NOTRE EUROPE
Jacques Delors Institute
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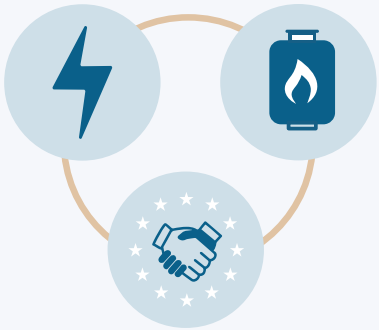
Overview of the European electricity market

1 How was the European electricity market developed?



Conventionally, energy was managed through national monopolies. Driven by the European Union (EU), a policy was launched with a view to developing energy exchanges in order to strengthen the security of supply while ensuring transparency in price setting.

The internal energy market is made up of the European electricity and gas markets. With the Single European Act (1986), the EU undertook a **market liberalisation policy**:

1996
Directive aimed at the liberalisation of electricity demand and the stimulation of competition both upstream and downstream of the sector.

2003
- Freedom of choice for professional (2004) and private (2007) customers in selecting an electricity provider.
- Legal separation of electricity generation, transmission, distribution and supply activities.

2009
- Facilitation of cross-border electricity exchanges.
- Creation of the Agency for the Cooperation of Energy Regulators (**ACER**), tasked with ensuring the proper functioning of the European energy market.

2019
- Directive favouring consumers' active participation in sustainable electricity generation.
- Introduction of common assessment and risk management methods in relation to supply security.

2 How does the European electricity market operate?

Large quantities of electricity cannot be stored. This means that a balance must be struck between supply and demand to avoid black-outs.

There are several wholesale markets on which electricity is purchased (by suppliers) and sold (by producers) for delivery on the same day, the next day or several months or years in advance.

Subject to interconnection capacity (high-voltage power lines), the electricity market facilitates electricity exchanges between countries and therefore price convergence.

Wholesale electricity price increases in Europe between 2021 and 2022

Source: Phuc-Vinh Nguyen on the basis of European Commission data.

The wholesale market differs from the retail market which concerns the supply to end customers (companies and households). In one year, the wholesale electricity price increased on average by 181% in Europe. This increase does not affect the retail price in the same way, as wholesale prices only make up one part of retail prices[1]. In addition, States can introduce measures[2] to limit retail price increases thanks to a **toolbox** presented by the European Commission in October 2021.

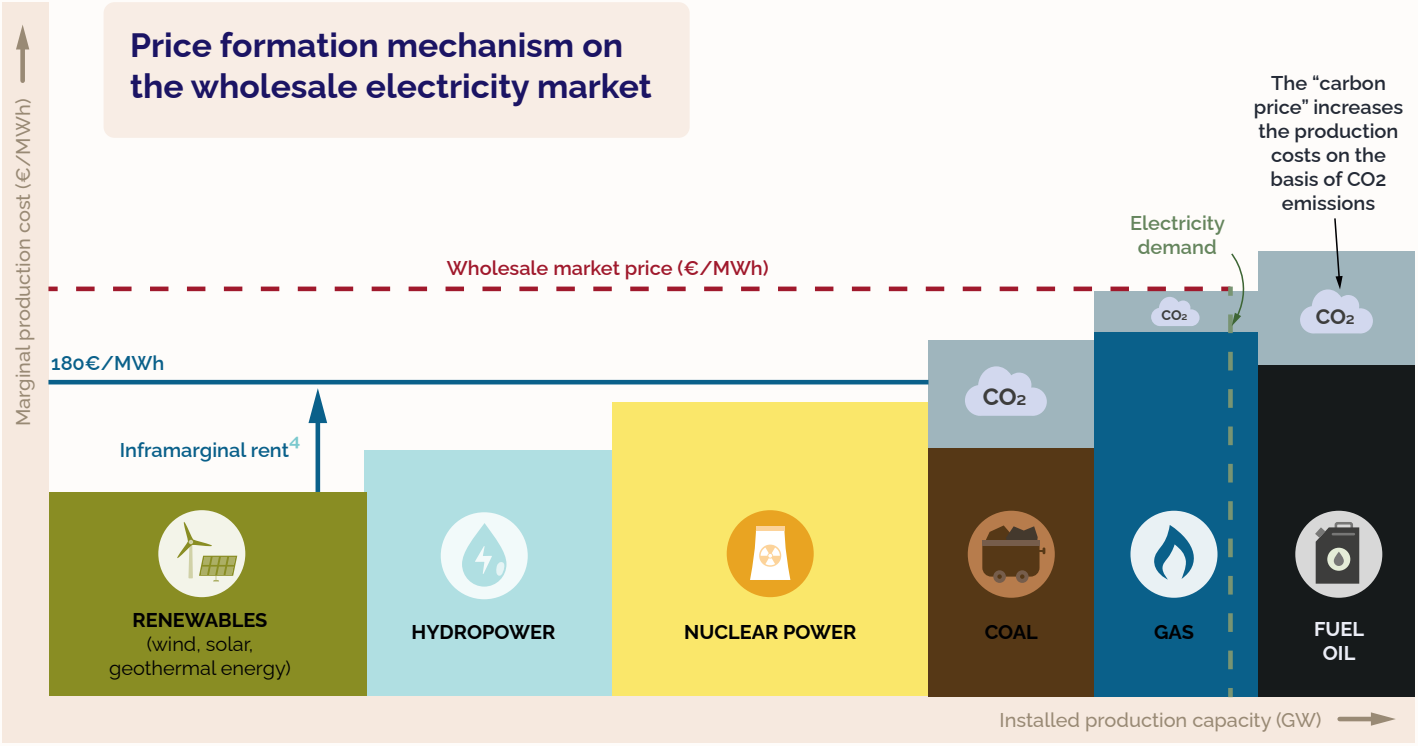
1. In France, the price is made up of energy supply (35%), taxes (33%) and transmission via the grids (32%).
2. This means that there has not been a spike in electricity bills for French households. This is due to the introduction of a "tariff shield", which caps increases of regulated electricity prices at 4% by lowering taxes on electricity and by increasing the share of regulated nuclear power.

