

The energy crisis: what emergency measures did the European Union introduce in response?

This bulletin attempts to evaluate the effect of emergency measures introduced by European Union (EU) Member States in 2022 to counter the energy crisis, and their impact on inflation. It analyses their economic consequences with regard to their three objectives: (i) lowering energy bills for households and firms; (ii) minimising the cost to public finances; and (iii) reducing demand for energy and securing energy supplies. The EU attempted to introduce measures aimed at all three objectives. In parallel, national authorities adopted two types of response: directly acting on energy costs for consumers (notably France and Spain) or paying subsidies to households and enterprises (Germany and the Netherlands).

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This Banque de France bulletin is the last in a series devoted to the energy crisis: "The impact of energy shocks on financial stability in the context of the 2022 episode" (December 2023), "The gas price shock: never again?" (May 2024) and "Energy tariff shield in France: what is the outcome?" (July 2024).

Between 2021 and 2023

4.1% of Italian GDP
spent on support measures

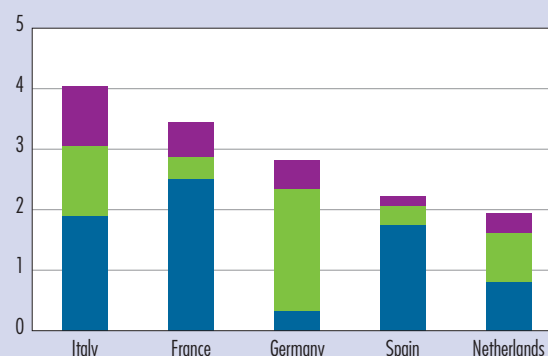
3.5% of French GDP
spent on support measures, 2.5 percentage points of which was used to lower prices (tariff shield)

2.8% of German GDP
spent on support measures, mainly in the form of income support

Support measures for households and firms between 2021 and 2023 (cumulative total)

(% of GDP)

■ Energy price support
■ Energy-related income support
■ Non-energy related income support



Source: OECD (2023).

1 Three objectives that are difficult to reconcile

The 2022 gas crisis was largely the result of Russia’s invasion of Ukraine.¹ It disrupted Russian gas supplies and caused wholesale natural gas prices to spike in EU markets, which in turn triggered sharp rises in wholesale electricity prices² and then in retail prices (see Baget et al., 2024 on the design of the European electricity market). In September 2022 (the peak in wholesale prices), the “gas” and “electricity” components accounted for 2.6 percentage points of the year-on-year rise of 9.9% in the euro area consumer price index. However, the effects of the crisis subsequently faded sharply. In December 2023, energy prices contributed negatively to the consumer price index, implying that energy in fact slowed inflation over the winter of 2023-24.

In response to the difficulties caused by high gas and electricity prices in 2022, EU Member States introduced various measures to contain inflation. The International

Monetary Fund (IMF) has calculated that euro area inflation would have been 1-2 percentage points higher in 2022 if governments had adopted a laissez-faire attitude (Dao et al., 2023).

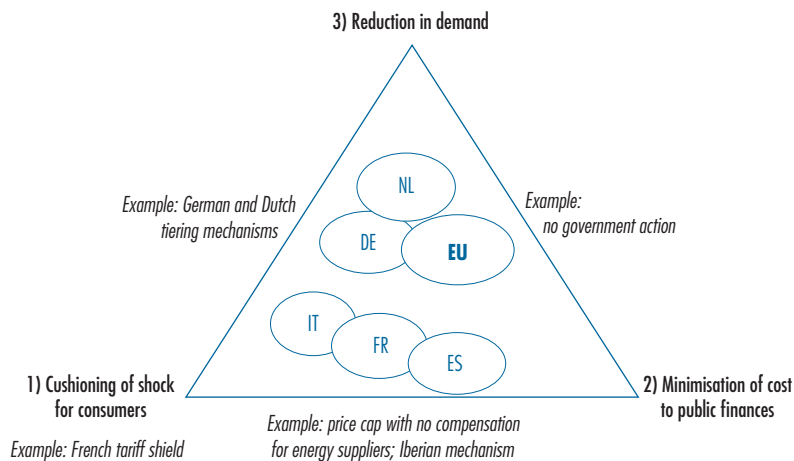
Multiple objectives that are difficult to reconcile

To counter the energy crisis, EU Member States introduced two types of mechanism: **direct government intervention** to control prices for consumers, in the form of price caps or producer subsidies, which in certain cases directly lowered the Harmonised Index of Consumer Prices (HICP); and the **payment of cash benefits**.

These support measures were designed, to differing degrees, to meet one or more of the following three objectives:

- 1) mitigate the impact of higher prices on consumers, in some cases by directly lowering the HICP;

Three objectives for national energy crisis responses



Source: Banque de France, authors’ diagram.

Note: IT, Italy; FR, France; DE, Germany; ES, Spain; NL, Netherlands; EU, European Union.

Guide: Each corner of the triangle corresponds to a desired public policy objective. For example, the Iberian price capping mechanism for gas used in electricity production cushioned the shock for consumers at a low cost to public finances, but did not encourage energy savings. Tiering mechanisms consist in subsidising a portion of consumption and charging the rest at market prices to lower outstanding demand. The cost of tiering mechanisms to public finances is relatively high.

