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The principles and driving forces behind the Internal Energy Market

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Traditional paradigm

Model of government - energy industry relations that emphasizes stability, reliability of supply, and public service; a model of technical organization that involves central control over a synchronized network.

- Security of supply imperative (-> stockpiling, subsidizing industries and foreign supply sources, intergovernmental supply arrangements, overinvestment etc.).
- Public service imperative.

Traditional paradigm

- Exclusive rights to build and operate networks.
- Closure to competition.
- Detailed regulation.
- Remuneration based on historical costs.
- Centralized control over planning.
- Limited participation by consumers.

Drivers of change

Started around 1980, following development in airlines and telecoms.

- Ideology and politics.
- Sympathetic regulators.
- Technology advancements (smaller gas power plants, now RES).
- Public debt.
- Inadequate investment in infrastructure (especially in developing countries).
- Poor accountability and performance (drop in commodity prices not followed by decrease in energy prices).
- Perceived poor performance of state run companies (over-investments).
- Corrupt symbiosis between state and monopolies.
- Curbing trade union power.

Liberalization paradigm

Liberal paradigm emphasizes a greater reliance on market. It aims to introduce competition whenever possible, encouraging openness, decentralized production with network access, and profit based on the market prices, not costs (regulation for competition).

Focus is on electricity and natural gas.

Liberalization paradigm

- Separation of activities to promote competition (unbundling).
- Freedom for entry and investment in competitive activities, moving away from a centrally planned approach.
- Freedom for contract arrangements and competitive price formation.
- Ensured access to networks and infrastructure.
- Oversight by an independent regulator.

First legal acts

- 1985 White paper: Completing the Internal Market
- 1988 Working Document on the Internal Energy Market.

First activities of the Commission date from 1989:

- Communication from the Commission: Transparency of consumer energy prices. COM (89)123, 1989.
- Towards completion of the internal market for natural gas. Proposal for a Council Directive on the transit of natural gas through the major systems. COM (89) 334, 1989.
- Increased intra-Community electricity exchanges: a fundamental step towards completing the internal energy market. Proposal for a Council Directive on the transit of electricity through transmission grids. COM (89) 336, 1989.
- And the others ...

First liberalization package (1996/1998)

	Unbundling of networks	Access to networks	Market opening	National regulation
First legislative package	Separate management and accounts	Negotiated or regulated terms of access	Power: 35% open by 2003 Gas: 33% open by 2018	Mechanism for regulation

Second liberalization package

2001 common market report - „European national gas markets are characterized by high prices and tariff differentials, a high degree of market concentration, insufficient unbundling, a lack of market based balancing regimes, and ex ante regulation ... The prices of gas and electricity are especially of concern. In some European countries, natural gas increases its share in electricity generation. During the 1990's the European industry was paying 40% more for its electricity than its American competitors“.

Unsatisfactory pace as well as targets, new legislation introduced in 2003.

Second liberalization package (2003)

	Unbundling of networks	Access to networks	Market opening	National regulation
First legislative package	Separate management and accounts	Negotiated or regulated terms of access	Power: 35% open by 2003 Gas: 33% open by 2018	Mechanism for regulation
Second legislative package	Separate subsidiary	Regulated terms of access (but TOP in gas)	Power and gas markets 100% open by July 2007	Specific regulator for energy

2007 Sector Inquiry

- The EC sector inquiry (2005 - 2007) highlighted several significant deficiencies:
 - High market concentration persisting (e.g., limited interconnections).
 - Insufficient integration between Member States' markets (e.g., limited common auctioning).
 - Lack of transparent market information.
 - Unsatisfactory unbundling levels.

Suggested solutions include enhancing market transparency, implementing caps on incumbents' market shares, bridging the gap between the responsibilities and competencies of national regulators, and adopting structural (ownership) unbundling.

Problems with utilities

- Vertical foreclosure happens when an incumbent restricts competitors' access to essential inputs, often through long-term upstream, capacity, or downstream contracts.
- Market segmentation through long-term contracts (LTC) in gas and physical interconnectors in electricity.