3 How is the electricity price determined on a day-to-day basis?

The wholesale electricity price (day ahead) is set according to the principle of **marginal cost pricing**, or the cost of the last megawatt-hour (MWh) generated: electricity power plants are called upon to meet demand according to "merit order". Therefore, producers using technologies with lower operating costs are contacted as a priority. The production cost of the last power plant called sets the wholesale market price.

This means that as gas prices increased tenfold in the space of a year, the marginality[3] of gas power plants contributed to the rise in electricity prices.

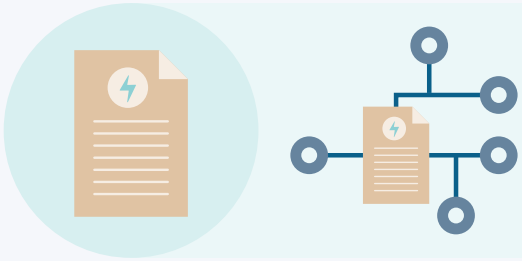
Price formation mechanism on the wholesale electricity market

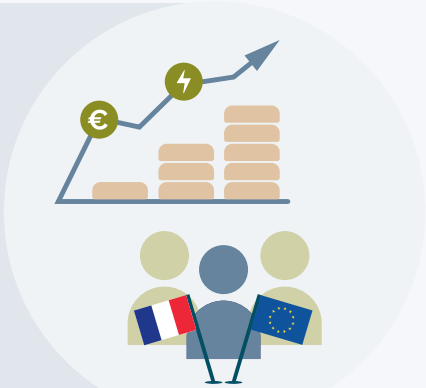


3. The marginality of gas power plants is due to the fact that they are regularly the last to be consulted to meet electricity generation demand.
4. Inframarginal rent concerns producers with low operating costs (renewables, nuclear, lignite) and which have recorded significant profits following the surge in electricity prices.

4 How should the European electricity market be reformed?

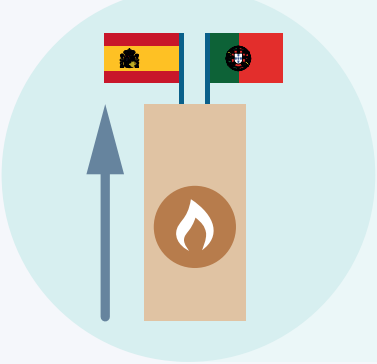
In the first quarter of 2023, the Commission will present a "deep and comprehensive reform of the electricity market" including in particular the "decoupling of gas and electricity prices".



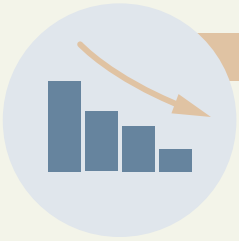


Theorized in the 1960s by Marcel Boiteux - who subsequently became chairman of EDF - marginal cost pricing is currently challenged by many States, including France. However, **the gas price crisis is not the only factor behind the record levels of electricity prices**. In France, for example, the market also includes a "risk premium" related to the lack of availability of the French nuclear plants which generates electricity shortages and therefore results in major price increases.

Since mid-June, the **"Iberian exception"** has capped the prices of gas used for electricity generation in Spain and Portugal. Adverse effects have, however, offset the savings made. The mechanism has resulted in greater gas consumption for electricity in Spain (+42%)[5]. It has also caused an increase in electricity exportations from Spain to France. If the mechanism was extended to the other EU countries, the United Kingdom, Switzerland or the Balkans could import gas at a lower cost and the cost overrun would be borne by Member States, which is not desirable.



While it remains imperfect, the European electricity market optimises electricity exchanges, incorporates renewables into the system and cuts costs. Pending a long-term reform, a drop in prices can be achieved by:

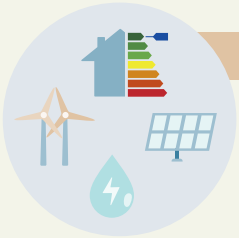


1

Making demand reduction targets for gas (-15%) **and electricity** (-10%) **mandatory** for each Member State through the adoption of **energy sobriety** measures.

2

Negotiating a price cap with our natural gas suppliers (Norway and Algeria in particular). This would be a key pre-requisite for a potential extension of the "Iberian exception" on a European level.



3

Stepping up the roll-out of renewables and the renovation of buildings for greater energy efficiency while 18% of European electricity is produced by gas[6] and the residential sector accounts for 40%[7] of European gas demand.

5. Source: The Iberian electricity market intervention does not work for Europe - CEPR
6. In 2021, 18% of electricity generated in the European Union came from gas. Source: European Electricity Review 2022 - Ember (ember-climate.org).
7. Gas factsheet - www.acer.europa.eu

Author: Phuc-Vinh Nguyen | Graphic design: Marjolaine Bergonnier | Date: November 2022
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