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Report

Research into GB electricity prices for Energy Intensive Industries

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The purpose of this research is to increase Ofgem's understanding of what drives comparatively high GB electricity prices for EIIs and to place them in wider context by comparing with selected European countries. This paper sets out the results of the research, led by the Office for Research and Economics (ORE). The ORE is a central team within Ofgem, separate to policy teams, and part of its role is to carry out research, analytical work and quality assurance on behalf of the organisation.

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Key findings

Ofgem is the energy regulator for Great Britain. Our principal objective is to protect the interests of current and future energy consumers, which includes Energy Intensive Industries (EIIs).[1]

EIIs in GB appear to face high electricity prices on average in comparison to many European countries. Ofgem has limited ability to affect the majority of costs that EIIs face. However given our role to protect all energy consumers, we wanted to better understand the drivers for GB's higher electricity prices. We also recognise that every EII (and company within an EII) is distinct, and faces different challenges and opportunities in the energy market. These mean that different EIIs could face higher or lower than average prices.

We have found there are three primary drivers of the relatively higher GB electricity prices for EIIs:

1. Although the difference between GB **wholesale electricity price** and that of other European countries varies over time, GB wholesale prices have tended to be higher. This is partly due to an electricity generation mix that depends on comparatively expensive natural gas as the marginal plant. However, this will likely change over time due to decarbonisation efforts. The Carbon Price Support also increases the price of electricity generated using fossil fuels. GB also has comparatively low levels of interconnection currently but interconnection capacity is expected to triple through planned projects.

2. GB **policy costs**[2] appear higher than the countries we draw detailed comparisons with (France, Germany and the Netherlands). While certain EIIs in GB can qualify for up to a 75% overall reduction on these costs, the comparator countries also offer

[1] 'EIIs' refers to electricity consumption only. EIIs are usually defined using the level of annual electricity consumption. However, consumption ranges used to define EIIs differ across sources. Therefore, this report does not use a fixed consumption range for EIIs. The consumption ranges used are stated throughout the report.
[2] By 'policy costs' we mean the costs of policies that incentivise the use of renewable generation in the energy system, including Contracts for Difference.

reductions. The reduced policy costs in France, Germany and the Netherlands appear lower than the reduced policy costs in GB.

3. GB **network costs** appear higher mainly because the comparator countries offer discounts on network costs for EIIs that meet eligibility criteria on electricity consumption and off-peak grid utilisation. This allows eligible EIIs to lower their network costs by up to 90% in some cases. The rationale for these discounts focuses on the value of EIIs' baseload demand to the grid.

We welcome feedback on these findings. Please send any comments to Chief.Economist@ofgem.gov.uk

1. Introduction

Context

1.1 Ofgem is the energy regulator for Great Britain. Our principal objective is to protect the interests of current and future energy consumers. This is a wide ranging remit, covering all consumers, ranging from domestic consumers through to the very largest users and Energy Intensive Industries (EIIs).

1.2 We aim to achieve our objectives at lowest cost to consumers, ensuring that those costs fall in a cost-reflective, balanced and proportionate way across all energy consumers. We also consider wider national objectives such as delivering a decarbonised energy system. Our Strategic Narrative,[3] and Forward Work Programme[4] set out our approach to managing these trade-offs whilst delivering our principal objective.

1.3 EIIs represent a diverse segment of the market, and each EII is different. For example, electricity consumption varies across EIIs and they each face their own challenges, whether it be rising input costs or increasing international competition. At the same time, others may be better placed to take advantage of new opportunities and revenue streams in a changing energy market, such as selling ancillary services to maintain the overall stability of the electricity grid. This means they can reduce the energy costs they face.

Objective of the research

1.4 Ofgem has limited ability to affect the key drivers of all costs that EIIs face. However, given our role to protect the interest of all consumers, and the rapidly changing energy system, we wanted to better understand the reasons why electricity prices appear to be higher for EIIs in GB than they are in Europe. We also heard from EIIs about the concerns they have in relation to the relatively higher average electricity prices they face in GB compared to their counterparts in Europe.

[3] Ofgem (2019): Our strategic narrative
[4] Ofgem (2020): Forward work programme 2021/22 consultation

Method

1.5 The research was largely desk-based, and we reviewed publicly available information from a range of sources. We supplemented this with input from other stakeholders, including a selection of our Large User Group (LUG) members. The LUG is a working group of large business consumers of gas and electricity.

1.6 The report looks at a wide range of countries, but we draw detailed comparisons with France, Germany and the Netherlands. We selected France and Germany due to economic similarity and proximity to GB. We also included the Netherlands as it was a useful comparator on how it treats network costs.

1.7 It should be noted that international comparisons are complex because of different charging systems. For example, there are often locational variations in network charges and upfront connection charges are generally lower in GB. Therefore comparisons with other countries are averaged and approximate.

Acknowledgements

1.8 We would like to thank all those who provided input and views to the research. In particular, we would like to thank members of LUG, National Grid, BEIS, and other European regulators and Ofgem colleagues.

Structure of the report

1.9 This report begins with an overview of electricity prices for EIIs in Europe, and then looks in turn at the three main drivers of the electricity price. These are 1) wholesale electricity prices 2) costs associated with policies such as Carbon Price Support and 3) network costs.

