



The Importance of the Regulatory Framework for Electricity Generation

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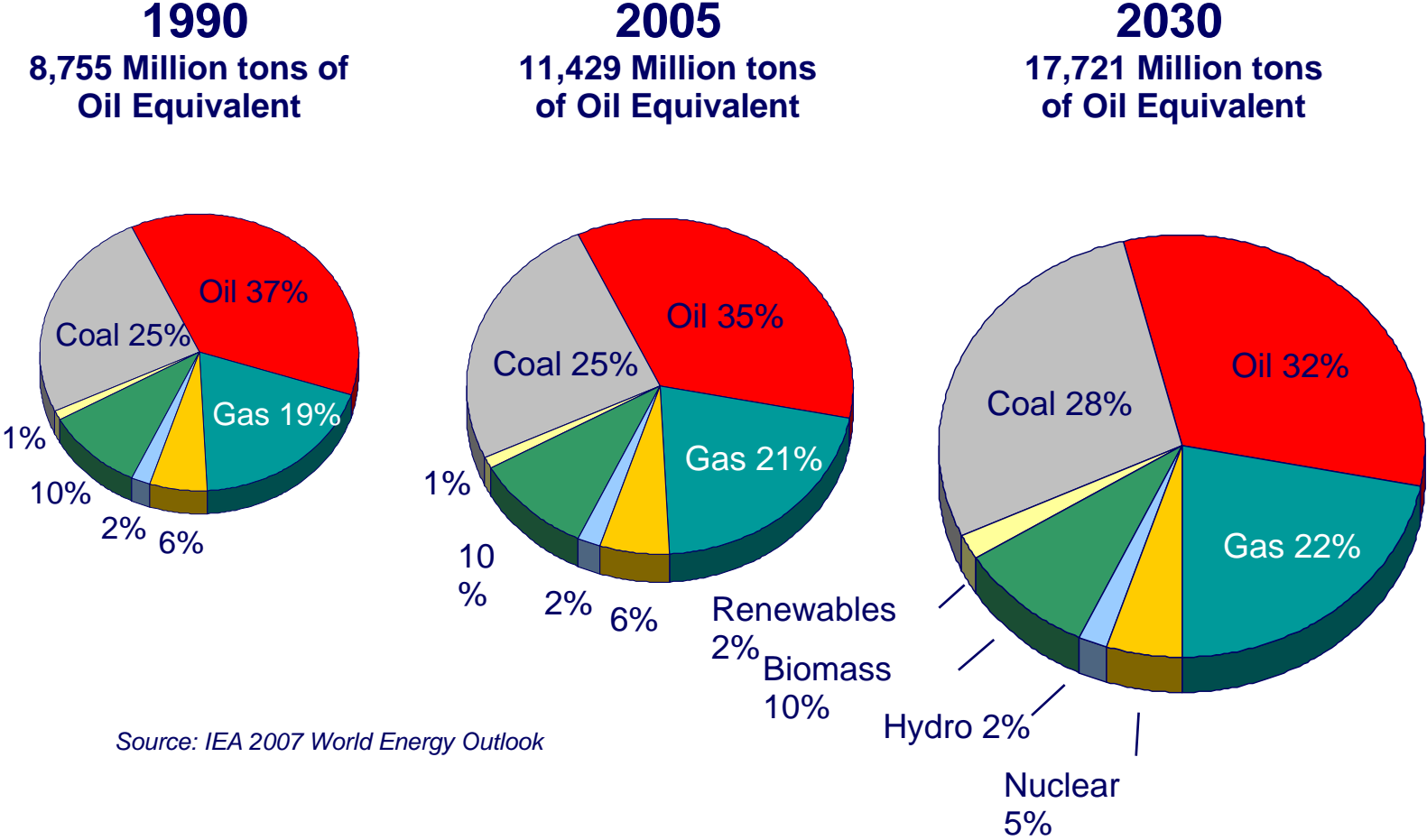
The 21st Century's Energy Problem

