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Regulation vs. a Free Energy Market

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Introduction
A historical perspective on France

- **1880-1946. Local initiative:**
  - **concessions** to private utilities or **direct management** by local authorities,
  - progressive increase of State control: on local authorities, grids, providers. Through technical standards; approval of prices, investment, financing; subsidies for rural electrification
- **1946-2000: Nationalisation → State monopolies**
- **from 1951: construction of European common market with an initial focus on energy**
  - ECSC (1952) and Euratom (1957)
  - the Messina Declaration (1955)

    « Putting more abundant energy at a cheaper price at the disposal of the European economies constitutes a fundamental element of economic progress. That is why all arrangements should be made to develop sufficient exchanges of gas and electric power capable of increasing the profitability of investments and reducing the supply costs. Studies will be undertaken of methods to co-ordinate development prospects for the production and consumption of energy, and to draw up general guidelines for an overall policy. »
- **From 1996: market opening driven by EU directives**
  - UK experience: unbundling and privatisation (80's)
  - 3 energy market packages (1996/98; 2003; 2009)
  - independent regulator (2000), market opening (starting in 2000), privatisation of GDF (2006)

Introduction
2050 prospective

1. **High uncertainties on the evolution of the energy sector in Europe**

2. **The rationale for both more market opening and more regulation**
   - more market opening required
   - persistence of natural monopolies
   - market failures in the competitive model of production and supply
   - A complex combination of public policy objectives

3. **Rethinking the regulatory framework**
   - a combination of regulatory and public policy instruments
   - new segmentations and combinations of territorial levels

1. High uncertainty: 2025

The general framework for EU energy and climate policy in 2020 is set :

- 20/20/20 objective (emissions, renewables, energy efficiency)
- goal of a fully integrated energy market as early as 2014
- 3rd package: increased independence of TSO, deployment of smart meters

The 2020-2025 horizon is substantially shaped by the current state and trends of infrastructure and technologies. Law of long lead times

Political elements of uncertainty

- continuation of the Kyoto protocol
- political choices on the energy mix of power generation (re in particular nuclear power), and administrative procedures (public enquiries etc) to allow the required investment
- geopolitical context (EU integration, relations with energy producers)

Economic elements of uncertainty

- ability to finance the required investment (acceptability of prices increases for consumers, financial markets)
- consolidation of industry
- ability to curb the increase of energy demand
- substantial development of shale gas production in Europe
- extent of tensions between supply and demand, price increases

1. High uncertainty: 2025 and beyond

- **Additional elements of uncertainty**

  - Environmental requirements at international, EU and national level
    - Climate change
      - Towards -80% GHG (EC, 2011)?
    - Energy mix
      - Towards 80% RES (IPCC, 2011)?

  - Availability / capacity of international / intercontinental networks (Medgrid etc)

  - Disruptive innovation
    - carbon capture and storage (CCS)
    - green techs competiveness (e.g. PV, biofuels)
    - energy storage
    - others

1. High uncertainity: 2050 and beyond

- **IEA scenarios for 2050 reveal the extent of possible evolutions**

  - Economic trends
    - demand: +32% or +84% ?
    - 90% of demand increase from non-OECD countries

  - Environmental trends
    - GHG emissions: x2 or -50% ?
      +50% or -25% in the industrial sector ?
    - renewable energy mix: 22% or 48% of electricity generation ?

  - Technologies available
    - CCS: not commercially deployed or 55% of electricity sector's emissions captured ?
    - electric and plug-in hybrid vehicle market share: 20% or 80% ?

2. The rationale for both more market opening and more regulation

- **More market opening**
  - price equalisation and optimized use of capacity across Europe
  - higher security of supply
  - competitivity and innovation stimulation
  - variety of offers

- **Difficulties**
  - Price equalisation may lead to increasing prices in France
  - Concentration of power generation market

2. The rationale for both more market opening and more regulation

- **Persistency of natural monopolies in transmission and distribution**
  - increasing returns to scale
  - economic efficency

- **Persistent need for a regulation of monopolies**
  - Traditionnal tools
    - Network access conditions
    - Dispute resolution
    - Tariffs
    - Investment and business plans
  - … or more innovative
    - soft law (code of good behaviour)
    - incentive-based regulation (on quality of supply, in France)
    - market driven, e.g. nodal market pricing

2. The rationale for both more market opening and more regulation

- **Market failures in the competitive model of production and supply**
  - market power (concentration of market players)
  - Asymmetry of information
  - no or limited storage of electricity: inter-temporal arbitration, value of time and peaks, risk of price manipulations
  - complexity of market design taking into account security of supply requirements

2. The rationale for both more market opening and more regulation

- **Market and regulatory mechanisms need to take into account a complex combination of public policy objectives**
  - Environmental impacts
  - Energy efficiency
  - Affordability, protection of vulnerable customers
  - Security of supply

3. Rethinking the regulatory framework

A combination of regulatory instruments

- end of regulated tariffs, except for grids
- development of market supervision
- market driven mechanisms
  - CO2 market
  - interconnection capacity allocation by auction
  - capacity markets

and other public policy instruments

- Regulations and standards
  - compulsory
  - voluntary / « soft law »(labels, etc)
- pigouvian taxes and other taxes or benefits with redistributive effects
  - fuel tax
  - carbon tax
  - social tariffs and national equalization (part of CSPE in France)
- subsidies to support R&D in new technologies, allocated on the basis of transparent rules at EU and international level

3. Rethinking the regulatory framework

- **The role of regulators in competitive and integrated markets**

– a new segmentation of regulatory activities
  - sectoral regulators for infrastructure / convergence between sectors (energy, telecoms, water, rail,…)
  - regulation of markets : definition of roles between competition authorities, finance authorities, and specialised regulators if any (by sector, regulation of markets of raw materials, protection of utility consumers: what relevant segmentation ?)

– relevant territorial level
  - International organisations and treaties : international environmental standards, intercontinental grids, cooperation on nuclear safety, on supervision of wholesale markets, international trade.
  - EU regulators : interconnections, market design, transport grids ? supervision of wholesale markets ?
  - Local authorities: distribution networks
  - What remaining role for NRAs ?