1 Russian gas supplies began to fall from as early as the end of 2021, when Gazprom imposed its first rations on supplies to Europe.

2 See Gaulier and Serfaty (2023) for the contribution of the shutdown of France’s nuclear reactors to the rise in prices.

- 2) minimise the cost of support measures to public finances;
- 3) reduce demand for gas and electricity while at the same time securing energy supplies.

Price caps limit the “price signal”

A price cap is a government decision to modify the prices paid by end-users. It automatically meets the Objective 1: the price paid by households and firms falls compared to market conditions, reducing uncertainty for consumers. However, it fails to meet the Objective 3 of lowering demand, since limiting the price rise reduces the incentive to lower consumption; in other words, the cap muffles the price signal.

Another consequence of this mechanism is that it can also reduce electricity supply if the gap between the cap and the market price is too large, and depending on who makes up for the cost differential. If the differential is absorbed by the government, there is no risk of shortage since producers continue to be paid the full market price; however, the cost to public finances is high. Conversely, if producers do not receive compensation, they may decide to sell in uncapped markets instead, potentially reducing the available energy supply.

Cash transfers have to be targeted appropriately

Using cash transfers to offset higher prices for consumers allows prices to play their role in regulating supply and demand. If the cash benefits are sufficiently high, the policy can also meet Objective 1 of cushioning the effect of higher prices for consumers, by protecting household

purchasing power. However, this comes at the expense of Objective 2: minimising the cost to public finances.

The main challenge for a cash transfer policy is to ensure the money is targeted effectively and fairly, taking account of household heterogeneity (housing characteristics, etc.). In an ideal world, the government would know how much energy each consumer needed and to what extent they could switch to alternative sources.³ It would also take account of each household’s exposure to the energy shock and the availability of other inflation protection mechanisms. For example, poorer households are already partially protected by the indexation of welfare benefits and wages.

Failing to properly target cash benefits can prove costly to public finances. Moreover, if the transfers are poorly calibrated and “overstimulate” demand, prices will continue to rise, undermining all three objectives.

2 A European response focused on supply security and solidarity between Member States

In response to the crisis, the EU initially focused its action in spring 2022 on securing the continent’s energy supply to ensure everyone had access to electricity (Objective 3). At the end of 2022, it then sought to cushion the impact of the crisis on citizens (Objective 1) and support Member States’ budgets (Objective 2). On top of this, the reform of European electricity and gas regulations agreed at end-2023⁴ is designed to limit the possibility of further short-term shocks and hence protect European consumers in the future.

³ An optimal system would allocate more funds to buyers whose demand curve is less elastic. The targeting could also have an equality objective, by taking into account users’ vulnerability.

⁴ The Council of the EU of 27 May 2024 validated the institutional agreement of 14 December 2023 amending the electricity market design directive and regulation, and the Council of the EU of 21 May 2024 validated the agreement of 8 December 2023 amending the gas market directive and regulation.

Common measures to lower consumption and safeguard gas supplies

In June 2022,⁵ Member States agreed to binding targets for replenishing gas reserves to limit the risk of a winter shortage. The storage filling target was set at at least 80% for the winter of 2022-23 and at 90% for subsequent winters. In contrast with the first oil shock in 1973, no rationing measures were imposed, but public authorities alerted households and firms to the need to save energy.

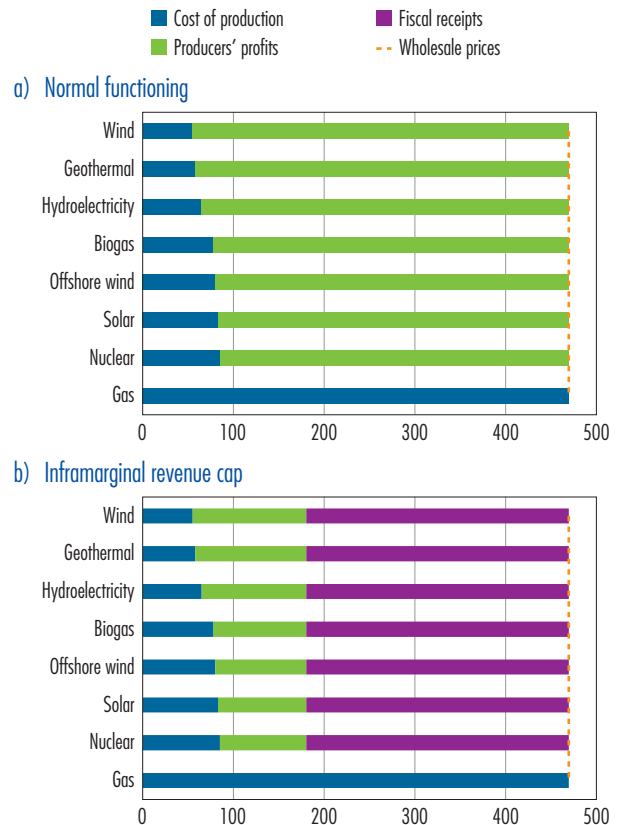
In addition to these commitments, Member States set a common target of reducing gas demand by 15% over the winter of 2022-23 (compared with the average for the five previous years). In the case of gas, it is likely that the price rise also contributed to the sharp drop in consumption. Gas use fell by 12% on average for EU households in 2022, and by 15% for firms, with the latter decline stemming notably from lower consumption in energy-intensive industries. Total consumption fell by a further 12% in 2023. In the case of electricity, RTE estimates that consumption adjusted for temperature effects fell by 8% in France over the winter of 2023-24, compared with the average for 2014-19.

