

# UMCoRS \_ Public Lecture

***“Reform and Economic Regulation of the Electricity Industry – Policy Implications for Governments, Industry and Consumers”.***

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Date: 11 August 2011

Time: 2.30pm

Venue: Lecture Hall 3,  
Faculty of Economics and Administration  
University of Malaya, 50603 Kuala Lumpur

# OBJECTIVES

- ***To present and discuss key principles underpinning the reform and economic regulation of the electricity sector .***
- ***To draw implications for the reform process, in particular for***
  - ***energy policy development,***
  - ***regulatory development and management, and***
  - ***tariff design and implementation***
- ***To provide information on future workshops on economic regulation to be conducted within UMCoRS***

# Reforming the Electricity industry

**Significant structural change since the mid 1990s.**

**Note: privatisation not a prerequisite for reform**

**Key elements of the reform process involved:**

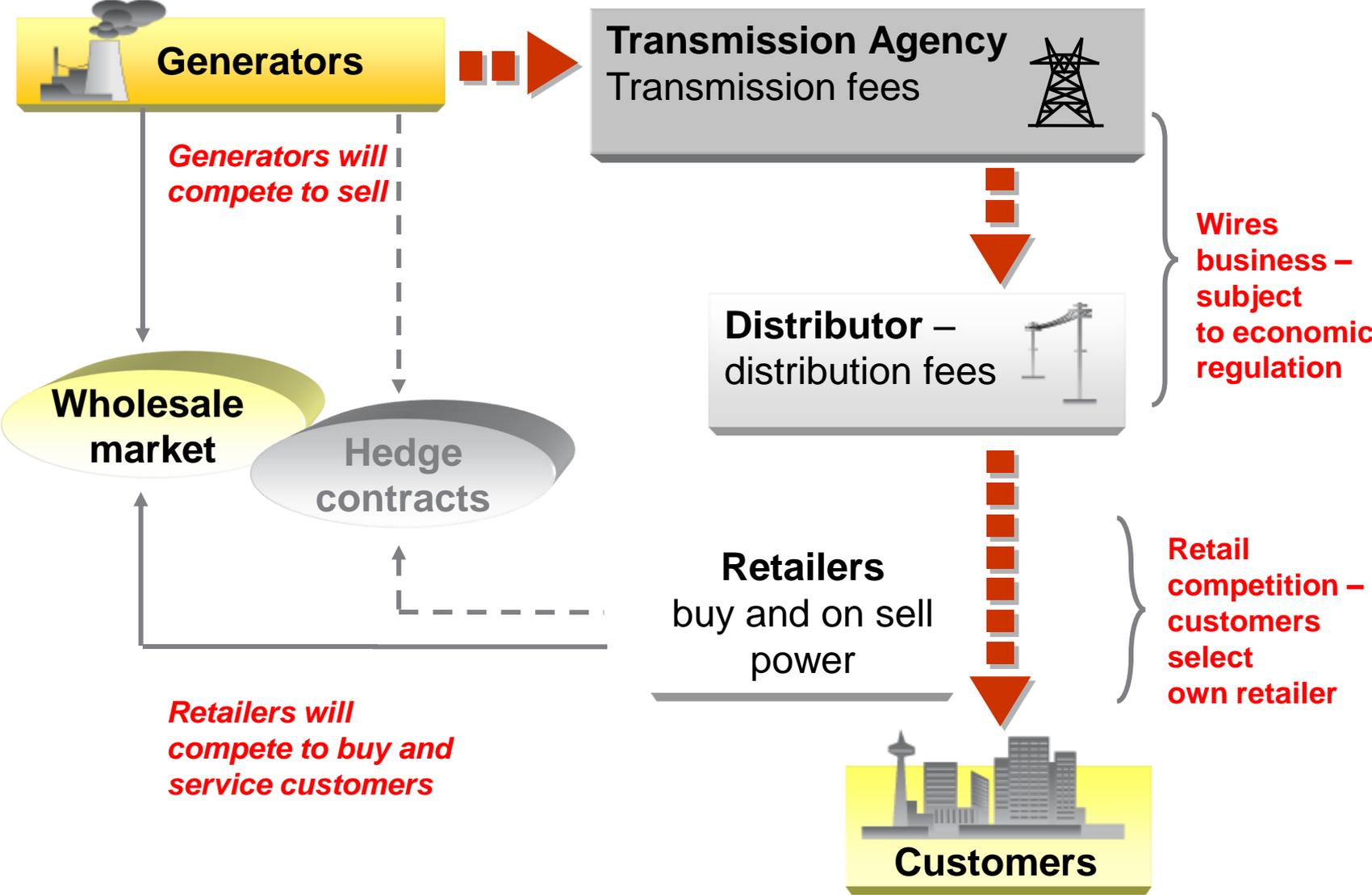
- **Liberalisation (vertical separation) of vertically integrated utilities**  
**Note: Vertically integrated utilities maintained in transition or for political reasons**
- **The introduction of competition where possible and feasible by deregulating retail market (selling) and generation (wholesale)**
- **The establishment of an effective and efficient regulatory regime for the natural monopoly elements (i.e. high voltage transmission and low voltage distribution wires)**
- **the introduction of a national policy on competition**

