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A descriptive comparison of Irish and European electricity prices: 2018–2024

BRENDAN WADE, NIALL FARRELL, MUIREANN LYNCH AND MIGUEL TOVAR REAÑOS

A DESCRIPTIVE COMPARISON OF IRISH AND EUROPEAN ELECTRICITY PRICES: 2018–2024

Brendan Wade

Niall Farrell

Muireann Lynch

Miguel Tovar Reaños

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THE AUTHORS

Brendan Wade is a Research Assistant at the Economic and Social Research Institute (ESRI). Niall Farrell is an Associate Research Professor at the ESRI and an Adjunct Professor at Trinity College Dublin (TCD). Muireann Lynch is a Senior Research Officer at the ESRI and an Adjunct Associate Professor at TCD. Miguel Tovar Reaños is a Research Officer at the ESRI and an Adjunct Assistant Professor at TCD.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

ACER	Agency for the Cooperation of Energy Regulators
AER	Alternative energy requirement
AIMF	Agile Investment and Modelling Framework
AUP	Average unit price
COVID-19	Coronavirus disease 2019
CRU	Commission for Regulation of Utilities
DG-1/DG-2	Distribution group 1/2
DSO	Distribution system operator
DUoS	Distribution use of system
ENTSO-E	European Network of Transmission System Operators for Electricity
EU	European Union
FASS	Future Arrangements for System Services
GB	Great Britain
GW	Gigawatt
H1/H2	First/second half
IEA	International Energy Agency
kW	Kilowatt
kWh	Kilowatt-hour
LCOE	Levelised cost of electricity
LEU	Large Energy User
LRMC	Long-run Marginal Cost
MW	Megawatt
MWh	Megawatt-hour
OAO	Offshore asset owner
PPS	Purchasing power standard
PR	Price Review
PSO	Public Service Obligation
REFIT	Renewable Energy Feed-in Tariff
RESS	Renewable Electricity Support Scheme
SEAI	Sustainable Energy Authority of Ireland
SEMO	Single Electricity Market Operator
SRESS	Small-Scale Renewable Electricity Support Scheme
TAO	Transmission asset owner

TSO	Transmission system operator
TTF	Title transfer facility
TUoS	Transmission use of system
VAT	Value-added tax

ABSTRACT

This paper examines trends in European and Irish household electricity prices during the 2018–2024 period, with a particular focus on Ireland. Measured in nominal terms and excluding taxes and levies, Irish electricity prices ranked third highest in 2018 but had risen to be the highest by 2024. Inclusive of energy credits, taxes and levies, Irish prices were the eighth highest in Europe in the second half of 2024. When adjusting for the general cost of living, Irish average electricity prices moved from being the eighth to the fifteenth most expensive in Europe in 2024. Retail prices correlated strongly with the cost of electricity generation and supply during the 2018–2024 period. Network costs have had a lesser influence on total costs to date. Their impact on total costs is expected to increase in the coming years, though remaining modest relative to the increases seen in recent years.

EXECUTIVE SUMMARY

This paper examines trends in European and Irish household electricity prices during the 2018–2024 period, with a particular focus on Ireland. Measured in nominal terms and excluding taxes and levies, Irish electricity prices ranked third highest in 2018 but had risen to be the highest by 2024. Inclusive of energy credits, taxes and levies, Irish prices were the eighth highest in Europe in the second half of 2024. When adjusting for the general cost of living, Irish average electricity prices moved from being the eighth to the fifteenth most expensive in Europe in 2024.

Energy and supply costs are the largest component of Irish electricity prices, and they also increased more than other components following the energy crisis. Because Ireland generates a large share of its electricity from gas, changes in the international price of gas on wholesale markets may be an important factor behind higher electricity prices. This rationale is backed up by the international literature, which finds that the wholesale price of natural gas is often an important driver of electricity prices. Tighter capacity margins may also play a role.

With regard to network costs, the findings of this paper suggest that distribution use of system (DUoS) and transmission use of system (TUoS) costs were not the primary factor driving the high household electricity prices faced between 2018 and 2024. However, there were considerable increases in costs for both the distribution system operator (DSO) and the transmission system operator (TSO). Some of the impact of these increases on residential consumers was offset through tariff-rebalancing measures.

Looking to the future, network costs in Ireland are set to rise. Under the Commission for Regulation of Utilities' (CRU) Price Review 6 (PR6) Final Determination for 2026–2030 (CRU, 2025c), baseline-allowed revenues will be more than double the revenues seen under the previous Price Review (PR5), and will potentially rise even further under a high expenditure scenario. These investments could add between €59 and €106 to annual household bills by 2029/30.

Renewable energy supports in Ireland are financed by the Public Service Obligation (PSO) levy on electricity bills. Lower PSO levy costs in recent years, alongside VAT reductions, have reduced the burden for households. In addition, energy credits have placed downward pressure on household bills.

CHAPTER 1

Introduction

The 2022 Russian invasion of Ukraine had a profound impact on the cost of energy in Europe. Prior to the conflict, almost 45 per cent of the EU's natural gas supply came from Russia (ACER, 2021). Though energy costs in Europe were already rising in the period preceding the invasion (Belhoula et al., 2024; IEA, 2021), subsequent restrictions on Russian gas supplies led to an increase in wholesale natural gas prices of up to 180 per cent (ECB, 2022). While wholesale gas prices subsequently fell, they remained elevated relative to pre-invasion levels (IEA, 2025). Many markets use natural gas to generate electricity, whereby an increase in the price of gas can influence the price of electricity. Irish electricity prices are particularly exposed, with approximately 50 per cent of Irish electricity generated using natural gas (SEAI, 2024a).

This paper seeks to better understand the factors influencing Irish electricity prices, with particular emphasis on how Irish prices compare to European counterparts (Eurostat, 2025a). We examine recent trends in European and Irish household electricity prices, from which several key patterns emerge. We find that Ireland experienced the sixth highest rate of nominal price growth between 2018 and 2024, moving from the third highest nominal electricity prices in 2018 to the highest in 2024, exclusive of taxes and levies (Eurostat, 2025a). In 2024, Ireland had the eighth highest electricity prices in nominal terms, inclusive of taxes and levies, taking into account the effects of temporary supports and reduced value-added tax (VAT) rates introduced by the Irish government[1]. Adjusting prices to account for differences in the cost of living moves Ireland's 2024 ranking from eighth to fifteenth most expensive.

To gain further insight, we compare trends across constituent components. We utilise Eurostat data, which decompose electricity prices into components of 'energy and supply', 'network costs' and 'taxes, levies, and other charges' (Eurostat, 2016, 2025b)[2]. We find that changes in Irish nominal electricity prices are closely correlated with changes in energy and supply costs. We observe data trends which suggest that, during the period 2022–2024, Irish electricity generation diversified away from natural gas to a lesser extent than in comparable

1 There was a reduction in the VAT rate on electricity from 13.5 per cent to 9 per cent in May 2022. This reduction was seen as a temporary relief measure, but has been extended multiple times and remains in place as of 1 March 2026.

2 The data series used is the Eurostat *'Electricity prices components for household consumers – annual data (from 2007 onwards)'* dataset. Per Eurostat (2016), the energy and supply component includes the cost of generation, aggregation, balancing energy, supplied energy costs, customer services after sales management, and other supply costs. Network costs are made up of fees for transporting electricity across power lines (transmission and distribution tariffs), energy lost during delivery (transmission and distribution losses), grid maintenance (system services costs), and the rental and use of electricity meters (meter rental and metering costs). Taxes and levies include VAT, renewable taxes (e.g. the public service obligation (PSO) levy), capacity taxes, environmental taxes, nuclear taxes and other levies (e.g. energy credits).

European countries. The extent to which Ireland's electricity prices may have been influenced by these factors is discussed in detail in Chapter 4.

Network costs are also reviewed in this paper. Irish consumers pay for network services through distribution use of system (DUoS) and transmission use of system (TUoS) charges (CRU, 2018a, 2019, 2020, 2021a, 2021b, 2022a, 2022b, 2022c, 2023a, 2024). An analysis of the underlying costs shows notable increases during the 2021/22 and 2022/23 tariff years, much of which was driven by the need for temporary emergency generation (CRU, 2021b, 2022c). Transmission costs and charges remained elevated in 2023/24.

Total network costs have risen in recent years. While customer charges have increased, there is evidence to suggest that the full extent of this has not been imposed on residential consumers. Different consumer categories face different DUoS and TUoS charges. As overall costs have risen, cost allocation has been restructured. This has been carried out through tariff changes and the unwinding of the Large Energy User rebalancing framework, so that a smaller share is borne by residential consumers. Consequently, households have not felt the full impact of these increases in the network cost base.

Looking to the future, network costs in Ireland are set to rise. Under the Commission for Regulation of Utilities' (CRU) Price Review 6 (PR6) Final Determination for 2026–2030 (CRU, 2025b), baseline-allowed revenues will be more than double the revenues seen under the previous Price Review (PR5), and will potentially rise even further under a high expenditure scenario. These increases are driven by substantial investment to facilitate decarbonisation, network resilience and the establishment of offshore infrastructure. According to the CRU (2025c), PR6 investment could increase residential energy bills in 2029/30 by an estimated €59–€106 relative to 2024/25 levels. This increase represents approximately 3–6 per cent of the €1,700 estimated average annual electricity bill in 2026 (Switcher.ie, 2026). These projected increases occur against a backdrop of elevated energy poverty in Ireland. Using one measure, a 2022 analysis found that approximately 29 per cent of households may be considered energy poor (Barrett et al., 2022). Lower-income households are consistently more exposed to higher energy costs, as they account for a larger share of their income, making even modest bill increases more impactful.

To provide this insight, this paper proceeds as follows. Chapter 2 will discuss the data used in this analysis and their data sources. Chapter 3 reviews energy price trends in Ireland relative to other EU countries. Chapter 4 analyses and compares the decomposition of prices, using Eurostat data. Chapter 5 considers the impact of network costs, and Chapter 6 considers the impact of the Public Service Obligation (PSO) levy.

CHAPTER 2

Data and Methodology

This chapter outlines the data sources used to carry out the analysis for this paper. We focus on the period 2018–2024. This includes the period immediately preceding and following the Russian invasion of Ukraine in February 2022, which saw sharp price increases in global energy markets (ECB, 2022). It also covers the COVID-19 pandemic period, during which energy demand collapsed and then rebounded (Jiang et al., 2021). Research suggests that rising demand in mid to late 2021, as Europe emerged from lockdown, contributed to rising prices prior to the conflict in Ukraine (Belhoula et al., 2024; Boeck and Zörner, 2025; Shaikh, 2022).

Multiple datasets are employed. We use household electricity prices from Eurostat (2025a), the statistical office of the European Union, which facilitates cross-country comparison. Monthly wholesale electricity price data are sourced from Ember, an energy think tank that gathers data on the power sector for public use (Ember, 2025a). Ember data are compiled from a number of constituent sources, including ENTSO-E (the European Network of Transmission System Operators for Electricity), the UK's market operators Elexon and Nord Pool, and Ireland's Single Electricity Market Operator (SEMO). Finally, we examine electricity generation data, using Ember's 'Yearly Electricity Data'. This dataset contains yearly electricity generation, capacity, emissions, import and demand data for over 200 countries. Data are collected from international multi-country datasets such as Eurostat and the International Energy Agency (IEA), which compile harmonised statistics across EU Member States and other countries, as well as from national-level sources. In the Irish case, Ember takes electricity generation data from the Sustainable Energy Authority of Ireland (SEAI) (Ember, 2025b). We use these data to examine the electricity generation fuel mix.

To assess Irish network costs, we complement an analysis of the Eurostat data, outlined above, with an analysis of the network charges levied on consumers. Transmission use of system (TUoS) and distribution use of system (DUoS) charges are levied on consumers, via suppliers, to ensure network operators receive adequate remuneration to operate the network. The CRU's allowed revenue and tariff determination documents (CRU, 2018a, 2019, 2020, 2021a, 2021b, 2022a, 2022b, 2022c, 2023a, 2024) set out the official revenues and tariffs for network operators each year. These determinations are made within the CRU's multi-year regulatory frameworks, which set allowed network revenues (and, therefore, consumer-levied network tariffs) for the subsequent five years. The past three determination periods have been Price Review 4 (2016–2020), Price Review 5 (2021–2025), and Price Review 6 (2026–2030).

2.1 EUROSTAT ELECTRICITY PRICES FOR DOMESTIC CONSUMERS

Eurostat's household electricity price data series is collected via surveys to energy suppliers in each EU Member State. Headline price statistics are available twice per year, with more detailed price breakdowns reported annually. Eurostat classifies household electricity consumers into five consumption bands, and average prices are reported using the following classifications: DA (less than 1,000 kWh per year) for very low usage, DB (1,000–2,500 kWh) for low consumption, DC (2,500–5,000 kWh) representing average household usage, DD (5,000–15,000 kWh) for high consumption households, and DE (over 15,000 kWh) for very high consumption (Eurostat, 2016). The focus of this paper is on average domestic household consumption, captured by the 'DC' category. The prices contained within the *'Electricity prices for domestic consumers – bi-annual data (from 2007 onwards)'* data series are volume-weighted average prices based on actual household contracts and include all applicable tariffs, fees and taxes (Eurostat, 2025a). The tariff observed in this Eurostat data series is reflective of the market segment, rather than the tariff offering of any single supplier, and is calculated by surveying suppliers. It may be interpreted as an average price per unit of electricity consumed, and therefore is not broken down by standing (fixed) and volumetric charge components.

This dataset also decomposes the price data according to *Regulation (EU) 2016/1952*, into constituent components of 'energy and supply', 'network costs', and 'taxes, fees, levies and charges'. *Regulation (EU) 2016/1952* provides a standardised framework for EU Member States to collect, calculate and report household energy prices, making it easier to compare costs across countries. These price component data are released annually in a separate data series entitled *'Electricity prices components for household consumers – annual data (from 2007 onwards)'* (Eurostat, 2016, 2025b)[3].

While the Eurostat data series provides insight into average price trends, there are limitations. Firstly, when considering the 'energy and supply' component, it is assumed that this comprises both wholesale electricity costs and supplier markup, precluding the separation of these components. Secondly, Eurostat data present a representative average price per unit of electricity. In reality, multiple tariff schedules are offered by multiple suppliers, as opposed to a single tariff. These include standard 24-hour tariffs, day/night tariffs and time-of-use tariffs. Rates are often available at a given time within a given market segment, and this is not reflected in the Eurostat dataset. Thirdly, the data series is available at intermittent

3 We present the data as reported by Eurostat. It should be noted that in some cases, annual averages reported by Eurostat (2025b) do not correspond exactly to the average of bi-annual amounts contained in Eurostat (2025a). This may be due to issues such as rounding, weighting or other unobserved calculations.

intervals. Overall prices are available twice yearly while price components are available at annual intervals.

Finally, there may be differences in how individual Member States interpret and implement *Regulation (EU) 2016/1952* and how average prices are collected. In an Irish context, statisticians at the SEAI calculate the average unit price of energy by surveying the revenue collected for energy delivered and calculating an average price per unit delivered (for further information, see SEAI (2024a)). This process is replicated by the relevant statistical authority for each Member State.

2.2 EMBER WHOLESALE ELECTRICITY PRICES

In addition to retail prices, we examine wholesale electricity prices. The wholesale price dataset used in this study, compiled by Ember (2025a) from ENTSO-E and Irish and UK market operators, includes average monthly and actual hourly wholesale electricity prices in euros per megawatt-hour (€/MWh) for European markets over the period 2018–2024.

2.3 EMBER ELECTRICITY GENERATION DATA

This paper also examines wholesale electricity generation data, also sourced from Ember (2025b). The wholesale generation data break down total electricity generated in each market by input fuel. These fuel-mix data are compiled using generation and capacity statistics from the ENTSO-E Transparency Platform, supplemented by data from national energy regulators or transmission system operators (TSOs). These datasets include real-time generation by fuel type, cross-border flows and grid-level dispatch data.

