



# **BRAZILIAN POWER INDUSTRY REFORM**

## **THE POLITICAL ECONOMY**

# **AGENDA**

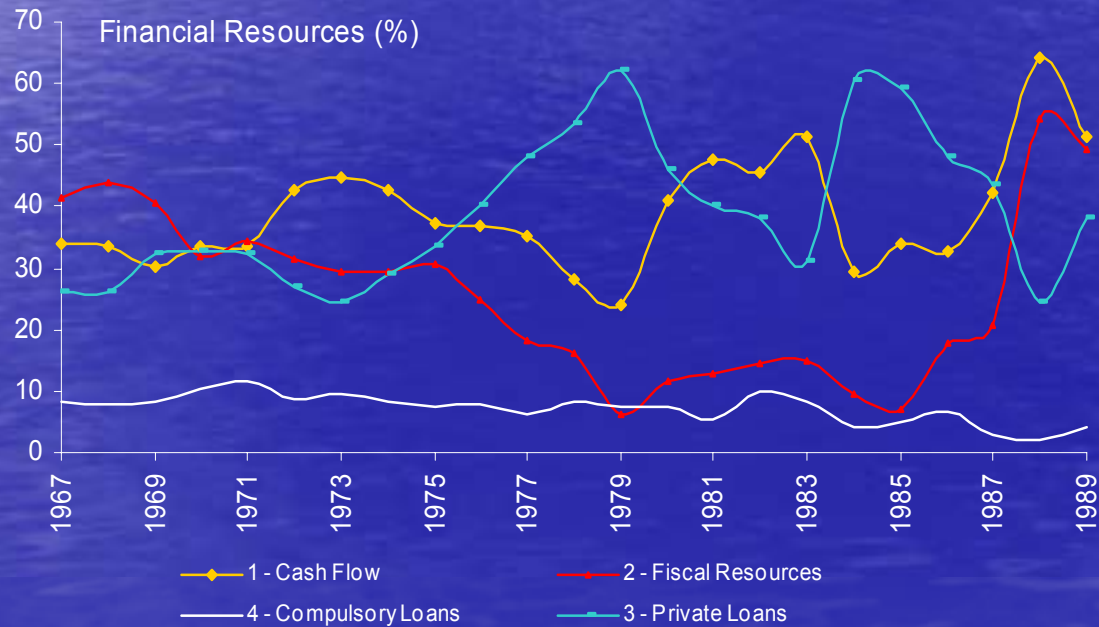
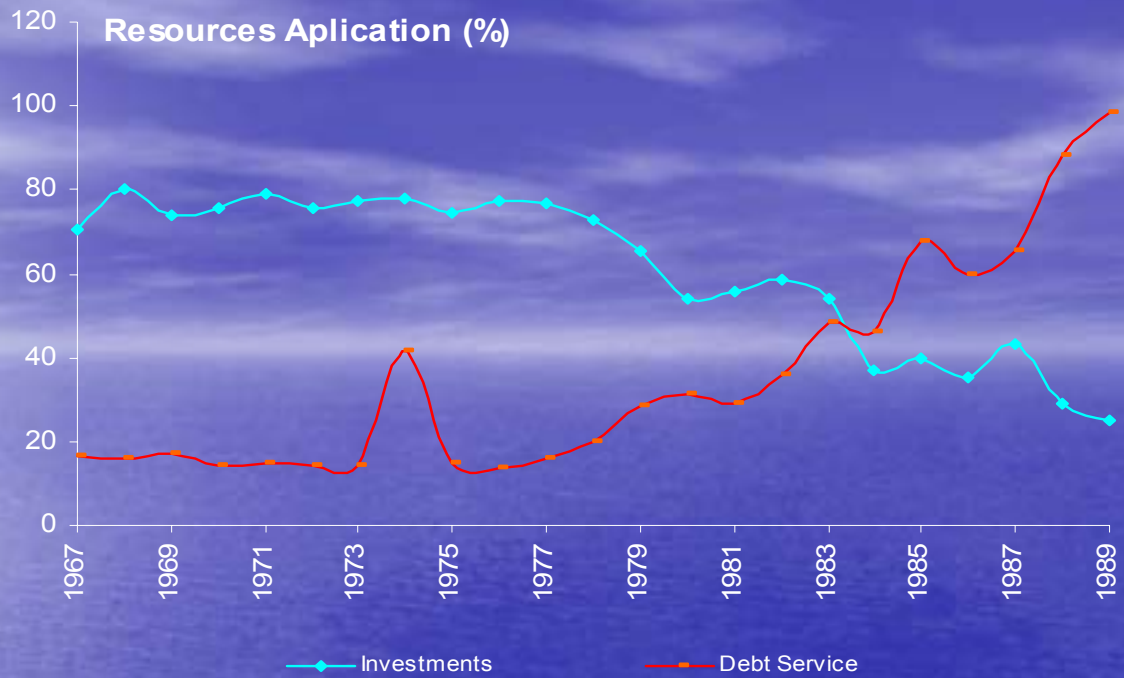
**1. Setting the Scene**