# Industry structure – Pre-reform

***State intervention on electricity pricing often achieved through opaque and unpredictable exercises of policy/political power***



# Post reform – vertical separation



# Beneficial outcomes from the reforms

- **UK, US and Australia, NZ - some reforms in these countries have been acknowledged internationally as being highly successful**
- **The reform has:**
  - **delivered initially lower prices to most customers through competition**
    - **some customers are vulnerable and never benefited**
    - **need transitional arrangements to bed down competition**
  - **improved the quality of service in terms of reliability**
  - **resulted in greater utilisation of generation capacity**
  - **resulted in improved efficiency**
  - **attracted greater interests from private sector investors**
  - **transparent decision-making process**

# Possible adverse outcomes from the reforms

**In some instances:**

- **Gaming may result in “goldplating” of capital and therefore higher prices to customers.**
- **Reduction in the quality of service in terms of reliability.**
- **Asymmetrical distribution of information/knowledge may impact on regulator’s performance.**
- **Regulators may be poorly resourced.**
- **Regulators may be captured!**
- **Poorly designed regulatory framework may lead to wasteful “forum shopping” (lobbying).**

# California Electricity Crisis (2000/2001)

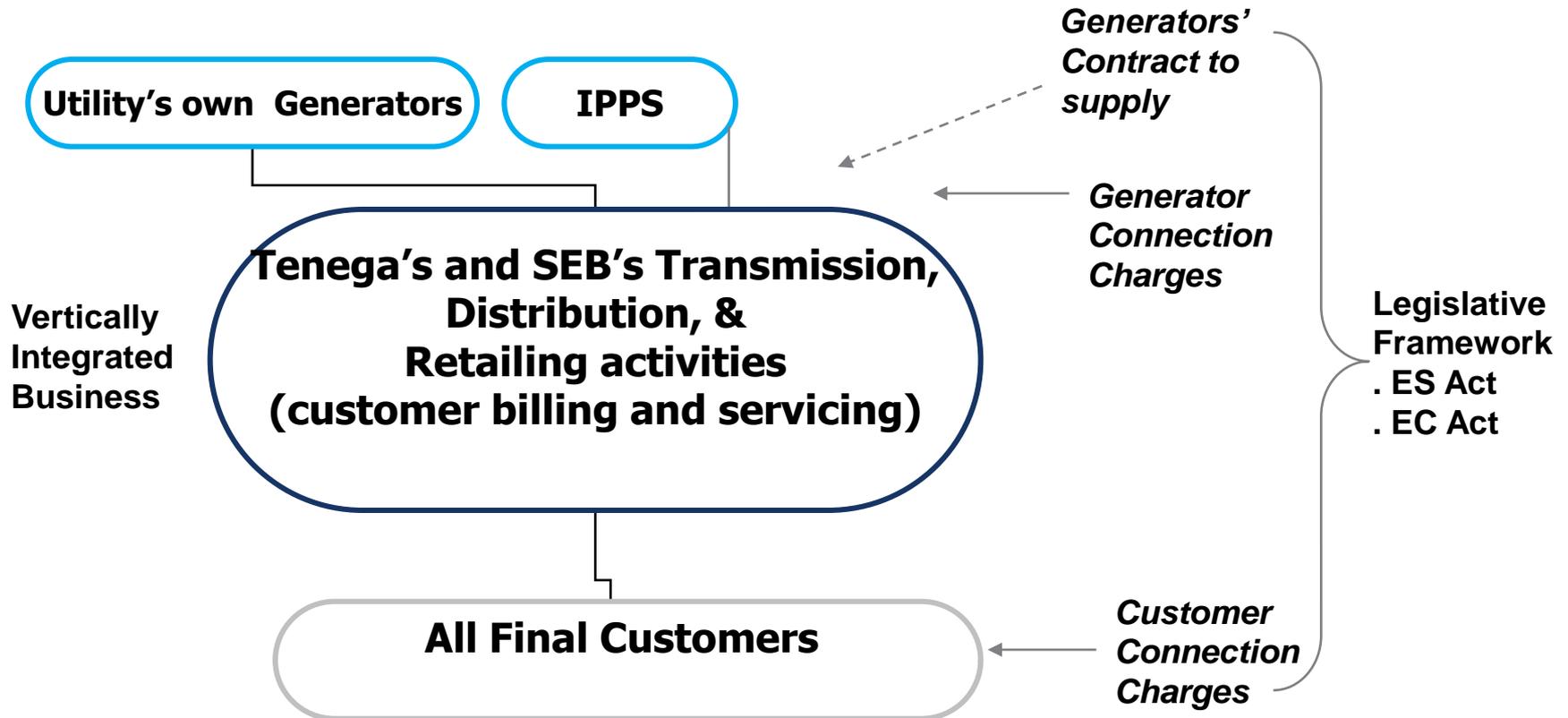
## **Crisis set back structural reforms in many countries including Malaysia**

- Crisis resulted in thousands of customer facing blackouts
- Anti-reformist and anti-privatisation proponents used it to argue their case
- Proper analysis of causes and informative debate gave in to emotional outburst (especially with disclosure of Enron & Reliant Energy behaviour)

## **Causes of Crisis**

- Increase in demand for energy during 90's not kept in pace with supply expansion
  - ✓ California did not build new major power plant.
  - ✓ Strong lobbying from Greens.
  - ✓ Increase demand met from inter-State imports and from expanding existing plants
- Price capping of retail prices discouraged energy conservation while energy utilities were forced to buy energy at uncapped whole sale spot market -- created disincentive for investments.
- Hedging by retailers were disallowed.
- Power generators manipulated market by shutting down plants for “maintenance”.
- Poor cross ownership laws (between energy and gas) enabled companies like Enron to control gas supplies and manipulate the market.
- Retail caps encouraged inter-state selling (where prices were not capped).
- Poor transmission infrastructure and market manipulation by energy companies lead to bottleneck points.
- New regulator (FERC under resourced).