2.4 IRISH NETWORK COST DATA

We supplement Eurostat's harmonised data on network costs with the precise charges levied, via suppliers, on Irish consumers. Distribution use of system (DUoS) and transmission use of system (TUoS) charges are outlined by the Commission for Regulation of Utilities (CRU) in their allowed revenue and tariff determination documents (CRU, 2018a, 2019, 2020, 2021a, 2021b, 2022a, 2022b, 2022c, 2023a, 2024). While DUoS and TUoS costs are levied on suppliers, suppliers are free to pass on these costs to consumers as they see fit. As each dataset is collected according to a different process, changes in DUoS and TUoS charges do not always align with changes in 'network costs' as per the Eurostat data series (Eurostat, 2016, 2025b).

CHAPTER 3

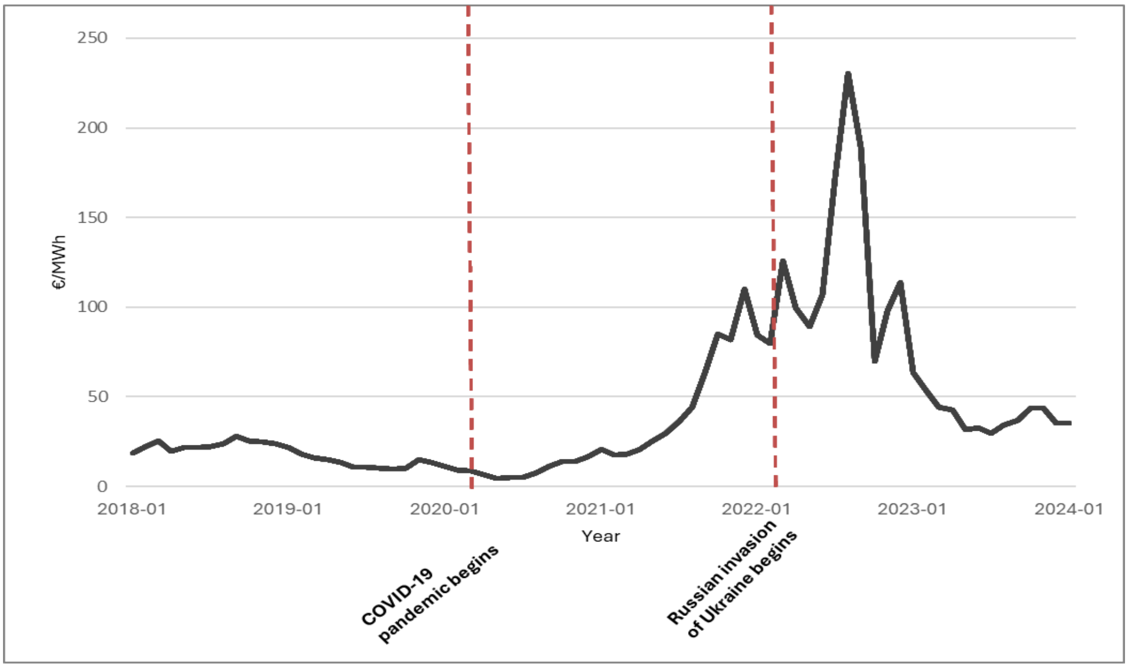
Energy Price Trends

This chapter will discuss the headline trends in European electricity prices. We begin by summarising gas price trends, to provide the appropriate context. Gas-fired power plants often set the wholesale price in electricity markets, meaning fluctuations in gas prices are often closely correlated with wholesale electricity prices (Zakeri et al., 2023).

Figure 1 shows wholesale gas prices from 2018 to 2024. Two sudden increases in gas prices are observed, each driven by a key event. The first arose in 2021 and relates to the COVID-19 pandemic. As Europe emerged from the COVID-19 lockdown in the spring and summer months of 2021, demand for natural gas began to increase at a time when it would usually decrease. This traditional period of low demand is when European gas stores are usually replenished for the following winter. However, natural gas supplies were used for consumption rather than storage, and European gas storage levels were underfilled for the following winter (Belhoula et al., 2024; IEA, 2021). While rising winter prices are typical in European gas markets due to higher heating demand, 2021 price trends were atypical, with underfilled storage facilities amplifying scarcity pressures. By autumn/winter 2021, prices were above those expected at this time of year (see Figure 1).

The second set of shocks followed Russia's invasion of Ukraine. Subsequent to the initial invasion of March 2022, European countries reduced their consumption of Russian gas. This was largely driven by a combination of Russian supply reductions and EU policy measures under REPowerEU to diversify energy sources and reduce EU dependency on Russian gas (European Commission, 2025a). Wholesale prices experienced a number of price shocks following this.

FIGURE 1: AVERAGE DAILY NATURAL GAS EU DUTCH TTF PRICES (€/MWH) 2018–2024



Notes: Prices refer to average daily Dutch Title Transfer Facility (TTF) natural gas prices for the European Union. Annual figures represent averages of daily prices. Prices measured in €/MWh. Year labels (e.g., 2018-01, 2019-01) denote January of each respective year. Labels indicate the start of the Covid-19 pandemic and the Russian invasion of Ukraine.

Source: Yahoo Finance (ICE Endex), TTF Day-Ahead (TTFDA) data, accessed 08/2025.

3.1 LITERATURE ON THE PASS-THROUGH OF GAS TO ELECTRICITY PRICES

Having discussed the trends in wholesale gas prices, it is useful to consider the link between wholesale gas prices and wholesale electricity prices. While the specific link between gas and electricity prices has not been empirically examined for Ireland, international studies provide insights from gas-dominated electricity markets. Key findings will now be summarised, with selected papers listed in Table 1.

Research shows that the price of natural gas has a strong effect on the price of electricity at the European level. Zakeri et al. (2023) showed that natural gas was the marginal price-setting fuel for 39 per cent of trading hours across Europe in 2021, increasing from 25 per cent in 2015. Similarly, Guo and Gissey (2021) modelled input cost pass-through in Great Britain and found that gas prices had a statistically significant effect on wholesale electricity prices. They found that even under relatively stable conditions (2015–2018), gas costs strongly influenced electricity pricing. Several recent studies confirm that natural gas prices are a major driver of wholesale electricity prices in many European countries, especially during periods of stress or volatility. Natural gas is a predominant fuel in the Iberian electricity market. Hidalgo-Pérez et al. (2024) showed that the 'Iberian exception', a temporary gas price cap for power generation, lowered wholesale electricity prices in Spain and Portugal compared to those countries without intervention. As such, regulation of the gas price had a likely influence on Iberian electricity prices.

Haro Ruiz et al. (2024) confirmed this, estimating that the cap reduced electricity prices by roughly 40 per cent between July 2022 and June 2023. These findings imply that under normal (uncapped) conditions, gas costs are a dominant driver of power prices in those markets.

Chuliá et al. (2024) found that, for countries with a heavy reliance on gas-fired generation, gas prices have a particularly strong influence on electricity prices, most notably during a high-gas-price period. They found notable effects for countries with heavy reliance on gas-fired generation such as Italy, the Netherlands and Great Britain (Ireland was not accounted for in this study, likely due to a tendency in the literature to focus on larger continental energy markets where more extensive data are available).

Uribe et al. (2022) analysed prices across 21 EU markets over 2015–2022 and found that the influence of gas prices on electricity prices became particularly pronounced during gas price spikes, i.e. in the upper quantiles of the electricity price distribution. Notably, the strength of this relationship varied by country and over time, with Germany, Denmark and the Nordic states showing high vulnerability during stress periods (again, Ireland was not accounted for in the study). This was largely due to their reliance on gas for peak or flexible generation, interconnections with neighbouring markets, and exposure to continental gas price dynamics.

Even markets with lower gas penetration are often affected through cross-border linkages. Do et al. (2024) showed that increased market interconnectedness amplified the impact of high gas prices across the EU, while Zhu et al. (2024) found that Nordic markets became more exposed to gas price changes after 2022 despite abundant hydro capacity. These findings highlight that cross-border dynamics and interconnectors can transmit gas price shocks to electricity systems even where gas-fired generation is limited.

TABLE 1: SELECTED STUDIES ESTIMATING THE IMPACT OF NATURAL GAS PRICES ON WHOLESALE ELECTRICITY PRICES IN EUROPE

Author(s)	Period	Region	Key Result
Chuliá et al. (2024)	2012–2022	21 EU markets	Strong gas-to-power connectedness
Do et al. (2024)	2020–2023	11 EU markets	Gas was dominant driver of prices during crisis
Guo and Gissey (2021)	2015–2018	GB	Gas showed pass-through to power prices
Haro Ruiz et al. (2024)	2022–2023	Spain, Portugal	40% reduction in spot prices due to gas cap
Hidalgo-Pérez et al. (2024)	2021–2023	Spain, Portugal	Iberian exception gas price cap lowered prices relative to those in other countries
Uribe et al. (2022)	2015–2022	21 EU markets	Gas dominated price change in times of high prices
Zakeri et al. (2023)	2015–2022	Europe-wide	Gas set price in 39% of trading hours in 2021
Zhu et al. (2024)	2018–2023	Nordics vs EU-27	Gas-to-power link intensified post-2022

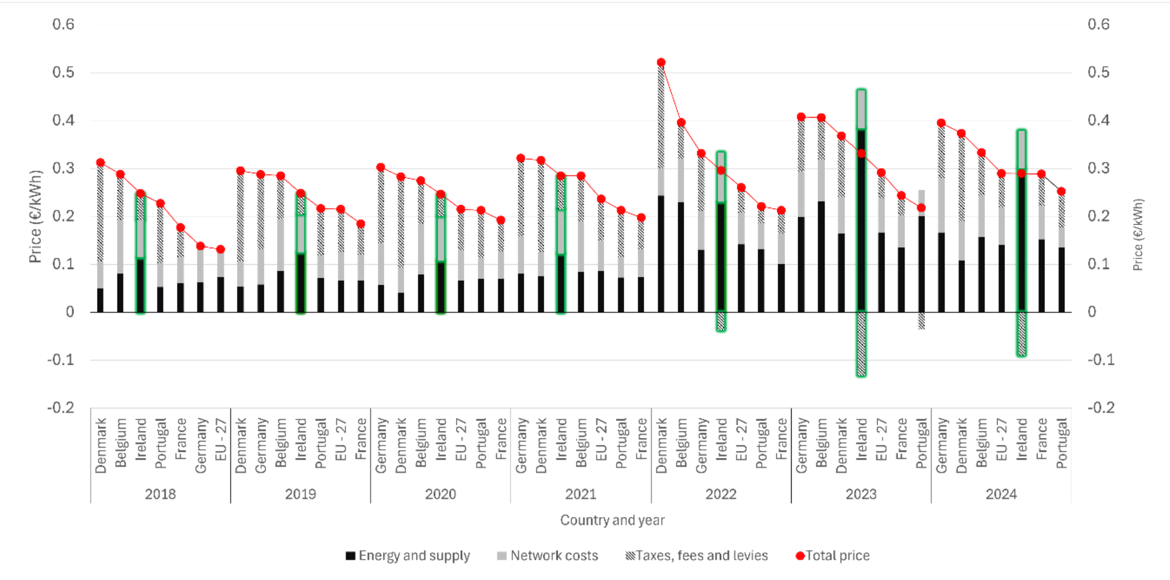
The literature suggests that gas prices are a strong driver of electricity prices in many contexts, particularly when a system is dominated by gas. Exposure to gas generation is likely of particular importance when analysing electricity prices.

3.2 ELECTRICITY PRICE TRENDS: H1 2018 – H2 2024

Using Eurostat data, this section reviews residential electricity prices for a sample of 35 European countries from the first half (H1) of 2018 to the second half (H2) of 2024. Electricity prices are presented in nominal terms and in purchasing power standard (PPS). PPS is an artificial currency unit used by Eurostat accounting for differences in price levels when comparing economic data between countries. In simple terms, PPS acts like an exchange rate that compensates for the cost-of-living difference between countries.

3.2.1 General trends: Nominal terms

FIGURE 2: AVERAGE DOMESTIC ELECTRICITY PRICES AND PRICE COMPONENTS IN NOMINAL TERMS (€/KWH) IN CERTAIN EU MEMBER STATES 2018–2024



Notes: Prices refer to average domestic (residential) electricity prices in nominal terms and are expressed in €/kWh. Total prices are decomposed into energy and supply, network charges, and taxes and levies components. Red dots represent total prices inclusive of taxes and levies. Annual figures represent averages over the year. Irish price data are highlighted in green. Figure shows a selection of European markets only. Markets additional to Ireland are shown for illustrative purposes. To examine the full dataset, see Eurostat (2025a).

Source: Eurostat (2025a, 2025b).

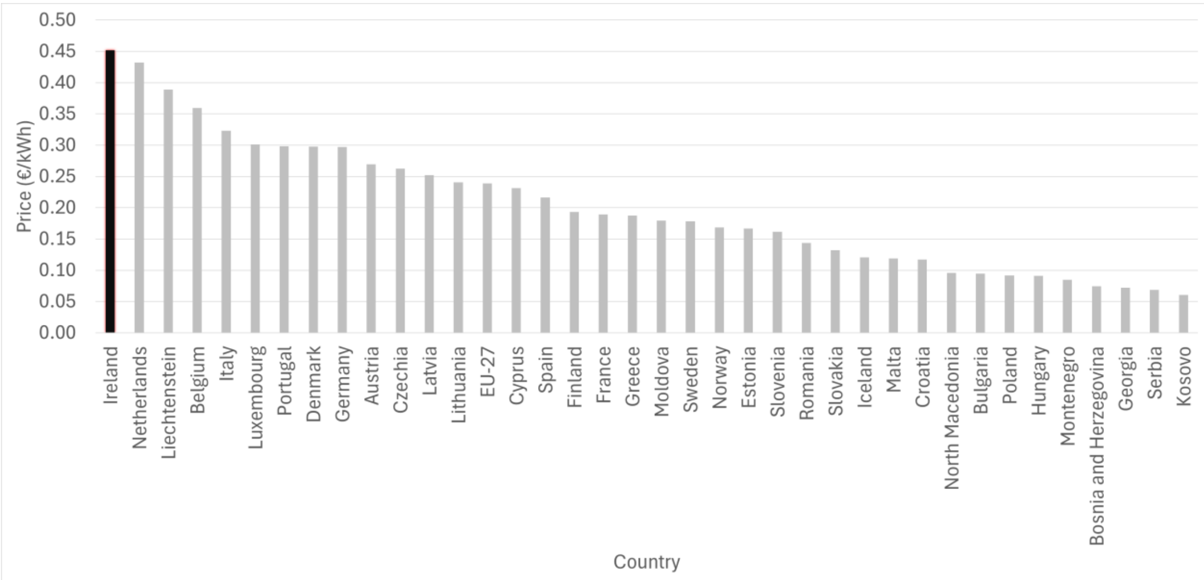
Prices exclusive of taxes and levies

Figure 2 presents average nominal electricity prices for the period 2018–2024 for the EU-27, alongside a subset of other markets, decomposed into their constituent components. It does not necessarily reflect Ireland's relative electricity costs, because only a subset of additional markets are included. For the full dataset, see Eurostat (2025b).

First, we consider annual trends between 2018 and 2022. Irish electricity prices (exclusive of taxes and levies) increased considerably from €0.19/kWh in 2018 to €0.33/kWh in 2022. Over the same period the EU-27 average price, excluding taxes and levies, increased from €0.13/kWh to €0.21/kWh. Countries with relatively high pre-crisis prices in 2018 often continued to exhibit high prices in 2022 (for example, Belgium), while others experienced much sharper increases. In Denmark's case, average prices (exclusive of taxes and levies) rose from €0.11/kWh in 2018 to €0.30/kWh in 2022, nearly tripling relative to the 2018 baseline.