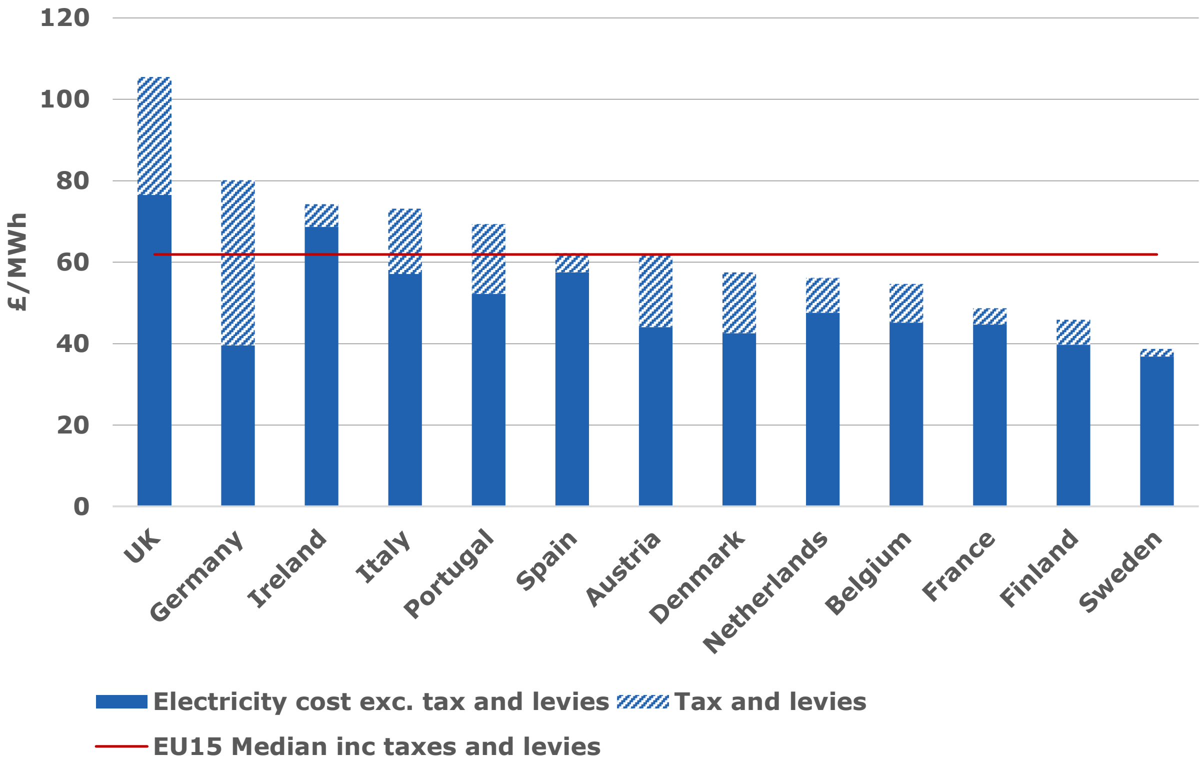
Your feedback

1.10 We are keen to receive your comments about this report. Please send any comments to Chief.Economist@ofgem.gov.uk

2. Overview of electricity prices for EIIs

2.1 On average, EIIs in GB[5] have faced historically higher electricity prices than other European countries. Between 2016 and 2020, GB's prices were consistently above the EU median and the most expensive overall. This is the case after excluding any environmental taxes and levies that apply as well (Figure 2.1).

Figure 2.1: Average electricity prices for EIIs in Europe (2016-2020)[6]



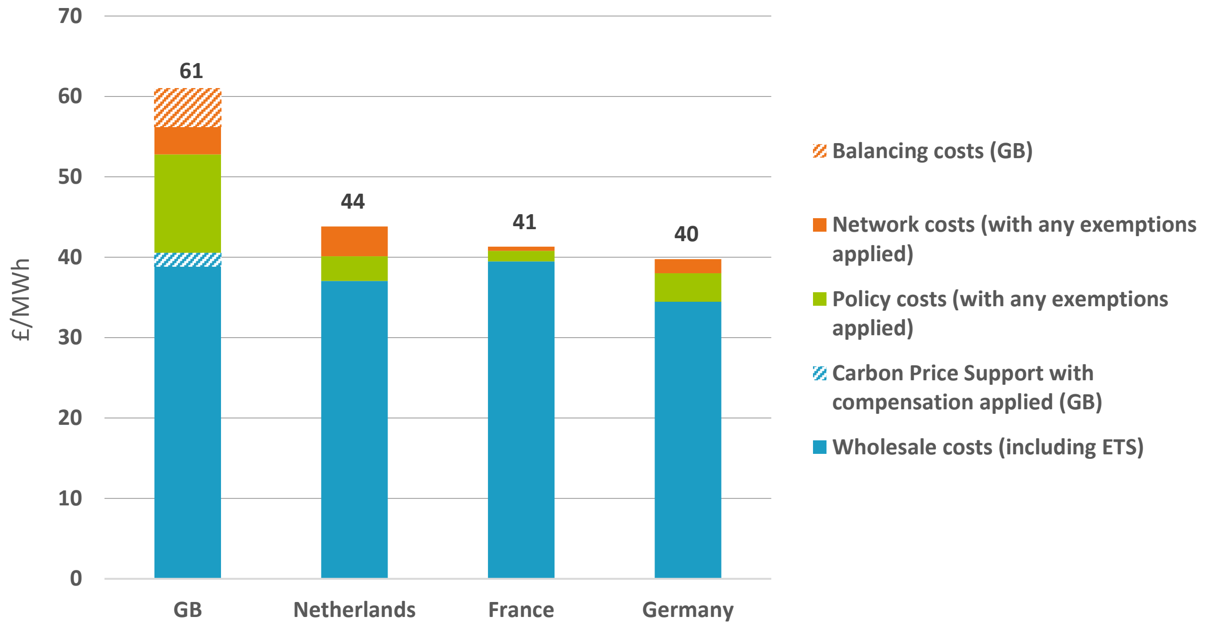
Notes: data represents consumers with an annual consumption between 70-150GWh. The total for each column includes all environmental taxes and levies, and excludes VAT. 2020 data is only up to and including June 2020. There was insufficient data for Greece and Luxembourg.

