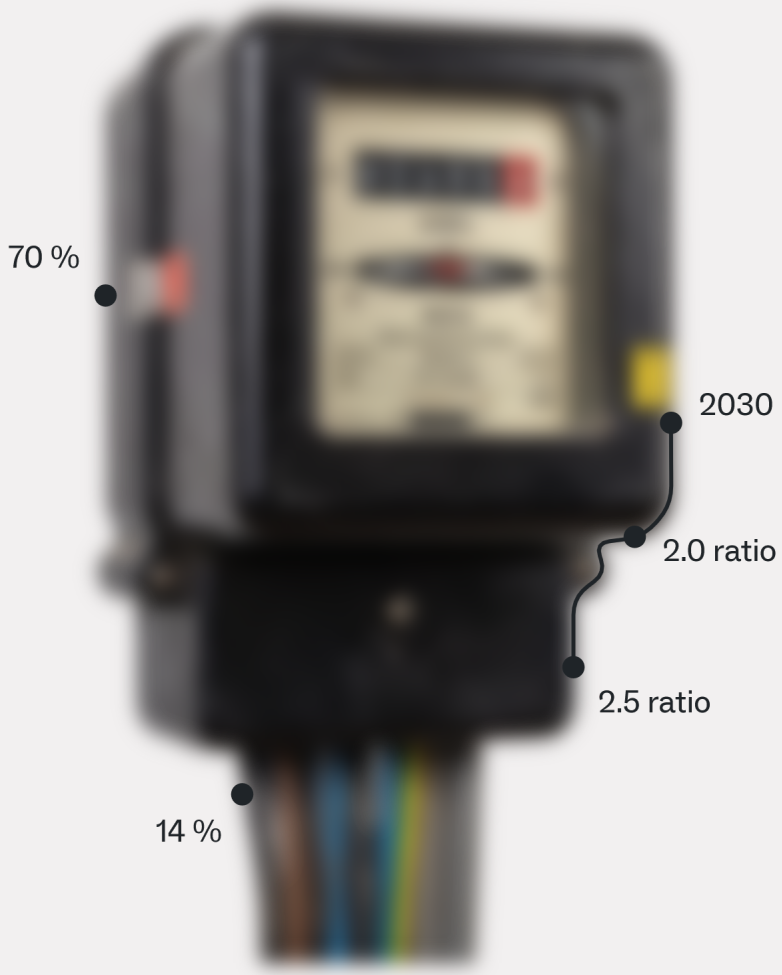
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How to think about electricity tax cuts



Electrification and fiscal impacts in selected EU member states

15 October 2026

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#ElectricityTax #Electrification #EnergyTaxation #FiscalPolicy

Alongside its *Electrification Action Plan*, the European Commission proposed that member states tax electricity no more heavily than gas. This paper assesses how cutting electricity taxes to that level, or to the EU minimum, affects bills, electrification incentives and public budgets. Only about a third of EU member states tax electricity more than gas, so the Commission's proposed parity rule would only affect these countries. An in-depth analysis of seven member states shows that the effects of a cut vary widely. Electricity taxes account for around 0.5 to 14 percent of electricity prices for a typical family household in the sample, so a cut noticeably lowers bills only where that share is high. Relief goes mainly to households and smaller businesses that do not yet benefit from exemptions. It strengthens electrification incentives only where the electricity-to-gas price ratio is also high. For the public budget, revenue losses dominate at first, but electrification can improve the fiscal balance over time through lower exposure to fossil fuel price shocks and avoided climate damages. Targeted cuts can deliver electrification benefits at a lower fiscal cost than a general cut and are already possible, but legal reforms to simplify their use would be desirable.

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Executive Summary

Why this matters

Electrification is a key strategy for reducing Europe's exposure to volatile fossil fuel prices, raising competitiveness and efficiency and limiting climate damages. Lowering electricity prices relative to fossil fuel prices is critical for improving the economics of electrification investments. In line with this, the European Commission's *Electrification Action Plan* targets electricity-to-gas price ratios of 2.5 for households and 2.0 for industry by 2030, accompanied by a legislative proposal requiring member states to tax electricity no more heavily than gas. We assess how cutting electricity taxes would affect bills, electrification incentives and public budgets.

What we find

- Electricity tax regimes differ greatly across the EU. The Commission's proposal mandating parity between electricity and gas taxes would affect about a third of EU states, as the others already tax gas at least as heavily as electricity, or tax neither. In the seven countries we analyse in depth, electricity taxes make up between 0.5 and 14 percent of a typical household's electricity price. Where that share is high, such as in France, Germany or Denmark (outside its temporary 2026–27 cut), a cut noticeably lowers bills. Because electricity-intensive industry already pays close to the EU minimum in most countries, relief goes mainly to households and to businesses that currently lack exemptions, especially in services.
- The electrification benefit of a tax cut depends on national electricity-to-gas price ratios. Across the countries analysed, cutting electricity taxes to the EU minimum would lower this ratio by 0.1 to 0.9 points for households, and by up to 0.4 points for non-household consumers. For large industrial consumers, most of whom already benefit from exemptions, the reduction would be 0.1 points at most. Beyond its direct price effects, an electricity tax cut would send a clear pro-electrification signal: a climate-aligned taxation regime should not tax electricity more heavily than fossil fuels.
- The key economic and fiscal benefits of electricity tax cuts materialise over time. In the short term, direct tax revenue losses outweigh additional revenues from increased electricity consumption and economic activity, and governments will have to decide which financing sources can compensate for this. In the medium to long term, as electrification increases, reduced exposure to fossil fuel price shocks, lower stabilisation spending and avoided climate damages can improve the overall fiscal balance. At the same time, every switch away from gas or oil erodes fossil fuel tax revenue.

What this means for policy deliberations

1. **A general electricity tax cut is simple to implement but difficult to finance.** Governments can implement it quickly and within existing EU law. Because it reaches all households, it also improves affordability broadly. Since absolute electricity spending tends to differ little across income groups, the relief is largest relative to income for low-income households.
2. **Targeted cuts can deliver electrification benefits at a lower fiscal cost and are already possible today, but legal reforms to simplify their use would be desirable.** Targeting by use, such as electric heating in Denmark or electric vehicle charging in the Netherlands, incentivises electrification. Concentrating relief on basic consumption volumes, through a fixed tax credit or an exempt base allowance, improves affordability. Under the Energy Taxation Directive, however, many targeted electricity tax cuts require the unanimous consent of the Council and must be renewed every six years.
3. **An electricity tax cut is no silver bullet for electrification – instead, an electrification toolkit is needed.** Any reform of the electricity tax must be accompanied by grid investments, network tariff improvements, measures to increase system flexibility and a review of other electricity levies. Higher gas taxation could also improve the electricity-to-gas price ratio and finance a cut. However, it would raise distributional questions for households that cannot yet electrify.

1. Introduction

The European Commission's *Electrification Action Plan* (EAP) places the electrification of heating, transport and industrial processes at the heart of a competitive, decarbonised and secure European Union (European Commission 2026a). Realising its targets requires investment on both sides of the electricity meter: renewable energy generation assets and grids have to be built; heat pumps, electric vehicles and electrified solutions for industrial processes have to be bought.

Electricity prices are a key factor influencing such investments, as well as affordability and competitiveness. Accordingly, the Commission set a target of reducing electricity-to-gas price ratios to no more than 2.5 for households and 2.0 for industry by 2030.[1] The proposed package to achieve these ratios includes measures on network tariffs and grid expansion, system efficiency and flexibility, long-term electricity contracts and taxation. The proposed tax provision would require member states' electricity tax rates to be no higher than their gas tax rates (European Commission 2026b). This move seeks to sidestep repeated stalemates in negotiations on revising the Energy Taxation Directive. National governments, meanwhile, already use electricity tax changes to pursue distinct policy goals: exemptions for electricity-intensive industry to increase competitiveness, reduced rates for electric vehicles or heat pumps to accelerate electrification, and broad cuts to improve affordability.

This paper analyses how a tax cut affects electricity prices, electrification decisions and public budgets over time. We consider two scenarios: a parity scenario, following the Commission's proposal that electricity may be taxed no higher than gas, and a minimum scenario, in which the tax is cut to the EU minimum rates. After an overview of the situation across all EU member states, we look at Germany, France, Italy, Spain, the Netherlands, Poland and Denmark in detail. These seven countries vary in their tax rates and exemption regimes, retail tariffs, electricity-to-gas price ratios and fiscal situation.

Three overall findings follow. First, tax regimes, and hence the effects of a cut, differ greatly across member states. Only about a third tax electricity more than gas, so the Commission's proposed parity rule would affect only them. Second, a cut tangibly improves electrification incentives only where electricity taxes are high. Third, the key economic and fiscal benefits materialise over time: in the short term, direct revenue losses outweigh the additional revenue from higher electricity consumption and economic activity. In the medium to long term, as electrification increases, reduced exposure to fossil fuel price shocks, lower stabilisation spending and avoided climate damages can improve the overall fiscal balance.

These findings lead to three policy implications for governments considering an electricity tax cut. First, a general cut is simple to implement but difficult to finance. Second, targeted cuts on basic consumption or specific uses are cheaper and possible today, but more complex to implement. Third, electricity tax cuts are no silver bullet, but as part of a broader toolkit they can send a clear pro-electrification signal – as broad cuts where budgets allow, and as targeted ones where fiscal space is limited.

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[1] These are policy benchmarks rather than universal investment break-even points. For industry in particular, ratios at which electrification becomes economically viable can vary greatly and electrification investments can be economically viable even at higher electricity-to-gas price ratios.

Chapter 2 outlines national electricity tax regimes across the EU and compares the national tax systems in the sample countries in detail. Chapter 3 shows what the parity and minimum scenarios would mean for bills and electrification incentives in each country. Chapter 4 explains the broader fiscal and economic effects of an electricity tax cut. Chapter 5 concludes and presents policy implications.

2. National starting positions

An electricity bill consists of four components: energy and supply (wholesale cost plus retailer's margin); regulated network fees; taxes and levies, including the electricity tax and, in some countries, renewable-support, capacity or environmental charges; and VAT. Network fees reflect regulated grid costs and investments, while the energy component follows wholesale markets and, over time, the generation mix and market structure. By contrast, taxation is one of the most direct levers governments have to influence bills, as they can often change electricity taxes and levies within a single budget year. The effective rate paid by consumers can diverge considerably from the statutory rate once different tiers, allowances and tax credits apply (Box 1).

Box 1: Statutory and effective rates

The **statutory rate** is the rate or schedule set in law. It may vary with connection capacity, consumption, eligibility or use. It is the rate an EU-wide rule would act upon. It is typically expressed as a **marginal rate** applied to the next kilowatt-hour.

The **effective rate** is the average tax *actually paid* per kilowatt-hour, once sectoral exemptions, volume tiers, base allowances and tax credits have been subtracted. It is specific to a consumer or a volume.

Although the electricity tax is formally an **excise duty**, this paper uses the term *electricity tax* to distinguish it from other excises.

In the EU, the *Energy Taxation Directive* (ETD) sets minimum rates of 0.05 ct/kWh for business use and 0.1 ct/kWh for non-business use, alongside provisions allowing exemptions and reductions (Box 2). Repeated attempts to reform the ETD have failed, not least because of the unanimity requirement for tax-related decisions at the European level. Member states can set higher rates: for instance, France, Germany and Italy levy standard rates above these levels.[2]

Box 2: The EU Energy Taxation Directive (ETD)

The Energy Taxation Directive (ETD; Council of the European Union 2003) governs how EU member states tax motor and heating fuels as well as electricity, setting floors below which national rates may not fall. For electricity, the minimum rates are 0.05 ct/kWh for business use and 0.1 ct/kWh for non-business use.

The Directive already allows differentiated tax rates: Article 5 permits tax ra-

[2] The Directive also permits exemptions and reductions that member states use extensively. Article 15(1)(h) allows household electricity to be exempted entirely; further provisions cover heating use, electricity-intensive business use and negotiated agreements.

tes to be differentiated "when the differentiated rates depend on quantitative consumption levels for electricity and energy products used for heating purposes" – a provision used by Denmark to lower the tax rate for electrically heated homes. Furthermore, Article 19 allows the Council, acting unanimously on a Commission proposal, to authorise targeted reductions for periods of up to six years, which need to be renewed – a route used by the Netherlands to obtain a reduced rate for electric vehicle charging stations until the end of 2024 (Council of the European Union 2021), and by Denmark for shore-side electricity supplied to ships (Council of the European Union 2015).

As a tax instrument, the Directive can only be amended by unanimous Council decision, i.e. with the consent of all EU member states. This makes changes to the Directive politically highly challenging, and the Directive has not been substantively amended since 2003. Past reform attempts have stalled, most recently in November 2025, when a compromise text failed to win unanimity in the Council amid disagreements over indexation, aviation and maritime fuel taxation and the treatment of natural gas and LNG (Council of the European Union 2025).

Statutory electricity and gas tax rates

The European Commission's legislative proposal from July 2026 on "future-proofing electricity bills", released alongside the *Electrification Action Plan,* would require national electricity tax rates to be no higher than those for gas (European Commission 2026b). More than half of all EU member states already tax one unit of household heating gas more heavily than a unit of electricity, or tax neither (Figure 1). For businesses, roughly two-thirds do so, or tax the two at similar rates (Figure 2). The rule would therefore require changes in only a subset of countries, mostly in Western Europe. Because several of these countries generate substantial revenues from electricity taxes, the requirement, if implemented, would have significant fiscal effects.

Only nine member states tax electricity more heavily than gas for a typical family household (Figure 1). In Poland and Greece, both rates are close to the EU minimum, so the gap is negligible in absolute terms. The remaining seven tax electricity at least 10 percent more heavily than gas: Belgium, the Netherlands, Germany, France, Spain, Italy and Finland. Bulgaria, Hungary and Slovakia exempt household electricity from tax entirely.[3] Overall, the level of taxation of one fuel does not predict that of the other.

However, these statutory rates often overstate the effective burden (see Box 1).[4] For example, in the Netherlands, a fixed annual tax credit partly offsets electricity tax costs, and in Italy, a basic consumption allowance brings the effective electricity tax below the statutory gas tax for households. The next section explains these policies in detail.

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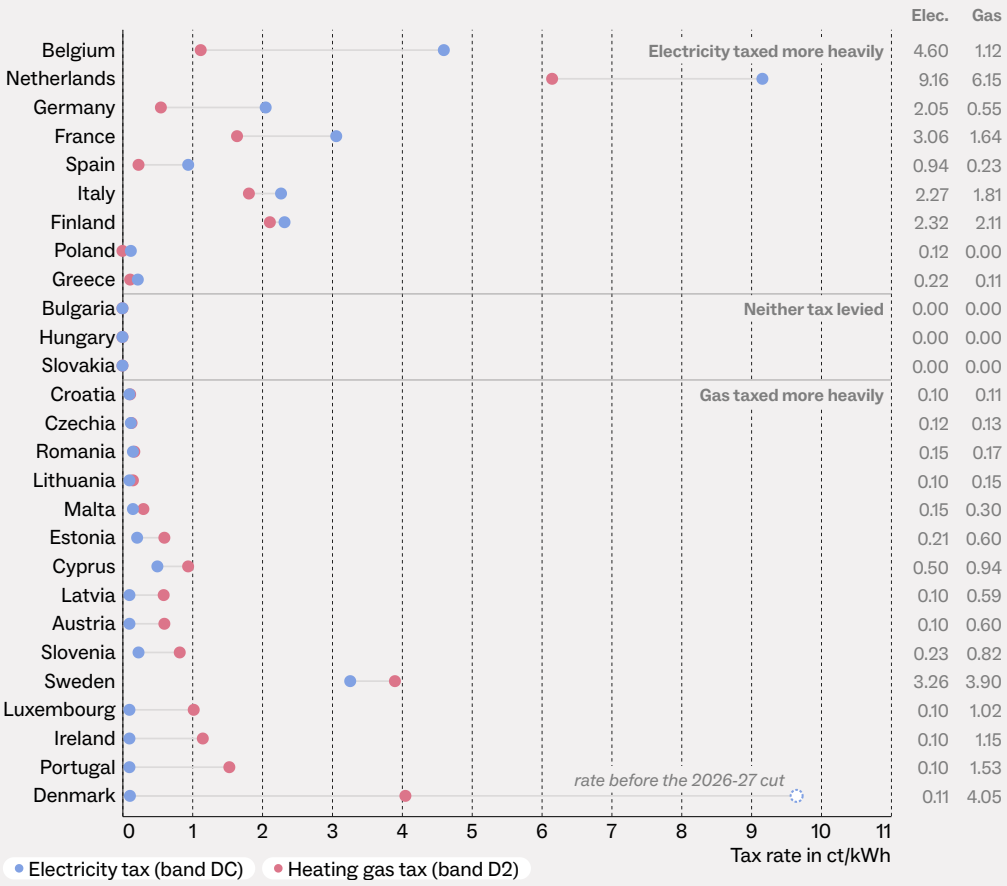
[3] Article 15(1)(h) of the Energy Taxation Directive (2003/96/EC) allows member states fully or partly exempt electricity, natural gas and solid fuels used by households from the minimum tax rates.