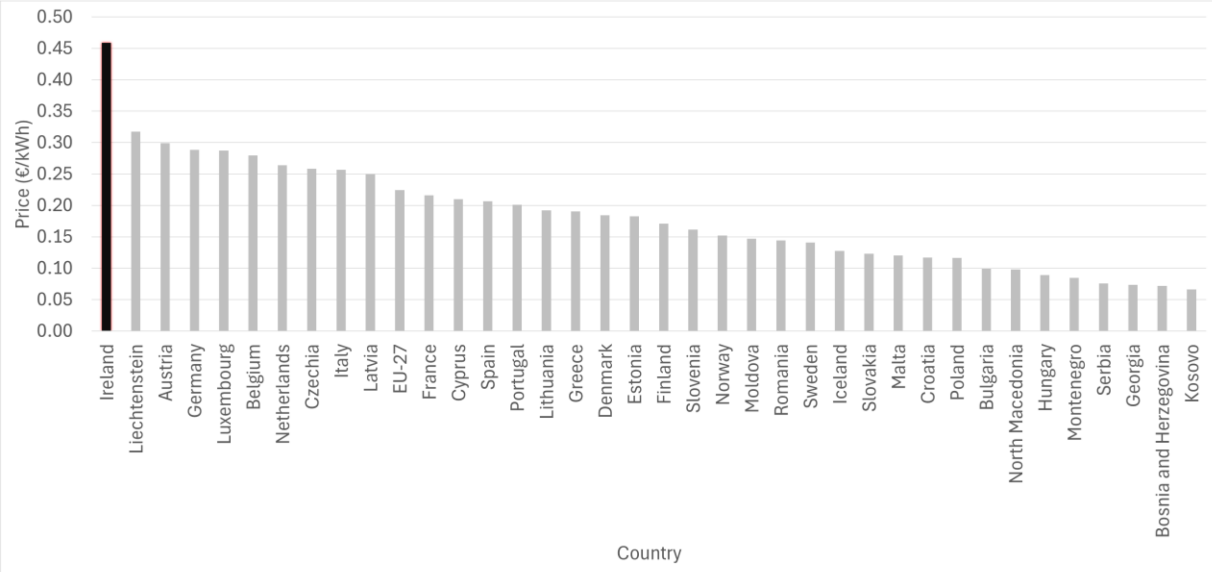
A number of intra-annual trends emerged between early 2023 and late 2024, which we will explore in Figures 3 to 5. These figures examine trends across the full Eurostat sample, focusing on electricity prices exclusive of taxes and levies. First, we explore trends that emerged between H1 2023 (Figure 3) and H2 2023 (Figure 4). In Ireland, Eurostat reported that the average electricity price in H1 2023, exclusive of taxes and levies, was €0.45/kWh. As Figure 3 shows, this was the highest among the European sample in H1 2023 when measured in nominal terms, exclusive of taxes and levies.

FIGURE 3: AVERAGE DOMESTIC ELECTRICITY PRICES IN NOMINAL TERMS (€/KWH) (EXCLUDING ALL TAXES AND LEVIES) IN EU MEMBER STATES AND ASSOCIATED COUNTRIES IN H1 2023



Notes: Prices refer to average domestic (residential) electricity prices expressed in nominal terms and exclude all taxes and levies. Prices are reported in €/kWh. Data correspond to the first half of 2023 (H1 2023).
Source: Eurostat (2025b).

FIGURE 4: AVERAGE DOMESTIC ELECTRICITY PRICES IN NOMINAL TERMS (€/KWH) (EXCLUDING ALL TAXES AND LEVIES) IN EU MEMBER STATES AND ASSOCIATED COUNTRIES IN H2 2023

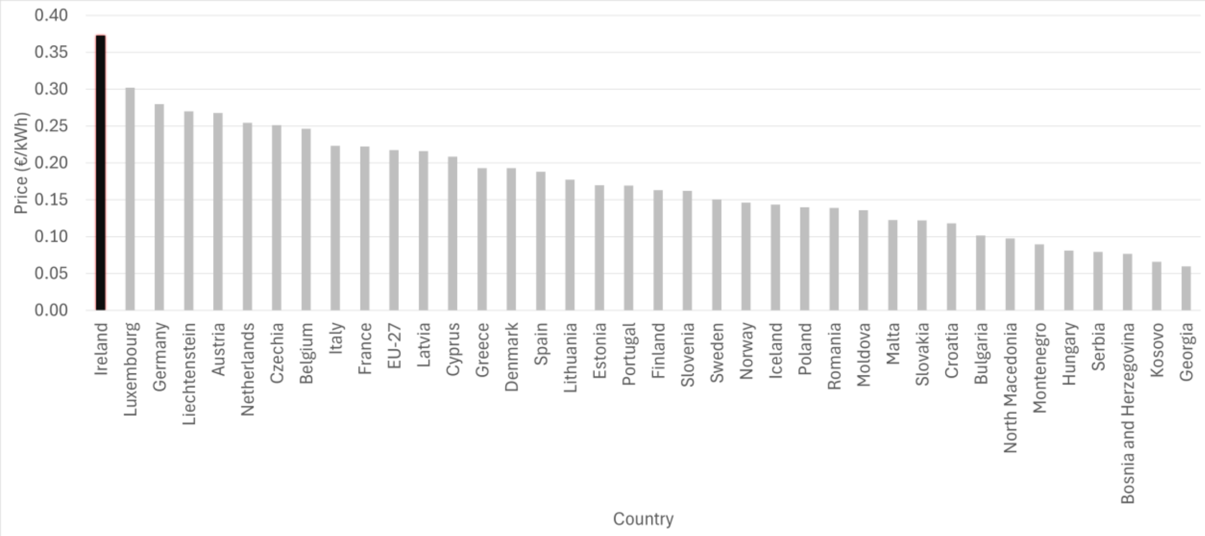


Notes: Prices refer to average domestic (residential) electricity prices expressed in nominal terms and exclude all taxes and levies. Prices are reported in €/kWh. Data correspond to the second half of 2023 (H2 2023).
Source: Eurostat (2025b).

Figure 4 shows H2 2023 prices exclusive of taxes and levies. High prices in Ireland, exclusive of taxes and levies, were sustained in H2 2023. This was different to several other European countries. Some countries with similarly high price levels in H1 2023 – such as the Netherlands, Belgium and Italy – saw their prices fall between the H1 2023 and H2 2023 reporting periods. As a result, Ireland appears to be an outlier in H2 2023. Liechtenstein, Austria, Germany, Luxembourg, Belgium and the Netherlands were among those with the next highest electricity prices in the Eurostat sample, with average prices of approximately €0.30/kWh. By H2 2023, Irish electricity prices were approximately €0.14/kWh higher than the second most expensive country, when taxes and levies are excluded.

Prices exclusive of taxes and levies in Ireland decreased by 19 per cent between H2 2023 and H2 2024, falling from an average of €0.46/kWh to €0.37/kWh (Figure 5). However, nominal Irish prices exclusive of taxes and levies remained the highest in Europe during this period. The reduction in nominal prices may reflect some easing of the wholesale gas price pressures at this time (see Figure 1). Irish electricity prices, excluding taxes and levies, remained above the EU-27 average in H2 2024 (€0.22/kWh).

FIGURE 5: AVERAGE DOMESTIC ELECTRICITY PRICES IN NOMINAL TERMS (€/KWH) (EXCLUDING ALL TAXES AND LEVIES) IN EU MEMBER STATES AND ASSOCIATED COUNTRIES IN H2 2024



Notes: Prices refer to average domestic (residential) electricity prices expressed in nominal terms and exclude all taxes and levies. Prices are reported in €/kWh. Data correspond to the second half of 2024 (H2 2024).
Source: Eurostat (2025b).

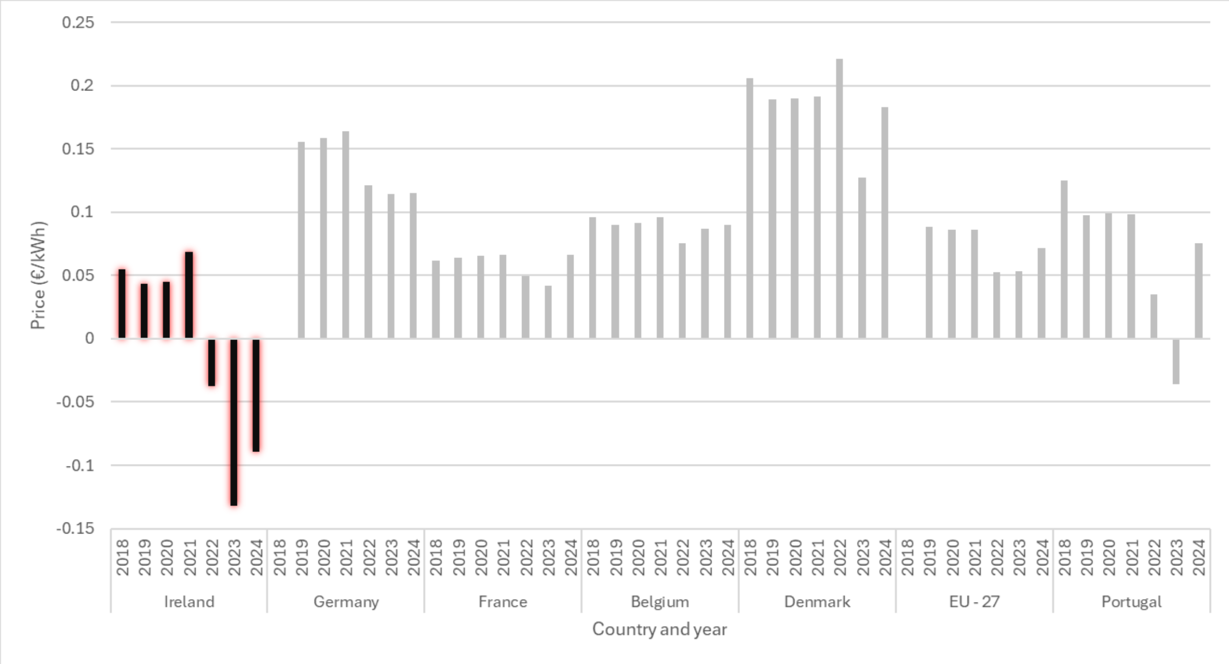
Ireland had the sixth highest rate of nominal price growth, exclusive of taxes and levies, in the 2018–2024 period[4], with prices growing from a higher base than many other European markets. Irish prices (excluding taxes and levies) in 2024 were 102 per cent greater than 2018 prices, whilst EU-27 prices grew by 69 per cent during the same period. Belgium and Spain displayed similar nominal prices (excluding taxes and levies) to Ireland in H1 2018, but experienced lower rates of price growth over the period to H2 2024.

Taxes and levies

This section will discuss the influence of taxes and levies on final electricity prices. From Figure 2, we see that taxes and levies (VAT, renewable taxes, capacity taxes, environmental taxes, nuclear taxes and other levies) are positive for all countries before the energy crisis. This component turns negative for Ireland from 2022. Figure 6 graphs the taxes and levies component only for Ireland and other EU Member States to highlight this effect. Negative values in the taxes and levies component reflect policy interventions such as electricity credits, which more than offset the taxes applied to domestic electricity consumption.

4 It should be noted that Irish prices grew considerably during the period 2018–2024 against a backdrop of growing domestic demand: the total energy requirement for the Irish system grew from around 30 TWh in 2018 to a predicted median value of around 34 TWh in 2024, a rise of about 10% (EirGrid, 2024). This increased demand reflects not only general economic growth but also significant expansion in demand from datacentres and other large new electricity users, as well as the electrification of heat and transport. While increased demand may lead to higher wholesale prices, it is expected *ex ante* that its impact is much less than effects such as large changes to wholesale gas prices. It is outside the scope of this paper to explicitly quantify the contribution that potential factors may have made to electricity price growth.

FIGURE 6: AVERAGE ANNUAL TAXES AND LEVIES FOR DOMESTIC CONSUMERS IN CERTAIN EU MEMBER STATES 2018–2024 (€/KWH, NOMINAL)



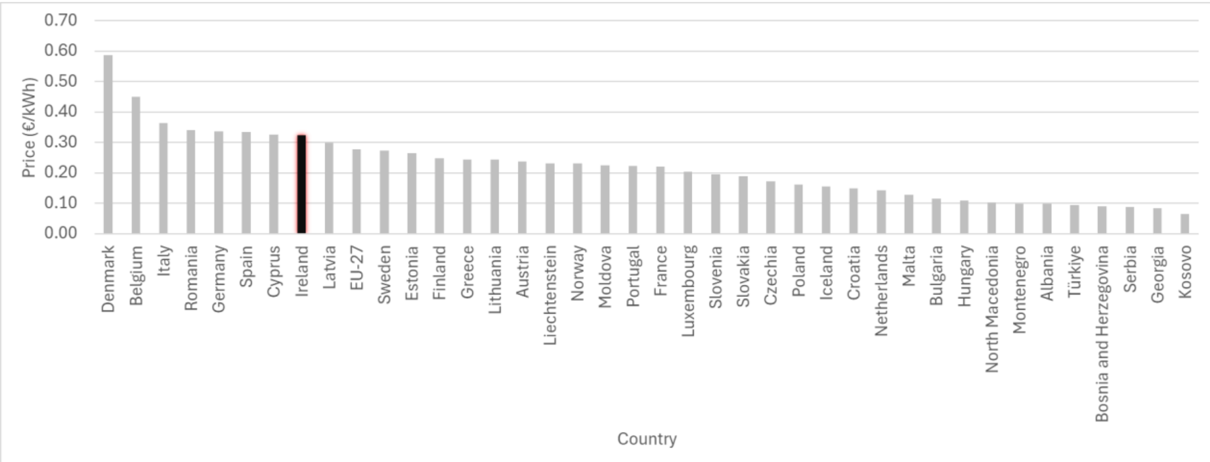
Notes: Prices refer to the taxes and levies component of average domestic (residential) electricity prices in Ireland, expressed in nominal terms (€/kWh). Annual figures represent averages over the year. Figure shows a selection of European markets only. Markets additional to Ireland are shown for illustrative purposes.
Source: Eurostat (2025b).

In an Irish context, the taxes and levies component comprises three primary elements, which may explain the data observed during the sample period. The first consideration is VAT revenues. The VAT rate on electricity in Ireland was reduced from 13.5 per cent to 9 per cent in May 2022 (Department of Finance, 2025). This lowered the overall tax burden faced by Irish households. In addition, renewable electricity price supports are financed by levies on electricity consumers. Due to the nature of these contracts, renewable generation made a net contribution to Irish consumers, rather than receiving a net subsidy, in the 2022/23 charging period (for a full discussion, see Chapter 6). Most significantly, the Irish government introduced a series of energy credits for all domestic electricity customers in response to sharply rising prices. Initially, three €200 credits were applied automatically in late 2022 and early 2023 (total value €600), and a further three €150 credits were provided across late 2023 and early 2024 to all eligible accounts. Later support under Budget 2025 delivered a €250 credit in two instalments to assist households with ongoing cost pressures (CRU, 2023b). When these credits are considered alongside VAT and other residual levies, the overall taxes and levies component for Ireland becomes negative. This contributed to Ireland also being one of the few countries in the Eurostat sample to record a decline in electricity prices inclusive of taxes and levies in H1 2023 relative to H2 2022 (see Figure 7 and Figure 8). Nevertheless, price levels remained elevated compared to pre-crisis norms.

The impact of taxes and levies is most notable when one examines 2022 price data. Figure 2 shows 2022 prices inclusive of taxes and levies, where the average Irish price was similar to the average EU-27 price of €0.27/kWh. The tax and levy component placed downward pressure on averaged Irish prices[5]. Indeed, other countries with high 2018 prices (Denmark, Belgium) experienced much greater 2022 increases in the final price than Ireland, once taxes and levies are considered (see Figure 2).