- Securing an adequate energy supply at reasonable cost (not new)
- Intelligently managing energy demand to lower consumer bills (not new)
- Managing the greenhouse gas (“climate change”) issue (new)

Three important government factors

- Compliance with policy decisions
 - International agreements
 - Federal legislation
 - Local requirements
- Meeting new regulatory requirements
 - International agreements
 - National / state regulation
- Approvals of investment in new technology (R&D, Pilots, Commercial)
 - Clean fuels and waste handling advancements
 - CARBON CAPTURE AND SEQUESTRATION
 - ASH
 - POLLUTANT GASES AND CHEMICALS
 - Transmission and distribution system “smart grid” advances
 - End use conversion efficiencies and novelties

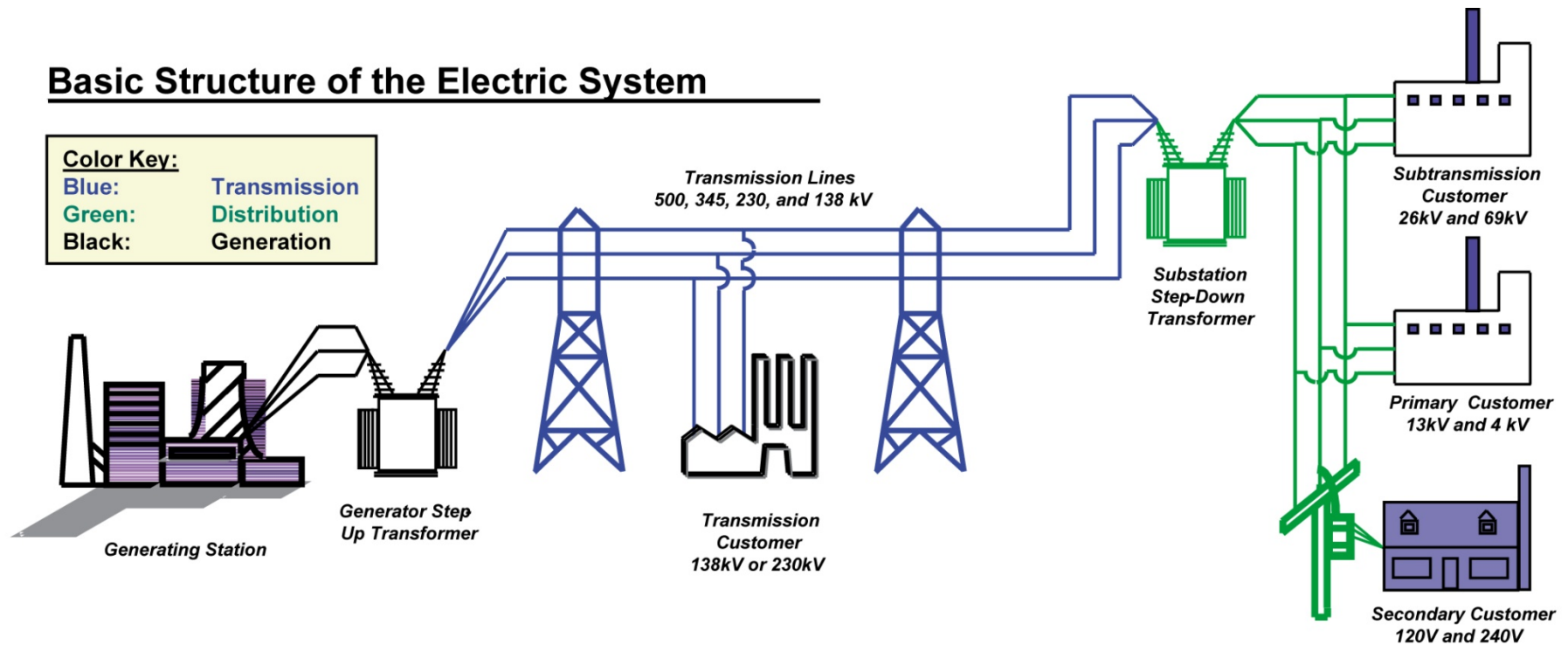
Coal, Oil, and Natural Gas Will Remain Indispensable