**2. From State Monopolies to Private  
Competition**

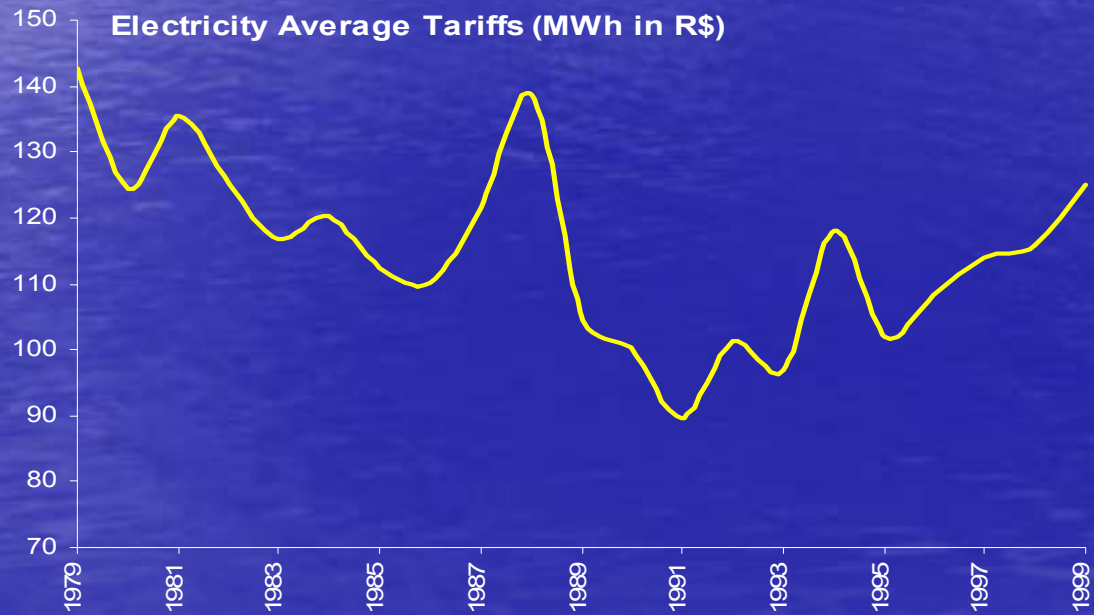
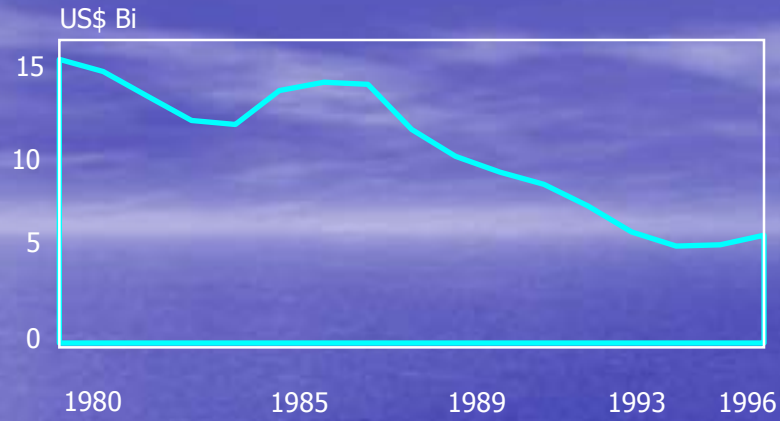
**3. The Outcome (so far)**