[4] Comparing rates per unit of energy also ignores conversion efficiency: e.g., heat pumps are typically three to five times more energy-efficient than gas boilers (IEA 2022). Measured per unit of useful heat, the tax on electric heating is therefore considerably lower than its statutory rate suggests.

Figure 1

Only nine EU member states tax household electricity more than gas

Tax on electricity and on natural gas for heating, in ct/kWh, 2026 (July 1).



Reading example: Belgium taxes household electricity about four times as heavily as gas, per unit of energy: 4.60 ct/kWh against 1.12. Denmark runs the other way, at 0.107 against 4.05. Bulgaria, Hungary and Slovakia tax neither. These are statutory rates, so they miss the reliefs that come afterwards. Spain taxes electricity at 5.11 percent ad valorem, the 0.941 shown is the effective rate TEDB's own conversion implies.

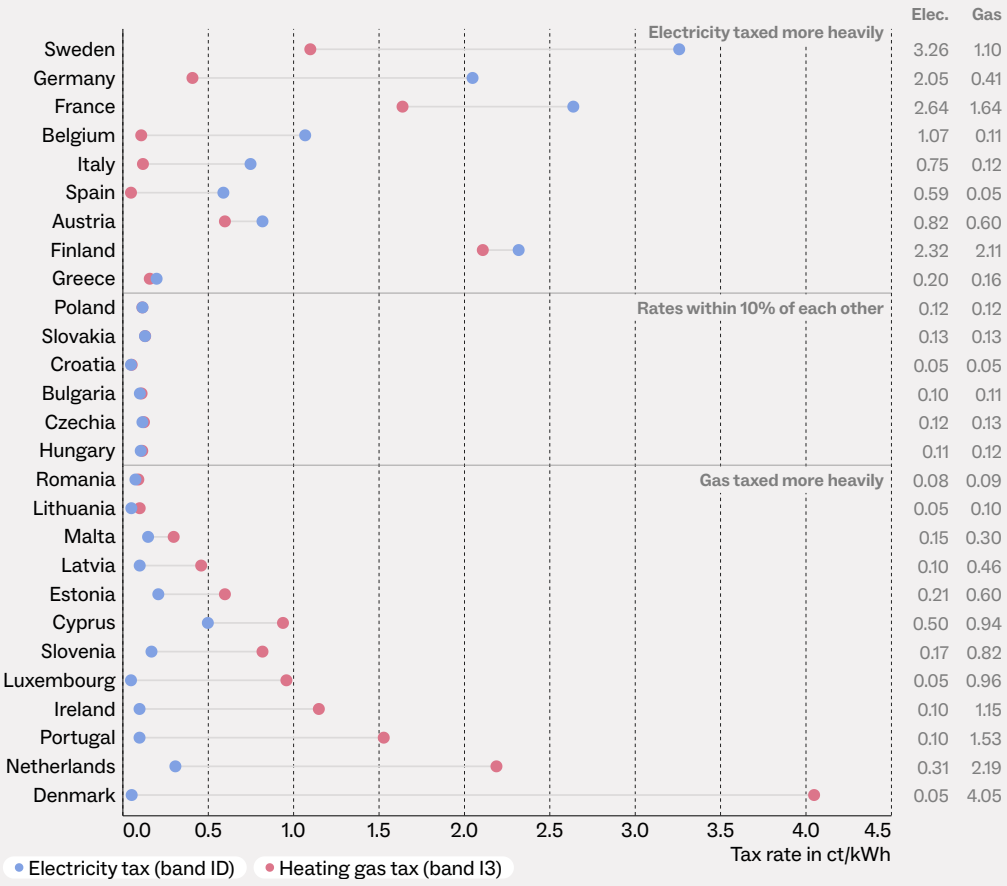
Source: Own compilation from the European Commission's Taxes in Europe Database (TEDB v5), corrected against national sources for Austria, Belgium, France, Croatia, Poland and Slovakia. For Greece, Hungary and Slovakia, the electricity rate is taken from TEDB's prose text.

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Figure 2

Only nine EU member states tax non-household electricity more than gas

Tax on non-household electricity and on natural gas for heating, in ct/kWh, 2026 (July 1).



Reading example: Sweden taxes non-household electricity about three times as heavily as gas, per unit of energy: 3.26 ct/kWh against 1.10. Denmark runs the other way, at 0.05 against 4.05. These are statutory rates and the figures ignore exemptions that eligible manufacturers, EU ETS firms and agreement-holders actually receive. Spain taxes electricity at 5.11 percent ad valorem, the 0.59 shown is the effective rate TEDB's own conversion implies.

Source: Own compilation from the European Commission's Taxes in Europe Database (TEDB v5), corrected against national sources for Austria, Belgium, France and Croatia.

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Non-household rates also vary sharply across countries and do not necessarily mirror household tax regimes. Poland, Slovakia, Croatia, Bulgaria, Czechia and Hungary all have electricity tax rates close to their gas tax rates (Figure 2). Nine member states tax electricity more heavily than gas for a mid-sized industrial business, with a difference exceeding ten percent: Sweden, Germany, France, Belgium, Italy, Spain, Austria, Finland and Greece. Figure 2 does not capture much of the relief available to eligible electricity-intensive firms, EU ETS installations and firms with negotiated agreements, whose effective rates may be even lower.

Box 3: Consumption bands

According to the European Parliament and Council of the European Union (2016), Eurostat uses the following bands to group consumers by annual electricity use. The examples below are illustrative, not official definitions.

Household consumption

- **DA** (< 1,000 kWh/yr): Low-consumption single household
- **DB** (1,000–2,499 kWh/yr): Single household
- **DC** (2,500–4,999 kWh/yr): Family household
- **DD** (5,000–14,999 kWh/yr): Household with electric heating, heat pump and/or electric vehicle
- **DE** (≥ 15,000 kWh/yr): Large household with electric heating and EV, multigenerational home or small business billed on a domestic tariff

Non-household consumption

- **IA** (< 0.02 GWh/yr): Very small business (shop, office, small restaurant, craft workshop)
- **IB** (0.02–0.5 GWh/yr): Small business (supermarket, hotel, small manufacturing workshop, office building)
- **IC** (0.5–2 GWh/yr): Small industrial or large commercial site (food processing, metalworking, logistics centre, shopping centre)
- **ID** (2–20 GWh/yr): Medium industrial site (automotive parts supplier, plastics processing, large hospital/university hospital, small data centre)
- **IE** (20–70 GWh/yr): Large industrial site (glass works, smaller cement plant, mid-size data centre)
- **IF** (70–150 GWh/yr): Very large industrial site (larger cement plant, mid-size chemical plant, steel/aluminium processing)
- **IG** (≥ 150 GWh/yr): Largest sites (primary aluminium smelter, integrated steel mill, chemical complex, large paper mill, hyperscale data centre)

For gas, the same regulation sets three household bands, from D1 (< 20 GJ/yr) to D3 (≥ 200 GJ/yr). It also sets six non-household bands, from I1 (< 1,000 GJ/yr) to I6 (≥ 4,000,000 GJ/yr).

Because statutory and effective rates differ for both household and non-household consumption, the subsequent sections focus on effective rates in a seven-country sample. The sample covers the main electricity tax regimes and mechanisms: France and Germany illustrate a substantial household tax share and eligibility-based relief for industrial consumers; Italy, consumption-based allowances and tiers; the Netherlands, tiers combined with a fixed tax credit; and Spain, an ad valorem tax. Denmark illustrates a design targeting electric heating, while Poland illustrates a low-tax regime with limited scope for further relief through tax changes. Together, the seven countries account for about 70 percent of EU electricity consumption.

Household tax design and effective rates

The sample countries use four different mechanisms to tax household electricity:

- **Flat rates. Germany**, France[5] and Poland have a flat rate for households. For households in these three countries, statutory and effective rates coincide.
- **Threshold relief.** Italy and Denmark link relief to consumption, although differently.
  - *Basic-consumption allowance.* Italy excludes the first 150 kWh of monthly consumption for eligible resident households from taxation. This exemption is gradually withdrawn once monthly consumption exceeds the threshold, so the marginal tax rate rises. Non-resident households and second homes are excluded. Our calculations annualise this monthly schedule.
  - *Electric-heating relief.* Danish households registered as primarily electrically heated benefit from a reduced rate on all consumption above an annual threshold of 4,000 kWh.[6] The effective tax rate therefore depends on both consumption and heating method. A general electricity tax cut for 2026–27 has lowered the standard rate to close to the EU minimum and thus temporarily removed the additional benefit of the heating provision.
- **Consumption tiers and a fixed tax credit.** In the Netherlands, marginal tax rates decline across consumption tiers. Eligible connections also receive a fixed annual tax credit per electricity connection, which the supplier deducts from the energy bill. Households receive money back only when their energy tax is lower than the credit. For example, for a typical single household, the credit more than offsets the gross tax on electricity. This design reduces the average bill without removing the marginal tax on additional use.
- **Ad valorem tax.** Spain applies tax to the value of electricity, not its quantity. The tax rate is fixed at 5.11 percent of the value of supply, so the tax paid per kilowatt-hour varies.

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5 The French rate has moved repeatedly: 3.37 ct/kWh from February to July 2025, 2.998 ct/kWh from August 2025, roughly 3.085 ct/kWh from February 2026 and 3.062 ct/kWh from August 2026.

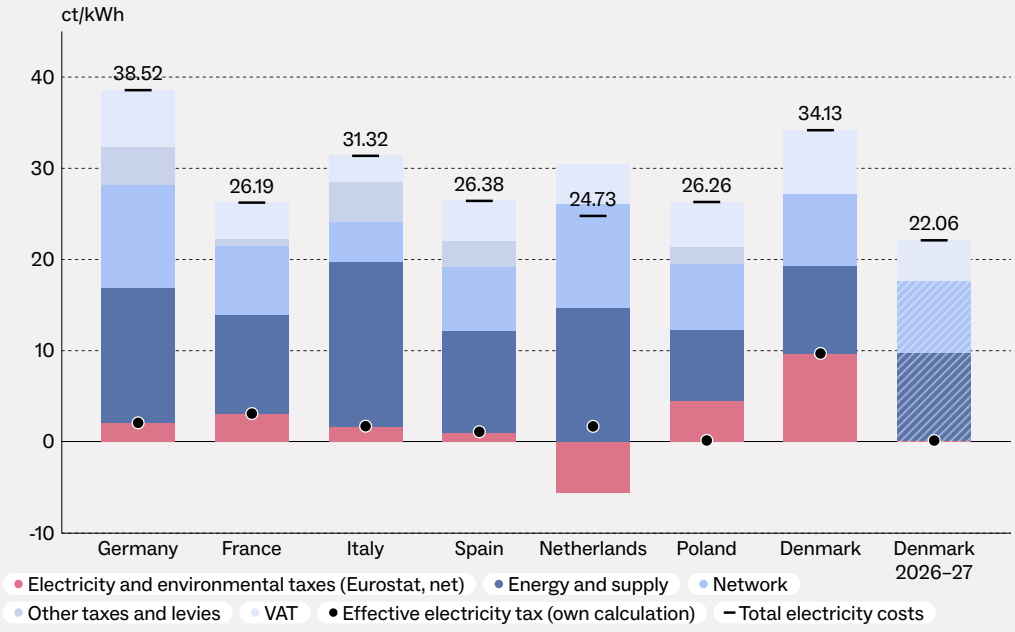
6 Applies only to homes registered in the Danish building register (BBR) with electricity as the primary heating source, typically electric heating or heat pumps.

Household tax shares in comparison

Figure 3

Household electricity prices by component

Eurostat price components and modelled effective electricity tax, DC consumption band (family household), ct/kWh, 2025.



Reading example: The dot is our modelled effective electricity tax; the pink segment is Eurostat's broader category of electricity and environmental taxes, and the two do not always coincide. Countries also report their cost components differently: Poland, for example, shows EU ETS costs separately as an environmental tax. The Dutch bar goes into the negative because its electricity and environmental taxes are negative (−5.64 ct/kWh) due to the tax credit. The hatched Denmark bar is the legislated 2026–27 schedule, not an observed 2025 price.

Sources: Eurostat (nrg_pc_204_c), effective electricity tax own calculation from national tax schedules

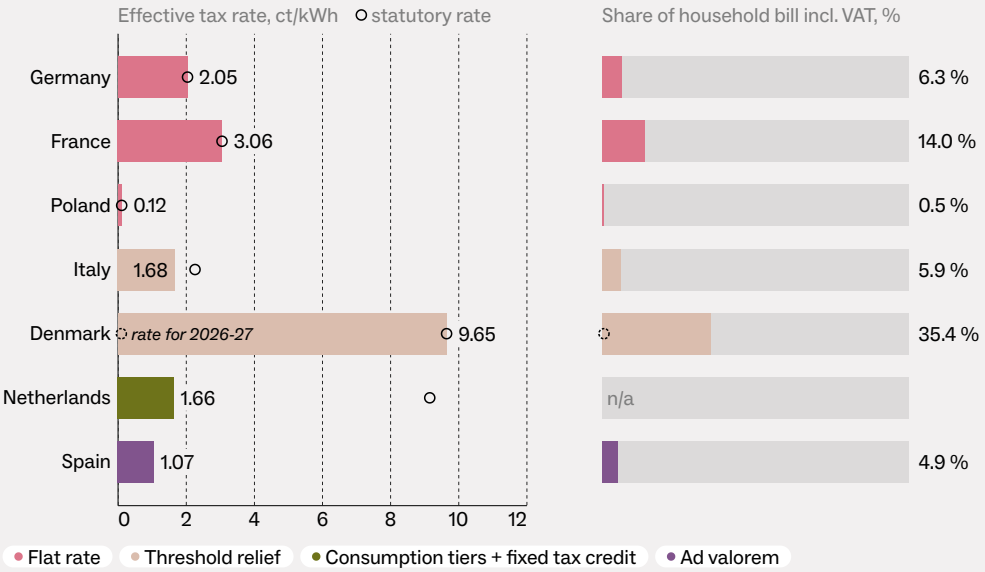
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Electricity tax is an important element of the effective household bill in France, Germany, Italy and Spain (Figures 3 and 4). The Netherlands' tax credit creates a negative effective rate for low consumption bands, and cutting the statutory rate while keeping the credit would lower the bill even further. In Denmark, a temporary tax cut for 2026 and 2027 has left little further room for reduction. Poland's household rate is already near the EU minimum.

Figure 4

Household electricity tax rates and their share of the bill

Effective household electricity tax at the DC consumption band (family household), 2026, by mechanism.



Reading example: The ring marks each country's statutory rate. Where it sits right of the bar, relief or a rebate cuts the effective rate: in the Netherlands, 9.16 ct/kWh falls to 1.66 ct/kWh. Denmark's dashed ring is the rate legislated for 2026-27 (0.11 ct/kWh). Spain has no formal statutory rate per kWh because its tax is ad valorem. On the right, the coloured part of each bar is the tax share of the household bill.

Sources: Eurostat (nrg_pc_204_c), statutory tax rates from national tax schedules, effective tax rates and bill share own calculation

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Industry tax design and effective rates

Electricity taxes for industrial consumers[7] depend heavily on both consumption and eligibility for national exemption schemes, which are in place in most countries. Whereas some countries grant deductions according to sector, activity or tax status, others reduce rates above consumption thresholds or apply low flat rates:

- **Eligibility-based relief.** The tax paid depends on sector, registration or electricity intensity.
  - Germany refunds most of the electricity tax to manufacturers and agricultural and forestry firms, subject to an annual deductible of €250. Large eligible consumers therefore effectively pay close to the EU minimum rate, while eligible firms whose refund would not exceed the €250 deductible receive nothing, and non-eligible businesses (most retailers and service businesses) pay the full rate.

[7] This paper uses Eurostat's nrg_pc_205, which reports three cumulative price levels, and decomposes industrial prices into three mutually exclusive layers derived from them. Refunds are paid back ex post and therefore appear in the recoverable layer, not in the tax wedge, so the statutory tax rate says little about what a firm actually pays.