Source: IEA 2007 World Energy Outlook

Power system overview

Basic Structure of the Electric System



Policy decisions pending for global warming

- International

- **United Nations Framework Convention on Climate Change (UNFCCC or FCCC)** US is signatory

- Conference of Parties COP 17 March 18, 2011 in South Africa

- National

- Climate change legislation

- Alternative / Renewable / “clean” energy programs and requirements

Regulation

- “The imposition by a government of controls over the decisions of ..firms..in order to prevent..exploiting of market power to extract pure economic profits.
 - ..an alternative to nationalization”
 - ..a reason ..to encourage competition.”
-
- Source: A Concise Dictionary of Business, Oxford University Press

Regulation is a substitute for competition.

- The objectives of electric utility regulation are to:
 1. Attract capital sufficient to build and maintain adequate and reliable service,
 2. Insure service at reasonable prices to consumers.

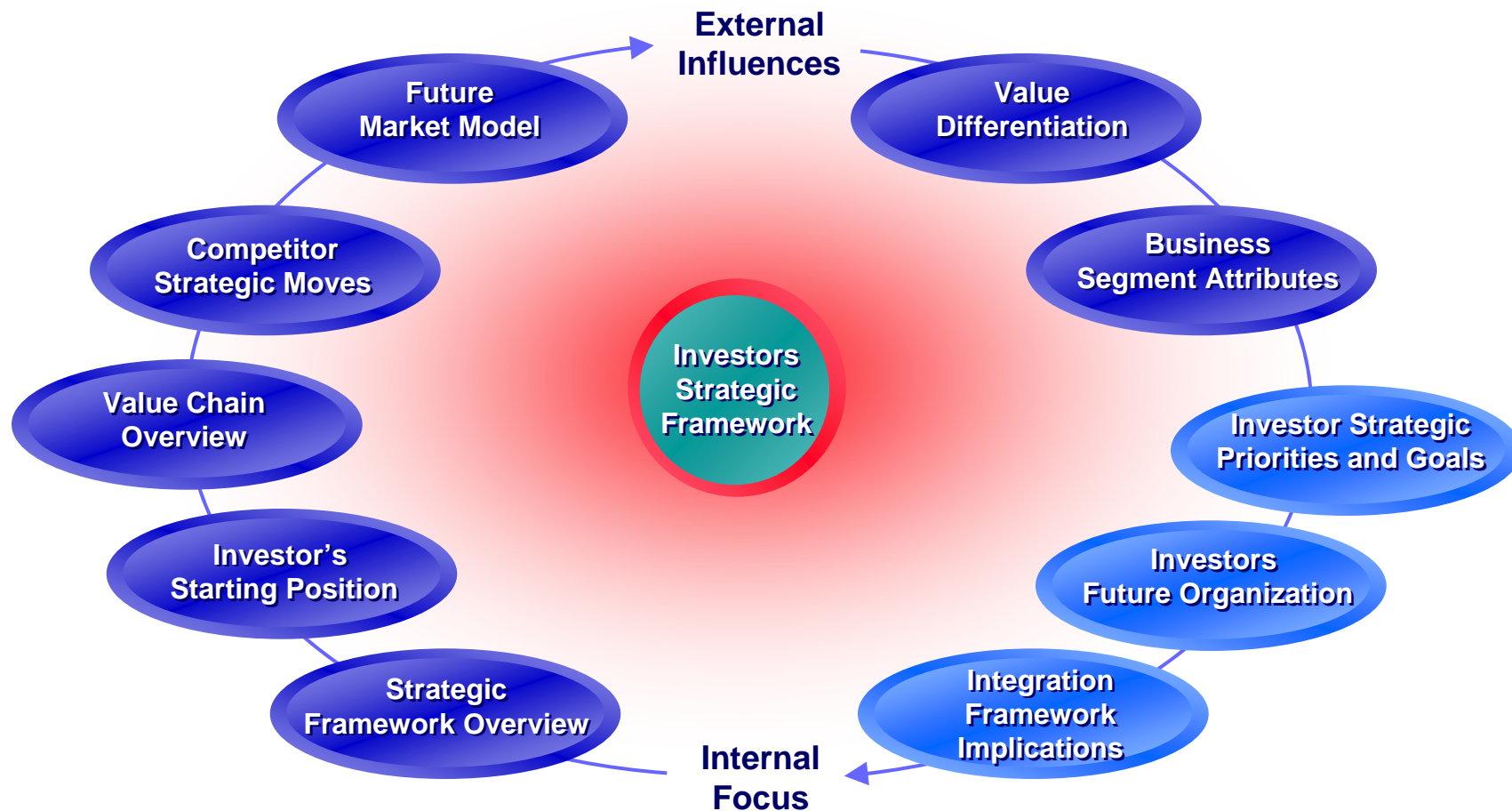
The First Problem: Creation of Policy

Governments have multiple goals available when developing an energy policy with respect to the electricity generation segment of the economy.

At the same time domestic and international investors have many investment choices including: country, industry, individual company, and choice of stocks versus bonds.

The issues are how to find policies which support government goals while also attracting investment capital.

Investor's Strategic Framework



Government policy is the key

- Appropriate government policy can attract reasonable cost capital by providing for:
 1. Stable government
 2. Consistent economic policies
 3. Predictable regulation
 4. Recognition by regulators of requirements of capital markets
 5. Desire to maintain national economic competitiveness

Government Duties in Electricity

- Selection of workable market model
 - Competitive power market – market regulation
 - Monopoly power supply –cost of service regulation
- Establishment of viable initial starting position
 - Provide clarity of how existing assets will be regulated
