

Restructuring of the Hellenic electricity sector

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Introduction

- The Internal Electricity Market Directive 96/92
- Eligible Customers
- Uncertainties due to market liberalisation
- Increase of entrepreneurial risks



Prerequisites for new entrants to join the Market (I)

- **Authorities**
 - Competition Committee
 - Regulatory Authority of Energy (RAE)
 - Independent System Operator (ISO)
- **Market Participants**
 - Eligible Customers
 - Independent Generators
 - Traders



Prerequisites for new entrants to join the Market (II)

- Clear and well defined rules for the Market
 - Free access to the network
 - Unbundling rules of the Accounts of all activities of Integrated Utilities
 - Impartial and nondiscriminatory System Operation by ISO
 - New laws to clearly define the market rules
 - Licensing of market participants
 - Establishment dispute resolution procedures

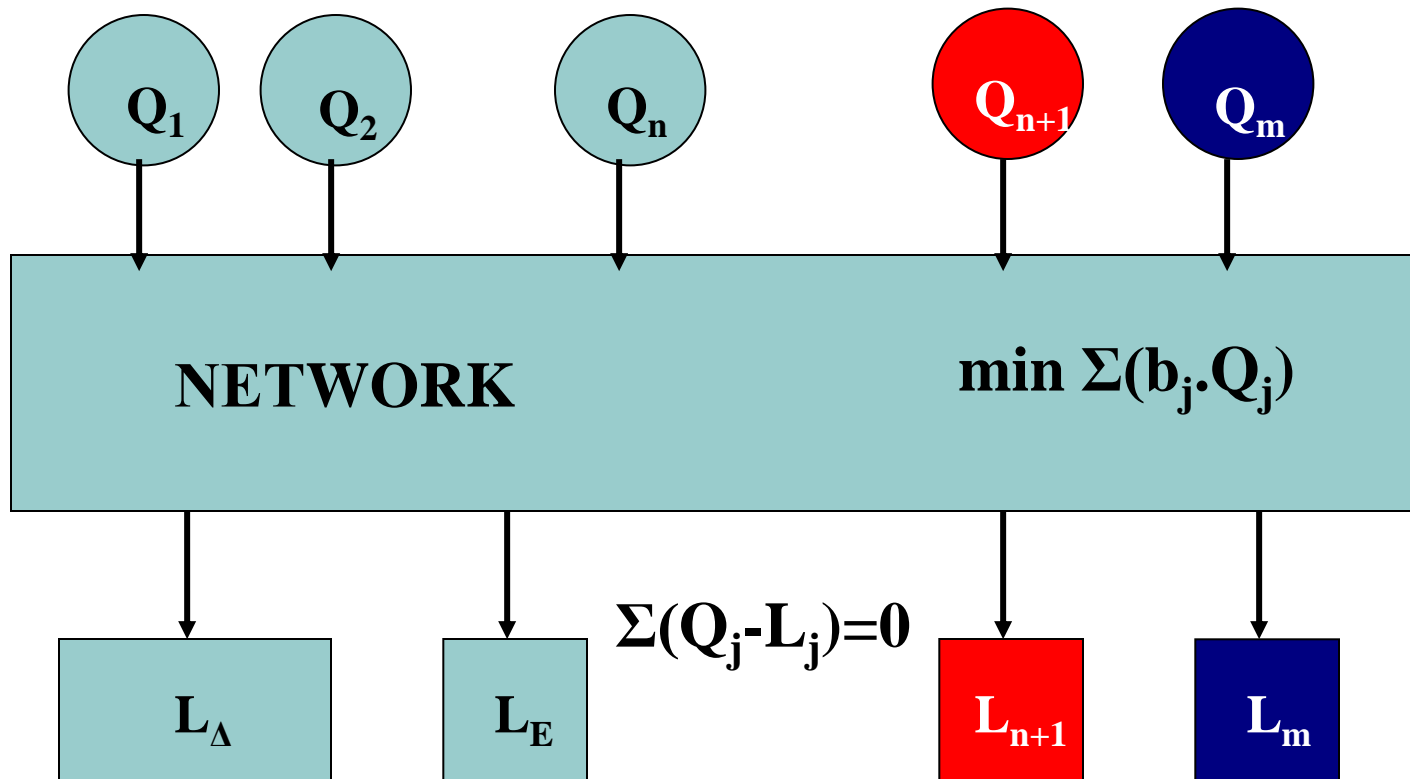


Basic Problems

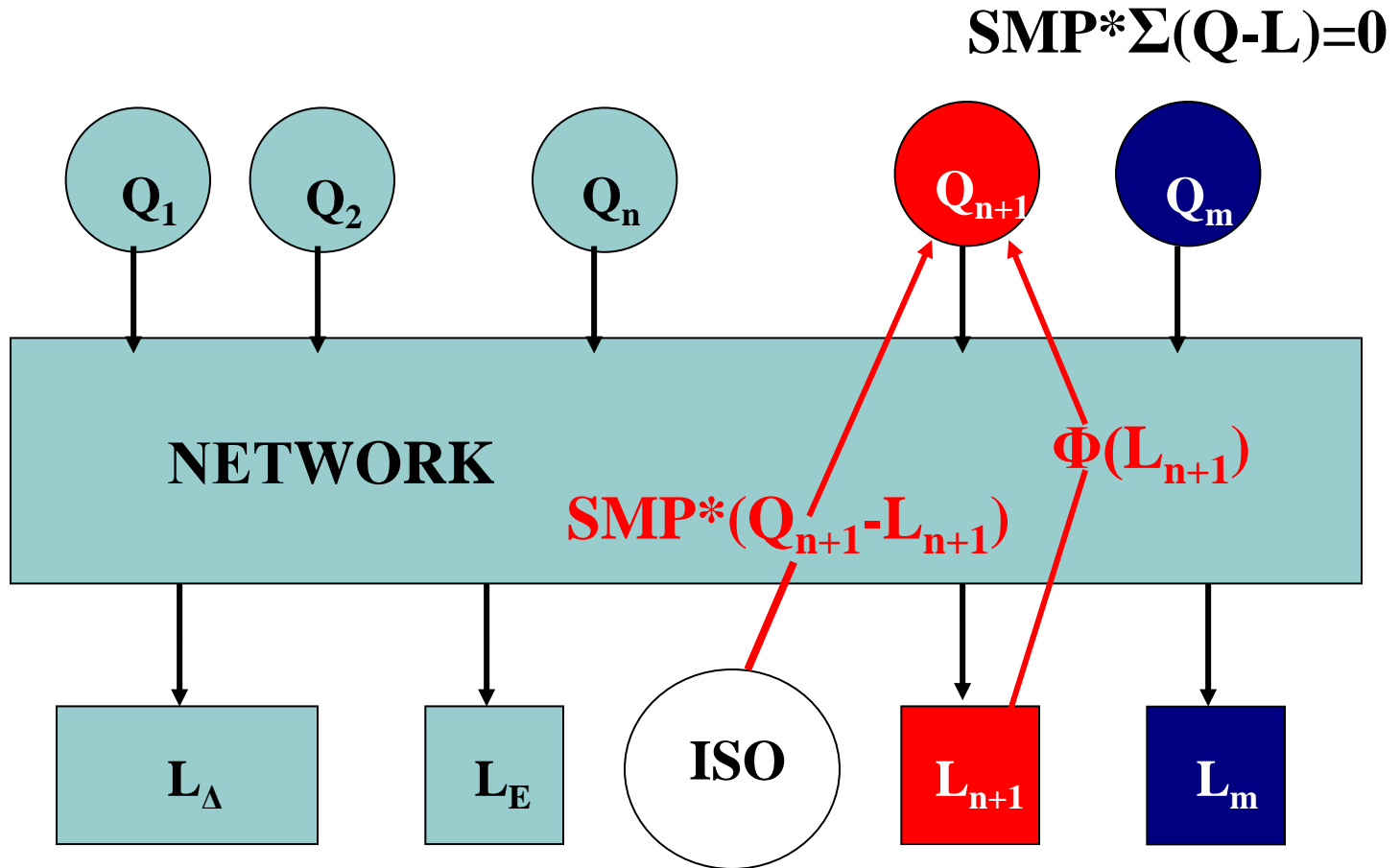
- Impartial **Load Dispatch** to available Generating Units participating in the market
- **Market Clearing**
- Development of new **Generating Capacity**
- Definition of **Rights and Obligations** of all market participants
- Definition of **Eligibility Criteria** for Customers
- Establishment of new rules for the **Management of Interconnections** with neighboring countries