This trend continued in 2023. Figure 2 shows sizeable 2023 increases in nominal prices (inclusive of taxes and levies) for many comparison countries, such as Germany. Indeed, these price increases are often of a considerable magnitude. In 2023 annual average prices for Ireland, inclusive of taxes and levies, stayed comparatively stagnant relative to 2022 values, rising slightly from €0.30/kWh to €0.33/kWh. This was due to the downward pressure being placed by the taxes and levies component, offsetting much of the additional increases in the cost base. Indeed, the inclusion of taxes and levies reduced Irish prices from the most expensive (see Figure 3) to eleventh most expensive (see Figure 8) in H1 2023.

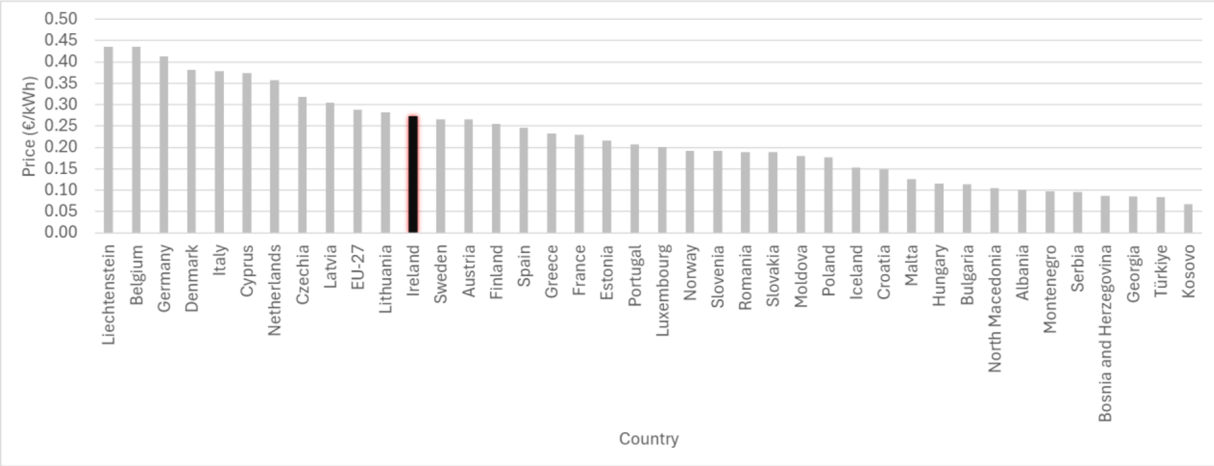
FIGURE 7: AVERAGE DOMESTIC ELECTRICITY PRICES IN NOMINAL TERMS (€/KWH) (INCLUDING ALL TAXES AND LEVIES) IN EU MEMBER STATES AND ASSOCIATED COUNTRIES IN H2 2022



Notes: Prices refer to average domestic (residential) electricity prices expressed in nominal terms and include all taxes and levies. Prices are reported in €/kWh. Data correspond to the second half of 2022 (H2 2022).
Source: Eurostat (2025b).

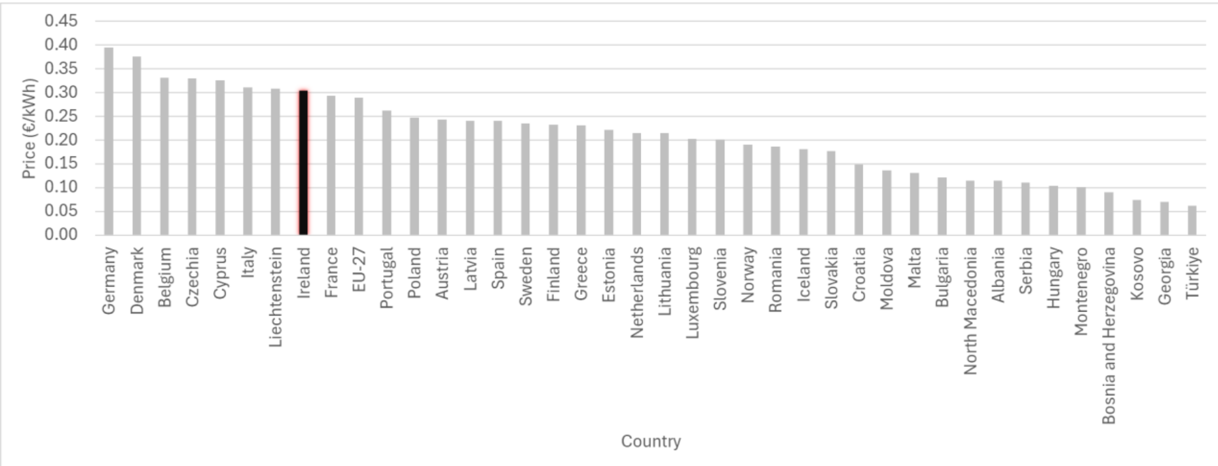
5 While elements of the 'taxes and levies' component, such as the energy credits, are separate to the actual prices faced by Irish consumers, recall that Eurostat data show an average price per unit, incorporating all elements. As such, these components are incorporated in the averaged price as per Eurostat calculations (see Chapter 2 for a full discussion).

FIGURE 8: AVERAGE DOMESTIC ELECTRICITY PRICES IN NOMINAL TERMS (€/KWH) (INCLUDING ALL TAXES AND LEVIES) IN EU MEMBER STATES AND ASSOCIATED COUNTRIES IN H1 2023



Notes: Prices refer to average domestic (residential) electricity prices expressed in nominal terms and include all taxes and levies. Prices are reported in €/kWh. Data correspond to the first half of 2023 (H1 2023).
Source: Eurostat (2025b).

FIGURE 9: AVERAGE DOMESTIC ELECTRICITY PRICES IN NOMINAL TERMS (€/KWH) (INCLUDING ALL TAXES AND LEVIES) IN EU MEMBER STATES AND ASSOCIATED COUNTRIES IN H2 2024



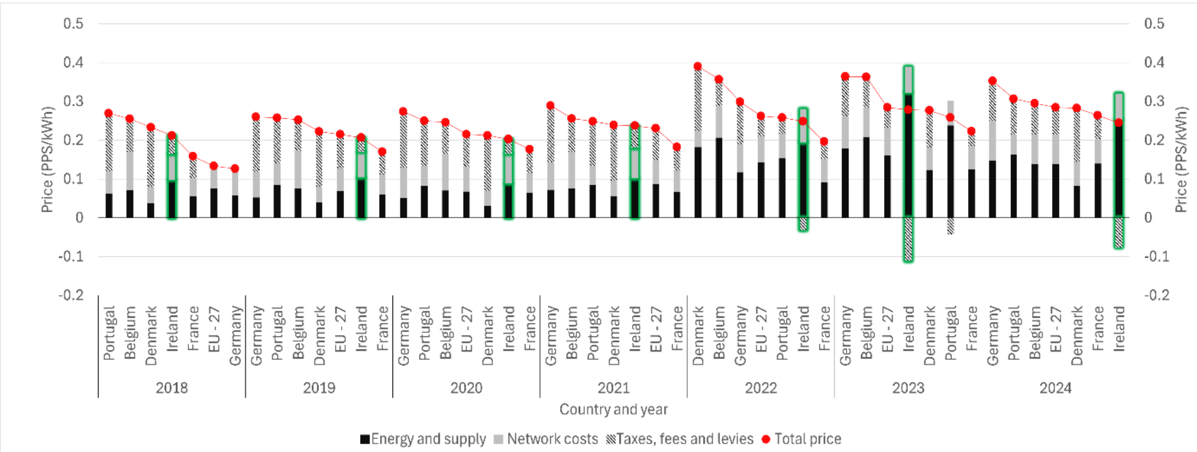
Notes: Prices refer to average domestic (residential) electricity prices expressed in nominal terms and include all taxes and levies. Prices are reported in €/kWh. Data correspond to the second half of 2024 (H2 2024).
Source: Eurostat (2025b).

Irish prices inclusive of taxes and levies grew to €0.38/kWh in H2 2023 before falling once again in 2024. By H2 2024, Irish nominal prices inclusive of taxes and levies (€0.30/kWh) were the eighth highest in the Eurostat sample. Inclusive of taxes and levies, Irish electricity prices increased by approximately 29 per cent over the period 2018–2024. Among the countries sampled by Eurostat, this represents the sixteenth largest price increase over this period. For comparison, the EU-27 average increased by 37 per cent during the same timeframe.

3.2.2 General trends: Real terms

We now examine prices adjusted for cost of living by comparing PPS prices from Eurostat. These are reported in Figure 10. Adjusting for differences in purchasing power brings Ireland's real average electricity price for 2018 closer to the EU-27 average (see Figure 10) than a similar comparison in nominal terms (see Figure 2).

FIGURE 10: AVERAGE DOMESTIC ELECTRICITY PRICES AND PRICE COMPONENTS IN REAL TERMS (PPS/KWH) IN CERTAIN EU MEMBER STATES 2018–2024



Notes: Prices refer to average domestic (residential) electricity prices in real terms, expressed in purchasing power standards (PPS) per kWh. Total prices are broken down into energy and supply, network charges, and taxes and levies components. Red dots represent total prices inclusive of taxes and levies. Annual figures represent averages over the year. Irish price data are highlighted in green. Figure shows a selection of European markets only. Markets additional to Ireland are shown for illustrative purposes. To examine the full dataset, see Eurostat (2025a).

Source: Eurostat (2025a, 2025b).

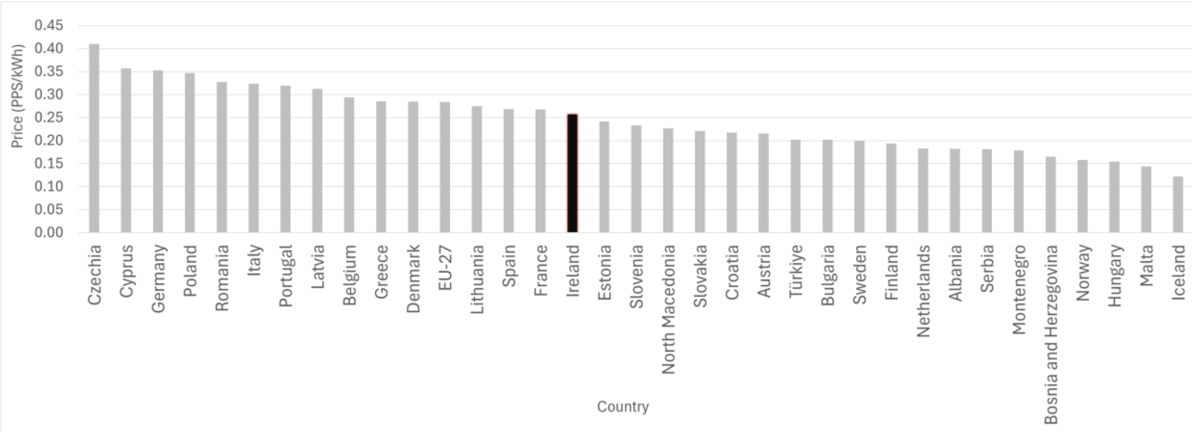
This pattern continues when one examines the biannual series of real average prices, including taxes and levies (Eurostat, 2025a). In H1 2018 Ireland ranked thirteenth in average real prices, compared with fifth in nominal terms, across the European sample. By H2 2023 Ireland had the ninth most expensive prices in real terms (including taxes and levies), compared to the second highest in nominal terms, across sampled countries. This pattern implies that some of Ireland's high energy costs are likely associated with generally high costs of living, although the direction of causality cannot be inferred (Eurostat, 2025b)[6].

While real prices see Ireland closer to the EU-27 average, H2 2023 Irish prices are still above the EU-27 average (Eurostat, 2025a). By H2 2024, Ireland had the fifteenth most expensive electricity prices in real terms among the Eurostat sample. The Irish average cost-adjusted electricity price, inclusive of taxes and levies, stood at 0.26 PPS/kWh in H2 2024. This is just below the EU-27 average, which was 0.28 PPS/kWh. Taxes and levies (including energy credits) and cost-of-living differences bring Irish energy prices close to the EU-27 average. The

6 While a generally high cost of living may be impacting the cost of electricity, it may also be the case that a high cost of electricity may be affecting the general cost of living, particularly as electricity is a primary input into many goods and services.

comparison between domestic electricity prices in real terms in Ireland and the EU-27 in H2 2024 can be seen in Figure 11.

FIGURE 11: AVERAGE DOMESTIC ELECTRICITY PRICES IN REAL TERMS (PPS/KWH) (INCLUDING ALL TAXES AND LEVIES) IN EU MEMBER STATES AND ASSOCIATED COUNTRIES IN H2 2024



Notes: Prices refer to average domestic (residential) electricity prices expressed in real terms and include all taxes and levies. Prices are reported in PPS/kWh. Data correspond to the second half of 2024 (H2 2024).
Source: Eurostat (2025b).

Overall, once adjusted for purchasing power, Irish cost-adjusted electricity prices inclusive of taxes and levies saw the nineteenth largest increase across all considered countries during the 2018–2024 period (Eurostat, 2025a).

CHAPTER 4

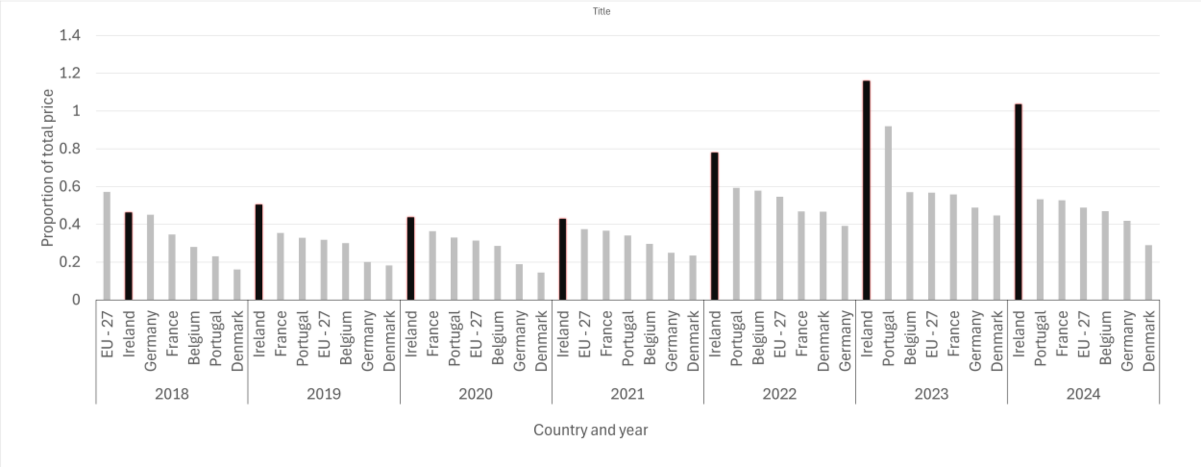
Examining Electricity Price Trends by Constituent Component: Energy and Supply

We now consider the constituent components of electricity prices, with a particular focus on countries that experienced a rise in domestic electricity prices over the 2018–2024 period. An analysis of these components (see Figure 12 and Figure 13) shows that the share of prices attributable to energy and supply has grown considerably during this period.

Figure 12 illustrates the growth in the proportion of the energy and supply component of residential electricity prices in Ireland relative to EU counterparts between 2018 and 2024. Figure 13 shows a more in-depth breakdown of Irish price components specifically. In 2018, energy and supply costs accounted for approximately 46 per cent of the total electricity price in Ireland. Network costs accounted for approximately 32 per cent, and taxes and levies accounted for 22 per cent. By 2023, energy and supply accounted for approximately 116 per cent of the final Irish price, network costs contributed around 24 per cent and taxes offset about 40 per cent[7]. In 2024, energy and supply accounted for approximately 104 per cent of the final price, network costs contributed around 27 per cent, and taxes offset about 31 per cent (see Figure 13). The energy and supply component saw the largest increase during the 2018–2024 period, consistent with wholesale price volatility during the energy crisis. In contrast, network costs remained relatively stable.