To secure supplies at the best possible price in Europe, the EU introduced a joint gas purchasing mechanism,⁶ enabling Member States to pool their purchases for at least 15% of their national storage filling targets. The mechanism is designed to leverage the EU's joint bargaining power in global gas markets, where it faces steep competition from Asian buyers.

A European cap on energy firms' windfall profits to support national measures

C1 Normal wholesale price fixing mechanism and inframarginal revenue cap enacted under Regulation EU 2022

(EUR)



Source: Banque de France and authors' calculations
 Note: Council (EU) Regulation 2022/1845 of 6 October 2022.
 Guide: The values shown are for illustration purposes only.
 Chart a: normal functioning of the wholesale electricity market with inframarginal revenues in green. The revenues earned by inframarginal producers, here non-gas producers, correspond to the difference between the wholesale price (orange dotted line) and the cost of production (blue portion), due to the fact that wholesale electricity prices are set according to the cost of the final production technology that balances supply with demand, in this case gas.
 Chart b: cap on inframarginal revenues of EUR 180/MWh (European mechanism introduced on 6 October 2022). Member States' receipts are shown in purple and firms' remaining inframarginal revenues are shown in green.

⁵ Regulation 2022/1032 of the European Parliament and of the Council of 29 June 2022.

⁶ Council Regulation (EU) 2022/2576 of 19 December 2022. The first call for tenders under this framework took place in May 2023. Supply exceeded demand, which meant that the most attractive offers could be selected and demand from nearly all countries was fully met.

The design of European energy markets allowed non-gas electricity producers to generate exceptionally high profits, known as “inframarginal” revenues, during the crisis (Baget et al., 2024). To finance the support measures for consumers (households and firms) and avoid excessive imbalances caused by disparities in national fiscal leeway, Member States introduced a cap on these inframarginal revenues.⁷ The aim was to minimise the cost to public finances and, at the same time, lower demand for gas and electricity by maintaining a market price signal. The mechanism consisted of a tax on all revenues in excess of EUR 180/MWh from market sales of electricity generated using inframarginal technology. The cap was set higher than the average wholesale price for previous years, allowing inframarginal producers to remain profitable (see Chart 1). The money raised from this tax was to be used by Member States to support households and firms.⁸

An attempt to regulate prices to prevent spikes in gas prices

Faced with strong gas price volatility in the summer of 2022 and threats to EU gas supplies, Member States decided to introduce a mechanism to cap wholesale gas prices. The market correction mechanism (MCM) came into force on 15 February 2023,⁹ and is activated when prices rise sharply and move above a global ceiling defined using the Dutch benchmark natural gas index (the Title Transfer Facility or TTF). It stops transactions on the month-ahead gas derivatives market, but also includes safeguard clauses allowing it to be deactivated if there is a risk to EU energy supplies. Since the regulation’s adoption, gas prices have dropped significantly, so the mechanism has not yet been activated. However, it is still justified in light of continuing strong volatility in gas markets

(Brousse et al. 2023). It should also be noted that Europe-wide regulation of gas prices has been backed up at EU and G7 level by measures to limit rises in oil prices.¹⁰

3 Additional national responses reflecting each country’s specificities

The measures introduced at EU level were insufficient to counter the price shock for consumers, leading Member States to enact national measures in parallel. These depended largely on the specificities of national energy markets and each country’s fiscal leeway.

A tiering mechanism to lower consumer bills ex post while preserving the price signal: the examples of Germany and the Netherlands

To maintain the price signal and encourage households and firms to save energy while at the same time protecting them from the negative shock, certain states, such as Germany (January 2023 to April 2024) and the Netherlands (January to December 2023), adopted a mechanism known as “tiering”. This consisted in subsidising agents’ consumption up to a maximum volume and billing any additional consumption at market prices. The measure therefore maintained the price signal beyond a set level of energy use, while at the same time limiting the fiscal cost.

In Germany, in the case of households, a regulated price was set for 80% of the previous year’s annual consumption, while any consumption beyond this threshold was charged at market prices. In practice, consumers paid market prices for the full amount of their consumption, and then received compensation calculated according to their energy use the previous year. For firms, the reduction applied to 70% of the previous year’s consumption. However, authorities

7 Council Regulation (EU) 2022/1854 of 6 October 2022.

8 Only two Member States have published final figures on the amounts raised (Bulgaria and Lithuania). Germany’s revenues are estimated at EUR 23.4 billion (European Commission, 2023b). France’s revenues were initially estimated at EUR 11 billion, but the draft budget law for 2024 only expects them to amount to EUR 4.3 billion for 2022 and 2023 combined, due to the fall in wholesale prices.