2.2 We have used a range of sources[7] to illustrate how this price breaks down for EIIs in GB compared to France, Germany and the Netherlands using 2020 data (Figure 2.2). Clearly wholesale prices are the largest component in all countries, followed by

[5] Data is for the UK overall and is not available for GB excluding Northern Ireland. Wholesale prices and policy costs (before reductions) are similar across GB and NI. These components form a large proportion of the electricity price for EIIs.
[6] BEIS (2020): Quarterly Industrial electricity prices in the EU for small, medium, large and extra-large consumers
[7] Ofgem network cost data; Make UK (2021), "Closing the Gap"; PWC (2020) "A European comparison of electricity and natural gas prices for residential, small professional and large industrial consumers"

policy costs and network costs. Given the challenges of comparing regimes across countries, this analysis is averaged and is indicative.

Figure 2.2: Average electricity price in £/MWh with maximum discounts applied for EIIs with annual consumption of 100-500GWh



Data sources: ICIS (wholesale prices), Ofgem analysis (GB network costs), Make UK (GB balancing costs), BEIS and Ofgem analysis (GB policy costs), CREG and pwc (2020) (Germany, France and Netherlands network costs and policy costs

3. Wholesale electricity prices and policy costs

Section summary

GB has tended to have one of the highest average **wholesale electricity prices** in Europe. Many of the European countries with the lowest wholesale electricity prices for EIIs have large proportions of coal, renewables and nuclear in the electricity generation mix, whereas GB's generation mix has high levels of comparatively expensive natural gas. In addition to the generation mix, the GB wholesale price is further affected by the Carbon Price Support.

GB applies reductions to **policy costs** that EIIs face such as Renewables Obligations, Contracts for Difference, Feed-in tariffs, Capacity Market and the Climate Change Levy. Before reductions are applied, the size of GB policy costs appear similar to Germany and the Netherlands. Some EIIs benefit more from reductions than others, but overall GB industry appears to face higher policy costs compared to industries in Germany, France and the Netherlands.

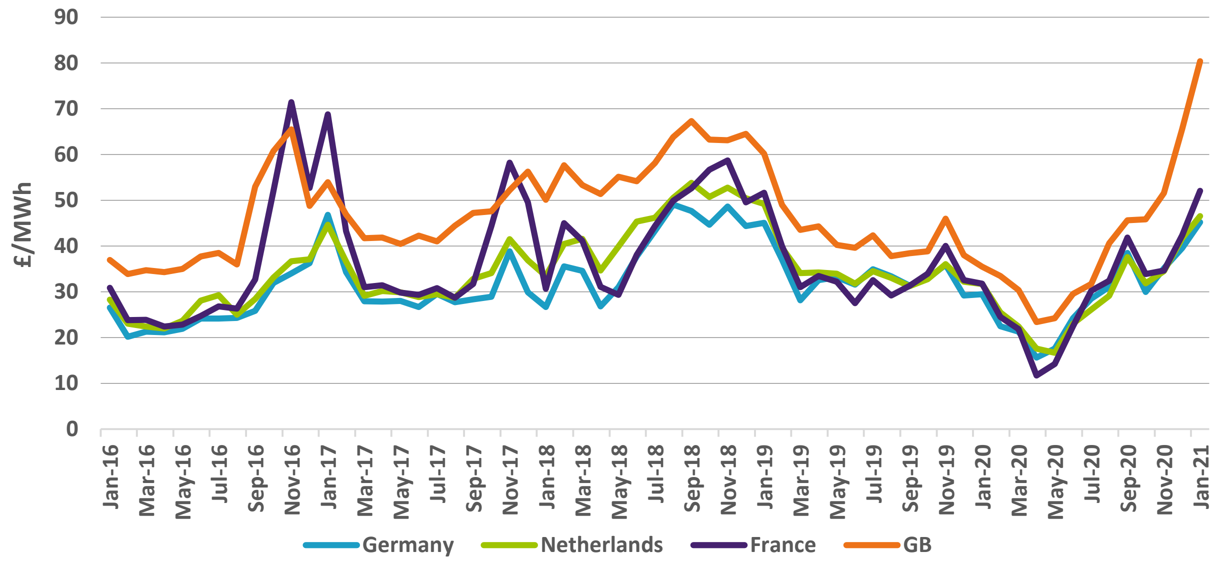
Wholesale prices in GB have tended to be higher