- Denmark offers refunds to VAT-registered firms so that most business use bears very little tax.
- France applies standard rates that vary with connection capacity (up to 36 kVA, 36–250 kVA, above 250 kVA) and reduced rates for eligible electricity-intensive activities. The revised 2026 system has three tiers depending on the tax liability at the standard rate relative to gross value added, and an additional exemption for firms exposed to international competition.
- Spain uses the same 5.11 percent *ad valorem* structure for businesses as for households. Eligible activities receive an 85 percent reduction of the taxable base, subject to minimum charges. The lower effective rate thus results from a smaller taxable base rather than a lower rate.

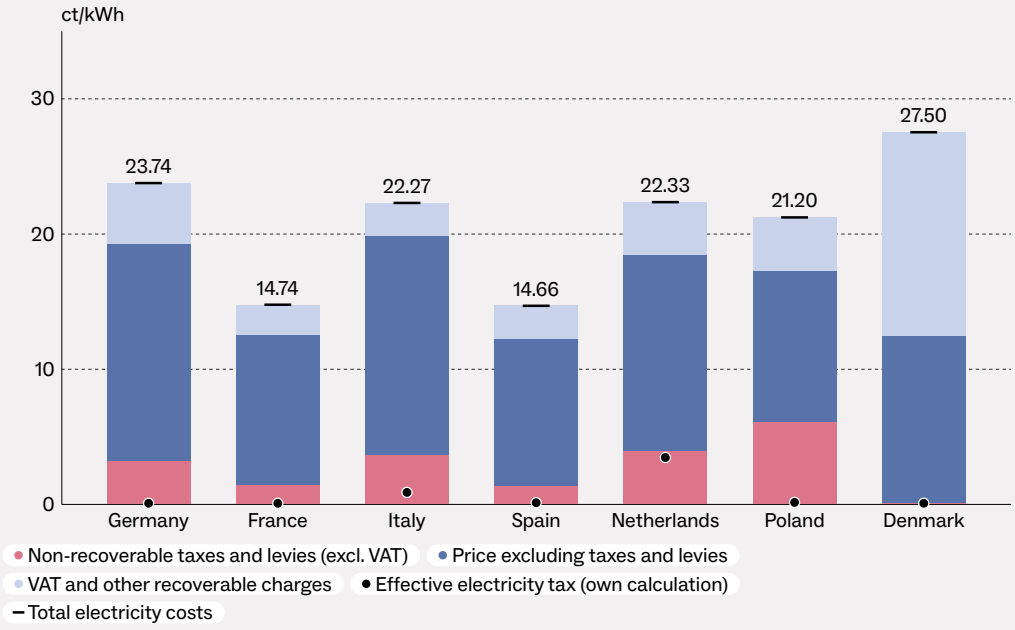
- **Consumption tiers.** The Netherlands applies a common tiered schedule with decreasing marginal rates for both households and businesses, so the effective rate falls as consumption rises. Italy also uses consumption-based business bands: above 200 MWh a month, a fixed monthly charge covers all further consumption. This sets the marginal rate to zero beyond that point, so the effective rate keeps falling with consumption.
- **Low flat rates.** Poland has low standard business rates for all consumption bands. Electricity-intensive Polish firms can also apply for a refund after the tax year. This refund is not reflected in the price data.

Non-household tax shares in comparison

Figure 5

Non-household electricity prices by component

Eurostat price components and modelled effective electricity tax, ID consumption band with exemptions applied for eligible industries, ct/kWh, 2025.



Reading example: Denmark has the highest total price (27.50 ct/kWh) but one of the lowest effective electricity taxes (0.05 ct/kWh). Most of its total is VAT and other recoverable charges (15.04 ct/kWh), not tax. Countries also report their cost components differently: Poland, for example, shows EU ETS costs separately as an environmental tax.

Sources: Eurostat (nrg_pc_205), effective electricity tax own calculation from national tax schedules

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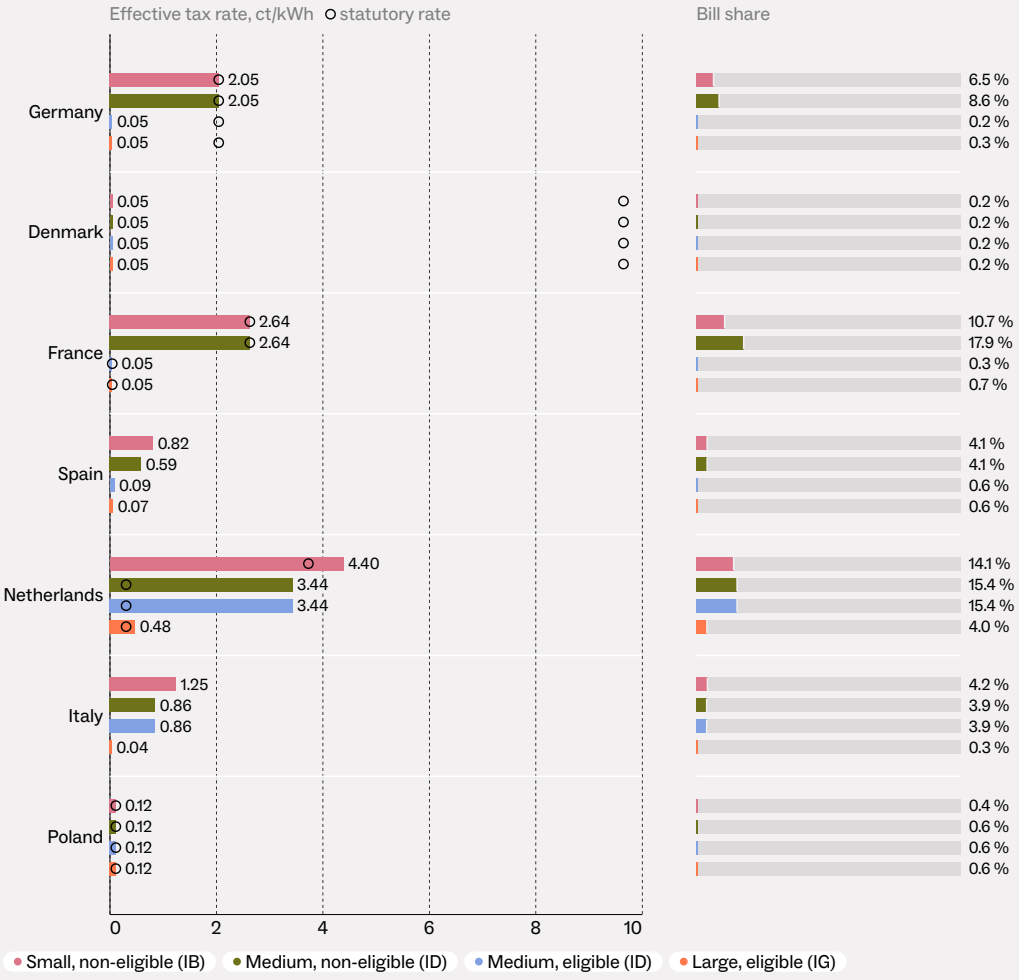
Smaller and non-eligible businesses[8] usually carry the highest relative burden, while large consumers that are eligible for exemptions pay considerably less. In Germany, for instance, the €250 annual deductible reduces or eliminates the refund for smaller eligible firms, while larger firms effectively pay close to the EU minimum (Figure 5). Across the sample, rates for smaller non-eligible businesses range from 0.05 to 4.58 ct/kWh, and those for large eligible consumers from 0.04 to 0.50 ct/kWh (Figure 6). Rates for large eligible consumers cluster far more tightly near the minimum than those for small businesses: the spread between highest and lowest rate narrows from roughly ninety-fold for small businesses to about twelve-fold for large industrial consumers.

8 "Non-eligible" is used to describe businesses or activities which are not eligible for electricity tax exemptions.

Figure 6

Non-household electricity tax rates and their share of the bill

Industrial electricity tax across four consumption and eligibility groups, 2026.



Reading example: The ring marks each group's statutory rate; where it sits right of the bar, relief lowers the effective rate. In Denmark, a statutory 9.65 ct/kWh falls to 0.05 ct/kWh for all four groups. In France, a medium non-eligible business pays 2.64 ct/kWh, a eligible one 0.05 ct/kWh. On the right, the coloured part of each bar is the tax share of the industrial bill.

Sources: Eurostat (nrg_pc_205), statutory tax rates from national tax schedules, effective tax rates and bill share own calculation

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3. Electrification effects of electricity tax cuts

Chapter 2 showed that statutory tax rates alone say little about how much electricity tax cuts would reduce costs and, therefore, promote electrification. Because electricity-intensive industry already pays close to the EU minimum thanks to rebates and refunds, a cut would mainly reach households and smaller businesses in most sample countries. This chapter shows what a cut would change for these different consumer groups.

To measure the electrification potential of electricity tax cuts, the analysis examines how far a tax cut moves electricity-to-gas price ratios. We consider two scenarios: a *parity scenario*, in line with the Commission's proposal that electricity may be taxed no higher than gas, and a *minimum scenario*, in which the electricity tax is cut to the EU minimum rates set by the ETD (0.1 ct/kWh for non-business use and 0.05 ct/kWh for business use). In both scenarios, gas taxes and prices are held constant, and existing reduced rates and exemptions remain unchanged.

How electricity taxation affects electrification

Electricity tax cuts affect electrification – that is, the switch from a fossil fuel-powered appliance to an electric one – across different uses. The effect of reductions is easiest to identify for heating, both in homes and in industrial processes.[9] Residential heat pumps compete directly with gas boilers, and the cost comparison is relatively straightforward. A household that has to replace a boiler pays for the new appliance and its installation, which typically cost more for a heat pump, as well as for the energy to run it. An electricity tax cut only affects this running cost. Its effect can be measured in two ways: by its share in an appliance's total cost of ownership, or by its effect on the electricity-to-gas price ratio. While the cost share shows how much the tax weighs in the overall decision, the ratio isolates its effect on running costs.

The electricity tax is a small share of a heat pump's **total cost of ownership**. In Germany, the electricity tax, including the VAT charged on it, amounts to around 6 percent of the total household electricity price (Figure 4). If electricity makes up 50 percent of a heat pump's total cost of ownership before capital subsidies and 65 percent after, the tax accounts for only 3 to 4 percent of its cost of ownership (Figure 7).[10] However, the tax share may grow: heat pump investment costs are particularly high in Germany (Miara & Rosenow 2026), and recent changes to subsidy schemes aim to bring them down. As investment costs fall, operating costs, including the taxes levied on them, weigh more heavily. To invest in long-lived equipment, households and firms also need confidence in a lasting price advantage, so permanent price reductions are more likely to trigger such investments than temporary ones.

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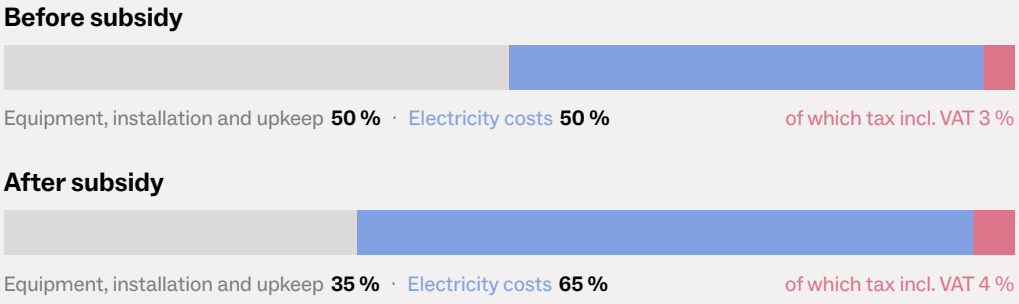
9 In the case of electric vehicles, the relevant comparison is with oil (petrol or diesel). Adoption of EVs is about four to six times less sensitive to electricity prices than to road fuel prices, in part also because the cost comparison is less clear than in the case of heating appliances (Bushnell et al. 2022).

10 Own calculation, undiscounted, over an 18-year lifetime. Assumptions: Annual electricity use of 5,000 kWh at €0.35/kWh, maintenance of €150 per year and equipment and installation costs of €30,000, which a 50 percent subsidy halves to €15,000 (Schlemminger et al. 2022; Harrison 2025). Electricity tax incl. VAT at 2.32 ct/kWh.

Figure 7

The electricity tax is 3 to 4 percent of what it costs to own a heat pump in Germany

Shares of the 18-year cost of owning a heat pump.



Assumptions: annual electricity use of 5,000 kWh at €0.35/kWh, maintenance of €150 per year, and equipment and installation costs of €30,000, which a 50 percent subsidy halves to €15,000; 18-year lifetime, undiscounted (cf. Schlemminger et al. 2022; Harrison 2025). Electricity tax incl. VAT at 2.32 ct/kWh. The subsidy pays part of the equipment, so it raises the electricity share rather than lowering it. Each bar is a separate 100 percent total; cost shares are rounded.

Reading example: Before any subsidy, equipment, installation and upkeep make up about half of what a German household pays to own a heat pump over eighteen years, and electricity the other half. The tax inside that electricity bill is 3 percent of the whole. A subsidy covering half the investment raises the electricity share to about 65 percent and the tax share to 4 percent, though the euros paid in tax do not change.

Source: Own calculations

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The **electricity-to-gas price ratio** compares the price of one kilowatt-hour of electricity with the price of one kilowatt-hour of gas. Because heat pumps produce several units of heat per unit of electricity, switching can pay off even at ratios well above one. In its *Electrification Action Plan*, the European Commission sets target ratios of 2.5 for residential and 2.0 for industrial use by 2030. The targets, best used as an indicator for residential and industrial heat generation, are simplifications used to estimate where switching from a gas appliance becomes economically viable, not universal break-even points.

Industrial heat technologies differ far more from one another than domestic heat pumps do. A household heat pump is an established technology with a standardised efficiency advantage. Industry lacks this uniformity: different technology pathways have different efficiencies and break-even thresholds. Industrial heat pumps typically need a coefficient of performance of 2.5 to 4.0 to break even, while state-of-the-art technologies reach about 6.0 (Padullés et al. 2025; Elwardany et al. 2026). Given such varied break-even thresholds, the Commission's target ratio of 2.0 is primarily a political benchmark.

The ratio calculations in this chapter are based on 2025 retail prices and measure the impact of an electricity tax change against an otherwise unchanged baseline. Figure 8 shows the 2025 price ratios for households in the country sample.

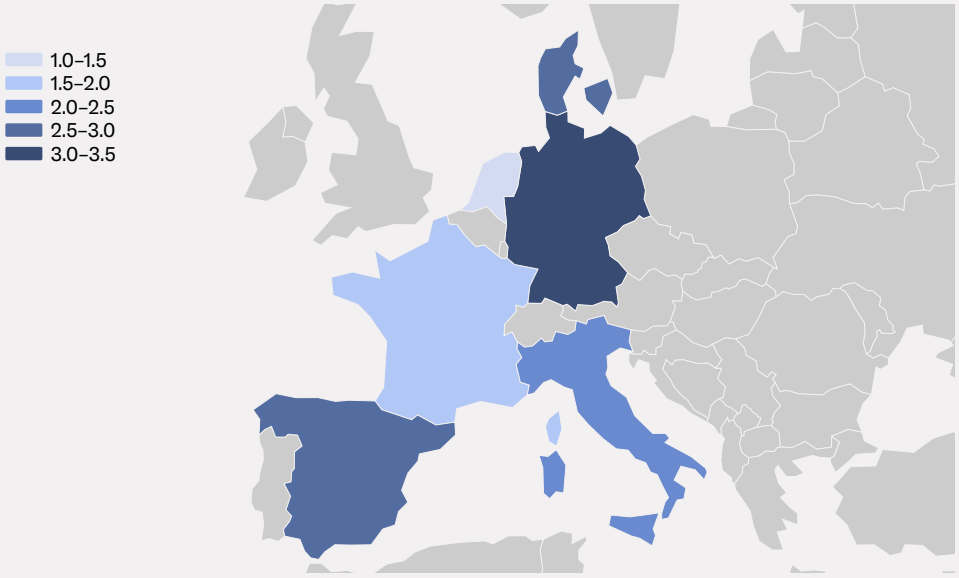
These ratios are a historical reference point for the tax counterfactuals, not a snapshot of current prices. Gas prices have risen since, so current ratios are likely lower and the ratios shown probably overstate today's gap to the target. They also likely overstate

the price ratio for households because our analysis uses Eurostat data on total costs by consumption band. The corresponding gas band covers a wide range, from about 5,500 to 55,000 kWh per year, and average household consumption is at the lower end of this range. Band averages therefore spread fixed gas costs over more consumption than a typical household has. Where fixed costs are high, as in France, actual gas prices are higher and ratios before and after the cut lower than shown.