# Setting the Scene

- **The Virtuous Circle (1945 – 1970)**
  - Centralization
  - State Owned Companies
  - Public Funding
    - Rapid growth
    - Scale and Scope Economies
    - Performance Improvement
- **The Vicious Circle (1980's)**
  - Conflicts
    - Single tariff
    - Regional monopolies
    - Stabilization plans
    - Financial deterioration
  - Investments decline



# INVESTMENTS - BESI



# REVISE

- State X Federal companies
- Poor managerial practices
- No legislation for water
- Companies are not government agencies
- Tariff must reflect cost
- **Funding**: government problem

# Competitive Integration in the World Economy

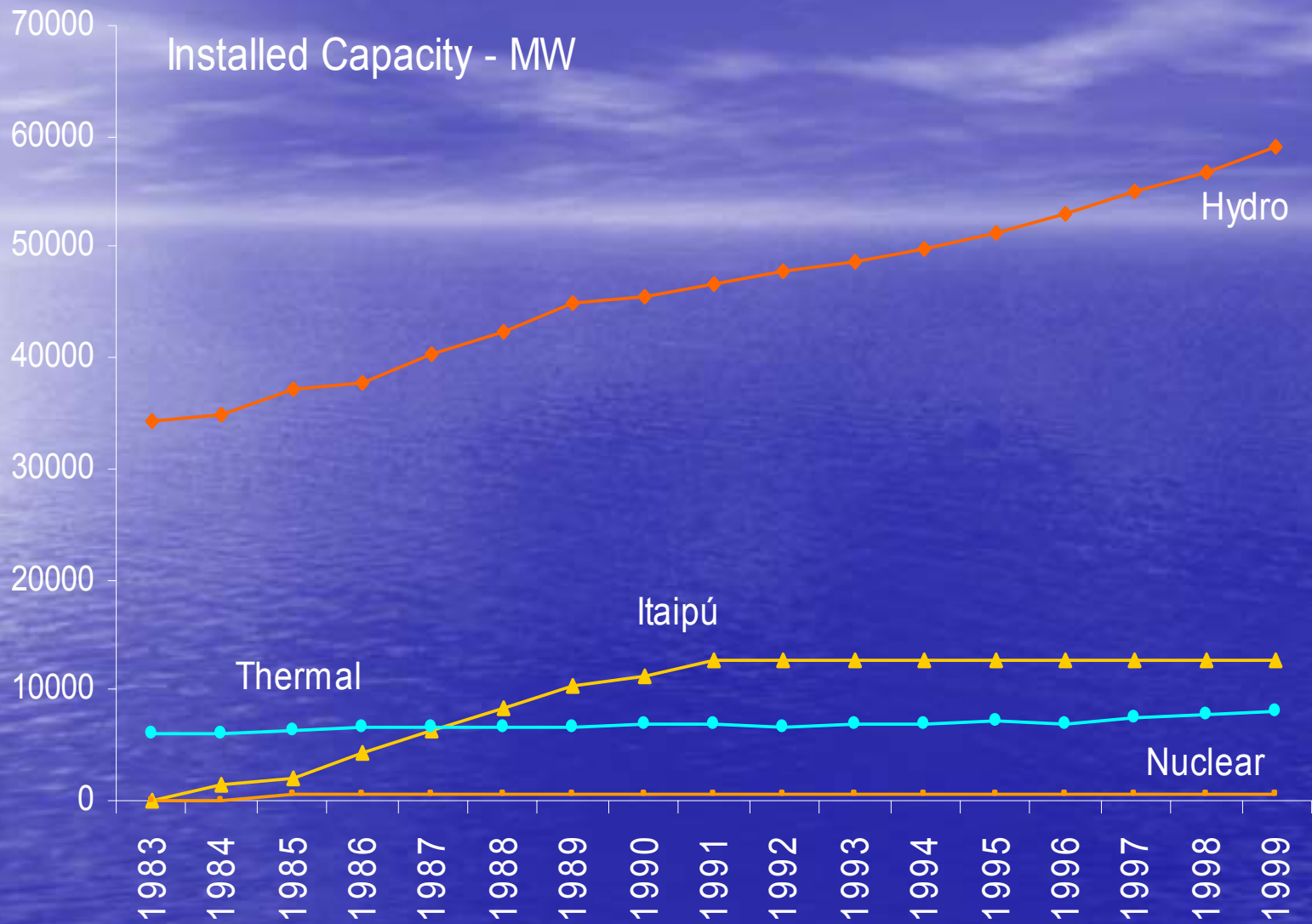
- **Import substitution strategy abandoned**
- **New currency**
- **New role for Government**
  - **Privatization**
  - **Regulators**
  - **Fiscal austerity**

