ❑ Regulation of inputs Most risk passed on to customer	❑ Recovery of forecast efficient expenditure ❑ Efficiency target set ❑ Efficiency sharing mechanism in place ❑ Regulation of outcome/performance Risk and Incentives shared with customer

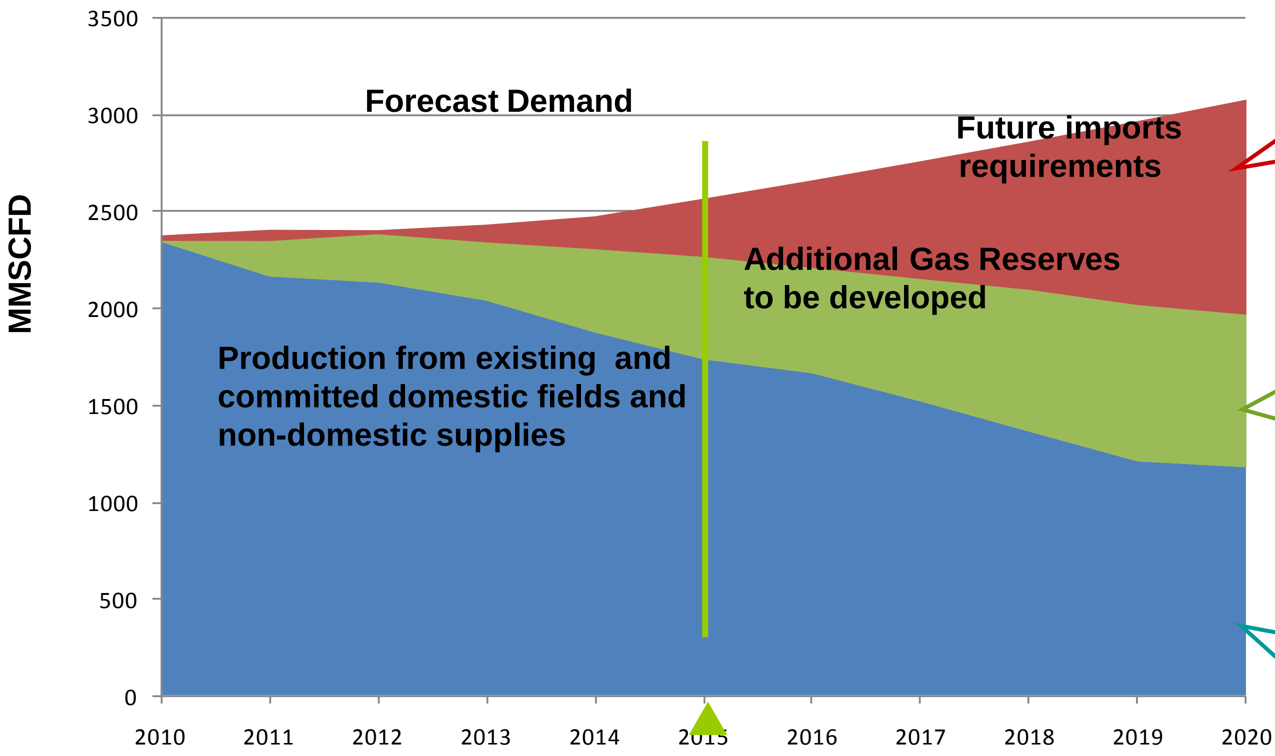
1. Incentives to seek operational efficiencies
2. Incentive to pursue financial efficiencies
3. Incentive to pursue performance efficiency

These efficiency gains achieved are then shared with the customer.

REFORM INITIATIVE
Incentive-Based Regulation

- Current Regulatory Framework based on modified cost of service regulation
  - Can lead to over-capitalisation
  - Little incentives to pursue economic efficiencies
  - ST lacks explicit power to seek information from all relevant parties
  - Current regime lacks transparency
  - No requirement for stakeholder consultation

Increasing Gas imports



Need to pay "fair market value" to attract imports

Extremely expensive to develop (many fields not economically viable)

Depleting domestic supply: 25% non-domestic (from JDA, Natuna & Vietnam)

LNG Re-gas Terminal to cater for LNG imports into Peninsular Malaysia to be ready by 2012

SOURCE: Petronas

REFORM INITIATIVE
Gas Supply in Future

- LNG Terminal for imported Gas
- Third parties to be able to import gas after 2012
- Third party access arrangements: detailed implementation plan, regulatory framework, etc.
- Firm availability on volume and consistency of gas quality for power sector

  - Petronas commitment: 1250 mmscfd from 2010 to 2011

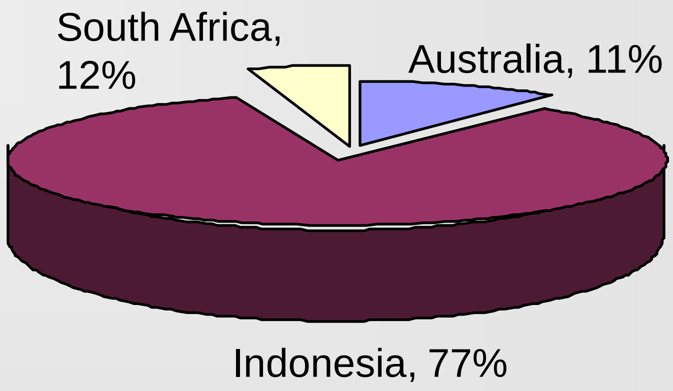
    1350 mmscfd from 2012 to 2015

    1550 mmscfd from 2016 onwards

COAL DEMAND FOR POWER GENERATION

Plant	Capacity (MW)	Commissioning Year	Max. Annual Consumption (Mtpa)
TNB Kapar	1600	1988/2001	2.90
TNB Janamanjung	2100	2002/03	6.77
Tg. Bin - IPP	2100	2006/07	6.08
Jimah - IPP	1400	2009	3.12
Total	7200		18.87