3.1. Between 2016 and 2020, GB tended to have higher wholesale electricity prices than European counterparts (Figure 3.1).[8] Average day-ahead wholesale prices, including the full costs of the EU Emissions Trading System[9] and Carbon Price Support during this period were:

- GB £46/MWh;
- France £39/MWh;
- Netherlands £36/MWh; and
- Germany £34/MWh.

[8] In January 2021, there was an unprecedented rise in the GB wholesale electricity price. A range of factors contributed to this, but a primary reason was low plant availability (for example there were large nuclear outages). This increased the marginal cost of electricity through having to use more expensive generation methods.
[9] The EU ETS is a pan-European greenhouse gas emissions trading system (GOV.UK)

Figure 3.1: Wholesale electricity prices (Jan 2016 - Jan 2021)



Notes: the data represents the monthly averages of wholesale day-ahead, baseload prices. Prices for France, Germany and the Netherlands have been converted to pounds using average exchange rates for each year. *Data source*: ICIS

3.2. The main reasons for GB's generally higher historical wholesale electricity price are:

- an electricity generation mix that relies on natural gas;
- the additional cost of the Carbon Price Support; and
- comparatively low levels of interconnection.

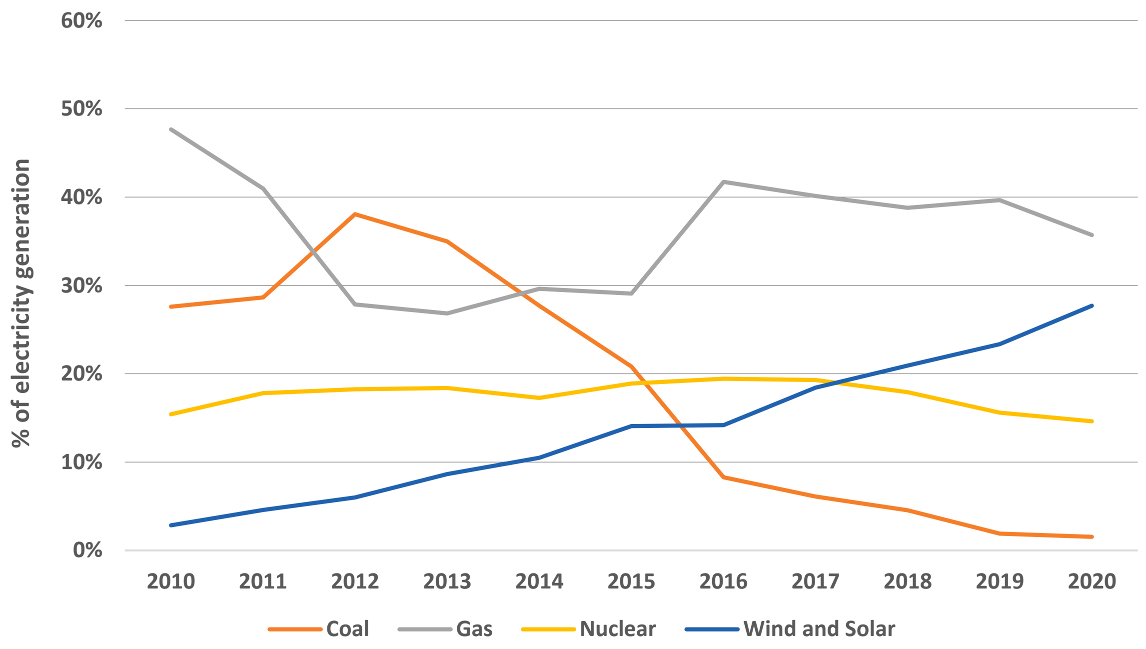
The electricity generation mix is an important factor

3.3. The electricity generation mix is a key factor because wholesale prices are largely driven by the cost of the marginal source of generation.[10] The GB electricity generation mix was approximately 36% natural gas in 2020.[11] This creates a dependence on natural gas which has a higher levelised cost of energy (LCOE). This means the average cost over the lifetime of the plant (per MWh of electricity generated) is higher when compared to other electricity generation methods with low running costs such as nuclear and renewables.[12] We found that dependency on natural gas for electricity generation appears to correlate with higher electricity prices for EIIs. The average percentage of natural gas in the generation mix for the

[10] UCL (2018): Wholesale cost reflectivity of GB and European electricity prices
[11] BEIS (2021): Energy trends: UK electricity
[12] BEIS (2020): Electricity Generation Costs

ten EU countries with the highest wholesale electricity prices for EIIs is 28%.[13] Conversely, this figure for the ten countries with the lowest wholesale electricity price was 14%.