# The Electricity System

	1950	1960	1970	1980	1991	2000
Total Population (millions)	51,9	70,1	93,1	119,0	146,8	169,8
Urban Population (millions)	16,3	28,5	47,5	72,1	98,5	123,5
Number of Cities	1887	2764	3952	3991	4491	5507
GDP (1980 = 100)	11,8	24,0	43,7	100,0	118,3	152,1
GDP/capita (US\$)	290	245	456	1948	2702	3491
Electricity Consumption (GWh)	8513	18346	37673	115874	225372	331596
Electricity Consp./ capita (KWh)	164	262	404	974	1535	1953

Source: IBGE

# Installed Capacity - MW

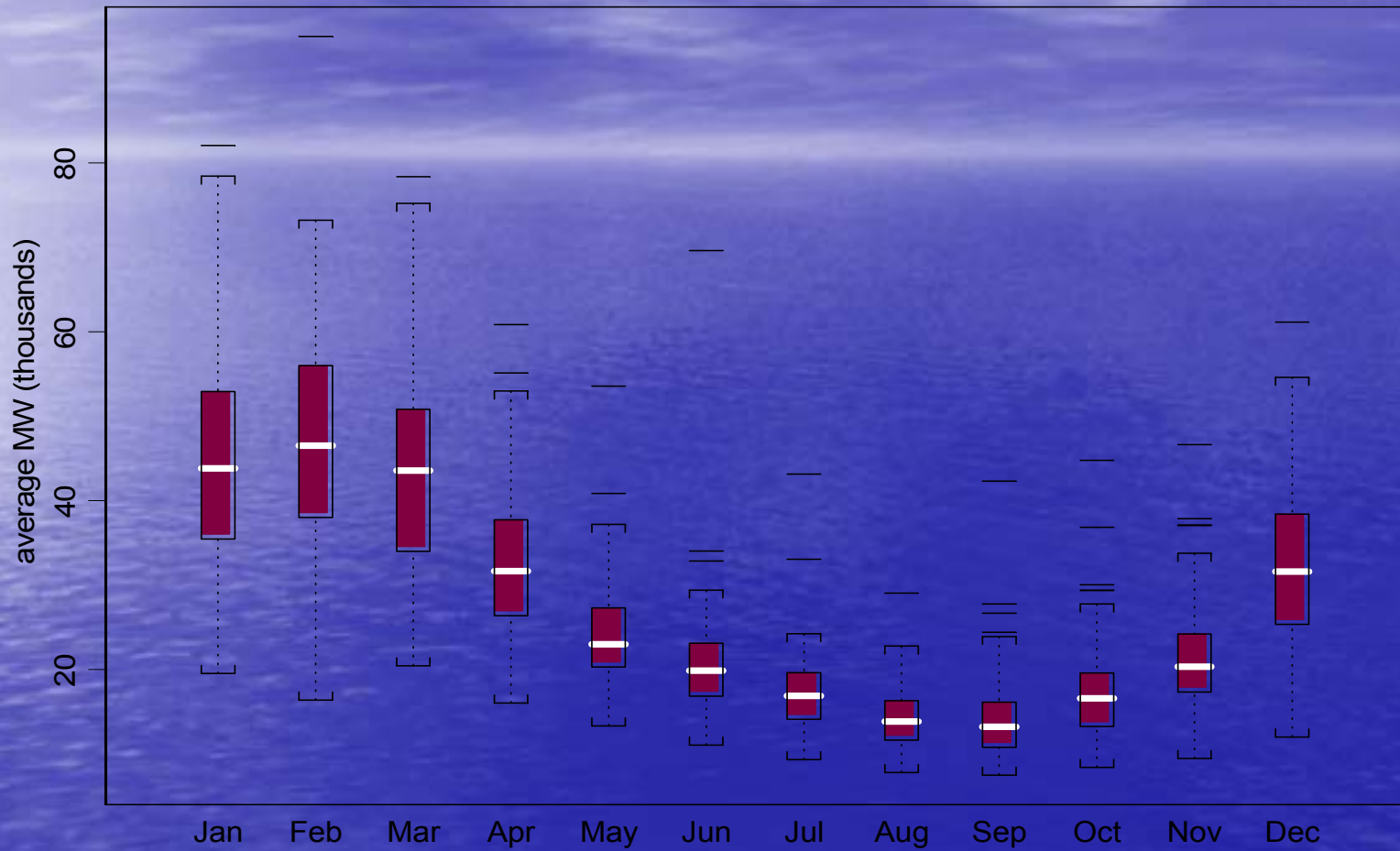


# Hydropower Choice

- **Several power plants in the same river**
- **Wide interconnected system to explore hydrological diversity**
- **Water flow risk management is crucial**
  - **Large reservoirs**
  - **Role of thermal power plants**