Coal Supply by Country in 2010



COAL PRICING
Forward Looking ACP

<u>Preliminary Price Determination</u> **CIF prices for the NEXT quarter** **Average CIF of all Sub-bituminous coal for next quarter** **Average CIF of all Bituminous coal for next quarter** **Calculated at IPP plant-specific PPA Coal Ratio**	**<u>Preliminary Price Declaration To IPP</u>** **TNB to declare :** ***ONE Sub-Bituminous Coal CIF Price*** ***ONE Bituminous Coal CIF*** ***IPP plant -specific PPA Coal Ratio***	**<u>Preliminary Price Determination</u>** **IPP to declare ACP, capped at *Preliminary Price***

POWER SECTOR REFORM

MyPOWER being set up by KeTTHA will drive efficiencies and industry restructuring as recommended by the MESI work

Emerging recommendations

Tariff

1. **Separate wholesale tariff formulas for G/T/D** with automatic adjustments for **fuel pass through**, allowable rates of returns and efficiency gains
2. Policy-driven end user tariff, with selective subsidization
3. Stabilization fund as **temporary buffer** between wholesale and end user tariff

Fuel

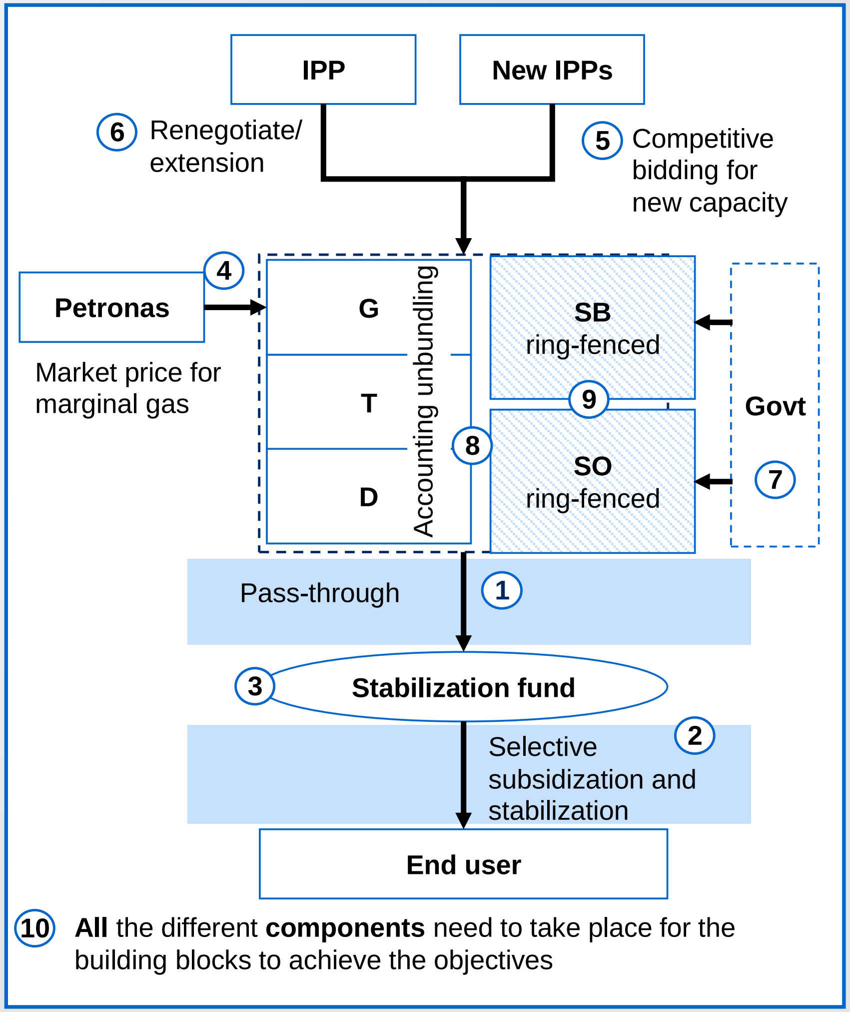
4. **Marginal** (or unused) gas to be bought/sold at **market price**, with gradual phase out over time of subsidies for volumes already committed*
   - Evaluate options to secure **additional supply of gas** (e.g. develop new fields or LNG)

Market structure

5. Single buyer to secure new capacity via transparent **competitive bidding** processes
6. Evaluate broader options for PPA renegotiations, including extension
   - Decision on **Bakun**

Governance

7. Separation of agency roles for **policy, planning, and supervision**
8. Enforce **accounting unbundling** of TNB's G/T/D operations
9. **Ring-fence Single Buyer and System Operations** within TNB, strengthening supervision of regulator



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THANK YOU!

TERIMA KASIH!

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