Figure 8

The household electricity to gas price ratio

Ratio of the total household electricity price (band DC) to the total household gas price (band D2) across the seven countries, 2025.



Reading example: Germany has the highest household electricity to gas price ratio of the seven, at 3.16, and the Netherlands the lowest, at 1.49. The value for Poland is not shown because Eurostat treats its household gas components as confidential.

Source: Eurostat (nrg_pc_204_c and nrg_pc_202_c), household electricity and gas prices, annual, all taxes included, own calculation

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Country deep dives

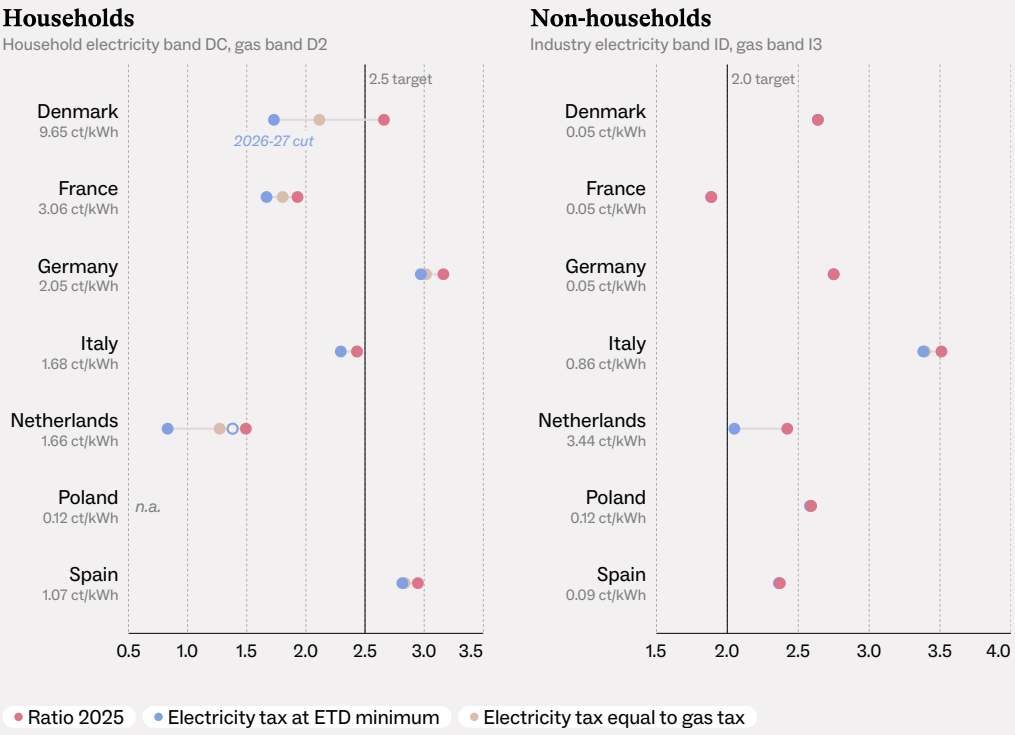
Both electricity tax cut scenarios – to the EU minimum, or to national gas tax levels – move household price ratios far more than industrial ones in most countries (Figure 9).

The calculations assume that the tax reduction is fully passed through into consumer bills. As a separately identified duty, the electricity tax is relatively easy to track, but this does not guarantee an immediate pass-through. Whether this happens depends on regulation and contract terms: in France, the tax is a statutory line item and a rate change should take effect on its legal date, whereas for three-quarters of German household electricity customers, who are on individual rather than default contracts, suppliers are not obliged to pass on tax cuts, so pass-through is left to the suppliers' discretion (Bundesnetzagentur 2025).

Figure 9

How electricity tax cuts change electricity-to-gas ratios

Ratio of the electricity to the gas price in 2025, with the electricity tax cut to the ETD minimum, and with it set equal to the gas tax. Grey figure under each country: current effective electricity tax. Non-household exemptions kept.



Reading example: Households: Germany's ratio is 3.16 today, 2.97 at the ETD minimum and 3.02 under equal tax rates. Non-households: in Italy the ratio falls from 3.51 today to 3.38 at the ETD minimum, or to 3.39 under equal tax rates. For the Netherlands, the outlined point assumes the household tax credit is abolished; the solid points keep it.

Sources: Eurostat (nrg_pc_204_c, nrg_pc_202_c, nrg_pc_205 and nrg_pc_203), tax rates from national schedules and Council Directive 2003/96/EC Annex I Table C, own calculation

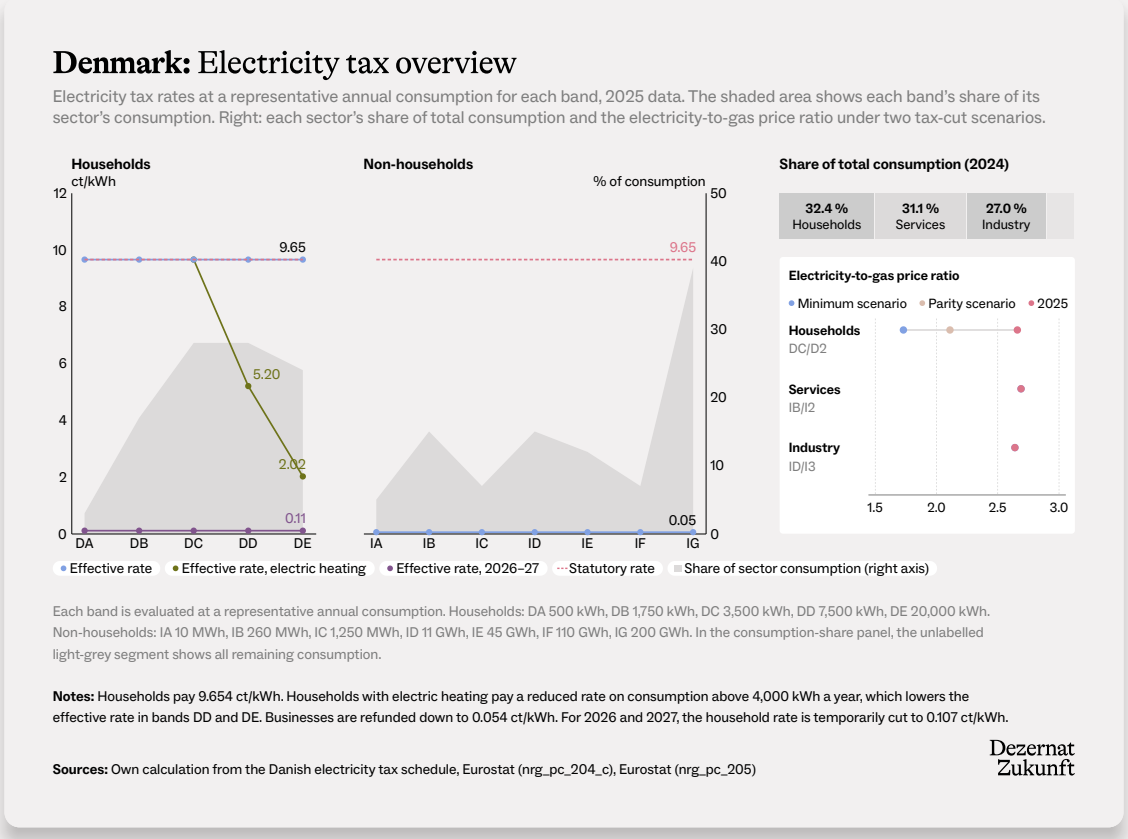
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Denmark

In Denmark, the electricity tax rate for all consumers was lowered to close to the EU minimum for 2026 and 2027. The government presented the measure explicitly as household relief and has confirmed that it will expire at the end of 2027, as the government is prioritising a planned VAT cut on food (Ritzau 2026). The cut also lowered inflation by almost 1 percentage point (Ritzau 2026). As the rate is indexed to inflation, it will be higher in nominal terms when it returns in 2028.

Once the temporary cut expires, the Commission's proposed parity requirement would affect Denmark again: at 2025 prices, the household electricity-to-gas price ratio would return to 2.7 and would decrease to 2.1 in the parity scenario and to 1.7 in the minimum scenario. That scenario amounts to making the temporary cut permanent. The relatively high regular household rate of about 9.7 ct/kWh (excluding VAT) explains the size of these shifts.

Figure 10



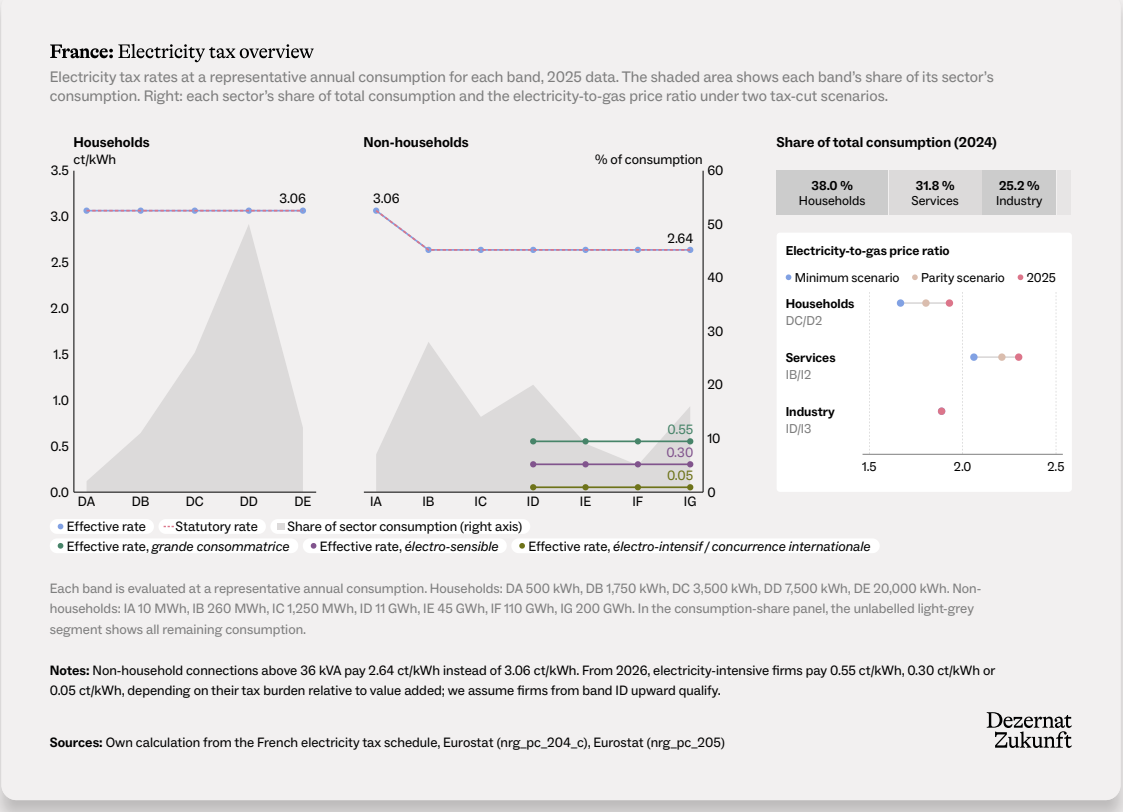
Electric heating already receives a reduced rate that will become relevant again once the temporary reduction expires: households registered as primarily electrically heated pay a reduced rate on all consumption above 4,000 kWh a year. This lowers the effective tax rate for households that use heat pumps or other electric heating. The reduced rate is based on Article 5 of the ETD (Box 2). Under the temporary cut, households without registered electric heating benefit on all of their consumption, while electrically heated households benefit only on their first 4,000 kWh a year.

Separately, electric vehicle charging also receives a tax refund, channelled through charging operators – even for household charging: as long as charging points are operated by a company at its own risk and expense, including those installed at homes, the company is treated as the consumer of the electricity and can reclaim the electricity tax down to the EU minimum for business use. This relief, which requires households to pay charging companies €8–12 a month for handling the refund, is set to expire in 2030.

A renewed cut after 2027 would forgo part of the roughly €1.1 billion the tax raised in 2025, before the temporary cut (Skatte- og Vækstministeriet 2026), and mainly benefit households and non-VAT-registered consumers, as VAT-registered firms already reclaim most of the tax. It would add little for households already heating electrically above 4,000 kWh a year, as that consumption is already taxed at a reduced rate. Still, the 4,000-kWh threshold matters for switching incentives. Most households heating with gas or oil currently use less than 4,000 kWh of electricity a year. Once the regular tax level is reinstated, the part of their heat pump's consumption that falls below the threshold would be taxed at the full rate. Lowering the threshold would thus further incentivise electrification of heating while preserving most tax revenues. Furthermore, heat pumps added as supplementary heat sources are not eligible for the reduced rate at all.

France

Figure 11



The electricity tax in France includes a surcharge used to balance prices between mainland France and non-interconnected territories (ZNI). Part of the tax revenue is also earmarked for indexed municipal and regional charges, which are redistributed to subnational budgets. In 2025, revenue from the electricity excise tax was €5.7 billion, and a further €2.4 billion was raised through the equalisation and regional charges (Gouvernement de la République française 2025; Direction générale des finances publiques 2026). To reflect the current regime, our status-quo calculations below use the full tax, including the additional charges levied through the electricity tax system. If a cut left these charges in place, the effect would be correspondingly smaller.

Lowering the electricity tax would provide substantial relief for households. A cut to the minimum would lower household electricity costs by about 14 percent, including VAT, and the electricity-to-gas price ratio would fall from 1.9 to 1.7 in the minimum scenario and to 1.8 in the parity scenario. Because the initial ratio is already below the 2.5 target, the additional electrification effect is likely smaller than in other sample countries. The main short-run benefit would be lower costs.

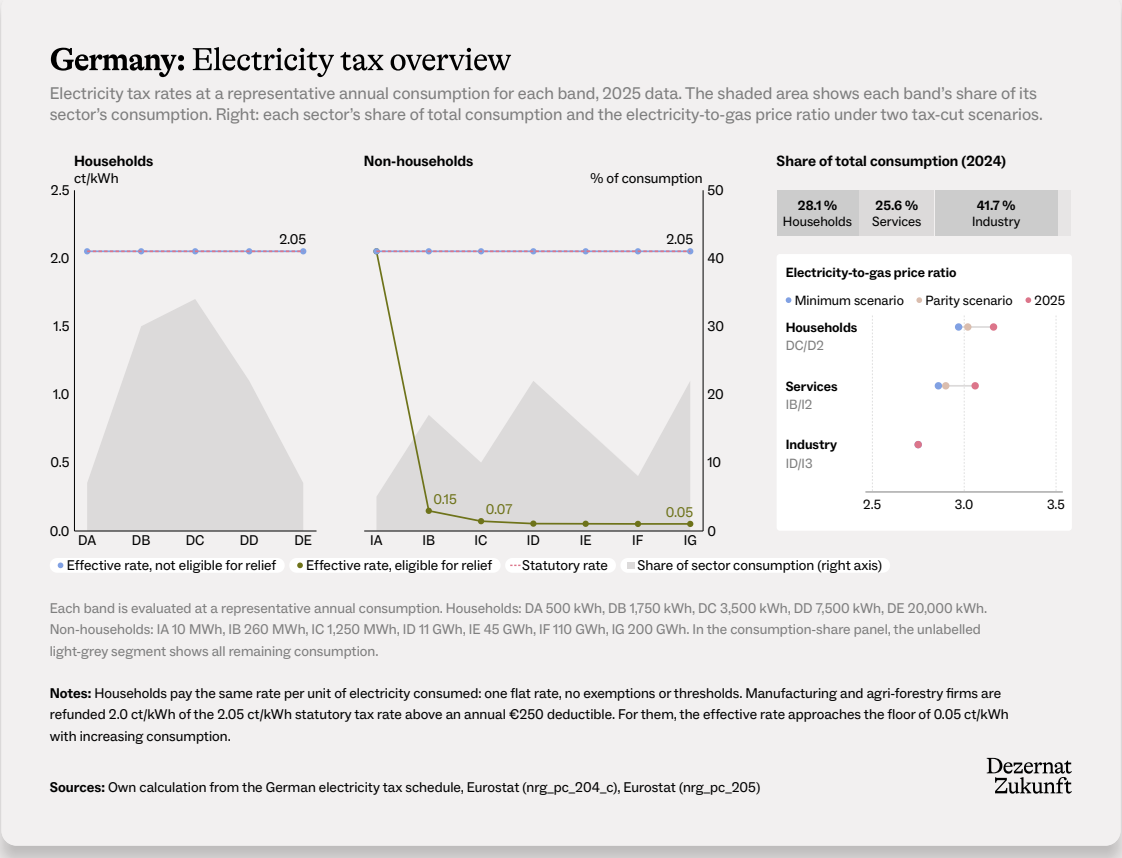
In the industry sector, electricity-intensive firms eligible for reduced rates already pay rates at or near the EU minimum, leaving little or no room for further relief. Their ratio of around 1.9 would barely change. For non-eligible services, the ratio would fall from about 2.3 to about 2.1 in the minimum scenario and to about 2.2 in the parity scenario.