# Pattern of natural energy flow

## Region: Southeast



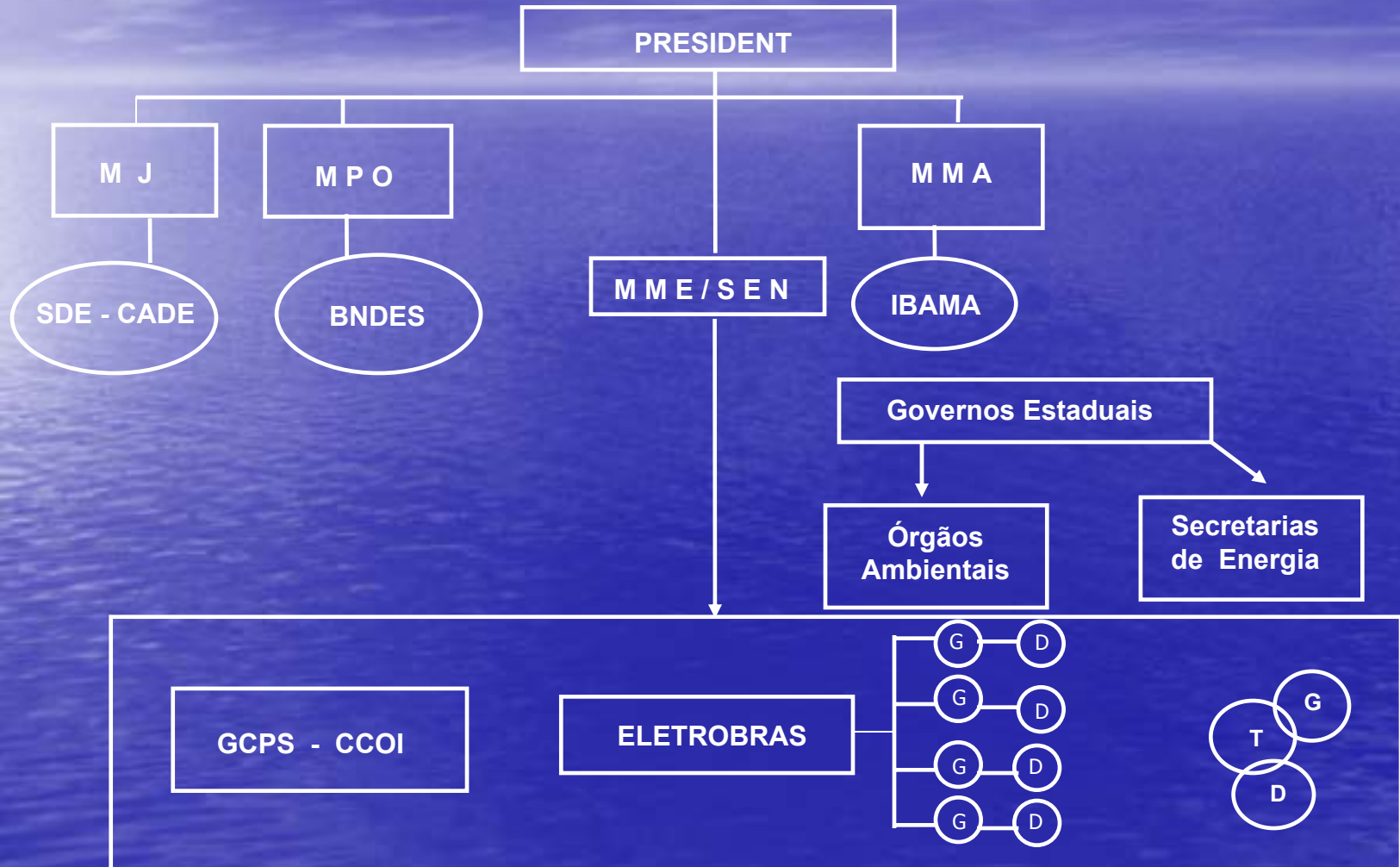
# Reform

- **New constitution**
  - Sources of public funding disappeared
  - Licensees are offered in public auctions
  - Tariffs based on price
- **BNDES command**
  - Privatization first
    - Distribution → generation → transmission
  - Regulation later