9 Council Regulation (EU) 2022/2578 of 22 December 2022.

10 For more details on the oil price capping mechanism, see Ishii et al. (2023).

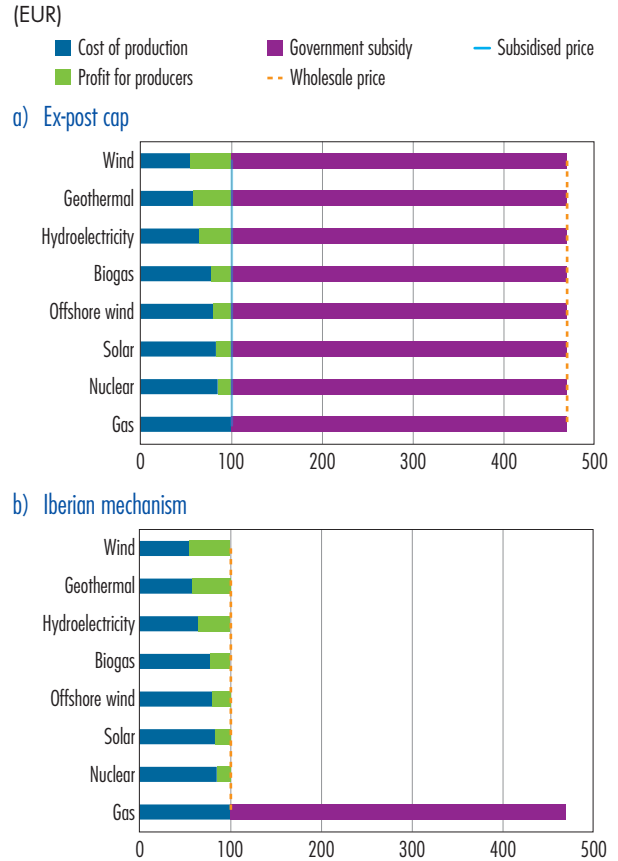
encountered difficulties in implementing the policy (e.g. multiple energy suppliers, special cases, inefficiency of the price signal due to the delay between consumption and invoicing). The Netherlands adopted a similar mechanism, but with a single threshold for households and small businesses.¹¹

An “Iberian mechanism” that lowered the price of electricity but without incentivising energy savings

In May 2022, Spain and Portugal introduced a measure known as the “Iberian mechanism”, designed to limit the impact of gas prices on electricity. It consisted in subsidising electricity producers’ gas purchases to limit price rises for end-consumers (households and firms).¹² The EU granted exceptional permission for the scheme, on the grounds that the Iberian energy market has limited interconnection with the rest of the continent so is not linked to wholesale prices elsewhere in the EU. The measure took advantage of the design of the European electricity market, where gas is generally the marginal energy source used to satisfy demand for electricity and therefore determines its price (Baget et al., 2024). By reducing the price of the gas used in electricity production, the mechanism immediately lowered the price of electricity in the Spanish wholesale market. Moreover, by only subsidising gas, the measure limited the cost to public finances (Objective 2) compared to an ex-post capping mechanism (such as that used in Germany and the Netherlands) which also applies to other electricity production technologies (see Chart 2).

A standing charge was added to bills to help to finance the measure. But, even taking this into account, the mechanism still met Objective 1 of reducing costs to consumers (see “net benefit” in Chart 3). According to

C2 Diagram of wholesale electricity prices with ex-post capping and the Iberian mechanism



Source: Banque de France and authors’ calculations
 Guide: The values shown are for illustration purposes only.
 Chart a: ex-post capping of supply prices (e.g. tiering mechanism) to lower them to the subsidised price (blue line).
 Chart b: Iberian mechanism where the capping of the price of gas used in electricity generation reduces the wholesale price of electricity produced using all technologies (orange dotted line) without impacting the market price of gas (same subsidy as in a, shown in purple). The purple bars in Charts a and b show the cost to public finances: in Chart a, it applies to all technologies while in b it only concerns gas.

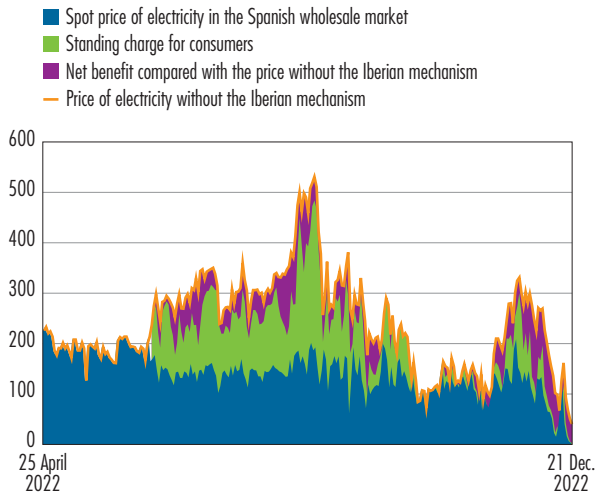
Hidalgo et al. (2022), the Iberian mechanism lowered consumers’ total electricity bill by 24%.

11 The thresholds were set at 2,900 kWh of electricity, 1,200 m³ of gas or 37 GJ of communal heating. Beyond these thresholds, consumers were charged market prices.