Figure 3.2: GB electricity generation by fuel source (2010 - 2020)



Data source: BEIS (2021): Energy trends: UK electricity
Notes: Data represents the annual average of the four quarters of each year.

The Carbon Price Support increases wholesale electricity prices in GB

3.4. In addition to the UK Emissions Trade Scheme (ETS) that mirrors the EU ETS, fossil fuel electricity generators in GB must pay CPS rates. The UK government introduced the CPS because the carbon price in the EU ETS had fallen dramatically since its introduction.[14] The CPS has been instrumental in decarbonising power generation, with large reductions in electricity generation using coal. In 2011, the UK government announced a combined ETS+CPS target price of £30/tCO_2 by 2020.[15] The ETS carbon price has increased from c.€5 in 2013 to c.€40 in March 2021. Meanwhile, the CPS rate has doubled from £9/tCO_2 to £18/tCO_2 meaning the

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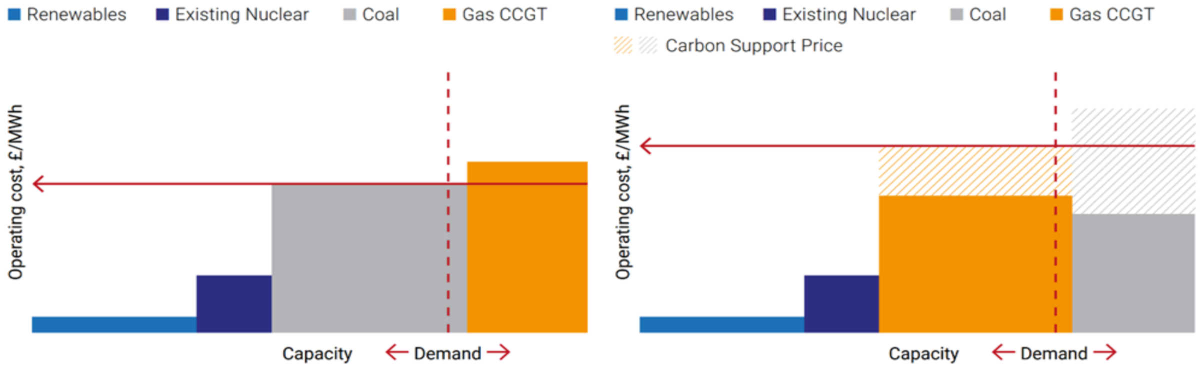
[13] Eurostat (2020): Electricity Price Statistics and IEA (2020)
[14] UK Parliament (2018): CPF and the price support mechanism
[15] UK Parliament (2016): The Carbon Price Floor

combined ETS+CPS price was around £51/tCO_2 in 2021. It should be noted that the CPS is currently capped at £18/tCO_2 to limit the competitive disadvantage faced by GB consumers,[16] and there are discounts of 60% for eligible EIIs.[17]

The Carbon Price Support impacts the merit order

3.5. Although the operating cost for coal is lower than natural gas, the combined operating cost and CPS rate means coal becomes more expensive. This has contributed to strong progress towards decarbonisation in GB by incentivising the use of usually more expensive natural gas in GB, which changes the merit order for GB power stations compared to other European countries such as Germany (Figure 3.3).

Figure 3.3: 2021 effective merit order for Germany (left) and GB (right)



Source: Make UK (2021) Closing the Gap p.20

The falling cost of renewables helps to reduce wholesale prices

3.6. The cost of electricity from renewable sources is falling and becoming increasingly competitive against fossil fuel sources. Globally, 75% of onshore wind projects, 89% of hydropower projects and 56% of solar PV projects created electricity costs that were lower than the cheapest fossil fuel alternative.[18]

[16] UK Parliament (2018): CPF and the price support mechanism
[17] BEIS (2019): Guidance on exemptions for EIIs
[18] International Renewable Energy Agency (2020): Renewable Power Generation Costs in 2019

3.7. Overall, 56% of newly commissioned renewable power generation projects had a LCOE lower than the cheapest fossil fuel source. Therefore, a country with an electricity generation mix with low levels of renewable sources is likely to experience higher wholesale prices.

3.8. Renewables generated around 42% of GB electricity in 2020 (Q1-Q3),[19] an increase from 6% in 2010. However, GB electricity generation from renewables is below the generation levels of the countries with the lowest wholesale electricity prices in Europe: Norway (98%, 2019), Sweden (59%, 2019), and Denmark (82%, 2019). Table 3.1 shows natural gas is no longer the lowest cost source for GB electricity generation and this could contribute to comparatively high GB wholesale electricity prices. However, the increase in renewable electricity generation in recent years shown previously in figure 3.2 could reduce GB wholesale prices in time.