Therefore, a cut would mainly benefit households and currently non-eligible businesses such as services and industrial companies with low electricity intensity. The fiscal consequences are the biggest implementation challenge: a permanent tax reduction would

require a financing decision, which would be difficult within France's fiscal framework, given its agreed net-expenditure path and its excessive deficit procedure (Darvas et al. 2024). Repeated changes to household rates since early 2025 could also undermine the credibility of a lasting tax cut and thereby weaken the investment signal.

Germany

Figure 12



Households and services make up more than half of national electricity consumption in Germany, in roughly equal parts, and both pay the full electricity tax rate of 2.05 ct/kWh. The estimated household tax on electricity, including VAT, is 6.3 percent of the household electricity price. A reduction to the minimum would decrease the electricity-to-gas price ratio from roughly 3.2 to 3.0, thus closing more than a quarter of the current gap to the Commission's target ratio of 2.5.

At present, relief measures are limited to eligible sectors. Manufacturing, agricultural and forestry firms can recover 2.0 ct/kWh of the standard rate of 2.05 ct/kWh, subject to an annual deductible of €250. As a result, large eligible users already benefit from an effective rate close to the minimum of 0.05 ct/kWh, while small non-household consumers receive no relief.[11]

For services, the ratio would decrease from about 3.1 to 2.9 if electricity taxes are cut to the EU minimum. The parity scenario would lead to practically the same results because

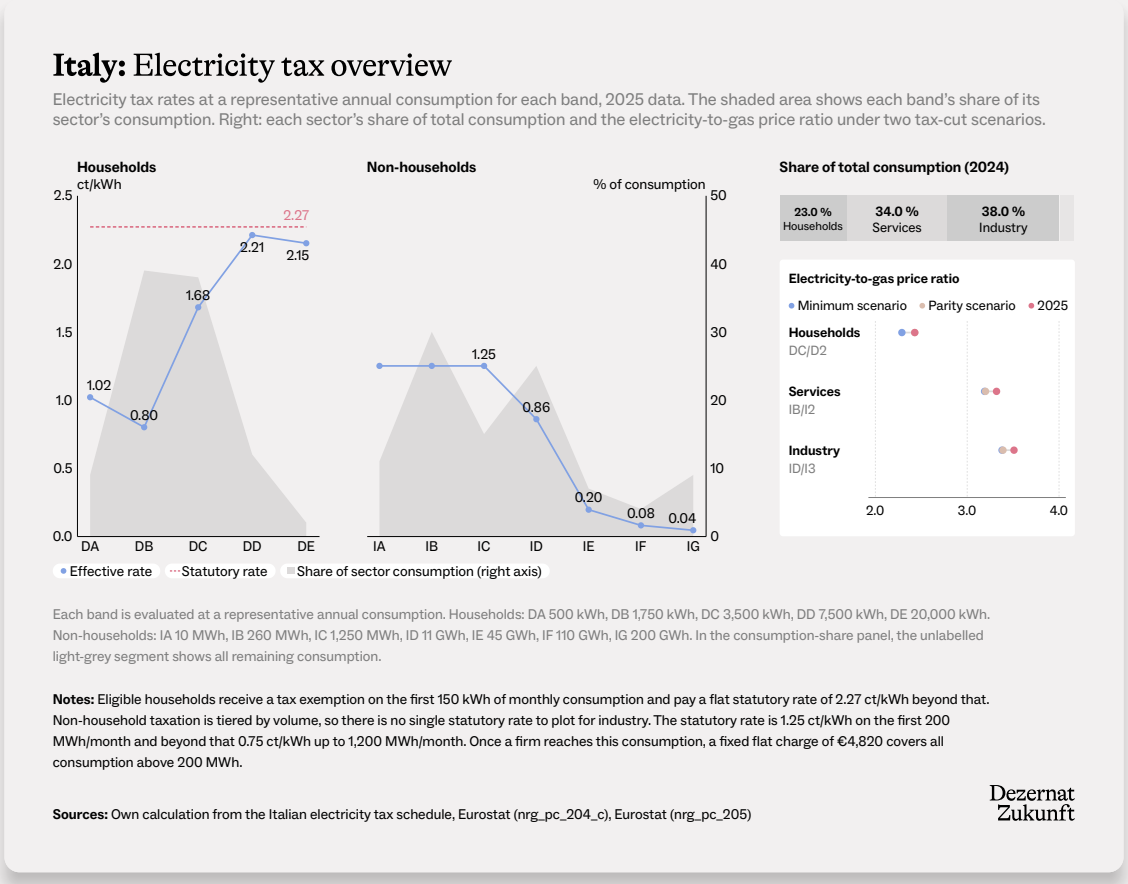
[11] Germany's governing parties have repeatedly announced their intention to lower the electricity tax for all consumers, but so far this has not happened because of limited fiscal space.

the gas tax is barely above the electricity tax minimum. Although the ratio would remain above the target, the decrease could still influence investment decisions for heating systems in the services sector.

In 2025, electricity tax revenue was €5.9 billion; for 2027, the government expects around €5.1 billion (Bundesministerium der Finanzen 2026). Germany is not subject to an excessive deficit procedure, but this does not necessarily mean it has fiscal headroom for a tax cut. The borrowing room under the German debt brake is largely earmarked and cannot directly fund a recurring tax cut. In an already stretched budget, a permanent cut would compete with existing commitments, including programmes to lower electricity prices, such as the subsidy towards grid fees and the renewable energy surcharge that has been transferred into the central budget.

Italy

Figure 13



Italy's electricity tax rate schedule differentiates mainly by consumption: an exempt base consumption for households and monthly tier rates for industrial use. In the minimum scenario, in which rates are lowered to the EU minimum, the electricity-to-gas price ratio for households in Italy would decrease from approximately 2.4 to 2.3, both below the 2.5 target. Equalising the two tax rates (parity scenario) would have no further effect, since the effective Italian household tax for gas is already roughly the same as that for electricity.

Italy's allowance scheme for households exempts basic consumption from the electricity tax, which limits the impact of a cut on low-consuming households who already pay little or no electricity tax. Effective rates are accordingly low: approximately 0.80 ct/kWh for a single household and 1.68 ct/kWh for a family household. The existing tax design therefore tilts the absolute benefit of a cut further towards higher-consuming households. The allowance also works against electrification, as only households with a connection of up to 3 kW qualify, so households that raise their meter's power rating to install a heat pump lose the exemption. At the same time, a separate VAT discount on the first 480 m^3 of gas a year favours gas for hot water and cooking in southern Italy, where these uses could be fully electrified.

The ratio for services would decrease from about 3.3 to 3.2, while that for eligible industry would decrease from 3.5 to 3.4 in the minimum scenario. The parity scenario would result in comparable numbers. These are still the highest ratios for industry and, together with Poland, for services among the member states analysed. As the electricity tax accounts for only around 4 percent of firms' total electricity costs in Italy (including VAT), reducing it would make only a modest difference to the ratio, although many firms would benefit from it.

Therefore, a cut would benefit all consumer groups but would likely give electrification only a small push. The household price ratio is already below the target, and the tax is too small a share of firms' costs to shift the high electricity-to-gas price ratio much. A cut would also forgo up to the €2.7 billion the electricity tax raised in 2025 (Ministero dell'Economia e delle Finanze 2026), which is hard to finance while Italy is under an excessive deficit procedure.

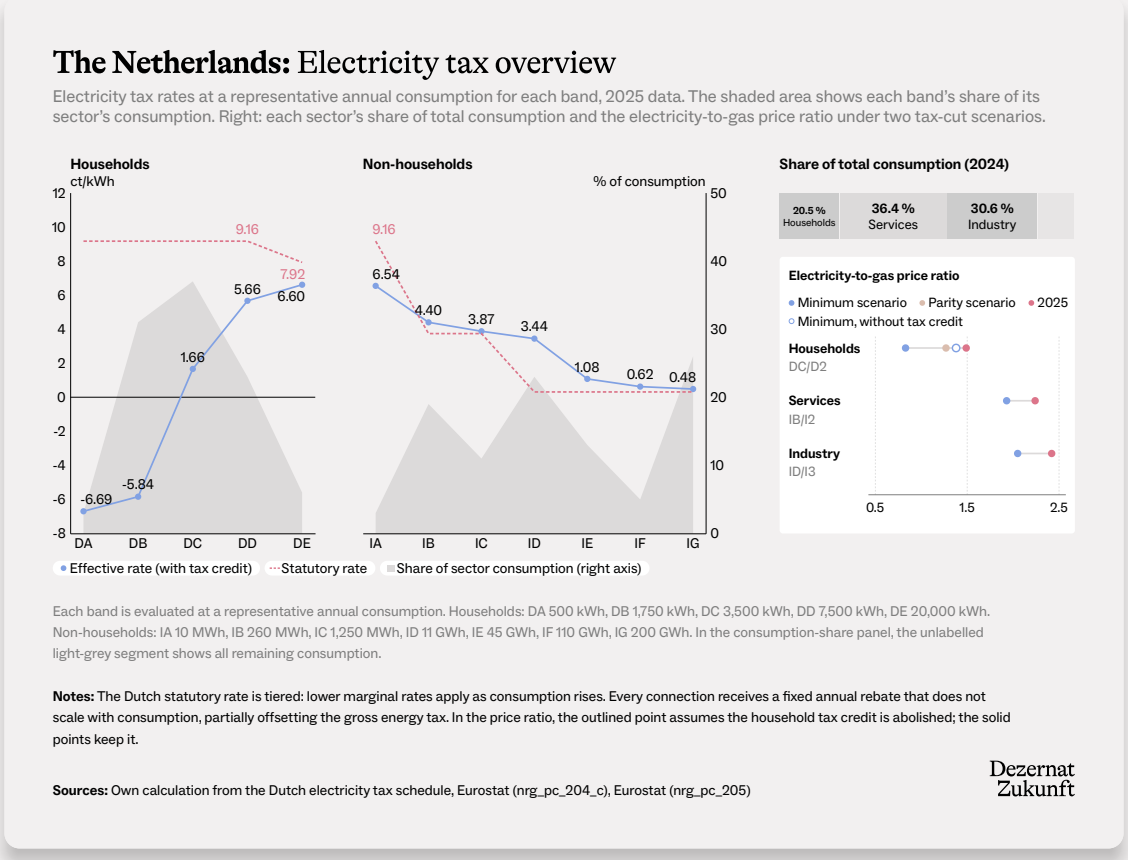
To incentivise electrification through prices, the more important levers are surcharges and levies that fall disproportionately on electricity rather than gas. In Italy, taxes and levies are around four times higher on electricity than on gas for households and around twenty times higher for businesses, largely because the costs of past renewable support are charged to electricity bills alone (ECCO 2026). Furthermore, EU ETS carbon prices are reflected in electricity prices but, until the EU ETS-2 is introduced, not in the gas prices paid by households and other users outside the ETS.

Netherlands

The Netherlands applies a statutory electricity tax schedule, partly offset by a fixed annual tax credit. Unlike the base allowance in Italy, all consumption remains subject to the tax rate. One exception was electric vehicle charging: with two unanimous authorisations of the Council under Article 19 of the ETD, the Netherlands applied a reduced rate to electricity supplied to charging stations until the end of 2024. Since 2025, the regular rate has applied again.

The tax credit exceeds gross electricity tax costs for a typical single household, leading to a negative effective rate, that is, a net payment to the household. Reducing the tax to the minimum while retaining the tax credit could theoretically reduce that household's ratio from around 1.5 to 0.8, but maintaining the credit after such a cut is unlikely: the tax credit of around €4.6 billion already roughly halves the €10.0 billion that the energy tax on electricity and gas raised in 2025 (Ministerie van Klimaat en Groene Groei 2025). Cutting the statutory schedule while preserving the fixed credit would reduce revenues further, which makes this scenario fiscally very difficult.

Figure 14



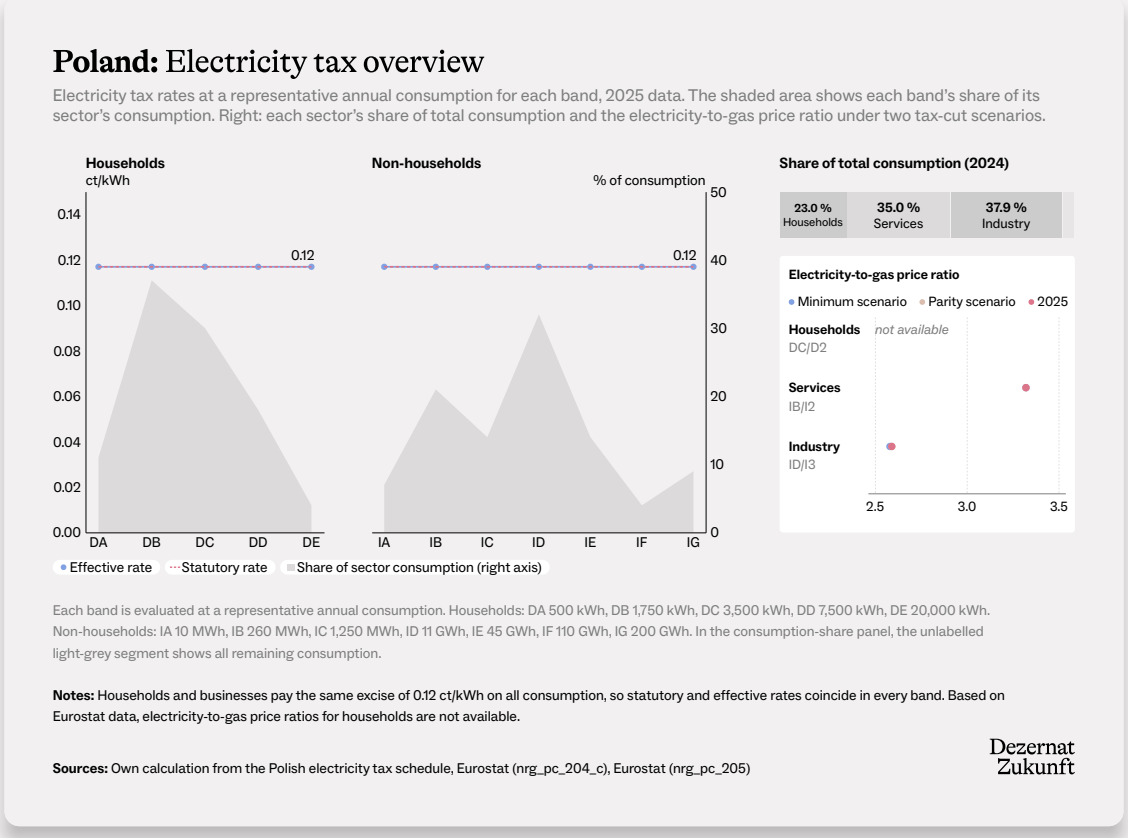
If the tax credit were abolished along with a cut to the EU minimum, the ratio would only fall to about 1.4. Setting the electricity tax equal to the gas tax while keeping the credit would lower it to 1.3.

Businesses overall account for two-thirds of national electricity consumption. The ratio for services would decrease from 2.2 to 1.9 in the minimum scenario. The industrial ratio would fall from 2.4 to 2.1. Although marginal rates fall steeply with consumption, mid-sized firms still pay the high lower-tier rates on most of their electricity, so their effective rate of about 3.4 ct/kWh is far above the EU minimum. Only the largest consumers pay little tax.

In the Netherlands, the benefits and incentives of a cut would therefore largely depend on whether the tax credit stays in place. A cut to the minimum would lower the ratio by about 0.3 points for services and 0.4 points for mid-sized industry, but would do little for the largest industrial consumers. Fiscally, any cut would shrink the net revenue of roughly €5.4 billion from energy taxes, and the shortfall would have to be covered from general revenue.