12 The price cap for gas used in electricity production was set at EUR 40/MWh for the first six months of the measure, rising by EUR 5 a month thereafter up to EUR 70/MWh in the final month. The average price over the entire duration of the measure was therefore EUR 48.8/MWh.

C3 Price of electricity in Spain

(EUR/MWh)



Source: Schlecht et al. (2022) using data from the Iberian energy market operator (OMIE, EpData platform), updated by the authors. Note: Thanks to the subsidy introduced in May 2022 on the price of gas used in electricity production (Iberian mechanism), the wholesale price of electricity in Spain (blue area) was reduced de facto to below where it would have been without the mechanism (counterfactual price, orange line). The net benefit for consumers (purple area) is calculated as the difference between the counterfactual price (orange line) and the standing charge introduced by the government to offset some of the cost (green area).

However, gas consumption for electricity production increased while the measure was in force, which runs counter to Objective 3 of lowering energy use. As the mechanism masked the price signal on gas for electricity production – the price paid by electricity producers was capped at EUR 50/MWh, regardless of market price – it reduced the incentive to lower consumption.

In France, a cap on gas and electricity price rises

In response to higher energy prices, France first introduced a cap on retail prices, financed by the government, and then supplemented it with targeted aid for households and firms (see appendix). In particular, the government capped the rise in the *tarifs réglementé de vente* (TRVs – regulated sales tariffs) for gas and electricity. For natural gas, TRVs were frozen at their October 2021 level for the whole of 2022, and the subsequent rise in January 2023 was capped at 15%. In the case of electricity, the rise in TRVs was capped at 4% in February 2022, then at 15% in February 2023 and 10% in August 2023. This limited the price rises for the majority of consumers as it also applied to supply contracts indexed to TRVs.

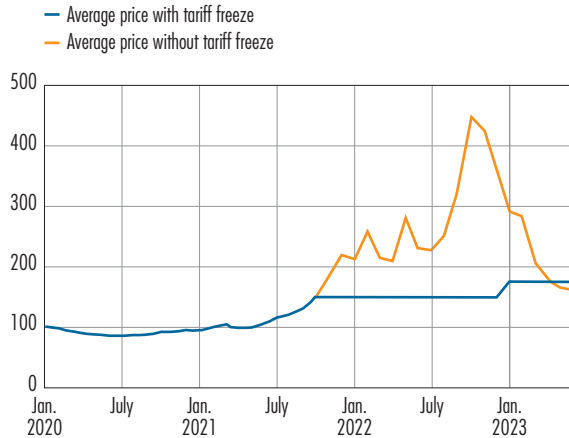
The government bore the full cost of this tariff shield, although a third of the cost of all measures was financed by revenues from renewable energy producers and measures enacted at European level (see appendix). Gas and electricity suppliers received government compensation for the shortfall caused by the TRVs, the amount of which depended on the gap between (i) the TRVs that would have applied without the cap, and (ii) the effective TRVs (see Chart 4). In the case of electricity, the tariff shield combined two measures, fully financed by the government: (i) a cut in taxes on final electricity consumption to their legal minimum; and (ii) an exceptional rise in the ARENH¹³ threshold from 100 TWh to 120 TWh in 2022 only. This latter measure mechanically reduced the TRVs as it lowered the cost of electricity for alternative suppliers.¹⁴

13 ARENH stands for *accès régulé à l'électricité nucléaire historique* or regulated access to historical nuclear energy. Under this system, all alternative energy suppliers can buy electricity from EDF at terms set by public authorities.

14 Alternative suppliers refers to all energy suppliers set up to rival the legacy suppliers: EDF for electricity and Engie for gas.

C4 Regulated sale prices (TRVs) of gas in France, effective and theoretical

(EUR/MWh)



Source: Commission de régulation de l'énergie (CRE) – Energy Regulation Commission, June 2023.

Cost of national measures to tackle the crisis

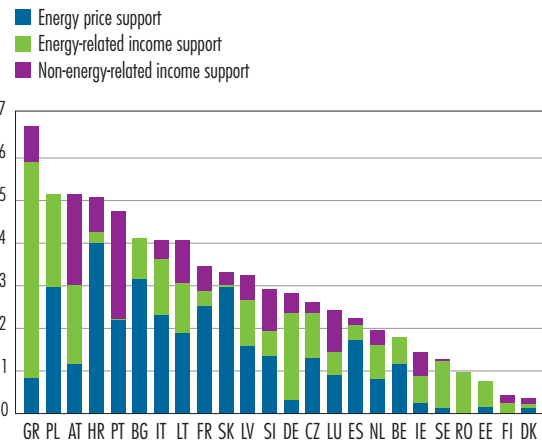
The cost of the measures taken by EU Member States from 2021 to 2023 in response to the unprecedented gas price shock ranges from less than 0.5% of GDP (Denmark, Finland) to over 5% (Greece, Poland, Austria, Croatia; see Chart 5a). These figures only take account of price and income support measures for firms and households, as defined by the Organization for Economic Co-operation and Development (OECD).¹⁵

France (tariff shield) and Spain (Iberian mechanism) almost exclusively used measures to lower prices (2.5 percentage points out of a total cost of 3.5% of GDP for France, 1.75 percentage points out of 2.2% for Spain). Conversely, Germany mainly used income support measures (2 percentage points out of 2.8% of GDP). The peak of the measures came in 2022 for ten countries – including France, Spain and Italy – and in 2023 for 14 countries, including Germany and the Netherlands, who both stand out as having responded later to the crisis (see Chart 5b).