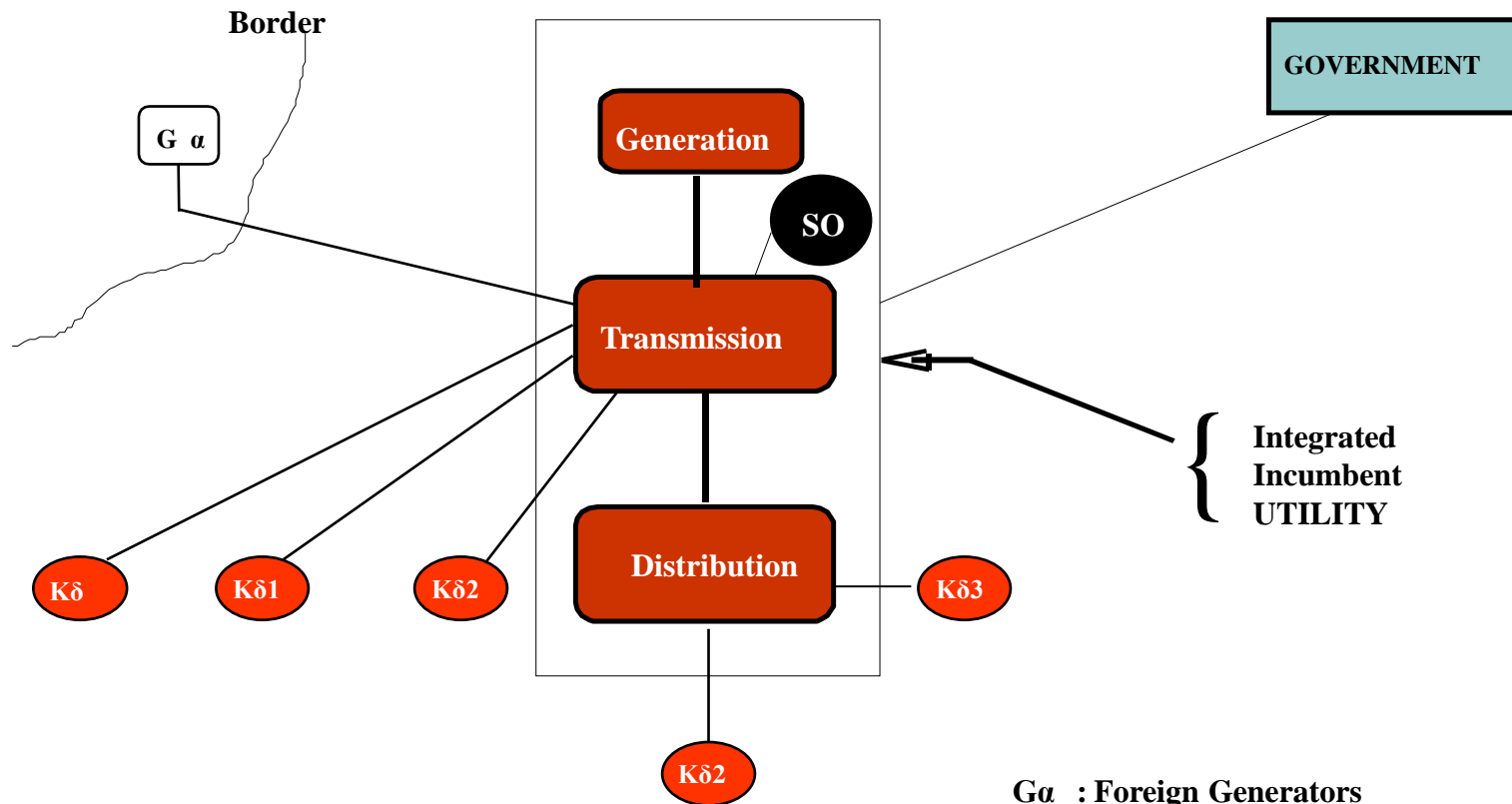
The Load Dispatch Problem



The Market Clearing Problem



The initial monolithic structure of the electricity sector

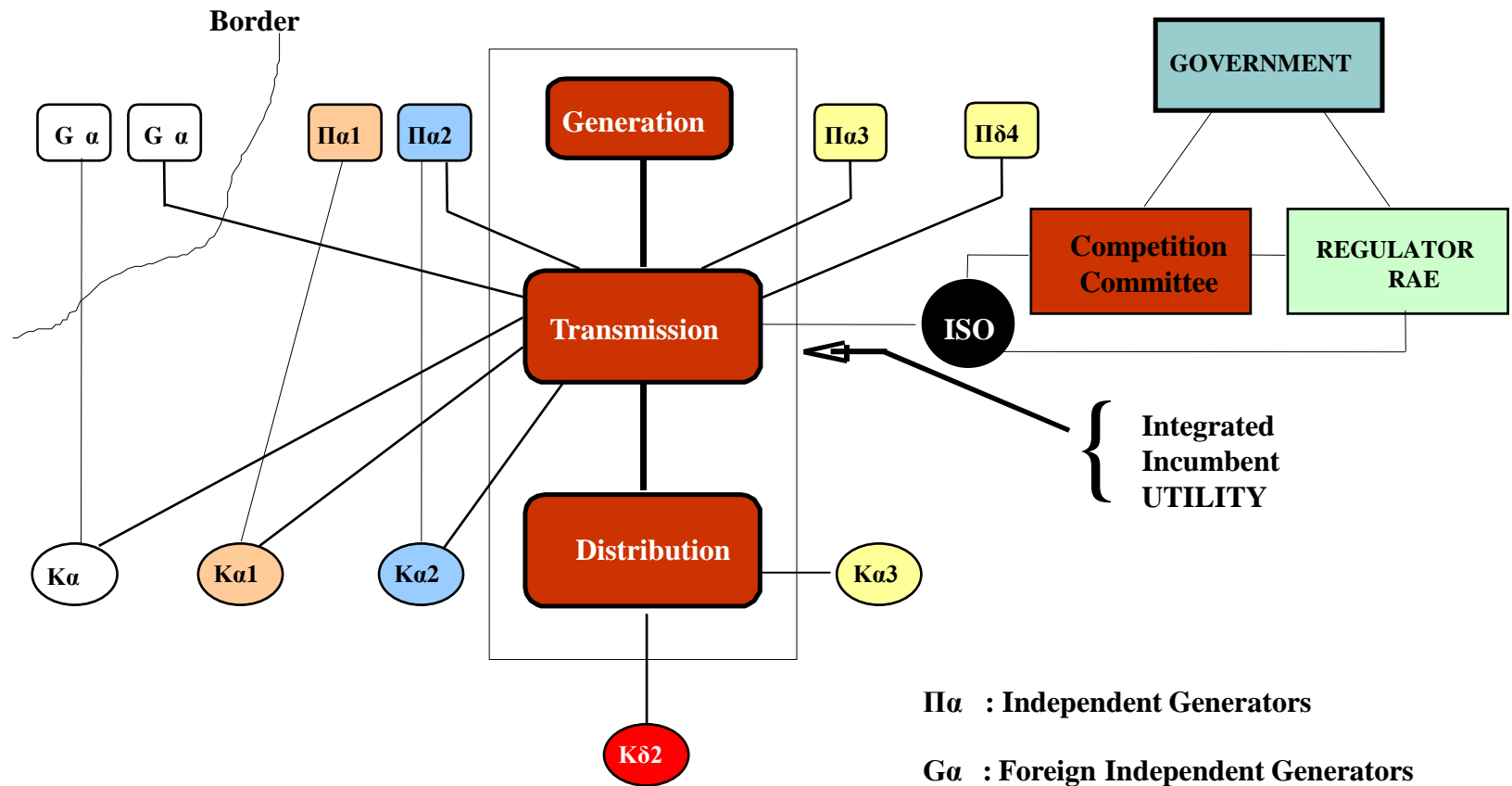


SO =System Operator
RAE=Regulatory Authority of Energy

G_α : Foreign Generators
K_δ : Non Eligible Customers



The restructured electricity sector



ISO =Independent System Operator
RAE=Regulatory Authority of Energy

IIa : Independent Generators

Ga : Foreign Independent Generators

Ka : Eligible Customers

Kδ : Non Eligible Customers



RAE: Regulatory Authority of Energy (I)

- RAE is authorized to:
 - Secure impartial treatment of all market participants
 - Secure transparency of market operations
 - Regulate Public Service Obligations in a competitive environment
 - Resolve disputes between market participants
 - Edit licenses to Generators and Traders
 - Prepare and monitor all call of bids for new capacity



RAE: Regulatory Authority of Energy (II)

- Establish, enhance and monitor the competition rules
 - Protect the customers, especially the non-Eligible ones
 - Control any cross subsidization between activities of Integrated Power Utilities
 - Monitor of the unbundling of the activities of Integrated Power Utilities
 - Control any improper behavior of market participants (limit pricing, predatory pricing, unjustified withdrawal of power units etc.)
 - Penalize any improper behavior of market participants



ISO: Independent System Operator (I)

- Organization and Monitoring of the Daily Short Term Market
 - Ensure the scheduling and dispatch of power units according to the approved rules and procedures
 - Bill and settle all payments in respect of the power bought and sold by market participants
 - Secure proper and stable operation of the system by purchasing any necessary ancillary services (voltage and frequency control, reactive power compensation, spinning reserve margin etc.)



ISO: Independent System Operator (II)

- Operation and Planning of the Transmission System
 - Operates the system and estimates its future needs
 - Pays a leasing fee to the owner of the transmission system, i.e. Public Power Corporation (the Incumbent Integrated Utility), for the use of the network assets
 - Charges all system users with all transmission costs
 - The owner of the transmission system, not ISO, is responsible for the construction of new transmission lines or new substations and for the maintenance of the system's equipment