Poland

Figure 15



Poland's electricity tax is a flat rate that is already close to both the EU minimum and the national gas tax. Furthermore, electricity-intensive firms can apply for a partial refund after the tax year if their electricity costs exceed 3 percent of the value of their output. A cut in the electricity tax would therefore have little effect. Policymakers seeking to lower electricity prices through tax-related reforms would have to look to other taxes, such as VAT. At 23 percent, VAT amounts to 5 ct/kWh, and Poland cut it to 5 percent in 2022 to provide immediate relief during the energy crisis.

Spain

Spain, uniquely among the countries analysed, does not tax electricity by volume (per kWh) but by value, at a fixed rate of 5.11 percent of the electricity bill. As a result, the tax burden moves with the electricity price and is highest per kilowatt-hour for small consumers, because the bill's fixed charges, which are taxed too, are spread over fewer units of electricity.

Spain temporarily reduced the electricity tax from 2021 and again in 2026 in response to energy crises. In addition, a "Social Electricity Bonus" *(Bono Social Eléctrico)* provides a discount of at least 35 percent on the electricity bill for vulnerable consumers (Ministerio para la Transición Ecológica y el Reto Demográfico 2026).

Cutting the tax to the EU minimum would lower the household electricity-to-gas price ratio from about 3.0 to 2.8. As gas is taxed lightly, the parity scenario, in which electricity tax rates are equalised with gas tax rates, would lead to almost the same result.

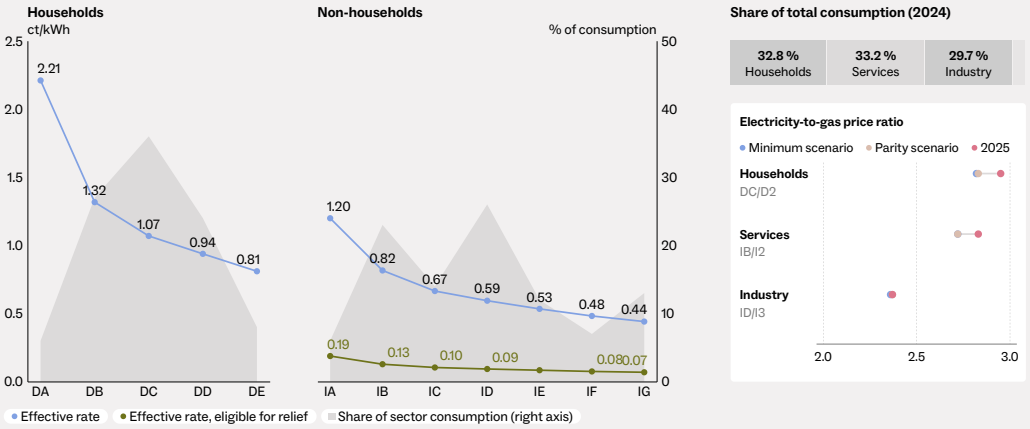
In the industrial sector, electricity-intensive uses receive an 85 percent reduction in the taxable base.[12] This brings the largest manufacturing sites down to an effective 0.07 ct/kWh, around 0.6 percent of their electricity costs. Further tax reductions would barely change the ratio of about 2.4 for eligible industrial consumers. For services, the ratio would fall from about 2.8 to 2.7 under either scenario.

As in France and Germany, a cut would therefore mainly reach households and non-eligible businesses. Households and services make up about two-thirds of total electricity use. Per kilowatt-hour, the relief would be largest for the smallest consumers. The push towards electrification would be modest but meaningful for households and negligible for eligible businesses. Electricity tax revenue was €1.7 billion in 2025, a year in which earlier crisis-related reductions had expired and the regular rate applied.[13]

Figure 16

Spain: Electricity tax overview

Electricity tax rates at a representative annual consumption for each band, 2025 data. The shaded area shows each band's share of its sector's consumption. Right: each sector's share of total consumption and the electricity-to-gas price ratio under two tax-cut scenarios.



Each band is evaluated at a representative annual consumption. Households: DA 500 kWh, DB 1,750 kWh, DC 3,500 kWh, DD 7,500 kWh, DE 20,000 kWh. Non-households: IA 10 MWh, IB 260 MWh, IC 1,250 MWh, ID 11 GWh, IE 45 GWh, IF 110 GWh, IG 200 GWh. In the consumption-share panel, the unlabelled light-grey segment shows all remaining consumption.

Notes: Spain taxes electricity at 5.11 percent of the taxable base, for households and industry alike. That is why there is no statutory rate per kilowatt-hour: the per-kWh burden rises and falls with the electricity price. For eligible industry the taxable base is reduced by 85 percent.

Sources: Own calculation from the Spanish electricity tax schedule, Eurostat (nrg_pc_204_c), Eurostat (nrg_pc_205)

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[12] This covers chemical reduction and electrolytic, mineralogical and metallurgical processes; products whose electricity cost exceeds 50 percent of total cost; industrial activities whose electricity purchases reach at least 5 percent of production value; and agricultural irrigation. All of these receive the 85 percent reduction, the minimum level of 0.05 ct/kWh applies additionally to the last two groups.

[13] Of this, €1.6 billion in the common regime and €0.1 billion in the two special regimes (Basque Country and Navarre) (Agencia Tributaria 2026; Departamento de Hacienda y Finanzas Gobierno Vasco 2026; Hacienda Foral de Navarra 2026).

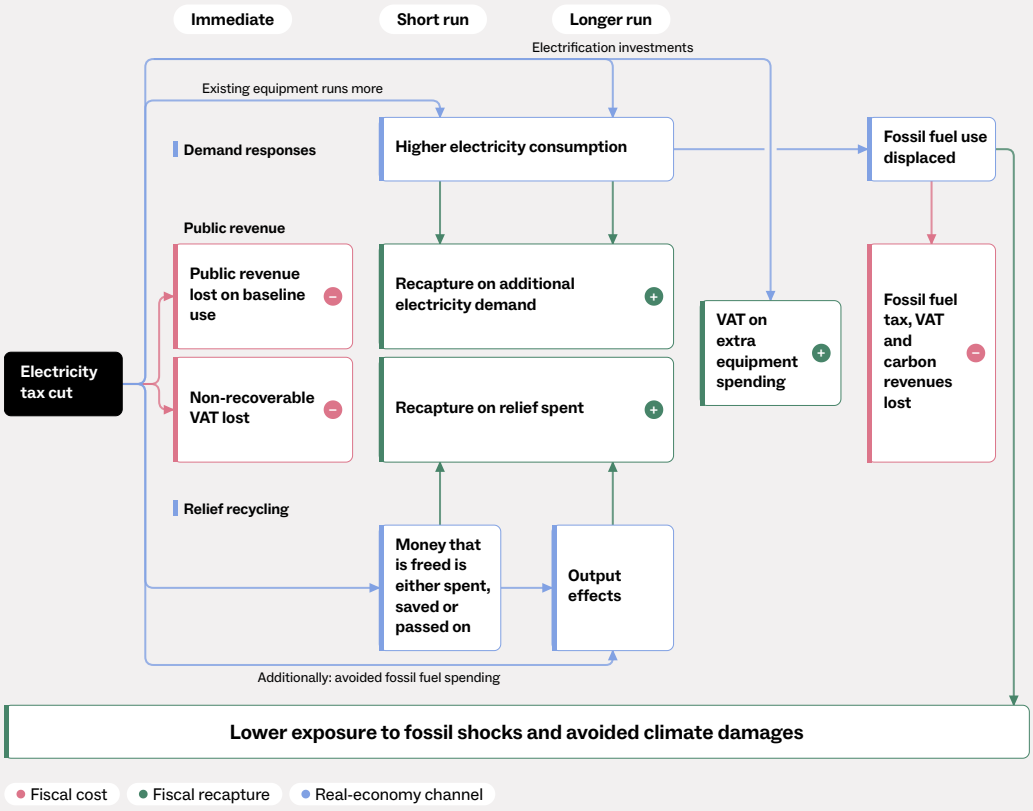
4. Further fiscal and economic effects

A cut's net fiscal effect is the revenue it forgoes minus the extra revenue and lower public costs its effects generate. The immediate fiscal cost is the revenue lost on existing, previously taxed consumption due to the lower tax rate, plus any non-recoverable VAT lost because of lower overall bills. Part of this is offset by additional tax revenue from extra electricity demand due to lower prices, and by taxes on additional spending and income. At the same time, any switching away from gas or oil erodes energy tax revenues on these fuels and shifts VAT and carbon price revenue. In the longer run, electrification and lower fossil fuel dependence reduce exposure to future fossil price shocks – arguably the largest potential effect, alongside reduced climate damages. Figure 17 illustrates these budget effects and consumer responses.

Figure 17

How an electricity tax cut plays out

Effects on bills, investment and public revenue



Reading example: The tax cut immediately costs revenue on existing consumption (red). Cheaper electricity raises consumption, which recaptures part of it (green). In the longer run, electrification displaces fossil fuels, which lowers fossil fuel tax revenue but reduces exposure to fossil price shocks.

Source: Own depiction

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Immediate tax revenue loss

Assuming unchanged behaviour, the initial loss equals the rate cut times existing consumption. For consumers who cannot reclaim VAT, such as households, public bodies and exempt businesses, the state also collects less VAT on the lower tax-inclusive price, as VAT is charged on total costs including electricity tax. Recoverable business VAT is not a net fiscal loss.

Demand responses

Short-run demand responses are limited since consumers still use the same equipment. The literature shows that household electricity consumption increases by 0.3 to 1.3 percent for a 10 percent price reduction in Europe, with international estimates around 2 to 3.5 percent (Espey & Espey 2004; Labandeira et al. 2017; Zhu et al. 2018; Csereklyei 2020; Jin & Kim 2022). EU estimates for non-household consumers are similar, at around 1 to 2 percent (Burke & Abayasekara 2018; Csereklyei 2020; Deryugina et al. 2020; Jin & Kim 2022). Therefore, consumption is close to unresponsive in the short run. Little additional consumption combined with a very low post-cut tax rate means that the initial demand response is unlikely to lead to meaningful additional tax revenues.[14]

Longer-run responses include equipment replacement and fuel switching: the desired electrification decisions. Historical estimates imply that long-run household consumption rises by 4 to 6 percent for a 10 percent price cut in European studies, and up to 10 percent in US work (Burke & Abayasekara 2018). For industry, the reported ranges are 7 to 10 percent in Europe (Csereklyei 2020), and as high as 17 percent in US work (Burke & Abayasekara 2018). These averages mix sectors that switch quickly with sectors that barely switch at all; they should not be read as a representative consumer's response.[15]

However, historical elasticities may understate the response now that more electric technologies, subsidies, infrastructure and installation services are available. Much of the cited European evidence uses data from 1996 to 2016, when electric options for industrial and residential heat and for (heavy) transport were less developed.

Extra electricity tax and VAT are only one side of the fiscal ledger: every household or firm that electrifies also stops paying tax on the fuel it replaces.

Relief recycling

Households and firms can spend or save what they no longer pay in electricity tax. How much additional tax revenue this yields depends on how much they spend, and on what. Domestic spending produces additional VAT and can raise output. Spending on imports does less for domestic production but still brings in VAT. Such leakage is typically greater in small open economies.

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[14] The recovered share is more meaningful when cutting from a high starting rate, but possibly negative once the rate being cut is already near the floor (cf. Skatteministeriet 2019).

[15] Whether cuts move demand as much as equivalent increases move it back is an open question. Burke & Abayasekara (2018) find no difference by direction of price change, and the asymmetry literature is largely about fossil fuels rather than electricity. We assume symmetry and flag it as an assumption.

For households, how much is spent rather than saved depends on the *marginal propensity to consume*. In the euro area, it averages around 0.46, with larger responses among low-income households (Albacete et al. 2024).[16] Low-income households also tend to spend a larger share of their income on electricity, and these shares vary by country. The proportion of income spent on electricity in Poland and Hungary is roughly twice that in Germany and the Netherlands (Menyhért 2022).

Relative to income, a rate cut benefits low-income households most; in absolute terms, it can benefit richer, higher-consuming households more (Flues & Thomas 2015). Because absolute electricity spending varies relatively little across income groups, however, this gap is smaller than for cuts to other energy taxes such as those on petrol or diesel (Bohmann & Küçük 2024). Although its impact varies with consumption and existing exemptions, a cut can therefore serve as a broad, if untargeted, affordability instrument.[17]

For firms, which usually recover VAT, the impact depends on what is done with the savings. Even without any behavioural response, savings kept within the firm raise taxable profits, since deductible costs fall. Savings paid out as wages generate income tax and social security contributions, and then further household spending. Savings passed on through lower prices leave consumers more to spend elsewhere. Evidence on employment and income effects is thin, and an electricity tax cut affects only a small part of firms' cost base, so the competitiveness gain is correspondingly narrow (Marin & Vona 2021).

For industry, where the electric option delivers the same service with efficiency gains and hence lower energy needs, the operating savings from electrifying could even exceed the tax relief itself (Rehfeldt et al. 2024). How much of this is realised as operating margin depends on how quickly the switching investment pays back over the asset's lifetime. Few studies examine the effect of electricity tax relief on investments or hiring practices. Studies on exemptions find changes in input choices but not in turnover, exports, investment or hiring (Flues & Lutz 2015; Gerster & Lamp 2024). [18] Broader evidence is likewise indirect: fiscal multipliers for tax cuts depend on who receives them and on the economic cycle (cf. Mertens & Ravn 2013; Ramey 2019).

Scale restricts these effects. On average, energy costs make up 2 to 5 percent of manufacturing production value, although they can reach 40 percent in the most intensive subsectors (European Commission 2025).[19] Electricity is only part of these energy costs, and the tax only part of the electricity bill. Exposure and subsector therefore matter as much as the size of the cut.

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16 The euro-area average conceals wide variation by country, by household characteristics and by the composition of household balance sheets, with cash-poor households responding most. In practical terms, an average EU household saving €100 a year redirects around €46 of it into spending.

17 During the 2022 energy crisis, targeted income support measures closed around three times more of the inflation-induced inequality gap per euro than broad price measures did (Amores et al. 2024), and fully compensating the bottom 40 percent of households would likely have cost only a fraction of a broad measure (Ari et al. 2022).

18 Most of the causal evidence concerns tax increases rather than cuts, so the symmetry assumption applies here too.

19 These shares reflect today's energy mix and may rise as production electrifies.

Longer-run fiscal position

Electrification changes the longer-run fiscal position through two channels.

The first channel is the tax base. A household or firm that electrifies stops paying tax, VAT and the carbon price on the gas or oil it no longer burns, and the treasury loses on two counts. First, the displaced gas or oil volumes exceed the electricity volumes replacing them, because an electric process commonly displaces several units of gas or oil.[20] Second, the tax per unit on gas or oil is at least as high as the post-cut rate on electricity in all member states. The more households and firms switch, the larger the fossil energy tax revenue losses (IEA 2025). Electric equipment costs more up front than the gas alternative (Harrison 2025), and VAT on the extra capital spending partly offsets the loss.[21] The scale of this depends on national tax rates and the equipment cost gaps. But the VAT on equipment is collected once, while the lost fuel revenue recurs every year, and in most member states a euro of energy spending is taxed more heavily than a euro of equipment (EHPA 2024). The budget effect of a single switch may therefore be positive at first and turn negative over the years. This erosion will likely become the largest long-term fiscal cost, exceeding the initial revenue loss from the lower electricity tax rate (cf. Skatteministeriet 2019).

The second channel is lower exposure to fossil fuel shocks: electrification reduces reliance on fossil fuels and thus the cost of potential supply and price shocks, as well as of climate damages. A gas price shock raises gas tax revenue, but it also raises costs across industry and cuts real incomes, which drags on consumption, output and overall tax revenue. Automatic stabilisers such as unemployment benefits then push up spending (cf. Dolls et al. 2012; Mohl et al. 2019). In a crisis, the gas tax line may look better, but the budget as a whole is worse off (cf. Mramor et al. 2026).

Recent crises show the fiscal and economic risks of fossil fuel dependency. In 2022, the EU's fossil import costs more than doubled, only to contract again by 2024 (Rosslowe & Petrovich 2026).[22] The 2026 Hormuz shock repeated the pattern. Crisis support of over €16 billion and additional fossil import costs of €46 billion added up to more than €60 billion (Moscovici & Nguyen 2026). The cost of EU gas-fired production rose by more than 50 percent within ten days (Rosslowe & Petrovich 2026).