C5 Support measures for households and firms

a) In 2021-2023

(cumulative total as a % of GDP)



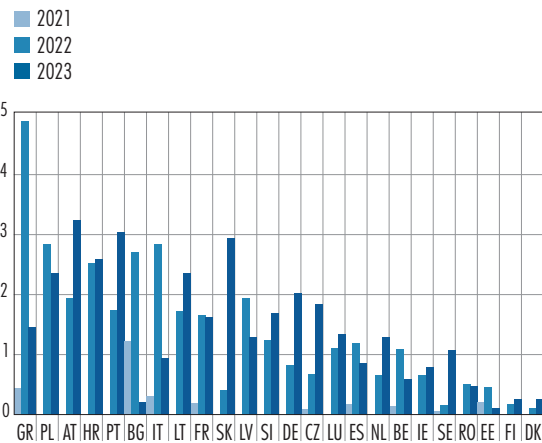
Source: OECD (2023).

Notes: Measures enacted between 2021 and 2023, as a percentage of national annual GDP. The measures collected by the OECD are gross of financing measures, unlike the data for France provided in the appendix.

For ISO country codes, see <https://www.iso.org/>

b) Per year

(% of GDP)



Sources: OECD, authors' calculations.

Note: The OECD breaks down the support measures by year of application, and assumes they are spread uniformly across months. In the absence of a start date, the date of the announcement is used. In the absence of an announced end-date, an expiry date is assumed (see OECD 2023, p. 12).

15 The OECD Energy Support Measures Tracker distinguishes between the different types of measure implemented between February 2021 and May 2023. Energy price support measures are defined as those aimed at lowering the marginal energy price, either via taxes or by reducing, regulating or capping marginal prices. Income support measures aim to lower the average cost of energy via fiscal transfers to households or firms. The OECD's tracker also distinguishes between income support measures directly linked to energy and those not directly linked to energy (for example, support measures for poorer households in general).

Targeted price measures that limited inflation

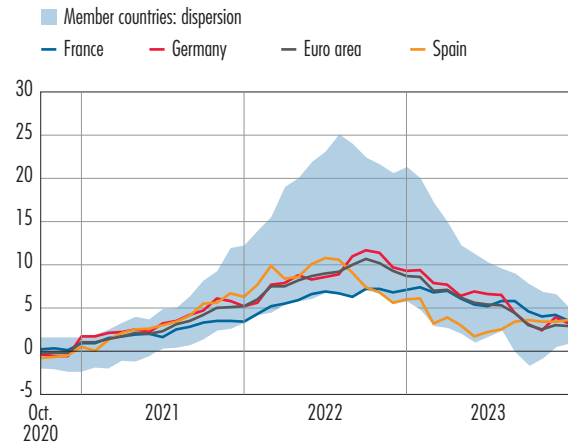
In France, the tariff shield helped to contain inflation in 2022: consumer prices rose at a much slower rate than in the rest of the euro area, where, on average, compensation measures were less focused on containing prices (see Chart 6). According to Lemoine et al. (2024), the tariff shield reduced French inflation by a cumulative 2.2 percentage points in 2022-23. According to Dao et al., the measures introduced in the euro area lowered inflation by between 1 and 2 percentage points in 2022.

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The energy crisis triggered by Russia’s invasion of Ukraine highlighted the fragility of the EU’s energy supplies. The region was particularly vulnerable due to its heavy reliance on Russian natural gas, but was also affected by imported inflation stemming from the crisis, a deterioration in its terms of trade which made its energy imports more expensive than its exports (Clavères, 2022 for France), and a rise in the price of imported inputs. While broad-based national and European measures helped to dampen energy inflation, international institutions (ECB 2023, IMF 2023, European Commission 2023a) agree that, for fiscal reasons and to maintain the price signal, policies should be more clearly targeted, especially towards vulnerable populations. Moreover, as fiscal policies aimed at subsidising energy prices create negative externalities for other economies (Auclert et al., 2023), it is vital for European countries to coordinate their national responses to tackle this common crisis.

C6 Harmonised index of consumer prices in the euro area

(year-on-year % change)



Sources: Eurostat, authors’ calculations.

References

ACER, Agency for the Cooperation of Energy Regulators (2023)

Assessment of emergency measures in electricity markets. 2023 Market Monitoring Report, July.

Auclert (A.), Monneray (H.), Rognlie (M.) and Straub (L.) (2023)

“Managing an energy shock: fiscal and monetary policy”, *NBER Working Paper Series*, No. 31543, National Bureau of Economic Research, August.

Baget (C.), Gaulier (G.), Carluccio (J.), Stalla-Bourdillon (A.), Gossé (J.-B.), Le Gallo (F.) and Schneider (A.) (2024)

“The gas price shock: never again?”, *Banque de France Bulletin*, No. 252/1, May-June.