7 The taxes and levies component was negative in 2022 and 2023.

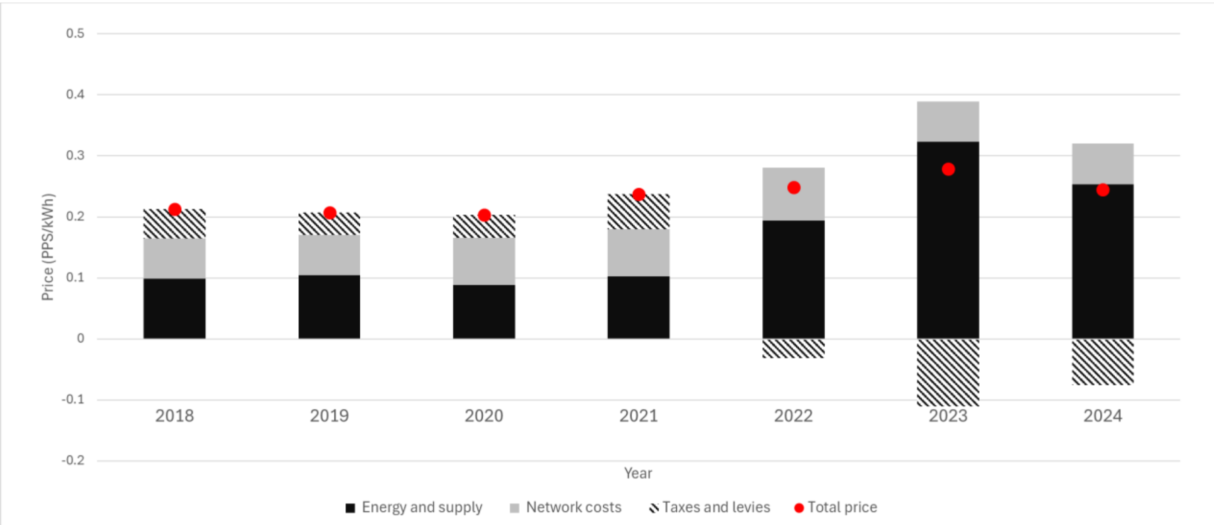
FIGURE 12: PROPORTION OF ENERGY AND SUPPLY COSTS IN REAL TERMS AS A SHARE OF RESIDENTIAL ELECTRICITY PRICES 2018–2024



Notes: Values show the proportion of energy and supply costs relative to total residential electricity prices, expressed in real terms. Annual figures represent averages over the year from 2018 to 2024. Figure shows a selection of European markets only. Markets additional to Ireland are shown for illustrative purposes.

Source: Eurostat (2025b).

FIGURE 13: BREAKDOWN OF IRISH HOUSEHOLD ELECTRICITY PRICES IN REAL TERMS BY PRICE COMPONENT 2018–2024



Notes: Prices refer to average domestic (residential) electricity prices in Ireland, expressed in real terms. Prices are measured in PPS/kWh. The breakdown shows the contribution of each price component – energy and supply, network charges, and taxes and levies. Annual figures represent averages over the year from 2018 to 2024.

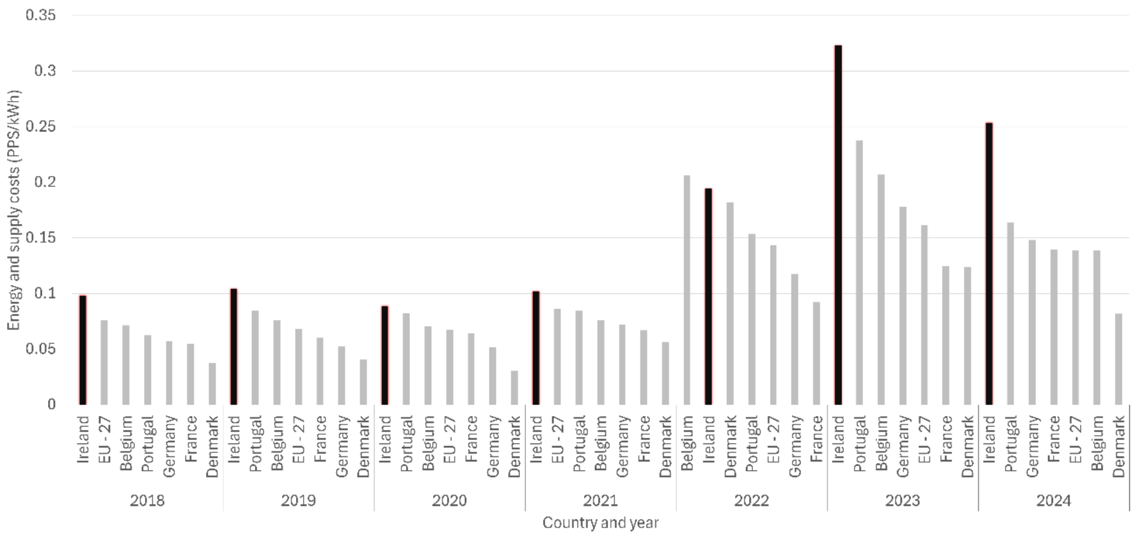
Source: Eurostat (2025b).

4.1 ENERGY AND SUPPLY

4.1.1 Overall trends in nominal energy and supply costs

Figure 14 compares Irish energy and supply costs in real terms, among a subsample of European countries, with prices shown in PPS/kWh. In 2022, Irish energy and supply costs in real terms approximately doubled relative to 2018, increasing from 0.098 PPS/kWh to 0.19 PPS/kWh. The EU-27 average in this period also doubled, from 0.076 PPS/kWh to 0.143 PPS/kWh. Ireland's relative ranking remains high when compared with its European counterparts. Ireland had the seventh highest energy and supply costs in real terms in 2022, among the full Eurostat sample (Eurostat, 2025a).

FIGURE 14: ABSOLUTE ENERGY AND SUPPLY COSTS IN REAL TERMS 2018–2024



Notes: Values represent absolute energy and supply costs for average domestic (residential) electricity prices, expressed in real terms. Prices are measured in PPS/kWh. Annual figures represent averages over the year from 2018 to 2024. Figure shows a selection of European markets only. Markets additional to Ireland are shown for illustrative purposes.

Source: Eurostat (2025b).

By 2023 Irish energy and supply costs in real terms had increased by over 200 per cent compared with 2018 prices, while the EU average had increased by 112 per cent. In 2024, Ireland reported the highest energy and supply costs in real terms in Europe, at 0.25 PPS/kWh, according to Eurostat data. While this reflects a decline from the 2023 peak of 0.32 PPS/kWh, Irish energy and supply costs still remained considerably above those of other EU countries, many of which also experienced price reductions over the 2023/24 period.

4.1.2 Trends in wholesale electricity prices

Having discussed the trends in the energy and supply component of Irish retail prices, the next step is to consider how these compare to wholesale electricity price trends. This may help us to understand the extent to which changes in energy and supply costs are correlated with changes in wholesale electricity prices.

Energy and supply costs mostly comprise the wholesale cost of generation and supplier markup. The wholesale cost of generation is largely made up of the price at which electricity is sold by generators on the wholesale market. Wholesale price trends are readily observable via market data.

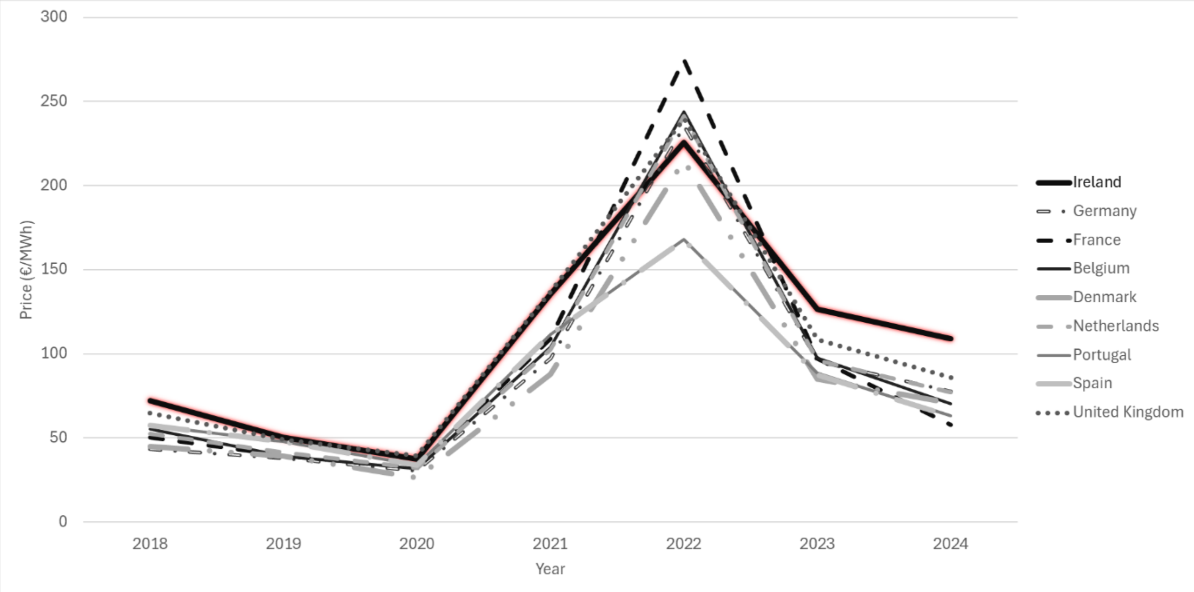
Figure 15 demonstrates the trends in wholesale electricity prices for a selection of markets similar to Ireland. Prior to 2020 we see that wholesale market prices were, on average, between c. €50/MWh and €70/MWh for this selection of European countries. Irish prices are at the upper end of the distribution for this selection.

Post-2020, wholesale electricity prices increased sharply across all countries in the sample, peaking in 2022, coinciding with the Russian invasion of Ukraine and concurrent restrictions on gas imports. The sharp spike in 2022 is consistent with the role of natural gas as the marginal fuel in many European power systems, implying that shocks to gas supply translated into electricity price shocks across many markets (Boeck and Zörner, 2025; Zakeri et al., 2023; Zhu et al., 2024).

In 2022, average wholesale electricity prices in the sample ranged from approximately €168/MWh in Spain and Portugal to around €275/MWh in France. Ireland recorded an average wholesale price of approximately €225/MWh, broadly in line with Germany, Belgium and the United Kingdom, all of which recorded prices in the €235–€245/MWh range. In the case of Spain and Portugal, low wholesale prices were influenced by the so-called 'Iberian exception', a temporary gas price cap for power generation introduced in June 2022 (Hidalgo-Pérez et al., 2024). Under this cap, governments limited the price paid by electricity generators for natural gas, starting at €40/MWh and gradually rising by €5 per month to an average of €48.80/MWh over the year. The price cap occurred between July 2022 and December 2023.

European wholesale electricity prices fell in early 2023, with average prices in many countries subsequently falling to 2021 levels. Figure 15 shows that Irish prices fell during the period 2022 to 2023, but by 2023 average Irish wholesale prices were still 30–32 per cent higher than those in many other countries in the sample, such as Germany, Belgium and the Netherlands. By 2024, Ireland and other comparison countries saw their wholesale prices fall further, by 14 per cent in Ireland and by an average of 26 per cent across the remaining eight countries shown in Figure 15.

FIGURE 15: WHOLESALE ELECTRICITY PRICES (€/MWH) IN CERTAIN EU MEMBER STATES AND THE UK 2018–2024



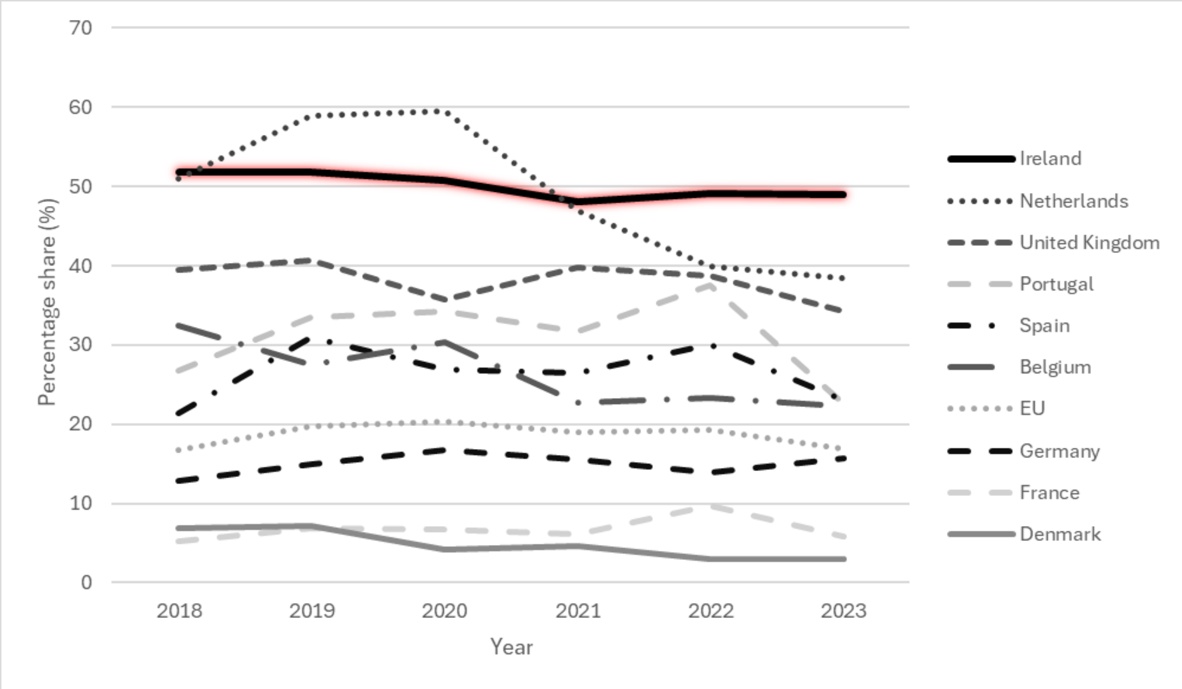
Notes: Prices refer to average wholesale electricity prices in selected EU Member States and the United Kingdom, expressed in €/MWh. Annual figures represent averages over the year from 2018 to 2024. Figure shows a selection of European markets only. Markets additional to Ireland are shown for illustrative purposes.
Source: Ember (2025a).

4.1.3 Wholesale costs and gas prices

As the energy price shock was largely driven by gas prices, markets with greater exposure to gas may have been more prone to higher wholesale electricity prices. This section examines the role of the fuel mix, with a particular focus on natural gas, in shaping electricity generation patterns and price dynamics across selected European countries.

Once again, we choose a sample of European countries to compare wholesale market trends. Among this sample, Figure 16 shows that Ireland consistently records the highest or near-highest share of natural gas in electricity generation in the 2018–2023 period. Many countries demonstrated a greater diversification from natural gas in their fuel mix post-2022. This is likely largely driven by policy shifts under the EU's REPowerEU Plan and associated climate and energy policies, which aimed to reduce gas dependency and accelerate renewable deployment in response to the energy crisis (European Commission, 2025a). The period between mid 2021 and early 2024 saw an approximate 18 per cent drop in gas consumption across the EU (European Commission, 2025a). Countries such as the Netherlands recorded substantial declines in gas use for electricity. Ireland, by contrast, did not demonstrate a shift away from gas generation in the period 2021–2023. Ireland's share of natural gas in the electricity fuel mix stayed at roughly 50 per cent throughout this period.