Table 3.1: LCOE over three reporting periods for projects commissioning in 2025

Project (commissioning in 2025)	LCOE central estimates by year (£/MWh)		
	2013	2016	2020
Combined Cycle Gas Turbine H Class	86	82	85
Offshore Wind Round 3	116	106	57
Onshore Wind >5MW UK	99	61	46
Large scale solar	105	63	44

Data sources: 2013- DECC (2013): Electricity Generation Costs , 2016- BEIS (2016): Electricity Generation Costs, 2020- BEIS (2020): Electricity Generation Costs

Higher levels of interconnection helps to reduce wholesale price

3.9. GB also imports electricity from the continent, traditionally around 6-7% of total electricity supply in recent years.[20] High levels of electricity interconnection permits a more integrated market which allows countries to import low-cost electricity and ensure electricity price convergence. This can lower the wholesale electricity price.[21] Therefore, comparatively low GB interconnection could be a contributory reason for higher electricity prices for GB EIIs. The EU has an interconnection target of at least 10% by the end of 2020.[22] In 2019, GB had 5GW of interconnector capacity which equated to 4.8% of domestic generation capacity in 2019.[23] While GB's geography

[19] BEIS (2021): Energy trends: UK electricity
[20] Ofgem (2021): Electricity generation mix
[21] GB Steel (2019): The Energy Price Gap
[22] European Commission (2020): Electricity Interconnection Targets
[23] Ofgem analysis

as an island makes interconnection more difficult, 17 EU member states have reported being on track to meet, or had already met, the 2020 10% target.[24] This included France, Germany and the Netherlands. [25]

3.10. GB is increasing its level of interconnection. The introduction of Ofgem's Cap and Floor regime[26] has led to investment in interconnectors with nine new planned projects from 2020 totalling 10.9GW, including new projects with Norway and Denmark.[27] These nine projects would triple the 2019 GB interconnection level to 15.9GW, which would take interconnector capacity above the 10% target according to 2019 levels of generation capacity.

Contribution of policy costs to EIIs' electricity prices

GB policy costs appear comparatively high after accounting for reductions

3.11. Before reductions are applied, GB policy costs appear similar to those in Germany and the Netherlands.[28] Certain EIIs in GB can reduce policy costs by up to 75% overall, but these reduced policy costs appear higher than the reduced costs for EIIs in the comparator countries (Figure 3.4 overleaf).

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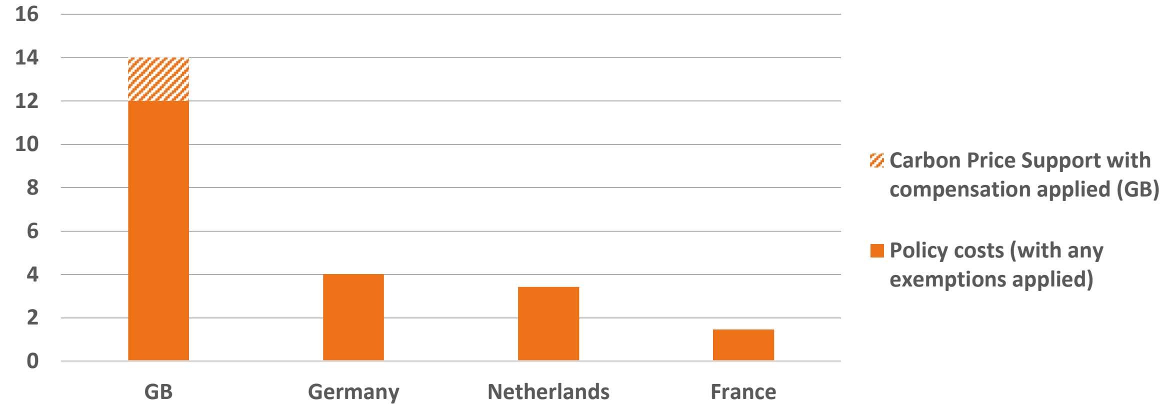
[24] European Commission (2020): Electricity interconnection targets
[25] European Commission (2015): Energy Union Package
[26] Ofgem (2016): Cap and floor regime
[27] Ofgem (2020): Electricity Interconnectors
[28] BEIS (2020): International industrial energy prices

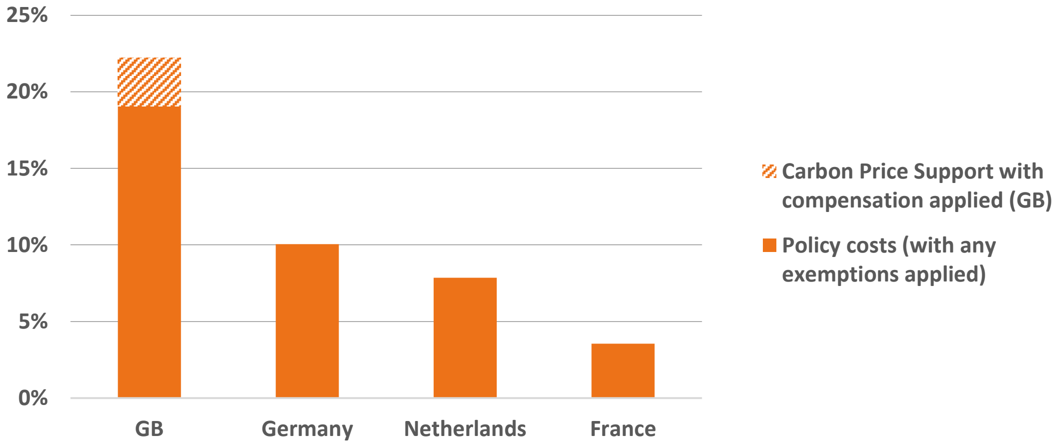
Figure 3.4: Estimated policy costs and CPS after reductions have been applied (£/MWh, 2020)



Data sources: BEIS and Ofgem analysis, and CREG and pwc (2020)
Notes: GB policy costs include payments for the Renewables Obligations, Contracts for Difference, Feed-in tariffs, Capacity Market and the Climate Change Levy. Data for Germany, France and the Netherlands represents consumers with an annual consumption 100-500GWh. ETS costs are not included.