[Download document](#)

Banque de France (2023)

The French balance of payments and international investment position. Annual Report 2022.

[Download document](#)

Bourgeois (A.) and Lafrogne Joussier (R.) (2022)

“Soaring energy prices: its effect on inflation halved by the ‘tariff shield’”, *INSEE Analyses*, No. 75, September.

Brousse (C.), Mème (N.), Saillard (M.) and Stalla-Bourdillon (A.) (2023)

“The impact of energy shocks on financial stability in the context of the 2022 episode”, *Banque de France Bulletin*, No. 249/7, Banque de France, November-December.

[Download document](#)

Clavères (G.) (2022)

“Répartition des pertes dues à la dégradation des termes de l’échange énergétiques”, *Trésor Éco*, No. 318, Direction générale du Trésor.

Commission de régulation de l’énergie (2023a)

“Publication des barèmes applicables pour les tarifs réglementés de vente de gaz naturel d’Engie – juin 2023”, May.

Commission de régulation de l’énergie (2023b)

“La CRE calcule l’évolution théorique des tarifs réglementés de vente d’électricité au 1^{er} août 2023”, June.

Dao (M. C.), Dizioli (A.), Jackson (C.), Gourinchas (P.-O.) and Leigh (D.) (2023)

“Unconventional fiscal policy in times of high inflation”, *IMF Working Papers*, No. 2023/178, September.

ESMA, European Securities and Markets Authority (2023)

Effect Assessment of the impact of the market correction mechanism on financial markets, March.

European Central Bank (2023)

“Fiscal policy and high inflation”, *ECB Economic Bulletin*, No. 2/2023.

European Commission (2023a)

“Fiscal Policy Guidance for 2024”, *Commission communication to the Council*, March.

European Commission (2023b)

“Report on the review emergency intervention to address high energy prices in accordance with Council Regulation (EU) 2022/1854”, *Report from the Commission to the European Parliament and the Council*, June.

Gaulier (G.) and Serfaty (C.) (2023)

“Energy balance in 2022: the crisis in nuclear power generation came at the worst possible time”, *Eco Notepad blog*, post No. 329, Banque de France, November.

[View blog post](#)

Hidalgo Pérez (M.), Escobar (R. M.), Collado Van Baumberghen (N.) and Galindo (J.) (2022) “Estimating the effect of the Spanish gas price cap for electricity generation”, *EsadeEcPol Brief*, No. 31, EsadeEcPol Center for Economic Policy, September.

[IMF, International Monetary Fund \(2023\)](#)

“Inflation and disinflation: what role for fiscal policy?”, *Fiscal Monitor*, chapter 2, April.

[Ishii \(K.\), Macaire \(C.\) and Stalla-Bourdillon \(A.\) \(2023\)](#)

“China has reduced its energy bill thanks to Russian oil discounts”, *Eco Notepad blog*, post No. 323, Banque de France, September.

[View blog post](#)

[Lemoine \(M.\), Petronevich \(A.\) and Zhutova \(2024\)](#)

“Energy tariff shield in France: what is the outcome?”, Banque de France Bulletin, No. 253/4, Banque de France, July-August.

[Download document](#)

[Nicolay \(K.\), Steinbrenner \(D.\), Woelfing \(N.\) and Spix \(J.\) \(2023\)](#)

“The effectiveness and distributional consequences of excess profit taxes or windfall taxes in light of the Commission’s recommendation to Member States”, European Parliament Policy Department, March.

[OECD, Organization for Economic Co-operation Development \(2023\)](#)

“Aiming better: Government support for households and firms during the energy crisis”, *OECD Economic Policy Papers*, No. 32, June.

[Schlecht \(I.\), Mülenpfordt \(J.\), Hirth \(L.\), Maurer \(C.\) and Eicke \(A.\) \(2022\)](#)

“The Iberian electricity market intervention does not work for Europe”, *VoxEU column*, Centre for Economic Policy Research (CEPR), August.

Appendix

Emergency measures in France

In response to higher energy prices, France first introduced a cap on retail prices, financed by the government, and then supplemented it with targeted aid for households and firms. The total net cost of these measures to public finances is 2.5% of GDP over 2021-24.¹ Purchasing power has primarily been protected through the cap on retail price rises.

The government has borne the full cost of the cap on the rise in the *tarifs réglementés de vente* (TRVs – regulated sales tariffs) for gas (g-TRVs, EUR 10 billion in 2021-24) and electricity (e-TRVs, EUR 55 billion).

- In the case of **natural gas**, g-TRVs were frozen at their October 2021 level for the whole of 2022, then the rise in January 2023 was capped at 15%.
- In the case of **electricity**, the rise in e-TRVs was capped at 4% (including VAT) in February 2022, then at 15% in February 2023 and 10% in August 2023.

The cap combined three separate mechanisms: (i) a reduction in taxes on final electricity consumption (the TICFE from 2022 onwards and the TCCFE from 2023) to their legal minimum; (ii) an exceptional rise in the threshold for the *Accès régulé à l'énergie nucléaire historique* mechanism (ARENH – regulated access to historical nuclear energy) from 100 TWh to 120 TWh, in 2022 only, which mechanically reduced e-TRVs (which are calculated by adding together the different components of suppliers' costs); and (iii) an additional freeze on e-TRVs.