FIGURE 16: PERCENTAGE SHARE OF GAS IN ELECTRICITY GENERATION IN CERTAIN EU MEMBER STATES AND THE UK 2018–2023



Notes: Values show the percentage share of natural gas in total electricity generation for selected EU Member States and the United Kingdom. Annual figures represent averages over the year from 2018 to 2023. Figure shows a selection of European markets only. Markets additional to Ireland are shown for illustrative purposes.
Source: Ember (2025b).

4.1.4 Comparing retail prices with energy and supply costs

The previous discussion has examined the trend in wholesale and retail electricity prices in isolation. It is useful to consider how these price series compare. Figure 17 plots average wholesale prices against energy and supply costs for a selection of European markets. A number of interesting trends emerge. First, we see that across all examined countries, the wholesale energy and supply cost spiked in 2022 with the Russian invasion of Ukraine. This led to a rise in retail prices. In many countries, such as Ireland, Germany and the Netherlands, wholesale energy and supply costs are passed through to retail prices with a delay. Other countries, notably Spain and Denmark, exhibit a much shorter lag between wholesale and retail price movements. It is difficult to ascertain for certain what leads to this difference in pass-through, but there are a number of potential explanations. The difference is possibly due to variability in retail market design, including the prevalence of fixed-price or regulated tariffs, the frequency with which suppliers are permitted to update prices, and the presence of direct government interventions that compress or cap wholesale cost pass-through (ACER, 2023; Fabra and Reguant, 2014). Overall, retail price increases in Ireland are large relative to wholesale energy and supply costs, and are notably greater than in many other markets.

It is useful to note the difference between retail and wholesale energy and supply costs before and after the 2022 price spike. In many of the considered markets, the margin between wholesale energy and supply costs and retail prices is greater post-2022. However, of the considered markets, this margin is greatest in Ireland. There are many potential reasons for this. First, it may be the case that Irish suppliers have greater difficulty hedging risk, and therefore a greater risk premium is built into their retail price. Second, there may be differences in competition between countries, with more competitive countries offering retail prices closer to cost. Finally, it should be noted that Eurostat data are collected by a number of statistical agencies who survey electricity suppliers in each market. There may be differences in the interpretation and execution of the sampling process between statistical agencies; however, large differences would not be expected. There may be further possible reasons, unaccounted for by this discussion. Further research is required to understand whether, and to what extent, each of these and other factors are contributing towards these observed trends.

FIGURE 17: ENERGY AND SUPPLY COMPONENT OF NOMINAL RESIDENTIAL ELECTRICITY PRICES VERSUS AVERAGE WHOLESALE ELECTRICITY PRICES IN SELECTED EUROPEAN MARKETS 2018–2024

Notes: Energy and supply refers to the energy and supply component of nominal residential electricity prices. Wholesale prices are annual average day-ahead market prices. Prices measured in €/MWh. Figure shows a selection of European markets only. Markets additional to Ireland are shown for illustrative purposes.

Source: Ember (2025a) and Eurostat (2025b).

CHAPTER 5

Examining Electricity Price Trends by Constituent Component: Network Costs

This chapter examines the trajectory of network costs to understand what factors influence these costs currently and how they are likely to evolve in the future. Network costs comprise costs and the associated charges required to fund the operation of the transmission and distribution networks. The transmission network, which carries electricity at high voltages across the country, is operated by EirGrid and owned by ESB Networks, while the distribution network, which delivers electricity at lower voltages to homes and businesses, is owned and operated by ESB Networks. As regulated monopolies, the costs of operation are recovered through regulated charges on consumers: transmission use of system (TUoS) charges for transmission and distribution use of system (DUoS) charges for distribution[8].

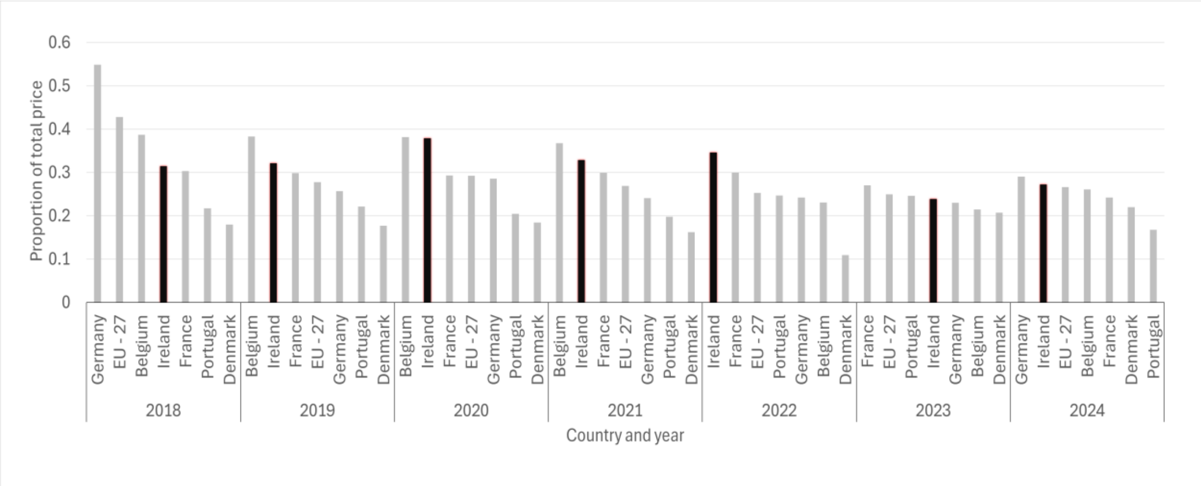
Both TUoS and DUoS are set by the Commission for Regulation of Utilities (CRU) based on ‘allowed revenues’ for EirGrid and ESB Networks. These costs are levied on electricity suppliers who recoup them via retail tariffs. Suppliers have full control of their retail tariff structure, and therefore the means with which these costs are passed through to consumers (Farrell and Meles, 2025).

5.1 NETWORK COSTS: 2018–2024

Drawing on calculations by Eurostat (2025b), Figure 18 shows the network costs as a proportion of the average electricity price for a subset of EU countries. In Ireland, network costs accounted for a greater share of the average electricity price than the EU average every year from 2019 to 2022. In 2023 and 2024, the proportion of total costs attributable to network costs in Ireland moved to slightly below the EU average. However, this is likely due to substantial increase in energy and supply costs, particularly in Ireland; the network cost component therefore comprised a smaller share compared to the EU-27 average. Figure 19 shows that, measured in real terms and using data collected by Eurostat (2025a), Irish network costs comprised 0.06–0.08 PPS/kWh between 2018 and 2024, falling slightly in 2023 and 2024.

8 While costs levied on generators, such as generation connection charges, may influence the cost of generation, we consider those charges levied on consumers in this discussion.

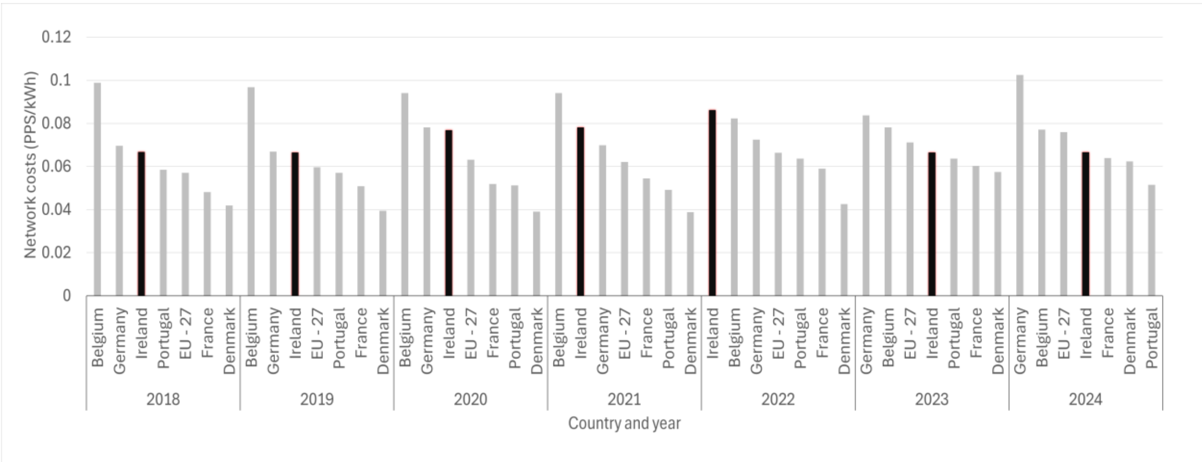
FIGURE 18: PROPORTION OF NETWORK COSTS IN REAL TERMS AS A SHARE OF RESIDENTIAL ELECTRICITY PRICES 2018–2024



Notes: Values show the proportion of network costs relative to total residential electricity prices, expressed in real terms. Annual figures represent averages over the year from 2018 to 2024. Figure shows a selection of European markets only. Markets additional to Ireland are shown for illustrative purposes.

Source: Authors' calculations using Eurostat (2025b).

FIGURE 19: ABSOLUTE NETWORK COSTS IN REAL TERMS 2018–2024



Notes: Values represent absolute network costs for average domestic (residential) electricity prices, expressed in real terms. Annual figures represent averages over the year from 2018 to 2024. Figure shows a selection of European markets only. Markets additional to Ireland are shown for illustrative purposes.

Source: Authors' calculations using Eurostat (2025b).

5.1.1 Transmission use of system (TUoS) charges: 2018–2024

The previous section considered network costs as calculated by Eurostat (2025b). We supplement this with an analysis of TUoS and DUoS charges during the 2018–2024 period. We carry this out in two stages. First, we consider changes in total costs, otherwise known as 'allowed revenues'. This gives us insight into changes in the total cost base. Second, we consider changes to TUoS charges levied on domestic consumers. This gives insight into changes in costs that consumers are exposed to. Allowed revenues and TUoS charges levied on domestic consumers may differ as system operators or the regulator may choose to levy changes in costs on different consumer categories. As such, while allowed revenues may increase, these additional costs may not be borne by domestic consumers, but rather another consumer category.

Changes in allowed revenues

First, we consider the total change in allowed revenues. We use the average unit price (AUP) metric constructed by the CRU to quantify changes in allowed revenues between the years 2018 and 2024 (CRU, 2020, 2021b, 2022c). The AUP is calculated by dividing the total allowed revenue for the tariff year by the forecast total energy consumption for that year, with the result expressed in cents per kilowatt-hour (c/kWh)[9].

Table 2 shows the trajectory of the TUoS average unit price (AUP) for regulatory periods spanning 2018/19 to 2023/24. These data give insight into the total cost of the transmission network over this period, accounting for changes in electricity consumption. We see a trend of growth with inter-annual volatility. In the 2018/19 regulatory period the AUP was €0.018/kWh, rising to €0.030/kWh by 2023/24, an increase of 65.8 per cent (Eurostat, 2025a). The most substantial increases occurred during the 2022/23 regulatory period, where TUoS charges increased by 44.60 per cent from €0.0202/kWh to €0.0292/kWh. Overall, TUoS costs between 2018 and 2024 grew at a rate greater than inflation (see Table 10 in the appendix): the TUoS AUP rose by 65.75 per cent between 2018 and 2024, whilst general price levels rose by 20.3 per cent.

TABLE 2: TRANSMISSION COSTS IN IRELAND MEASURED BY AVERAGE UNIT PRICE

Regulatory period	AUP (c/kWh)	Year-on-year increase
2018/19	1.81	N/A
2019/20	1.77	-2.21%
2020/21	1.81	2.26%
2021/22	2.02	11.60%
2022/23	2.92	44.60%
2023/24	3.00	2.74%
Total change (2018–2024)		65.75%

Notes: Values represent the average transmission unit price (AUP) for electricity, expressed in cents per kWh (c/kWh). The average unit price (AUP) refers to the mean price charged per unit of electricity (per kWh) and is calculated by dividing total transmission revenue by the total volume of electricity transmitted over a given period. Annual figures represent averages over the year from 2018 to 2024.
Source: Authors' calculations using CRU (2018a, 2018b, 2019, 2020, 2021a, 2021b, 2022a, 2022c, 2023a).

9 It should be noted that this calculation differs methodologically from that of the preceding section. These potential differences, and their implications, will be discussed as they arise.

A notable contributor to network costs are costs associated with temporary emergency generation to maintain security of supply (CRU, 2021b, 2022c). This generation consists of mostly short-term, gas-fired units contracted by the CRU to ensure sufficient electricity supply during the periods of tight supply. These generating plants will be connected to the system for a limited number of years until new, enduring power generation plants are connected in the late 2020s (CRU, 2021b, 2022c). The costs associated with temporary emergency generation are reflected in the considerable growth of the transmission AUP in 2022. Transmission costs and charges remained elevated in 2023/24. While these expenditures are included in TUoS costs, they reflect the costs of insufficient generation capacity rather than network cost or development.

Changes in costs levied on residential consumers

The previous discussion considered changes in allowed revenues, and we now turn to considering how this translates into changes in charges levied on residential consumption. TUoS charges are levied on suppliers by the transmission system operator and subsequently passed on to residential consumers as a component of the final retail price. These levies vary by consumer category.

There are three main components to TUoS charges that are levied on all users of the transmission system: the network transfer charge, which covers the cost of using the transmission network to transport electricity from generators to distribution networks; the network capacity charge, a volumetric charge that reflects the cost of providing transmission capacity to meet demand; and the system services charge, which recovers costs associated with the secure operation and ancillary services of the transmission system.

We focus on the charges for the DTS-D2 consumer category, which represents standard domestic consumers[10].

10 Formally, these are consumers 'indirectly connected to the transmission system via the distribution network and with a Maximum Import Capacity (MIC) of less than 0.5 MW' (CRU, 2020, 2021b, 2022c).

TABLE 3: TUOS DTS-2 CHARGES (€/MWH) 2018–2024

Regulatory period	Network capacity charge	Network transfer charge	System services charge	Total	Year-on-year increase
2018/19	6.71	3.19	7.50	17.40	N/A
2019/20	7.03	3.37	6.50	16.90	-2.9%
2020/21	7.43	3.55	6.37	17.35	2.7%
2021/22	5.90	2.78	10.91	19.59	12.9%
2022/23	6.49	3.05	19.05	28.59	45.9%
2023/24	7.03	3.35	18.86	29.24	2.3%
Total change (2018–2024)					68.1%

Notes: Values represent the TUoS DTS-2 network capacity charges, expressed in €/MWh.
Annual figures represent averages over the year from 2018 to 2024.
Source: Authors' calculations using CRU (2018a, 2018b, 2019, 2020, 2021a, 2021b, 2022a, 2022c, 2023a).

Table 3 shows the TUoS charges for DTS-D2 customers between the 2018/19 and 2023/24 regulatory periods. While the network capacity charge levied on households increased modestly by 4.8 per cent over the period 2018/19 to 2023/24, the system services charge rose by 151 per cent, resulting in a total TUoS increase of 68.1 per cent.

From this analysis, we can see that the AUP increased by 65.8 per cent between 2018 and 2024 (Table 2) whilst overall TUoS costs increased by 68.1 per cent (Table 3), resulting in a similar increase in both the transmission system cost base and the TUoS charges levied on domestic consumers.

5.1.2 Distribution use of system (DUoS) charges: 2018–2024

DUoS charges are analogous to TUoS charges but recover distribution rather than transmission system costs. They vary by consumer category to account for broad between-group differences in the costs imposed on the distribution network. Domestic users are classified under 'DG-1' (urban) and 'DG-2' (rural) categories. DUoS charges for domestic consumers incorporate a volumetric (c/kWh) and standing charge (c/day) component.

Table 4 shows the distribution network allowed revenues for the regulatory periods spanning 2018/19 to 2023/24. Once again, to get a handle on total system costs, we consider allowed revenues in 'AUP' terms. For the 2018/19 regulatory period, the DUoS AUP was 3.38c/kWh, rising to 4.51c/kWh in the 2023/24 time period; an increase of 33.3 per cent. This increase occurred against a backdrop of a 20.3 per cent rise in general price levels (see Table 10 in the appendix).