3.12. These comparatively high policy costs for GB appear to form a larger proportion of total electricity cost (figure 3.5).

Figure 3.5: Estimated policy costs as a proportion of total electricity cost (2020)



Data sources: BEIS and Ofgem analysis, and CREG and pwc (2020)
Notes: GB policy costs include payments for the Renewables Obligations, Contracts for Difference, Feed-in tariffs, Capacity Market and the Climate Change Levy. Data for Germany, France and the Netherlands represents consumers with an annual consumption 100-500GWh. ETS costs are not included.

3.13. In addition to the UK ETS and the CPS, EIIs also face other costs (with reductions) which include the costs associated with Renewables Obligation, Contracts for Difference, Feed-in Tariffs and Capacity Market. The GB exemptions are listed in Table 3.2 overleaf.

Table 3.2: Compensation and exemptions in GB

Policy	Eligibility criteria	Exemption or Compensation	Discount level	Estimated reduction
Renewables Obligation **Feed-in-Tariffs** **Contracts-for-Difference**	**Sectors** with electricity-intensity of at least 7% and trade intensity of at least 4%. **Businesses** where electricity costs are at least 20% of GVA.[29]	Exemption (costs are spread onto other consumers)	Up to 85% of support costs	£28/MWh
UK ETS **UK CPS**	**Sectors** with trade intensity of at least 10% and where ETS increases costs by at least 5% of GVA. **Businesses** where combined carbon costs of ETS and CPS are at least 5% of GVA.[30]	Compensation (costs recouped through taxation)	Up to 60% of the indirect costs of the UK ETS and CPS costs	£10/MWh
Climate Change Levy	Holders of a Climate Change Agreement (CCA) qualify	Exemption from payment to HMT (costs are not spread to other consumers)	92% on electricity rate.	£1/MWh

[29] BEIS (2019): Guidance on exemptions for EIIs
[30] BEIS (2019): Guidance on exemptions for EIIs

4. Network costs

Section summary

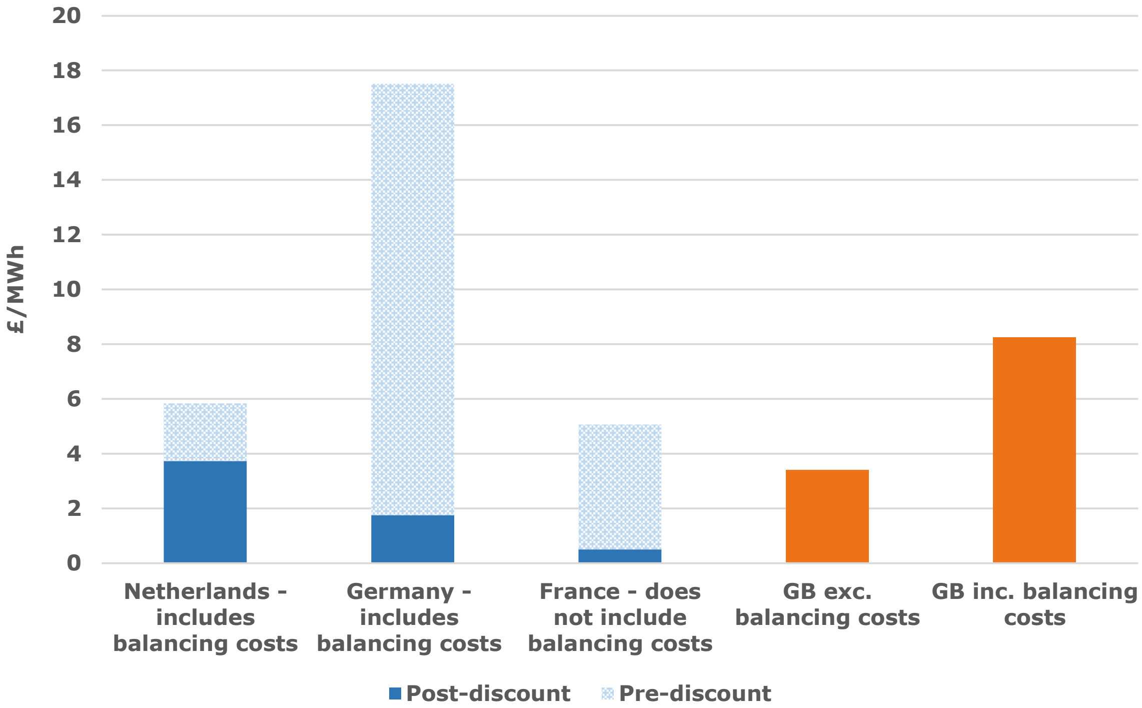
GB network costs appear on average higher than in France, Germany and the Netherlands. This is because these countries apply network cost discounts for eligible EIIs, which can reduce their network costs by up to 90% in some cases. These countries offer discounts because they argue large users such as EIIs add value to the grid by providing steady baseload demand.