The cost of these measures to public finances depends on how wholesale markets evolve, although there are timing differences between the impact of gas and electricity. The compensation paid to gas and electricity suppliers depends

on the differential between the counterfactual TRV and the effective TRV. The French *Commission de régulation de l'énergie* (CRE – Energy Regulation Commission) calculates counterfactual TRVs using a complex methodology that notably takes account of wholesale energy costs. The timing of the impact on public finances therefore varies: g-TRVs adjust rapidly to changes in wholesale gas prices, whereas e-TRVs smooth the changes in wholesale electricity prices over several years. In June 2023, for example, counterfactual g-TRVs fell below effective g-TRVs (CRE, 2023a), whereas counterfactual e-TRVs remained 74.5% above their effective level (CRE, 2023b).

In addition, in 2022, to counter the rise in oil prices, the government introduced a rebate on road fuel prices, ranging from 10 cents to 30 cents per litre and applicable from April to December (cost of EUR 8 billion in 2021-23).

These mechanisms were supplemented with targeted measures for households and firms:

- For **households**, EUR 18 billion of targeted transfers in 2021-24 to cushion the loss of purchasing power: inflation relief subsidy, exceptional back-to-school subsidy, road fuel subsidy, early increase in pensions, rise in the tax deduction on car travel for business purposes, etc.
- For **firms**, EUR 7 billion of aid in 2021-24 to protect profit margins: help with energy bills for energy-intensive firms, cap on electricity prices for very small enterprises (VSEs) that are not eligible for the tariff shield, electricity cushioning mechanism in 2023 for VSEs, SMEs and local authorities (payment of half the additional cost to energy bills over and above EUR 180/MWh and up to a limit of EUR 500/MWh), etc.

¹ The cost of the measures is taken from the draft budget law for 2024.

The impact on public finances has been limited by various measures (EUR 33 billion in 2021-24), some of which were introduced at the European level (EUR 5 billion):

- With the rise in electricity prices, the government received substantial revenues from renewable energy, thanks to hydropower concession fees and the system of subsidies paid by the government to support renewable energy production. The amount of these subsidies depends on the difference between a threshold price specified by contract and the market price of electricity. As market prices rose, the subsidies became negative, allowing the government to recover a portion of renewable electricity

producers' profits. This was amplified by the removal of the cap on the amount of profits the government could claw back.

- Government receipts have also been boosted by two mechanisms stemming from European regulation. A **temporary solidarity contribution**, consisting of a tax on windfall profits generated by oil, natural gas, coal and refining firms² (only EUR 200 million), and an **inframarginal revenue cap for electricity producers** which, in the case of France, mainly applies to nuclear power due to the revenues already derived from renewable energy under the mechanism described previously.

Cost of compensation measures to public finances

(EUR billions)

	2021	2022	2023	2024	Total
Direct action on prices	0.4	32.8	27.0	12.2	72.4
Gas tariff shield: compensation paid to gas suppliers	0.4	6.7	2.3	0.5	9.9
Electricity tariff shield: cut to TIFCE and TCCFE		7.0	8.8	8.9	24.7
Electricity tariff shield: shortfall for electricity suppliers		11.2	15.9	2.8	29.9
Discount on road fuel prices		7.9			7.9
Support for households	4.3	9.4	3.5	0.6	17.8
Subsidy cheques for poorer households	4.3	1.2	1.3		6.8
Exceptional back-to-school subsidy		1.1			1.1
Early increase in pensions and welfare benefits		6.7	1.6	0.1	8.4
Tax deduction on car use for business purposes		0.4	0.6	0.5	1.5
Support for businesses	0.0	1.4	5.2	0.8	7.4
Electricity cushioning mechanism and guarantee for VSEs			2.6	0.8	3.4
Energy bill subsidy for firms		0.5	2.5		3.0
Sectoral aid		0.9	0.1		1.0
Other			0.9		0.9
financial support	-1.9	-11.7	-12.1	-7.7	-33.4
Reduction in CSPE energy tax	-1.9	-10.1	-8.6	-6.7	-27.3
Tax on inframarginal revenues from electricity production		-1.2	-3.1		-4.3
Exceptional solidarity contribution		-0.2			-0.2
Rise in hydropower concession fees		-0.2	-0.4	-1.0	-1.6
Total	4.7	43.6	36.6	13.6	98.5
Net total	2.8	31.9	24.5	5.9	65.1
Net total as a % of 2022 GDP	0.1	1.2	0.9	0.2	2.5

Sources: Social and financial economic report appended to the 2024 Budget Law, 2023 Stability Programme.

Note: TICFE, *taxe intérieure sur la consommation finale d'électricité* (domestic tax on final electricity consumption); TCCFE, *taxe communale sur la consommation finale d'électricité* (local tax on final electricity consumption); CSPE, *charges de service public de l'énergie* (public service energy tax).

² Article 40 – Law No. 2022-1726 of 30 December 2022 on the budget for 2023.

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