TABLE 4: DISTRIBUTION COSTS IN IRELAND MEASURED BY AVERAGE UNIT PRICE

Regulatory period	AUP c/kWh	Year-on-year increase
2018/19	3.38	N/A
2019/20	3.36	-0.59%
2020/21	3.75	11.61%
2021/22	3.45	-8.10%
2022/23	3.79	9.86%
2023/24	4.51	19.00%
Total change (2018–2024)		33.32%

Notes: Values represent the average distribution unit price for electricity, expressed in c/kWh.
Annual figures represent averages over the year from 2018 to 2024.
Source: Authors' calculations using CRU (2018a, 2018b, 2019, 2020, 2021a, 2021b, 2022a, 2022c, 2023a).

Table 5 shows the DUoS tariffs for DG-1 (urban) and DG-2 (rural) consumers. Overall, DG-1/DG-2 tariffs decreased slightly by 0.77 per cent between 2018 and 2024. Table 5 shows a pattern of fluctuation in DUoS costs over the period, with some years increasing and others decreasing. This contrasts with the pattern of growth observed with respect to the allowed revenues (see Table 4). Table 4 shows that the AUP over the 2018–2024 period increased by 33.3 per cent, whereas DG-1/DG-2 tariffs (Table 5) decreased by 0.77 per cent.

TABLE 5: DUOS DG-1 AND DG-2 24H UNIT CHARGES

Regulatory period	DG-1/DG-2 (c/kWh)	Year-on-year increase
2018/19	3.918	N/A
2019/20	3.979	1.56%
2020/21	4.441	11.61%
2021/22	4.112	-7.41%
2022/23	4.019	-2.26%
2023/24	3.888	-3.25%
Total change (2018–2024)		-0.77%

Notes: Values represent DUoS DG-1 and DG-2 24-hour unit charges, expressed in c/kWh.
Annual figures represent averages over the year.
Source: Authors' calculations using CRU (2018a, 2018b, 2019, 2020, 2021a, 2021b, 2022a, 2022c, 2023a).

Over the 2018 to 2024 period analysed, allowed revenues for the distribution network increased from around €900 million in 2018 to €1.18 billion in 2024 (CRU, 2018a, 2023a). As a regulated monopoly, ESB Networks' allowed revenues are set by the CRU to recover efficient operating and capital costs, together with a regulated rate of return on invested capital, meaning that higher revenues reflect higher regulated costs rather than increased profitability (ESBN, 2023, 2024). ESB Networks has stated that these increases were largely driven by higher capital investment and operating costs required to maintain and upgrade the distribution network (ESBN, 2023, 2024).

Unlike with TUoS, we see a difference between costs and the tariffs faced by domestic consumers. It should be noted that these changes in TUoS and DUoS costs are net of changes to the Large Energy User (LEU) rebalancing framework. The LEU rebalancing framework, when in place, shifted some costs from LEUs to domestic consumers. This was unwound as of 1 October 2022[11] (CRU, 2022b). This measure, alongside associated tariff adjustments, placed downward pressure on network charges (CRU, 2021a, 2022a, 2022b, 2023a, 2024). This may have contributed to the observed trend whereby many of the increased distribution costs encountered during the 2018 to 2024 period (Table 4) were not passed on to domestic consumers (Table 5). Other factors may also be at play.

While we observe some increases in network costs during the 2018–2024 period, these changes were relatively modest when compared to other components of final electricity price, such as energy and supply. Nominal Irish electricity prices (excluding taxes and levies) in H2 2024 were 102 per cent higher than H1 2018 (Eurostat, 2025a). Residential TUoS and DUoS charges[12] increased by 68.1 per cent and decreased by 0.77 per cent respectively in the 2018–2024 period. The TUoS and DUoS AUPs, however, rose by 65.75 per cent and 33.3 per cent respectively during this time.

In summary, these findings suggest that DUoS and TUoS costs were likely not the primary factor driving the high household electricity prices faced between 2018 and 2024. However, there were considerable increases in costs for both the distribution system operator (DSO) and the transmission system operator (TSO). It appears that domestic consumers were shielded from some of the increases in the cost base through tariff-rebalancing measures.

5.2 ANTICIPATED NETWORK COSTS: 2026–2030

Up to this point, we have discussed the trajectory of past network costs in Ireland. This section will discuss the expected future trajectory for network costs in Ireland, the implications this may have for retail prices going forward, and some important economic considerations for policy decision-making.

The Price Review (PR) process, which allocates and approves network infrastructure expenditures, occurs in five-year cycles. The PR6 Final Determination paper published by the CRU outlines increased expenditure for Irish transmission and distribution networks, including expenditure for offshore network investments (CRU, 2025b). This additional expenditure is split into two

11 The unwinding of the LEU rebalancing framework reversed a policy that had shifted a portion of network costs from large energy users (LEUs) to domestic consumers since 2010. From October 2022 the CRU ended this framework, recalibrating domestic customer charges.

12 The DTS-D2 network capacity charge, network transfer charge and system services charge for transmission and the DG-1/DG-2 24h unit charge for distribution.

categories: a baseline expenditure amount and an additional high expenditure amount.

Final allowed revenues for network costs under the baseline and high expenditure scenarios are outlined in Table 6. In the baseline scenario, total expenditures are 2.14 times the ex-post 2020–2025 PR5 allowance, rising to 2.29 times the PR5 allowance in the high expenditure scenario.

TABLE 6: ALLOWED REVENUES FOR PR5 (2020–2025) AND PR6 (2026–2030) BY NETWORK (€MN, 2024 PRICES)

Category		Ex-post PR5 allowance	Final determination PR6 allowance (baseline)	Final determination PR6 allowance (high)
Transmission	TSO	€734	€6,193	€6,640
	TAO	€1,383	€2,105	€2,398
Distribution	DSO	€5,385	€7,466	€7,914
Offshore	OAO	€121	€523	€523
Total		€7,623	€16,287	€17,475

Notes: Values represent the allowed revenues for PR5 (2020–2025) and PR6 (2026–2030) by network, expressed in millions of euros (€mn) in 2024 prices.
TSO = transmission system operator, TAO = transmission asset owner, DSO = distribution system operator, OAO = other asset owner.
Source: Table 2 and Table 4 of Price Review Six: Investing in Ireland's Future (CRU, 2025b).

Given the large changes in network expenditure, TUoS and DUoS charges are likely to increase should these costs be passed through to consumers. The potential changes in these costs are identified in CRU (2025c). For domestic consumers, the following changes are anticipated (CRU, 2025c): Over the five-year period from the 2024/25 tariff year to the 2029/30 tariff year, CRU (2025c) estimate that the typical bill for domestic customers will increase by between 15 per cent and 28 per cent in nominal terms. In the high-cost scenario, there is an estimated €106 net increase in network charges between those incurred in 2024/25 and those incurred in the 2029/30 regulatory year.

The method of network cost recovery has important economic implications for consumer welfare, as it affects the immediate incidence of cost changes on household energy bills. It also shapes the behavioural and investment incentives faced by consumers and firms, influencing consumption choices, technology adoption and longer-run network efficiency. The means of cost recovery must be specified correctly. Much research exists to inform these decisions. The following sections will discuss the means of cost recovery according to two categories: tariff design and channel of cost recovery.

5.2.1 The importance of cost-reflective tariffs

It is important that the tariffs are designed in a cost-reflective manner. Cost reflectivity and 'Coasian' pricing are important principles adopted in many markets in the design of goods or services with high fixed costs, such as electricity (Farrell, 2021; Farrell and Meles, 2025). In plain terms, cost-reflective, or Coasian, pricing means setting network charges so that what households pay more closely matches the actual costs that their use of the electricity system imposes on the network. Under a Coasian approach, fixed costs (like the cost of maintaining and upgrading the network) would mainly be recovered through standing charges, while costs that vary with use or with peak capacity requirements would be recovered through tariffs more closely linked to energy use or capacity. This is the basis for multi-part retail tariffs that comprise fixed and energy-related charges. A capacity charge may also be included. Farrell (2021) and references therein provide a full discussion of these principles.

Applying these principles to the recovery of network costs implies that the volumetric price should be set equal to the marginal cost of electricity transmission/distribution (i.e. the cost of transmitting/distributing the last kWh of electricity through the system). The standing charge should be proportional to the burden that the consumer places on fixed costs. A capacity charge should be proportional to each consumer's contribution towards the transmission capacity requirement. This may contain a spatial and/or temporal component, whereby the capacity and fixed charges are proportional to each consumer's contribution towards fixed costs and capacity requirements at a given location, at a given time.

Cost reflectivity is important as it guides efficient consumption and investment decisions. A cost-reflective volumetric charge ensures that consumption takes place if the value is greater than the cost. This guides consumers towards consumption decisions that are worthwhile; consumption will not take place if the value is less than the cost. Similarly, a cost-reflective standing charge ensures that the connection takes place when the value outweighs the cost. This is particularly important in a spatial context; cost reflectivity guides efficient spatial patterns of investment in demand and generation. This has knock-on effects for network development, guiding efficient connections and the development of the network.

Finally, a capacity charge guides efficient consumption during periods of congestion, which is a key determinant of capacity requirements; if there is less consumption at peak hours, we need less instantaneous generation at a given time, and less capacity on the system to deliver this instantaneous generation. While important for all users, this may be of particular importance for non-domestic consumers, particularly large energy users, as their connection decisions can have important implications for grid investment.

Any deviation from cost reflectivity results in a welfare loss. This can manifest in many ways. Welfare-enhancing consumption may be foregone, or consumption may take place where the value is less than the cost of delivery. Investment may be misguided to inefficient locations.

Research by the ESRI has identified elements of these cost drivers. All new infrastructure connecting with the transmission network (e.g. wind, solar and thermal generation; storage; electrolysers; etc.) has the potential to contribute costs, as well as a benefit, to the network. Research on optimal generation and transmission investment planning shows that the net impact of new infrastructure on the network varies by location (Fitiwi et al., 2020a, 2020b; Koecklin et al., 2021; Longoria et al., 2021). All else equal, network connections for new infrastructure should be prioritised or incentivised towards locations that deliver the greatest network benefits, whether reducing congestion, lowering system costs or providing system services. Efficient, cost-reflective tariffs that incorporate spatial variation in costs can help to achieve this.

The importance of cost reflectivity grows with the magnitude of network costs: any deviation results in a greater welfare loss for Irish consumers. As such, the proposed increase in network costs draws greater attention to the means by which these costs are to be recovered.

Cost-reflective tariffs are of considerable importance in the final determination for PR6, where the final costs imposed on consumers could either be a baseline or high-cost scenario. The high-cost scenario is subject to investment of uncertain requirements. A system of cost-reflective tariffs to guide efficient behaviour is of fundamental importance to minimise costs, and thus the likelihood of realising the high threshold of network investment.

The deployment of greater shares of renewable generation, alongside the electrification of heat and transport, are driving significant changes in where and when electricity is consumed and produced, placing new demands on distribution and transmission networks. Tariffs that reflect the spatial and temporal costs of network usage can signal the value of locating flexible demand, generation or storage in areas that alleviate congestion or minimise the requirement for investment. For example, network tariffs with a spatial component can incentivise the siting of renewable generation or sources of demand in areas where capacity is available and discourage investment in constrained zones. Similarly, capacity-based tariffs can encourage consumers to manage peak demand, through technologies such as smart thermostats or battery storage, minimising future network investment requirements.

On foot of this evidence, it can be concluded that network cost recovery should take place in a cost-reflective manner to guide efficient investment and consumption decisions. The CRU expenditure models provide a breakdown between load-related and non-load-related expenditures to facilitate this. This is a suitable starting point for cost-reflective network tariff formulation.

5.2.2 Channel of cost recovery

A central debate in the design of a cost-reflective network is whether capital costs should be recovered through levies on electricity consumption or through levies on general taxation. The preferred criteria to allocate costs to consumers are subject to debate. To guide good investment and consumption decisions, these costs should be reflective of costs to the system that are directly related to long-term consumption decisions. A guiding principle of this debate is the concept of long-run marginal cost (LRMC) (Strbac et al., 2014). If an expenditure constitutes an element of the long-run marginal costs of the system, then it is reasonable to recover these costs via levies to the electricity consumer, in the manner outlined above.

Defining LRMC is difficult and often subjective. There are a few generally agreed-upon factors that constitute a LRMC. In general, LRMCs are forward-looking expenditures and should relate to long-term decisions related to the use of the system. Examples of expenditures that may be included in LRMCs include incremental capacity expansion costs such as system upgrade or infrastructural investment to meet demand or reinforcement costs in constrained areas.

Costs that do not represent LRMCs are historical or sunk costs. These do not change with future demand. If costs do not comprise an element of LRMCs, then there is a strong argument for their recovery via general taxation. Costs are levied on consumers to guide efficient decision-making. Levying costs that cannot change with consumption patterns on consumers is inefficient: consumption will be affected but costs will remain unchanged. A similar principle applies to financing costs (including depreciation and return on capital) and costs for social reasons or policy reasons, not directly tied to system usage.

With regard to PR6 expenditures, it would appear that many of these additional expenditures are related to LRMCs. Therefore, it is reasonable that many of the additional costs are recovered by the electricity consumer. There are some legacy costs, sunk costs or historical costs that may not be LRMCs. Table 7 presents cost categories associated with PR6 expenditures. Reviewing these cost categories, ‘depreciation’ and ‘return’ are substantial cost components that may come under this heading. If any elements of the total network cost expenditure are to be recovered via alternative means, non-LRMC cost components should be considered in the first instance.

TABLE 7: BREAKDOWN OF REVENUE REQUIREMENT INTO VARIOUS COST DRIVERS – BASELINE SCENARIO (€MN, 2024 PRICES)

Category	DSO	TSO	TAO	OAO
Better services for customers	520	0	0	0
Delivering decarbonised electricity	567	6	14	0
Secure and resilient networks and supplies	1,292	35	391	0
Security of supply, ancillary services and FASS	0	2,455	0	0
System planning costs	0	819	0	0
Offshore planning	0	0	0	482
Other operational costs and investments	1,050	110	279	0
Depreciation	2,374	403	542	0
Return	1,223	99	887	0
Incentives and adjustments	-90	30	-34	0
Total	6,935	3,956	2,079	482

Notes: Values represent the breakdown of the revenue requirement into various cost drivers under the baseline scenario, expressed in millions of euros (€mn) in 2024 prices. Data displayed as presented in Price Review Six: Impact Analysis. DSO = distribution system operator, TSO = transmission system operator, TAO = transmission asset owner, OAO = other asset owner, FASS = future arrangements for system services.

Source: Table 6 of Price Review Six: Impact Analysis (CRU, 2025c).

5.2.3 TUoS and DUoS cost-recovery should incentivise efficient spatial investment

Generally, the level of generation investment increases nonlinearly with demand. With high renewable electricity targets and electricity demand, proportionally greater levels of (renewable) generation investment are required to satisfy demand (Fitiwi et al., 2024). The growth in electricity demand from datacentres over the next decade is expected to be as much as 75 per cent of total electricity demand growth, and in aggregate datacentres are expected to account for approximately one-third of total electricity demand by 2030. The nonlinear growth in costs is therefore exacerbated by datacentre demand. The location of existing and proposed datacentres is concentrated primarily in the Dublin region, where network infrastructure is already under stress due to congestion.

The strong growth in datacentre demand will continue to have an impact on the transmission system, as the location of the strongest demand growth is distant from the growth in renewable generation. Optimally locating new datacentres in a spatially dispersed manner around the digital (fibre) network will substantially reduce grid investment needs, with up to 39 per cent reduction in network investment required in some instances (Fitiwi et al., 2024). Transmission system costs are ultimately borne by all electricity consumers. Transmission system costs driven by datacentre demand may therefore disproportionately burden other electricity customers (Lynch and Devine, 2019)

To address these issues there is an arguable case that datacentres assume greater responsibility for transmission costs associated with datacentres, and that new datacentres be located, or be incentivised to locate, at sites more optimal for the power system in terms of reducing congestion and lowering total system costs.