 - Provide clarity in how new investment would be regulated
- Recognition of regional realities in energy and financial markets

Typical government policy determinations

- Corporatization policy where there is government ownership of existing infrastructure
- Choice of type of corporate restructuring when divestiture & unbundling of vertical integrated systems are planned
- Establishment of regulation
 - Wholesale power market regulator
 - Transmission and distribution regulation
- Rules for private concessions for “greenfield”
- Transparent privatization of existing assets
- Clarity in liberalization if retail competition is introduced

International Consensus on need for:

- World Bank: “..market structure, competition, and regulation”
- World Energy Council: “..liberalization, competition,..empowerment of consumers”
- International Energy Agency: “competitive and liberalized markets”

Model of EC “liberalization” available

- Electricity Directive adopted 1996 covers generation, transmission and distribution, and supply
- Member states shall pass laws to comply no later than 19 February 1999
- new generation tendering procedures,
- transmission choose from negotiated and regulated third party access or a single buyer
- 6 year gradual opening of end use markets
- “competition is introduced or enhanced in markets thanks to the removal of monopolies”

Decisions for policymakers

- Clarify policy objectives
- Establish adequate competition, where competition will be introduced
- Create non-discriminatory and transparent regulation for both any new competitive power market and the residual monopoly of transmission and distribution

Decisions in the Privatization Phase

- Create industry structure first
- Identify competitive markets and provide legal basis for competition
- Establish regulation for residual monopoly
- Remove residual regulatory authority from previous laws and ministries

Ms. Nemat Tallat Shafik, World Bank

- “healthy [electricity] market criteria:
- secure legal framework,
- sound regulation,
- efficient banking,
- basic fundamentals to reduce risk perception.”