Electrified demand reduces this exposure to the extent that it is met by non-fossil generation. In early 2026, gas set Spanish electricity prices only 15 percent of the time, against 89 percent in Italy, and Spanish prices stayed below gas generation costs for the first ten days after the shock, while Germany, the Netherlands, Italy and Belgium recorded annual peaks (Rosslowe & Petrovich 2026). Heat pumps, solar and wind capacity installed from 2022 to 2024 reduced EU gas demand by almost 9 billion cubic metres in 2024, roughly 3 percent of its total gas consumption that year (Jaller-Makarewicz 2026).

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[20] Heat pumps on the market are three to five times more energy efficient than natural gas boilers (IEA 2022; European Commission, Directorate-General for Energy 2025). Delivering a kilowatt-hour of heat therefore takes roughly 0.2 to 0.3 kWh of electricity where a gas boiler burns about 1.1 kWh of gas. Industrial heat pumps operate at lower coefficients of performance, so the displacement ratio is smaller in industry than in buildings but runs in the same direction.

[21] Member states may apply VAT as low as 0 to 5 percent to solar panels and high-efficiency heating systems (Council of the European Union 2022).

[22] In 2022, the EU's fossil import costs grew from 313 billion to 693 billion euros, only to drop back down to 376 billion euros by 2024 (Rosslowe & Petrovich 2026). Sgaravatti et al. (2023) put the cost at €540 billion from September 2021 to January 2023; the ECB (2023) estimates a terms-of-trade loss of 2.4 percent of GDP in 2022.

On the system-wide level, lower exposure to imports helps avoid or limit stabilisation spending and the loss of income due to a shock-driven contraction (Siemplenski Lefort 2026). These savings do not show up in the budget until a shock arrives, as stabilisation spending that is not needed and as revenue that is not lost. Until then, lower exposure works as insurance.

Macroeconomic context and broader impact

Beyond the fiscal channels discussed so far, a cut's longer-run impact depends on three further dimensions: inflation and monetary policy, the economic cycle, and coordination and competitiveness.

Inflation and monetary policy. Taxes and levies made up about 27 percent of the average EU household electricity bill in 2025 (Kuik et al. 2026). A tax cut affects only part of that share. If passed on to households, it decreases the electricity component of consumer prices once and drops out of the annual inflation rate after twelve months. In Denmark, the 2026 cut lowered inflation by almost 1 percentage point (Ritzau 2026). The lasting impact on monetary policy depends on electrification: in the long run, electrification can limit imported inflation volatility, as energy systems become less vulnerable to fossil fuel supply shocks. Reduced inflation also affects public finances in both directions, easing some indexed spending and cutting nominal tax bases.

The economic cycle. How much a tax cut stimulates the economy may depend on the state of the cycle. This effect is usually measured by fiscal multipliers: the change in output per euro of tax cut or public spending. Some studies find larger multipliers during recessions (Auerbach & Gorodnichenko 2012), while others report multipliers below one in both recessions and expansions (Ramey & Zubairy 2018). These are not electricity-tax multipliers, but they suggest that the effects of a cut should be tested under different economic conditions.

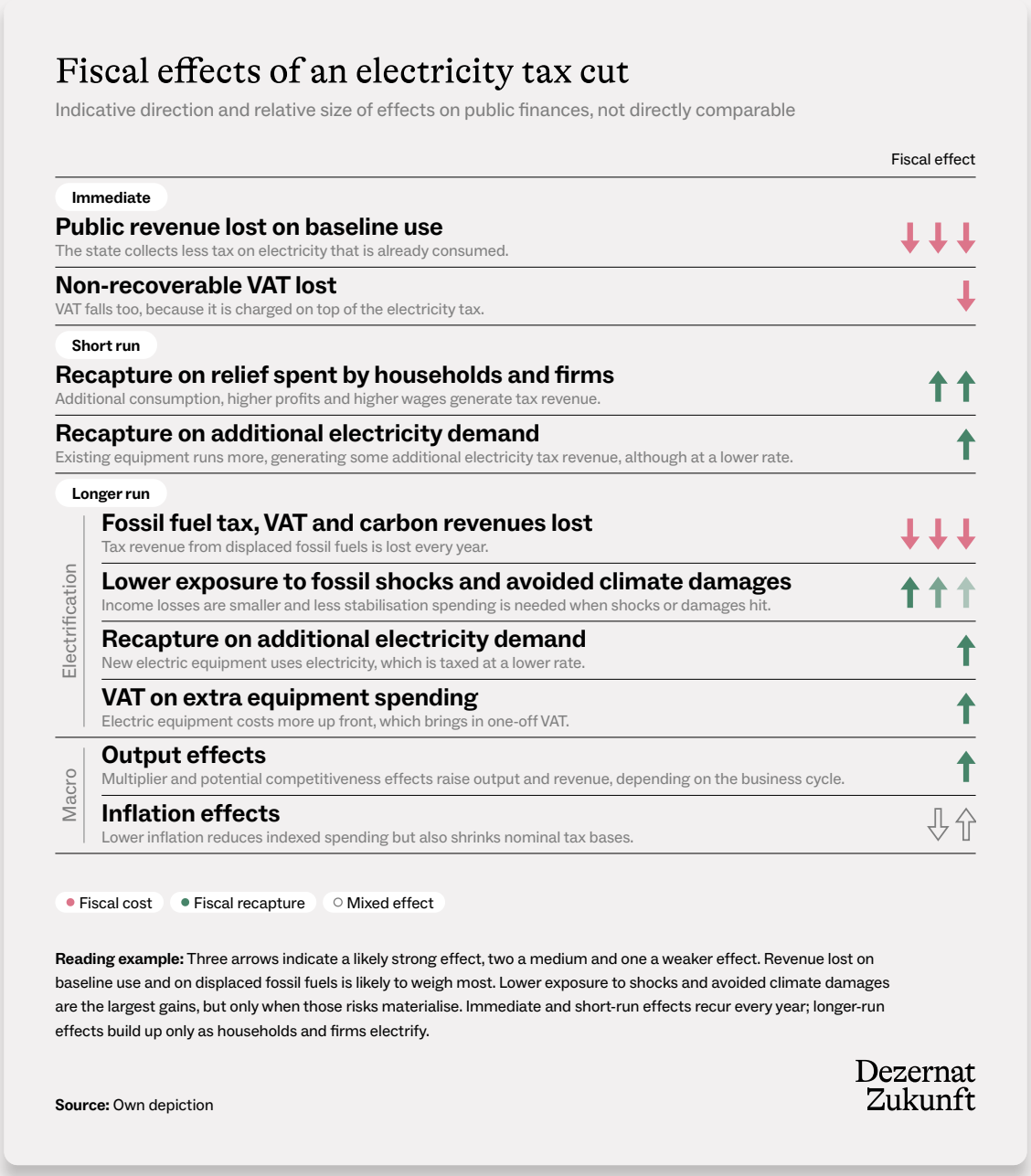
Coordination and competitiveness. A unilateral cut can change a country's costs relative to its neighbours. Coordination can limit some competitive distortions, but a common rule still has unequal effects because rates, exemptions and pass-through differ. The international competitiveness impact of electricity tax relief alone is likely to be modest: EU industrial prices are two to three times those in the United States and China, and for many eligible firms this gap far exceeds the tax share (Draghi 2024). In addition, industrial consumers are already mostly exempt from electricity taxes.

This chapter also leaves out two feedback loops. Higher electricity demand might raise wholesale electricity prices until supply catches up (cf. Rivera Rivota et al. 2026). And electrification increases network costs in absolute terms through grid expansion but spreads a largely fixed network cost base over more kilowatt-hours, which lowers per-unit costs.

Net fiscal effect

Figure 18 summarises the fiscal effects of an electricity tax cut. The immediate revenue loss and the short-run recapture recur every year after the cut, whereas the longer-run effects build up as households and firms electrify.

Figure 18



The immediate effect on fiscal revenue is negative: the state collects less tax on baseline electricity consumption. Consumers also pay less VAT, as it is charged on the price including the electricity tax. The size of the loss depends on how much consumption is currently taxed at the full rate rather than exempted or reduced.

Short-run responses recover only a small share of this loss. Households and firms spend some of their relief, which generates tax revenues. The more of this spending stays in the domestic economy, the more flows back. Existing equipment runs slightly more due to lower costs, but demand barely responds in the short run and the new tax rate is low, so recapture on this additional demand is small. Together, these effects cannot outweigh the immediate loss: the net short-run effect remains negative.

In the longer run, the balance depends on electrification. The erosion of the fossil fuel tax base described above recurs every year and grows with every switch. It is largest where gas is taxed heavily and switching is likely, which means countries with the strongest case for electrification have the most revenue at risk. Tax on the additional electricity demand and one-off VAT on currently more expensive electric equipment offset only a small part of it. Output effects, including competitiveness gains, are likely small and depend on the business cycle. Lower inflation reduces indexed spending but also shrinks nominal tax bases.

The balance can turn positive once fossil fuel-related price or supply shocks are considered: lower exposure then means less stabilisation spending and smaller income and revenue losses, as seen during the recent war-induced energy crises. Accelerated electrification and faster emission reduction also contribute to avoiding climate damages and related tax shortfalls. A cut that succeeds in driving electrification in times of turbulent global energy markets therefore costs more in the short run but may well pay for itself in the long run. Overall, as electrification is likely to proceed with or without a tax cut, finance ministries need strategies for replacing the shrinking fossil fuel tax base with new sources of revenue.

5. Conclusions and policy implications

Electricity tax regimes differ greatly between EU member states, and so would the impact of potential tax cuts. Only about a third of EU member states tax electricity more than gas, so the Commission's proposed parity rule for electricity and gas taxes would only affect these countries. A broad tax cut to the EU minimum would benefit households and services in Germany and France, act as a shallow, economy-wide measure in Italy, support businesses in the Netherlands and have only a small, price-linked effect in Spain. It would have little effect in Poland and virtually none in Denmark while its temporary cut remains in place until 2027. Where electricity taxes are already at the minimum, changes to other taxes, especially VAT, can lower electricity prices.

Where electricity tax rates are high, such as in Germany and France, cuts can make electricity more affordable and improve electrification incentives. Electricity taxes currently account for around 0.5 to 14 percent of total electricity prices for a typical family household across the member states analysed. Beyond the tax share, the electrification benefit of a tax cut depends on national electricity-to-gas price ratios. Across the countries analysed, cutting electricity taxes to the EU minimum would lower this ratio by 0.1 to 0.9 points for households, by up to 0.4 points for non-household consumers, though by at most 0.1 points for eligible industry. Other policy instruments, such as the introduction of the second emissions trading system (EU ETS-2) from 2028[23] and additional measures to lower electricity prices, will further shift relative prices.

The key economic and fiscal benefits of electricity tax cuts materialise over time. In the short term, direct tax revenue losses outweigh additional revenues from increased electricity consumption and economic activity, and governments will have to decide which financing sources and tax bases can compensate for these losses. In the medium to long term, as electrification increases, reduced exposure to fossil fuel price shocks, lower stabilisation spending and avoided climate damages can improve the overall fiscal balance.

Beyond its direct price effects, an electricity tax cut would send a clear pro-electrification signal. Even though tax cuts alone are insufficient to accelerate electrification in line with energy and climate targets, they are in accordance with a basic principle of climate-aligned taxation: electricity should not be taxed more heavily than fossil fuels. Parity, or a lower tax on electricity, can also be reached by taxing fossil fuels more heavily, as the European Commission's 2021 proposal to revise the ETD originally envisaged.

[23] Industrial firms already pay a carbon price through the emissions trading system (EU ETS-1). Germany already prices emissions for heating and transport nationally under the Fuel Emissions Trading Act (BEHG).

Three policy implications

1. **A general electricity tax cut is a simple-to-implement way to support electrification and affordability, but it is difficult to finance given most member states' limited fiscal space.**

Against a backdrop of strained public budgets, a general electricity tax cut is an expensive form of electrification support. Its main advantage is simplicity: governments can implement it quickly and within existing EU law. Because it reaches all households, it also improves affordability broadly. Since absolute electricity spending tends to differ little across income groups, the relief is largest relative to income for low-income households.[24]

2. **A targeted electricity tax cut can deliver electrification benefits at a lower fiscal cost than a general cut. Such targeted reductions are already possible, but legal reforms to simplify their use would be desirable.**

The fiscal efficiency of a broad electricity tax cut is constrained by two factors: it lowers the total lifetime costs of the electrified assets it is meant to promote by only a few percent, and it benefits all consumption, not just that of vulnerable consumers or that resulting from additional electrification. To maximise efficiency, electricity taxes can be targeted in two ways. First, to incentivise electrification, targeting by use lowers the tax on specific, desired uses, such as electric heating in Denmark or electric vehicle charging in the Netherlands. Second, to improve affordability, relief could be concentrated on basic consumption volumes instead of every kilowatt-hour: through a fixed tax credit, as in the Netherlands, or an exempt base allowance, as in Italy (if designed in a way that does not discourage electrification). Both instruments, the credit and the allowance, relieve low-consuming households most, relative to their bills.

However, targeted cuts are harder to design and administer. And although they are already possible, EU law complicates their implementation. Under the ETD, targeted electricity tax cuts, such as different rates for electric vehicle charging, require the unanimous consent of the Council, meaning all member states, and must be renewed every six years.[25] The Netherlands obtained such an authorisation twice, applying a reduced rate for electric vehicle charging until the end of 2024. Still, the ETD already allows separate rates for electric heating if they are tied to specific consumption levels, an option Denmark has used. A reform of the ETD – even if politically challenging, as repeated attempts have failed – could make a significant difference by allowing member states to adopt targeted electricity tax cuts more flexibly.

Given the legal hurdles for targeted electricity tax cuts, member states without the budget for a broad cut may instead use the limited fiscal space available for decarbonisation measures to target upfront investment costs, for example through purchase subsidies or reduced VAT rates on electric equipment, both of which EU law already allows. Whether subsidising the purchase of electric equipment or lowering its running costs delivers more

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[24] Provided suppliers pass the cut on to consumers, a relevant criterion for countries in which contracts do not require suppliers to automatically pass on tax cuts, such as Germany.

[25] Directive 2003/96/EC, Article 5, permits differentiated rates under fiscal control, by product quality, by quantitative consumption level for electricity and heating fuels, for a listed set of specific uses and between business and non-business use. Article 19 requires Council authorisation, acting unanimously on a Commission proposal, for any further exemption or reduction, for a maximum of six years, renewable (Council of the European Union 2003).

additional electrification per euro of public money remains an open question for further analysis, as do the social and distributional implications of each option.

3. **An electricity tax cut is no silver bullet for electrification – instead, an electrification toolkit is needed.**

Binding constraints on electrification differ across member states, ranging from infrastructure to prices. Any reform of the electricity tax must be accompanied by grid investments, network tariff improvements, measures to increase system flexibility and a review of other electricity levies. This broad approach is rightly reflected in the Commission's *Electrification Action Plan*.

Electricity-to-gas price ratios can also be improved through higher gas prices. Higher gas taxation could even finance an electricity tax cut, improve the ratio during the transition and address the erosion of the energy tax base in the medium term. However, it would raise distributional and political questions for households that cannot yet electrify, all the more so amid a continuing energy crisis and rising prices. It would also need to come with additional transition support to help these households avoid fossil lock-in. From 2028 onwards, the EU ETS-2 will improve the ratio in any case by pricing fossil fuels for household energy and transport.

Bibliography

Agencia Tributaria (2026): “Excise Tax Report (Informe de Impuestos Especiales)”, Agencia Tributaria, https://sede.agenciatributaria.gob.es/Sede/en/_gb/estadisticas/estadisticas-impuesto/informe-impuestos-especiales.html, [accessed on: 13.10.2026].

Albacete, N. / Fessler, P. / Pekanov, A. (2024): “The Role of MPC Heterogeneity for Fiscal and Monetary Policy in the Euro Area”, Working Papers, https://ideas.repec.org/p/onb/oenbwp/254.html, [accessed on: 13.8.2026].

Amores, A. F. / Basso, H. S. / Bischl, J. S. / De Agostini, P. / Poli, S. D. / Dicarlo, E. / Flevotomou, M. / Freier, M. / Maier, S. / García-Miralles, E. / Pidkuyko, M. / Ricci, M. / Riscado, S. (2024): “Inflation, fiscal policy and inequality: the distributional impact of fiscal measures to compensate for consumer inflation”, European Commission, Joint Research Centre, https://publications.jrc.ec.europa.eu/repository/handle/JRC135517.