CHAPTER 6

Public Service Obligation Levy

Finally, we consider electricity subsidy costs, which in Ireland are recovered via the Public Service Obligation (PSO) levy. For domestic consumers, the PSO levy is a flat rate charge on electricity bills. At present, the PSO levy funds price supports for renewable energy deployment only. In the past, this levy has also funded indigenous peat generation and other energy generation capacity for security of supply purposes.

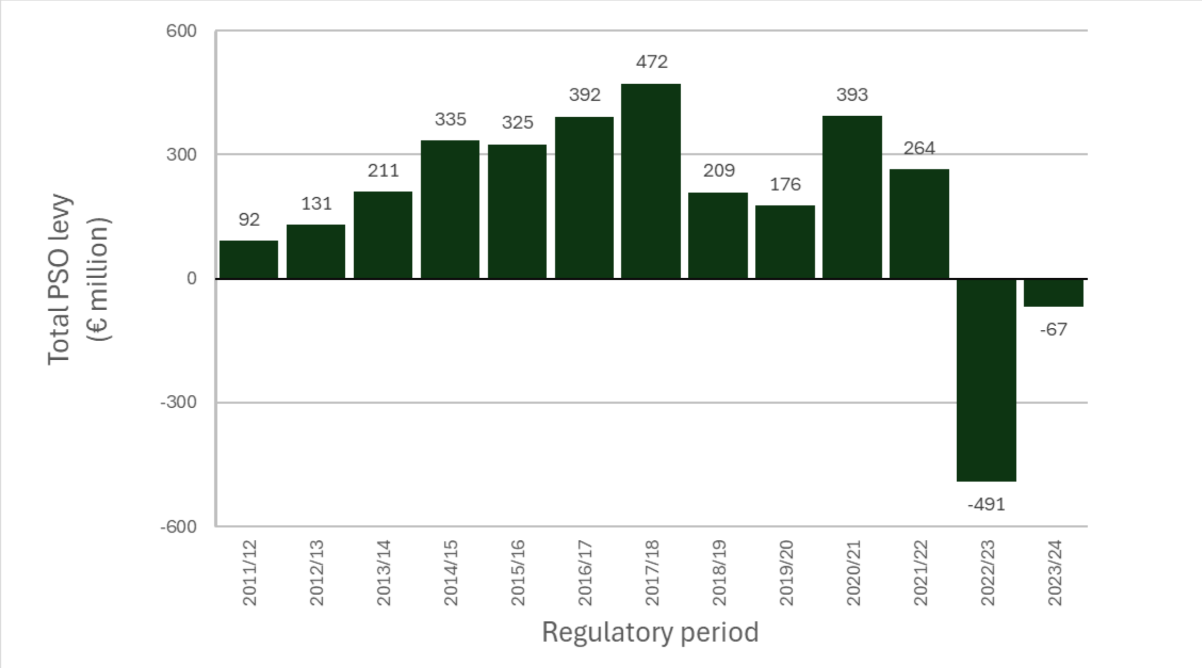
6.1 PSO LEVY: 2018–2024

Renewable generation in Ireland that receives a subsidy generally falls under one of two schemes. Since 2019/20, renewable energy has been supported by the Renewable Electricity Support Scheme (RESS). This is a competitive auction in which generators bid the price at which they are willing to supply electricity. If successful, they will receive a payment equivalent to the difference between the market price and the strike price they bid. This payment is positive when the strike price exceeds the market price and negative otherwise.

Prior to the RESS scheme, the Renewable Energy Feed-in Tariff (REFIT) scheme provided a guaranteed uniform price floor for all generators. Market revenues in excess of the price floor were not returned to the regulator. While the REFIT scheme is no longer open to new applicants, the costs of financing capacity introduced in previous years continues. During the 2022/23 regulatory period, market prices exceeded the strike price, and so RESS subsidy costs were negative. Consumers incurred a negative cost levy (i.e. a rebate) in 2022/23, and a zero-cost levy in 2023/24. A zero-cost levy was chosen in anticipation of positive costs the following year, and so revenues received during the 2022/23 period were banked to offset any positive cost during the 2023/24 period.

Figure 20 shows the total PSO levy receipts required to finance renewable energy policies in recent years, with Table 8 showing the levies imposed at the household level. Approximately 40 per cent of total revenues are recovered from domestic consumers, with the remainder recovered from commercial and industrial consumers. Both display items show inter-annual volatility attributable to forecast errors, changes in wind generation and electricity price fluctuations.

FIGURE 20: TOTAL PSO LEVY REQUIREMENTS 2011–2024



Notes: Values represent total Public Service Obligation (PSO) levy requirements, expressed in millions of euros (€mn). Annual figures represent totals for each year from 2011 to 2024.
Source: Humes and Farrell (2025), CRU (2023c).

TABLE 8: IRISH PUBLIC SERVICE OBLIGATION LEVY COSTS PER HOUSEHOLD 2011–2024

Regulatory Period	Monthly PSO levy (€)	Annual PSO levy (€)
2011/12	1.61	19.32
2012/13	2.32	27.84
2013/14	3.57	42.84
2014/15	5.36	64.32
2015/16	5.01	60.12
2016/17	5.90	70.80
2017/18	7.69	92.28
2018/19	3.48	41.76
2019/20	2.84	34.08
2020/21	6.52	78.24
2021/22	4.30	51.60
2022/23	-7.43	-89.16
2023/24	0.00	0.00

Notes: Values represent the Irish Public Service Obligation (PSO) levy costs per average household, expressed in euros (€). Annual figures cover the years 2011 to 2024.
Source: Humes and Farrell (2025), CRU (2023c).

Given this funding structure, the PSO funds a mix of both REFIT- and RESS-supported generators. Applicants entered the REFIT scheme until 2017. As contracts were of 15 years' duration, the last remaining REFIT contracts will expire in 2032. Table 9 subdivides PSO levy payments since 2021 into REFIT and RESS components. A small proportion of revenues fund the Alternative Energy Requirement (AER) scheme, the pre-REFIT support mechanism.

TABLE 9: *EX ANTE* PSO LEVY PAYMENT BY SUPPORT SCHEME 2021–2025

Support scheme	2021/22 (€ million)	2022/23 (€ million)	2023/24 (€ million)	2024/25 (€ million)	2025/26 (€ million)
RESS-1	-€6.27	-€313.95	-€59.54	-€52.44	-€11.10
REFIT	€46.94	€38.34	€10.78	€35.56	€50.22
AER	0.06	0.06	0.00	0.00	N/A
SRESS	N/A	N/A	N/A	N/A	0.05
Total	€40.73	-€275.51	-€48.75	-€16.88	€39.17

Notes: Values represent *ex ante* Public Service Obligation (PSO) levy payments by support scheme, expressed in millions of euro (€mn). Support schemes are defined as follows: RESS-1 – Renewable Electricity Support Scheme, first auction round; REFIT – Renewable Energy Feed-In Tariff; AER – Alternative Energy Requirement, the pre-REFIT price support mechanism; SRESS – Small-Scale Renewable Electricity Support Scheme, introduced to complement RESS auctions.
Annual figures cover the years 2021 to 2025.
Source: CRU PSO Levy Decision Papers (CRU, 2022d, 2023c, 2024, 2025*a*).

Since 2021, RESS projects have represented a net gain to consumers, as market prices were on average higher than strike prices. RESS projects have therefore put downward pressure on PSO levy payments, while REFIT projects have done the opposite. In all but the highest wholesale price years of 2022/23 to 2024/25, the net effect has been a cost to consumers[13].

Given these design features associated with RESS price supports, a considerable and growing proportion of PSO levy costs are negatively correlated with wholesale prices. As such, Irish PSO levy costs, particularly the portion associated with funding the RESS auction, act as a hedge to dampen any unexpected price shocks in wholesale markets.

6.2 FUTURE PSO LEVY PROJECTIONS

The future trajectory of PSO levy payments is difficult to anticipate. Here, we discuss three primary mechanisms that will determine the cost of renewable energy supports and the PSO levy: (1) the quantity of renewables deployed, (2) the cost of renewable energy installation and (3) the wholesale price of electricity.

The quantity of renewable energy deployed

Ireland's target is to achieve 80 per cent of electricity from renewable sources by 2030. While 9GW of this is expected to come from onshore renewables, the Irish government has also set specific targets of 5GW of offshore wind and 8GW of solar PV by 2030 (Government of Ireland, 2025). As such, there will be growing quantities of renewable electricity on the Irish system. All else equal, this will increase the subsidy requirement. However, the cost per unit of renewable

13 A windfall tax was implemented by the Irish government to recoup gains from generators, including renewable generators, as a result of high wholesale prices. Furthermore, all renewable generation acts to suppress wholesale prices via the merit order effect, which at least partially offsets the cost of subsidising renewable generation via the PSO levy.

electricity, and the relative cost of wholesale electricity, will be important determinants also.

The cost per unit of renewable electricity

While there will be a greater volume of renewable electricity to be supported, the subsidy requirement may not increase linearly with deployment. Irish renewable energy costs are at the higher end of the spectrum relative to international benchmarks. In 2023, the strike price for offshore wind in Ireland came in at €86/MWh (EirGrid, 2023a). The combined weighted average strike price for onshore wind and solar PV in Ireland in 2023 was €100/MWh (EirGrid, 2023b). In contrast, costs observed in European markets have been lower than this. Onshore wind has achieved costs below €40/MWh in some European markets, while many European countries have seen offshore renewable energy deployed at a cost of approximately €65/MWh (Wind Europe, 2025).

Renewable electricity is subject to cost reductions as the technology matures, and projections for the levelised cost of electricity (LCOE) for wind suggest that future PSO levy costs may be tempered by falling technology costs. Offshore wind costs, particularly for floating turbines, are expected to decline by 37 to 50 per cent by 2050 (SEAI, 2024b; Wiser et al., 2021). For onshore wind, some literature estimates a drop in the LCOE of approximately 33 per cent, bringing average generation costs to around €48/MWh (Duffy et al., 2020). While the sector has recently experienced inflation due to supply chain constraints, these pressures may ease in the medium to long term (IEA, 2024). Should this happen, the cost of deploying renewable electricity and the guaranteed minimum price required may fall. Assuming wholesale prices remain constant, the required rate of price support may fall.

Wholesale electricity prices

The difference between the minimum price required for viable investment and the average wholesale market price determines subsidy costs. The wholesale price of electricity is subject to much more uncertainty in international fuel prices and the exposure we have to these fuel costs. These prices are also highly sensitive to geopolitical events, fuel supply dynamics and policy decisions.

As of Q4 2025, many sources project that international wholesale gas prices will remain elevated relative to pre-2022 levels in the medium term at least (European Commission, 2025b; IEA, 2025). Ireland’s exposure to these prices will have a large influence on average wholesale electricity prices; as more renewables are deployed, Ireland will be less exposed to these international fuel prices, and the wholesale electricity price may decline. Therefore, renewable deployment provides an immediate benefit to the consumer. However, the likelihood and magnitude of this impact are uncertain, and it is difficult to predict how this may affect the PSO levy subsidy burden.

CHAPTER 7
Discussion and Conclusion

This paper examines trends in European and Irish household electricity prices during the 2018–2024 period, with a particular focus on Ireland. Measured in nominal terms and excluding taxes and levies, Irish electricity prices ranked third highest in 2018 but had risen to be the highest by 2024. Inclusive of energy credits, taxes and levies, Irish prices were the eighth highest in Europe in the second half of 2024. When adjusting for the general cost of living, Irish average electricity prices moved from being the eighth to the fifteenth most expensive in Europe in 2024.

To better understand the factors contributing towards these relatively high prices, we analysed electricity costs by component of ‘energy and supply’, ‘network costs’ and ‘taxes/levies’. Energy and supply costs are the largest component of Irish electricity prices, and they also increased more than other components following the energy crisis. Because Ireland generates a large share of its electricity from gas, changes in the international price of gas on wholesale markets may be an important factor behind higher electricity prices. This rationale is backed up by the international literature, which finds that the wholesale price of natural gas is often an important driver of electricity prices. Tighter capacity margins may also play a role.

With regard to network costs, the findings of this paper suggest that DUoS and TUoS costs were not the primary factor driving the high household electricity prices faced between 2018 and 2024. However, there were considerable increases in costs for both the distribution system operator (DSO) and the transmission system operator (TSO). Some of the impact of these increases on residential consumers were offset through tariff-rebalancing measures.

Lower Public Service Obligation (PSO) levy costs in recent years, alongside VAT reductions, have reduced the burden for households. In addition, energy credits have placed downward pressure on household bills.

Looking forward, the relative importance of network costs is set to grow. Under the forthcoming Price Review 6 framework, allowed revenues for transmission and distribution operators are projected to increase considerably. This reflects planned investments in decarbonisation, resilience and offshore wind infrastructure. The CRU has indicated that these increases could add between 15 per cent and 28 per cent to domestic network charges, equating to as much as €106 in additional costs per household.

There are several takeaways for policymakers and regulators. The first is that Irish energy costs are higher than average and particularly exposed to the international price of natural gas. This has imposed a considerable additional cost on consumers. Policy measures have been effective in reducing the burden of these additional costs. The energy credits made a considerable impact on final energy bills, and this can be seen clearly in the data. While other policy measures, such as increased fuel allowance, also reduced the impact of higher bills on households, this was not immediately identifiable via electricity price comparisons. Disentangling the net effect of direct and indirect policy responses to higher electricity prices is nontrivial.

The second key finding from this study is the challenge of transparently identifying the drivers of electricity costs. There is a difference between costs (such as investment costs by regulated monopolies) and prices (such as energy or capacity prices from competitive markets). While the former can be estimated relatively accurately, the latter is harder to model, particularly *ex ante*. The impacts of various policy measures, such as decarbonisation or market (re)design, are therefore challenging to identify in advance, and analyses that rely solely on least-cost modelling will present only a partial picture.

Furthermore, the costs of a secure energy supply are challenging to analyse. While the cost of temporary emergency generators can be identified transparently, this is an anomaly, and the cost of insecure supply is generally transmitted to customers via higher wholesale and/or capacity prices. These are elements of Ireland's high electricity costs that are not readily observable in the data. Furthermore, even the cost of emergency generation is recouped via network charges, specifically the TUoS charge, rather than via a separate 'security' mechanism. The costs of insufficient power generation are real, but difficult to quantify, while the costs of the investment needed to ensure sufficient generation are transparent. This poses a challenge for policymakers.

Finally, the significant difference between real and nominal prices is an important finding. In a generally high-cost economy, the price of goods and services will naturally be higher compared to other countries. However, energy is a pure input good, and so high electricity prices may well be a driver of, as well as driven by, the general price level. The extent to which lower electricity prices may improve general competitiveness and living standards warrants further research.

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APPENDIX

TABLE 10: IRISH CONSUMER PRICE INFLATION (CPI) 2018–2024

Year	CPI
2018	0.5%
2019	0.9%
2020	-0.3%
2021	2.4%
2022	7.8%
2023	6.3%
2024	2.1%
Total change (2018–2024)	20.3%

Source: Eurostat (2025c).

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

Economic & Social Research Institute

Whitaker Square
Sir John Rogerson's Quay
Dublin 2

Telephone: +353 1 863 2000
Email: admin@esri.ie
Web: www.esri.ie

An Institiúid um Thaighde Eacnamaíochta agus Sóisialta

Cearnóg Whitaker
Cé Sir John Rogerson
Baile Átha Cliath 2

Teileafón: +353 1 863 2000
Ríomhphost: admin@esri.ie
Suíomh Gréasáin: www.esri.ie