# Current Electricity Industry Structure - Peninsula Malaysia and Sabah



## Some countries have retained their vertically integrated energy utilities

- **Fear Loss of economies of scale and scope**
- **Governments desire to retain control**
  - ✓ **political reasons**
  - ✓ **to achieve other socio-economic objectives**
  - ✓ **for industry protection**
- **Uncertainty of outcomes from competition**

# Implications for energy Policy Development & Regulation if reform is pursued

- **Need to embrace the role of competition and market forces**
- **Greater transparency of policy development process & objectives**
- **Policy on alternative fuels and renewable energy**
- **Implement transitional arrangements**
- **Establish regulatory independence and accountability**
- **Consult key stakeholders in policy and regulation development**
- **Need to focus on consumers and their empowerment**

# Promoting competition is central to the reform process

**Regulators can promote different forms of competition:**

## **1. Competition for the market :**

- Competitors bid for the market e.g franchise bidding

## **2. Competition in the market:**

- perfect (many buyers and sellers) and imperfect competition (few buyers, sellers);

## **3. Yard-stick competition :**

- Competition by comparison

# What is economic regulation?

- **What is economic regulation?**
  - form of government intervention to address inefficiencies arising from monopolistic markets e.g. natural monopoly sectors of electricity transmission and distribution.
  - substitute for competition where competition is not possible
  
- **Aims to ensure that:**
  - customers of monopoly services are protected
  - prices that monopoly companies charge are based on efficient costs
  - the quality of service and performance of the companies assets are maintained
  - the monopolies face the right incentives to improve their performance and increase investments on an on-going basis.

# Implications for economic regulation

## **Under an effective regulatory environment, the regulator**

- Pursues light-handed regulation where possible
- Relies on competition where possible and feasible
- Approves, if required, the monopoly's transmission and distribution charges based on *efficient* costs which include:
  - *a reasonable* return on capital
  - *prudent and efficient* operating expenditure
  - depreciation, and
  - tax payments
- Reviews and resets fees every 5 years following an *extensive consultation* process
- Monitors and reports publicly on service quality and performance

# Promoting competition - the starting point for economic regulation!

- **Starting point :**
  - Economic regulation is not a perfect solution to an imperfect market. It is second best!
  - Economic regulation involves regulating behaviour as well as promoting competition.
- **Only regulate where competition is:**
  - not possible (natural monopoly, access to essential facilities),
  - is weak (where there is market dominance, power),
  - unlikely to deliver specific policy objectives.
- **Competition & regulation objectives often compromised for specific government policy objectives (e.g. to pursue other socioeconomic goals)**
  - issue for regulators is how to incorporate these objectives in the regulatory framework

# Role of regulator in industry restructuring

## 1. Competitive Wholesale Spot /Contract Markets

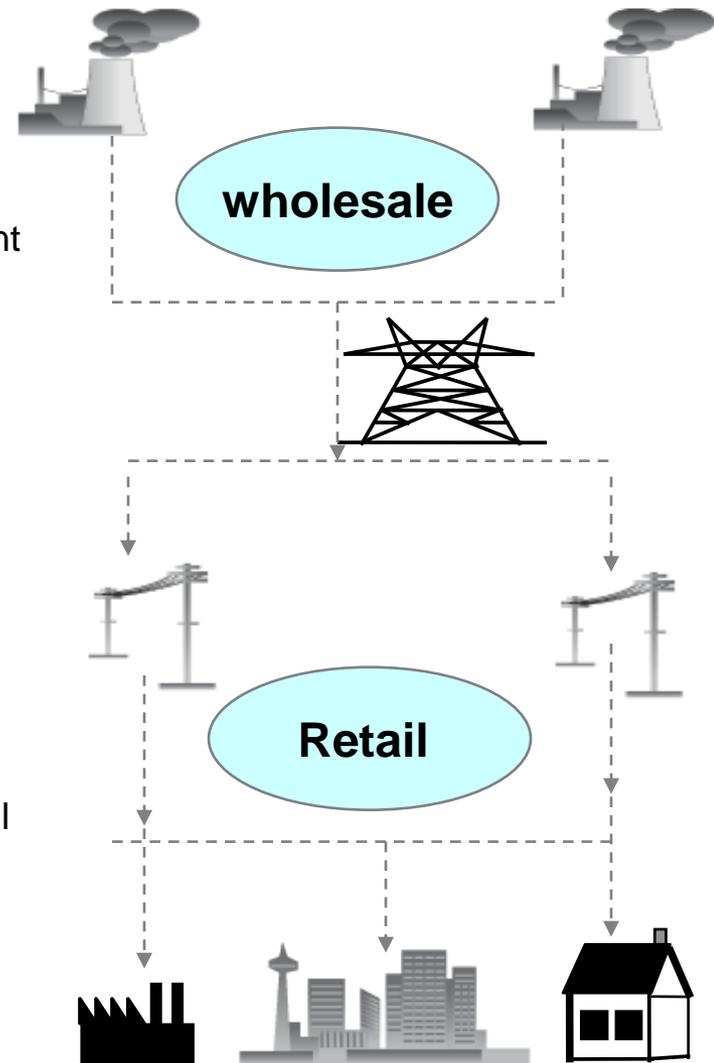
- ensure compliance with set rules
- monitor behaviour for gaming and collusion (anticompetitive behaviour)
- ensure consideration of long term investments e.g Statement of Opportunities for signaling new generation capacity