EC enforcing new rules

- 2006: EC court cases against 17 states for not adhering to 2003 directives.
- 2007: Anti-trust probes into Eni, RWE (issues: under-investment, high network access prices, etc.); inspections in 25 companies in 6 EU countries.
- 2/2008: E.ON grid sell-off (~€1bn/y) due to EU antitrust concerns.
- 6/2008: RWE sells gas grid to avoid EU anti-trust actions.

Governments' opposition

- Protecting domestic companies by blocking foreign takeovers
- Hungary (Moll) vs OMV, Great Britain (Centrica) vs Gazprom...
- Regulating the regulators.

Governments' opposition

Retail Market: Regulated vs. free energy pricing.

- EK challenges Slovakia (PM Fico threatens renationalization of Slovenske Elektrarne over price hikes).
- 2006: EC targets Spain, France, Estonia, Latvia for tariff regulation.
- EC probes Italy, Ireland for biased power supply rights at regulated prices.
- Multiple cases against Germany, Czech Rep., Poland, Slovakia, Lithuania, Italy for inadequate tariff informations.
- 2007: EC again challenges Spain, France over tariffs.

Third liberalization package (2009)

	Unbundling of networks	Access to networks	Market opening	National regulation
Third liberalisation package	Ownership unbundling, ISO, ITO.	Regulated terms of access	Already achieved	Upgraded and harmonized powers for national energy regulators

EU energy regulatory principles

- Competitive (supply) vs. non-competitive (network operations) parts of the industry.
- Network operators must allow third-party access.
- Remove barriers for alternative energy suppliers.
- Consumers can choose and switch suppliers without restrictions.
- Establish independent regulators for sector oversight and TPA enforcement.

Arguments in favor and against the liberalization

Pros	Cons
Increased competition	Risk of monopolies
Attracting investments	Public interest concerns
Consumer choice	Inequitable distribution
Efficiency and Innovation	Price volatility
Market-driven pricing	Job losses
Reducing the government's budget	Loss of national control
	Environmental and social concerns

Structure of the power market

- EU liberalization and market unification leads to the introduction of new participants.
- System growth and national differences amplify coordination demands (power sector as integrated system with limited storage capacity + high costs associated with outages).

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Infrastructure and physical assets

Component	Description
Generation facilities	Power plants utilizing coal, nuclear, gas, hydro, solar, wind, and other resources.
Transmission networks	High-voltage systems for transporting electricity over long distances.
Distribution networks	Lower voltage systems distributing electricity to consumers locally.
Storage systems	Battery storage, pumped hydro storage, and others for balancing supply and demand.
Interconnectors	Infrastructure facilitating cross-border/regional electricity transfer.

Operational entities

Entity	Description
Generation companies	Entities operating power generation facilities.
Transmission System Operators (TSOs)	Entities responsible for transmission network operations and stability.
Distribution System Operators (DSOs)	Entities handling distribution networks and connections to consumers.
Market operators	Entities like NEMOs overseeing electricity trading platforms.

Market and economic participants

Participant	Description
Wholesalers	Buy large quantities of electricity and sell to retailers or large industrial consumers.
Traders	Engage in speculative buying/selling of electricity contracts and derivatives.
Retailers/Suppliers	Purchase electricity wholesale and sell it to end-users.
Consumers	Residential, commercial, and industrial end-users of electricity.
Power exchanges	Power exchanges enable efficient electricity trading and market pricing.

Regulatory and coordinating bodies

Body	Description
National Regulatory Authorities	Oversee market operations, tariff setting, and compliance at a national level.
Regional and supranational entities	Bodies like ACER and ENTSO-E working across countries for harmonization and integration.
Industry associations	Groups like Eurelectric representing industry interests and promoting best practices.
Standard-setting bodies	Entities defining technical, safety, and operational standards for the industry.

IEM prerequisites

- Liberalization and competition – withdrawal of the state from the energy sector, removing the barriers.
- But also regulation – to curb the power of (natural) monopolies and to address the legacy of the pre-liberal paradigm – regulation to competition.
- Interconnectors.
- Liberalization ≠ privatization.

Sources

- Buchan, D. (2009): Energy and Climate Change: Europe at the Crossroads.
- Cameron, P.D. (2007): Competition in Energy Markets: Law and Regulation in the European Union.