Ari, A. / Arregui, N. / Black, S. / Celasun, O. / Iakova, D. M. / Mineshima, A. / Mylonas, V. / Parry, I. W. H. / Teodoru, I. / Zhunussova, K. (2022): “Surging Energy Prices in Europe in the Aftermath of the War: How to Support the Vulnerable and Speed up the Transition Away from Fossil Fuels”, IMF Working Paper 2022/152, https://www.imf.org/en/publications/wp/issues/2022/07/28/surging-energy-prices-in-europe-in-the-aftermath-of-the-war-how-to-support-the-vulnerable-521457, [accessed on: 24.8.2026].

Auerbach, A. J. / Gorodnichenko, Y. (2012): “Measuring the Output Responses to Fiscal Policy”, American Economic Journal: Economic Policy, 4 (2), p. 1–27, https://doi.org/10.1257/pol.4.2.1.

Bohmann, S. / Küçük, M. (2024): “Einkommensstarke Haushalte verursachen mehr Treibhausgasemissionen – vor allem wegen ihres Mobilitätsverhaltens”, DIW Wochenbericht, 27, p. 421–429, https://doi.org/10.18723/diw/_wb:2024-27-2, [accessed on: 13.10.2026].

Bundesministerium der Finanzen (2026): “Entwurf zum Bundeshaushaltsplan 2027, Einzelplan 60: Allgemeine Finanzverwaltung”, Bundesministerium der Finanzen, Regierungsentwurf, p. 10, https://www.bundeshaushalt.de/static/daten/2027/soll/draft/epl60.pdf, [accessed on: 13.10.2026].

Bundesnetzagentur (2025): “Monitoringerhebung 2025”, https://www.smard.de/page/home/topic-article/444/217350/monitoringerhebung-2025.

Burke, P. J. / Abayasekara, A. (2018): “The Price Elasticity of Electricity Demand in the United States: A Three-Dimensional Analysis”, The Energy Journal, 39 (2), p. 123–146, https://doi.org/10.5547/01956574.39.2.pbur.

Bushnell, J. / Muehlegger, E. / Rapson, D. (2022): “Energy Prices and Electric Vehicle Adoption”, National Bureau of Economic Research, https://doi.org/10.3386/w29842.

Council of the European Union (2003): *Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity (consolidated text 02003L0096 — 10.01.2023)*.

Council of the European Union (2015): *Council Implementing Decision (EU) 2015/993 of 19 June 2015 authorising Denmark to apply a reduced rate of taxation on electricity directly provided to vessels at berth in a port, in accordance with Article 19 of Directive 2003/96/EC*.

Council of the European Union (2021): *Council Implementing Decision (EU) 2021/359 of 22 February 2021 authorising the Netherlands to apply a reduced rate of taxation to electricity supplied to charging stations for electric vehicles*.

Council of the European Union (2022): *Council Directive (EU) 2022/542 of 5 April 2022 amending Directives 2006/112/EC and (EU) 2020/285 as regards rates of value added tax*.

Council of the European Union (2025): “Economic and Financial Affairs Council, 13 November 2025: Main results”, Council of the European Union, https://www.consilium.europa.eu/en/meetings/ecofin/2025/11/13/, [accessed on: 13.10.2026].

Csereklyei, Z. (2020): “Price and income elasticities of residential and industrial electricity demand in the European Union”, Energy Policy, 137, p. 111079, https://doi.org/10.1016/j.enpol.2019.111079.

Darvas, Z. / Welslau, L. / Zettelmeyer, J. (2024): “Incorporating the impact of social investments and reforms in the European Union’s new fiscal framework”, Bruegel, Working Paper 07/2024, https://www.bruegel.org/working-paper/incorporating-impact-social-investments-and-reforms-european-unions-new-fiscal, [accessed on: 13.8.2026].

Departamento de Hacienda y Finanzas Gobierno Vasco (2026): “Recaudación de las Diputaciones Forales por tributos concertados”, Gobierno Vasco, Departamento de Hacienda y Finanzas, https://www.euskadi.eus/recaudacion/web01-s2oga/es/, [accessed on: 13.10.2026].

Deryugina, T. / MacKay, A. / Reif, J. (2020): “The Long-Run Dynamics of Electricity Demand: Evidence from Municipal Aggregation”, American Economic Journal: Applied Economics, 12 (1), p. 86–114, https://doi.org/10.1257/app.20180256.

Direction générale des finances publiques (2026): “Compte général de l’État 2025”, Ministère de l’Économie et des Finances, https://www.budget.gouv.fr/documentation/file-download/33247, [accessed on: 9.10.2026].

Dolls, M. / Fuest, C. / Peichl, A. (2012): “Automatic stabilizers and economic crisis: US vs. Europe”, Journal of Public Economics, 96 (3), p. 279–294, https://doi.org/10.1016/j.jpubeco.2011.11.001.

Draghi, M. (2024): “The future of European competitiveness: In-depth analysis and recommendations (Part B)”, European Commission, https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92/_en?filename=The%20future%20of%20European%20competitiveness/_%20In-depth%20analysis%20and%20recommendations/_0.pdf.

ECB (2023): “Economic Bulletin, Issue 2 / 2023”, https://www.ecb.europa.eu/press/economic-bulletin/html/eb202302.en.html.

ECCO (2026): “Electrification, interrupted: how taxes and levies are slowing the energy transition in Italy”, ECCO - the Italian Climate Change Think Tank, https://eccoclimate.org/wp-content/uploads/2026/08/Electrification-Interrupted/_policy-briefing/_.pdf, [accessed on: 9.10.2026].

EHPA (2024): “Heat pumps versus boilers: taxes and running costs”, European Heat Pump Association, https://www.ehpa.org/wp-content/uploads/2024/12/EHPA/_VAT-report/_Heat-pumps-versus-boilers-taxes-and-running-costs-1-1.pdf.

Elwardany, M. / Turja, A. I. / Hasan, M. M. / Nassif, N. (2026): “High-temperature heat pumps for industrial decarbonization: Technologies, integration strategies, and future perspectives”, Chemical Engineering and Processing - Process Intensification, 225, p. 110806, https://doi.org/10.1016/j.cep.2026.110806.

Espey, J. A. / Espey, M. (2004): “Turning on the Lights: A Meta-Analysis of Residential Electricity Demand Elasticities”, Journal of Agricultural and Applied Economics, 36 (1), p. 65–81, https://doi.org/10.1017/S1074070800021866.

European Commission (2025): “Energy prices and costs in Europe”, European Commission, https://energy.ec.europa.eu/data-and-analysis/energy-prices-and-costs-europe/_en.

European Commission (2026a): “Electrification Action Plan”, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52026DC0595.

Bibliography

European Commission (2026b): *Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2019/943, as regards future-proofing electricity bills in the Union, through reducing system costs and fostering electrification and digitalisation*.

European Commission, Directorate-General for Energy (2025): "5 things you should know about heat pumps", https://energy.ec.europa.eu/news/5-things-you-should-know-about-heat-pumps-2025-12-05/_en.

European Parliament and Council of the European Union (2016): *Regulation (EU) 2016/1952 of the European Parliament and of the Council of 26 October 2016 on European statistics on natural gas and electricity prices and repealing Directive 2008/92/EC*.

Flues, F. / Lutz, B. J. (2015): "Competitiveness Impacts of the German Electricity Tax", OECD Environment Working Papers, https://ideas.repec.org/p/oec/envaaa/88-en.html, [accessed on: 14.8.2026].

Flues, F. / Thomas, A. (2015): "The distributional effects of energy taxes", OECD Taxation Working Papers, 2015, https://doi.org/10.1787/5js1qwkqqrbv-en, [accessed on: 9.7.2026].

Gerster, A. / Lamp, S. (2024): "Energy Tax Exemptions and Industrial Production", The Economic Journal, 134 (663), p. 2803–2834, https://doi.org/10.1093/ej/ueae048.

Gouvernement de la République française (2025): "Évaluation des voies et moyens. Annexe au projet de loi de finances pour 2026, Tome I: Recettes", Assemblée nationale, https://www.assemblee-nationale.fr/dyn/contenu/visualisation/1087930/file/PLF%202026%20-%20V%26M%20TI%20-%20Evaluations%20des%20recettes.pdf, [accessed on: 9.10.2026].

Hacienda Foral de Navarra (2026): "Ingresos Hacienda Foral de Navarra, diciembre 2025: recaudación líquida acumulada", Gobierno de Navarra, https://www.navarra.es/documents/48192/57192155/Ingresos+HFN+Diciembre+2025.pdf/84470f78-90c5-334a-cb56-251148db74cd?t=1770810680991, [accessed on: 13.10.2026].

Harrison, T. (2025): "Plugging heat in: smart policy can help electrify household heating in Europe", Ember, https://ember-energy.org/latest-insights/plugging-heat-in-smart-policy-can-help-electrify-household-heating-in-europe, [accessed on: 22.9.2026].

IEA (2022): "The Future of Heat Pumps", IEA, https://www.iea.org/reports/the-future-of-heat-pumps.

IEA (2025): "Global EV Outlook 2025", IEA, https://www.iea.org/reports/global-ev-outlook-2025, [accessed on: 8.10.2026].

Jaller-Makarewicz, A. M. (2026): "New solar, wind and heat pumps could save twice the gas the EU imports from Qatar by 2030", Institute for Energy Economics and Financial Analysis (IEEFA), https://ieefa.org/resources/hitting-eu-renewables-targets-could-save-twice-much-gas-qatars-potential-supply-eu-2030.

Jin, T. / Kim, J. (2022): "The elasticity of residential electricity demand and the rebound effect in 18 European Union countries", Energy Sources, Part B: Economics, Planning, and Policy, 17 (1), p. 2053896, https://doi.org/10.1080/15567249.2022.2053896.

Kuik, F. / Lis, E. / Schäfer, J. (2026): "The uneven journey of wholesale gas and electricity prices to consumer bills", Economic Bulletin, https://www.ecb.europa.eu/press/economic-bulletin/focus/2026/html/ecb.ebbox202606/_04~5f026ee8e2.en.html.

Labandeira, X. / Labeaga, J. / López-Otero, X. (2017): "A meta-analysis on the price elasticity of energy demand", Energy Policy, 102, p. 549–568, https://doi.org/10.1016/j.enpol.2017.01.002.

Marin, G. / Vona, F. (2021): "The impact of energy prices on socioeconomic and environmental performance: Evidence from French manufacturing establishments, 1997–2015", European Economic Review, 135, p. 103739, https://doi.org/10.1016/j.euroecorev.2021.103739.

Menyhért, B. (2022): "The effect of rising energy and consumer prices on household finances, poverty and social exclusion in the EU: A preliminary empirical analysis", Publications Office of the European Union, https://doi.org/10.2760/418422.

Mertens, K. / Ravn, M. O. (2013): "The Dynamic Effects of Personal and Corporate Income Tax Changes in the United States", American Economic Review, 103 (4), p. 1212–1247, https://doi.org/10.1257/aer.103.4.1212.

Miara, M. / Rosenow, J. (2026): "Why are heat pump installation costs so much higher in Germany? Evidence from a European comparison", Energy and Buildings, 369, p. 117998, https://doi.org/10.1016/j.enbuild.2026.117998.

Ministerie van Klimaat en Groene Groei (2025): "Antwoord op vragen van het lid Eerdmans over het bericht "Tienduizenden huishoudens kunnen energierekening niet betalen: waarom is aardgas zo duur?"", Tweede Kamer der Staten-Generaal, (2024-2025, nr. 1676), https://zoek.officielebekendmakingen.nl/ah-tk-20242025-1676.html, [accessed on: 9.10.2026].

Ministerio para la Transición Ecológica y el Reto Demográfico (2026): "¿Qué es el bono social?", Ministerio para la Transición Ecológica y el Reto Demográfico, https://www.miteco.gob.es/es/energia/pobreza-energetica/pe-001/que-es.html, [accessed on: 13.10.2026].

Ministero dell'Economia e delle Finanze (2026): "Appendici statistiche al Bollettino 286 delle entrate tributarie", Ministero dell'Economia e delle Finanze, https://www.finanze.gov.it/export/sites/finanze/.galleries/Documenti/entrate/_tributarie/_2025/Bollettino-entrate-appendici-statistiche/_Dicembre/_2025.pdf, [accessed on: 9.10.2026].

Mohl, P. / Mourre, G. / Stovicek, K. (2019): "Automatic Fiscal Stabilisers in the EU: Size and Effectiveness", Directorate-General for Economic and Financial Affairs, https://doi.org/10.2765/07002, [accessed on: 22.9.2026].

Moscovici, A. / Nguyen, P.-V. (2026): "Energy shock: Immediate Responses and National Context", https://energy-crisis-tracker-100days.netlify.app/, [accessed on: 7.10.2026].

Mramor, T. / Roth, A. / Tagliapietra, S. (2026): "The fiscal fault lines of Europe's energy shock", Bruegel, https://www.bruegel.org/first-glance/fiscal-fault-lines-europes-energy-shock, [accessed on: 22.9.2026].

Padullés, R. / Kountouris, I. / Kanbur, B. B. / Jensen, J. K. / Elmegaard, B. (2025): "Break-even coefficient of performance: Scenario-based analysis of industrial heat electrification feasibility in Europe", Energy Conversion and Management, 326, p. 119488, https://doi.org/10.1016/j.enconman.2025.119488.

Ramey, V. A. / Zubairy, S. (2018): "Government Spending Multipliers in Good Times and in Bad: Evidence from US Historical Data", Journal of Political Economy, 126 (2), p. 850–901, https://doi.org/10.1086/696277.

Ramey, V. A. (2019): "Ten Years After the Financial Crisis: What Have We Learned from the Renaissance in Fiscal Research?", Journal of Economic Perspectives, 33 (2), p. 89–114, https://doi.org/10.1257/jep.33.2.89.

Rehfeldt, M. / Bußmann, S. / Fleiter, T. (2024): "Direkte Elektrifizierung von industrieller Prozesswärme: Eine Bewertung von Technologien, Potenzialen und Zukunftsaussichten für die EU. Zusammenfassung", Fraunhofer-Institut für System- und Innovationsforschung ISI, im Auftrag von Agora Industrie, urn:nbn:de:kobv:109-1-15501251, https://nbn-resolving.org/urn:nbn:de:kobv:109-1-15501251.

Ritzau (2026): "Sænket elafgift får inflationen til at dykke", Berlingske, 10 February 2026, https://www.berlingske.dk/business/saenket-elafgift-faar-inflationen-til-at-dykke.

Bibliography

Rivera Rivota, D. / Weigelt, L. / Guevara, G. S. / Arent, D. J. / Sandalow, D. (2026): "The Effects of Load Growth on Electricity Prices in the United States: A Literature Review", Center on Global Energy Policy, https://www.energypolicy.columbia.edu/publications/the-effects-of-load-growth-on-electricity-prices-in-the-united-states-a-literature-review/, [accessed on: 13.8.2026].

Rosslowe, C. / Petrovich, B. (2026): "Latest energy shock reminds Europe of its risky gas reliance", Ember, https://ember-energy.org/latest-insights/latest-energy-shock-reminds-europe-of-its-risky-gas-reliance/.

Schlemminger, M. / Ohrdes, T. / Schneider, E. / Knoop, M. (2022): "Dataset on electrical single-family house and heat pump load profiles in Germany", Scientific Data, 9 (1), p. 56, https://doi.org/10.1038/s41597-022-01156-1.

Sgaravatti, G. / Tagliapietra, S. / Trasi, C. / Zachmann, G. (2023): "National fiscal policy responses to the energy crisis", Bruegel, https://www.bruegel.org/dataset/national-policies-shield-consumers-rising-energy-prices, [accessed on: 10.7.2026].

Siemplenski Lefort, J. (2026): "How Europe's clean energy transition is shielding its economy from global energy shocks", https://www.eib.org/en/stories/eu-clean-energy-transition-shielding-economy.

Skatte- og Vækstministeriet (2026): "Afgifter - provenuet af afgifter og moms", Skatte- og Vækstministeriet, https://svmn.dk/tal-og-metode/statistik/provenu-og-skattestruktur/afgifter-provenuet-af-afgifter-og-moms, [accessed on: 9.10.2026].

Skatteministeriet (2019): "Energibeskatning", in: *Skatteøkonomisk Redegørelse 2019*, København, Skatteministeriet.

Zhu, X. / Li, L. / Zhou, K. / Zhang, X. / Yang, S. (2018): "A meta-analysis on the price elasticity and income elasticity of residential electricity demand", Journal of Cleaner Production, 201, p. 169–177, https://doi.org/10.1016/j.jclepro.2018.08.027.

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