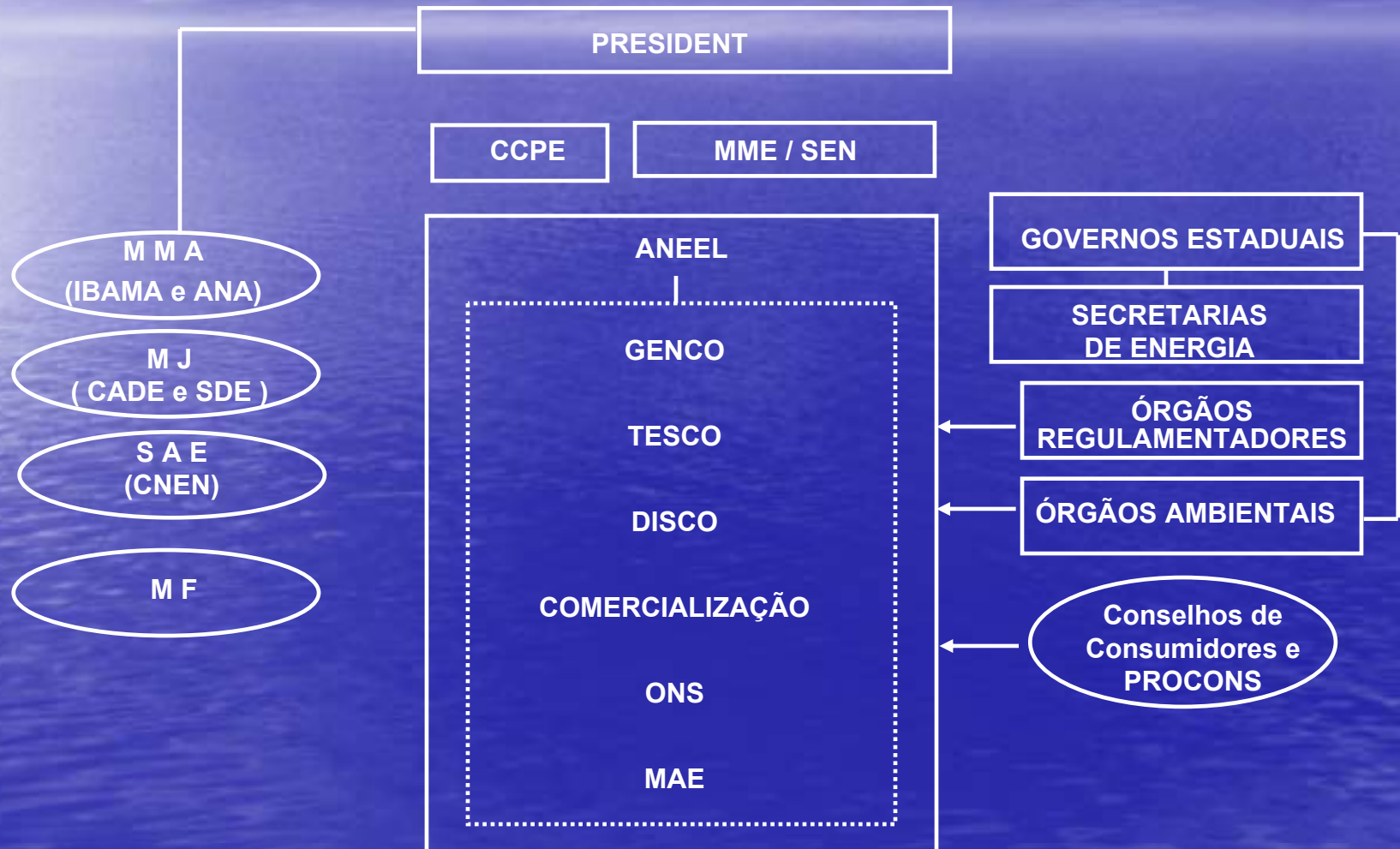
# Reform

- **Electricity experts**
  - Consulting company + Working groups
  - Hydropower protection
- **Eletrobras Role**
- **Decentralization**
  - Dispatching (30% power loss?)
  - Pricing (reservoirs in the same cascade)

# The Old Institutional Arrangement



# The New Institutional Arrangement



# Regulations

- **Distribution**
  - **Controllable costs (RPI-X)**
  - **Uncontrollable costs (pass through)**
  - **Normative price**
- **Transmission**
  - **Auction price (indexed)**
  - **ONS costs**
  - **Zone tariff**