National energy policy objectives

National energy (electricity) policy objectives include the following considerations:

- to seek efficiency
- to have supply reliability
- to sustain environmental programs
- to provide consensus level of social subsidy
- to remove energy subsidies

International Energy Agency

- World Energy Outlook 1999 Insights “Looking at energy Subsidies: getting the Prices Right” (IEA November 1999)
- “removing energy subsidies would support the three principal aims of sustainable development: social welfare, environmental protection and economic growth.”

Ada Karina Izaguirre, World Bank

- Writing in Note 54 of World Bank's "Public Policy for the private sector"
- "The most successful countries have been those that have found the political will to abandon a long history of subsidized tariffs and to establish regulatory frameworks that offer credible commitments to investors"

An International Investor's View

- CEO, Vivendi electric & water Senegal Morocco
- Discussing experience in developing countries
“good regulatory system was a necessary factor for success.”
- This CEO also called for World Bank to help train regulators

Regulatory guides for capital attraction

The following characteristics are those of electricity regulatory systems which have attracted capital at reasonable cost:

- **Transparent process** - the regulator explains the basis for decisions
- **Decisions are issued in a timely manner**- a “bad” timely order may be preferable to a long delayed decision
- **Balanced consideration**- to insure that the public perception is that their interests were fairly represented
- **Availability of review** - for legal merits and process
- **Stability of regulation**- orders expected to stand review and, principles evenly applied
- **Independence of regulatory action**- sufficient to gain public confidence that regulation was based on law and merits of the application

Regulation important to investors

- “the regulatory structure is the main factor to determine how attractive that country is to outside investment capital”
- “..in Europe the regulations are there-but the regulatory structure needed to carry them out is NOT there”
- From the CEO of Southern International (now Mirant Corp.)

Capital attractive rate making -COS

- A system of rate making which will attract capital at must recognize and include in rates:
 1. A “reasonable” level of costs of service (electricity production, transmission and distribution)
 2. Full recovery of depreciation over economic service lives
 3. All taxes as a “cost of service”
 4. The opportunity to earn a “fair” return on investment after taxes are paid.

Fair Return Opportunity

- Realistic chance to obtain a “market derived” cost of capital
- Opportunity for higher profits for exceptional performance
- Incentives for innovation and improvements

USA wholesale market-based pricing goals

1. **Reduce wholesale electric prices (FERC sets wholesale and transmission rates)**
 1. *Make markets work*
 2. *Not protect competitors*
2. **Incent investment in infrastructure**
 1. *Transmission,*
 2. *Generation,*
 3. *Demand response*
3. **Incent development of technology**
 1. *Demand response*
 2. *Efficiency gains*
4. **Protect the environment**
 1. *Encourage demand response*
 2. *Use of more efficient generation*

From US Federal Energy Regulatory Commission “Standard Market Design” proposal

US FERC “Standard Market Design”

- *Same set of rules for all users of the grid*
 - *Open access and flexible transmission service*
 - *Administered by fair and independent entity*
- *Market rules protect against market manipulation (addresses Enron type trading strategies)*
- *Customer protection through market power mitigation measures and oversight*
- *Clear transmission pricing and planning policies for grid expansion*

An early view of role of investment

- “It is not because a corporation has a large capital or transacts a large and profitable business that it is an injury to community or a menace to prosperity. On the contrary, the development and growth of modern business have made large aggregations of capital absolutely necessary, and **such capital is fairly entitled to a reasonable and legitimate profit.** The wrong is done and the injury inflicted when such combination of capital are enabled, by means adopted for the purpose, to control prices, stifle competition and create a monopoly.”
- La Follette edited by Robert S. Maxwell
- Governor of Wisconsin Robert “Fighting Bob” LaFollette later U.S. Senator
- Electric utility regulation established in Wisconsin in 1907

Summation

- Regulation is the key to attraction of capital for investment in electric infrastructure
- Private capital is available to meet all needs.
- But attracting private capital at reasonable cost requires good regulatory policy and performance.
- The parameters of good regulation are knowable from international experience.
- This is valid under both Market Based Regulation and Cost of Service Rate Making

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