## 2. Transmission & Distribution (wires businesses – natural monopolies )

- regulate for access to promote upstream and down stream competition
- regulate service levels
- promote competition for connection/augmentation works
- competition by comparison

## 3. Competitive Retail Market

- promote competition (low barriers to entry for new retailers)
- protecting customers by phasing in competition through retail pricing capping
- customer empowerment through customer charter; effective complaints handling and dispute resolution processes



# Principles & practices for effective & efficient regulation

- Clear and unambiguous regulatory objectives
- Regulation should be consistent with other laws (e.g. Competition Law)
- Transparency in regulator's decision-making process
- Regulator's decisions are explained in writing
- Regulator's decisions are appealable
- Regulation should promote economic not just technical efficiency
- Regulation should prevent the extraction of monopoly rents
- Regulator should balance all stakeholder interests
- Regulation should encourage efficient pricing
- Government involvement made explicit and transparent e.g. Statements of Government Policy

# Implications for Electricity Tariff Design and Implementation

## **Tariff design and implementation is complicated because:**

- Electricity is an essential commodity for economic and social reasons.
- Tariffs are not cost reflective thereby giving rise to inter-generational issues
- Tariffs are set by governments to achieve multiple objectives (financial, social and political)
- Poor market segmentation and price differentiation
- Growing externalities from fossil fuels (e.g pollution & climate change)
- Lack of Transparency in tariff setting mechanism for monopoly services

# Tariff Setting Objectives

- 1. Revenue adequacy** - Sufficient revenue to:
  - : recover operating & financial costs including a reasonable rate of return
  - : allow for investments to maintain service quality and meet future demand
- 2. Economic efficiency & signaling Function** – Tariffs should signal true costs of supply to customers if alternative sources of energy are to be encouraged.
- 3. Equity/fairness/affordability** - Expect low users to pay low bills; low income users to pay less; no customer group should carry higher burden than the cost of supplying them; no customer to be terminated because of affordability.
- 4. Simplicity** - Simple for customers to understand their bills.
- 5. Flexibility** - Pricing structure needs to cope with such changes as environmental regulations, changes in input costs, demand changes & extraordinary circumstances.
- 6. Implementation costs** - Implementation cost should be kept as low as possible
- 7. Government policy objectives** need to be made explicit and costed

# Forthcoming 2-Day Workshop on Economic Regulation

**Title** : Economic Regulation and Reform of the Electricity Industry

**When** : 5-6 October 2011

**Where** : Seri Pacific Hotel, Kuala Lumpur

**Aim** : To introduce participants to economic issues underpinning electricity market reforms, and to international best policies, practices and principles for regulating and reforming the sector.

**Who should attend** : Policy makers, regulators, academic community, representatives from industry and consumer groups.

## **Workshop Organisation and topics :**

**Day 1** : Understanding energy economic concepts & principles in reforming the generation sector

**Day 2** : Reforming and regulating the transmission and distribution businesses