# Regulations

- **Generation**

- **Hydro**

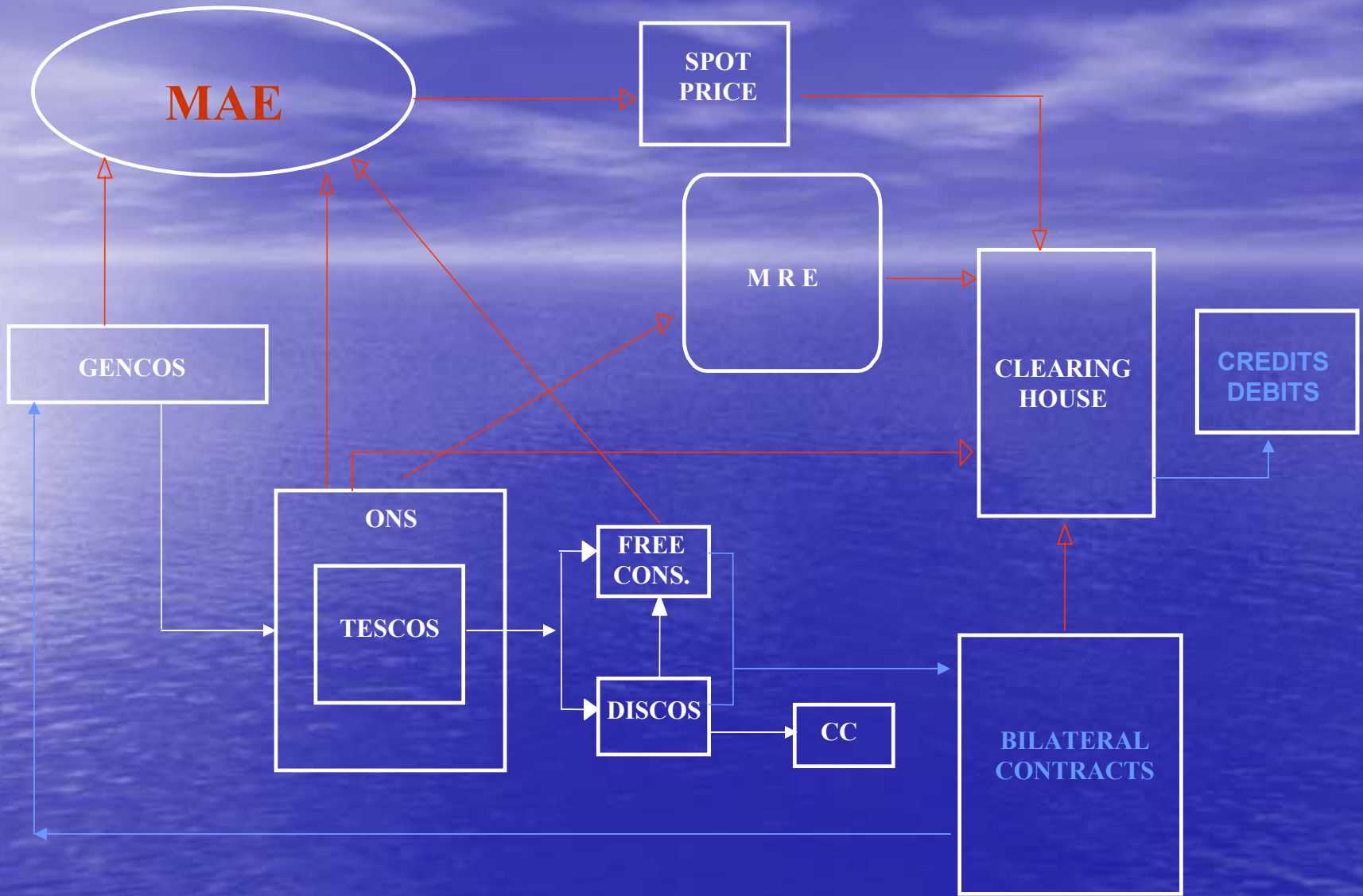
- **Assured energy**
    - **Secondary energy**

- **Thermal**

- **Flexible**
    - **Inflexible**

- **Price**

- **Spot: Set of computer models**
    - **Contracts: bilateral negotiation**



Electricity

Revenues

Information

# The Outcome (so far)

- **Until 1998**
  - **Privatization**
    - **Distribution (160TWh – R\$ 19.3 billion)**
    - **Generation (9.2 GW – R\$ 3.9 billion)**
    - **Transmission – new lines privatized**
  - **Quality of service improved**
  - **Rural electrification increased**
  - **Investment and operational costs diminished**

# The Outcome (so far)

- **After 1998**
  - **Devaluation**
  - **Rationing**
    - **Dry period**
    - **Lack of thermal power plants**

# The Outcome (so far)

- **Critical Issues**
  - **Fuels market**
    - **Take-or-pay, indexed to oil and US\$**
    - **Gas Monopolies**
  - **Wholesale power market**
    - **Normative price**
    - **Designed for flexible thermal power**

# The Outcome (so far)

- **Critical Issues**
  - **Risk management**
    - **Currency risk**
    - **Market risk**
    - **Hydrological risk**
  - **Lack of water regulation**

# **The Outcome (so far)**

- **Situation after the Rationing**
  - **Consumption dropped 10% below previous forecast ( same level of 2000)**
  - **Companies are in difficult financial situation**
  - **Consumers are unhappy (tariff increases)**
  - **Regulator lost public confidence**

# **New Government**

- **Leftwing coalition**
- **Suggested a profound review**
- **Has no clear idea what exactly to do**

# CONCLUSION

- **Mistakes**
  - **Privatization before regulation**
  - **Lack of water regulation**
  - **No attention for risk management**