GB network costs appear comparatively high due to discounts in other countries

4.1. It is challenging to accurately compare network costs across countries. However, GB network costs appear to be slightly lower than pre-discount network costs in France and Germany, and slightly higher than pre-discount network costs in the Netherlands.

4.2. EIIs in these countries can take advantage of discounts as large as 90% on their network costs if they meet certain eligibility criteria. The impact of network cost discounts in France, Germany and the Netherlands can be significant and once this is taken into account, GB network costs appear comparatively high (Figure 4.1). We have shown the position with balancing costs included and also excluded from the GB network cost – this is to aid comparisons because in Germany and the Netherlands, balancing costs are included in the data we have, in France they are not.

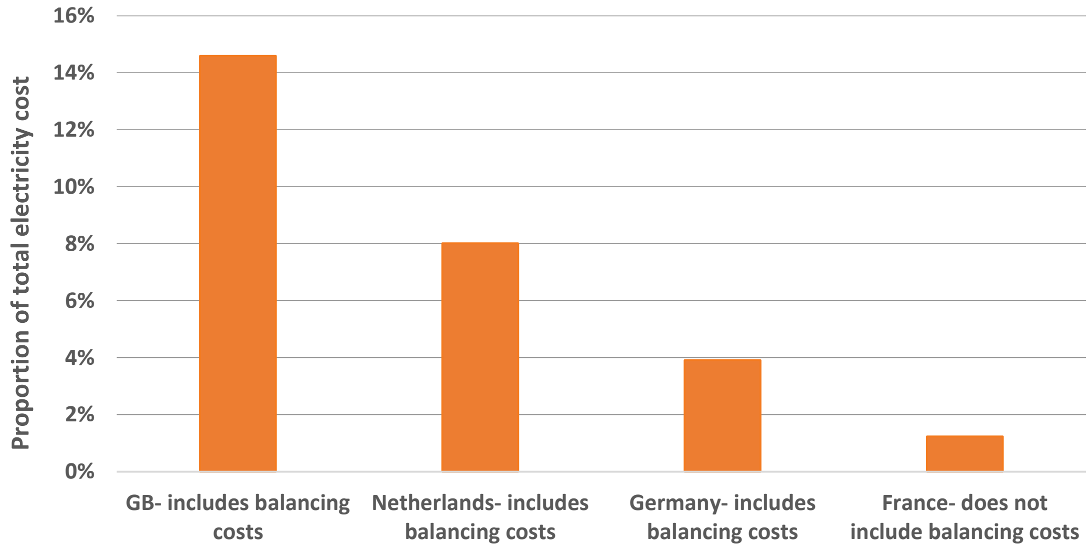
Figure 4.1: Estimated network costs before and after discounts (2020, annual consumption 100-500GWh)



Notes: data is from January 2020 for France, Germany and the Netherlands. Euros have been converted to pounds using the average exchange rate for 2020. GB network costs are an average for 2019/20 unit charges for transmission-connected EII sites with annual consumption 100-500GWh. GB balancing costs are included and are an estimate based on the estimated balancing costs for the steel sector.
Data sources: CREG and pwc (2020) and Ofgem analysis

4.3. These comparatively high network costs for GB result in GB network costs forming a relatively larger proportion of total electricity cost (figure 4.2 overleaf).

Figure 4.2: Estimated network costs as a proportion of total electricity cost (2020, annual consumption 100-500GWh)



Notes: GB network costs are an average for transmission-connected EII sites that have an annual electricity consumption >100GWh, and include balancing costs. GB balancing costs are included and are an estimate based on the estimated balancing costs for the steel sector (Make UK). Data for Germany, France and the Netherlands represents consumers with an annual demand >100GWh.

Data sources: Ofgem internal analysis (GB network costs and balancing costs), CREG and pwc (2020) (for Germany, France and Netherlands network costs)

4.4. Table 4.1 overleaf summarises the eligibility criteria for the maximum discounts available France, Germany and the Netherlands. While eligibility criteria differs slightly across the three countries, potential discounts of 90% are possible in each country.

Table 4.1: Eligibility criteria for maximum network cost discounts

Eligibility	Discount
Germany	
Annual power consumption: >10 GWh >8,000 annual offtake hours	**90%** reduction
Netherlands	
Annual power consumption: >50 GWh Operating time: >5,700 hours per year (or 65%) during off peak hours (23.00-07.00, weekends and bank holidays)	**Up to 90%** reduction
France	
Annual offtake >10 GWh and >8000 hours or; Annual offtake >20GWh and off-peak grid utilisation >53% Trade intensity >4%	**60%** reduction for electro-intensive consumers [31] **90%** reduction for hyper electro-intensive consumers [32]

Data source: CREG and pwc (2020)

Rationale for discounts - EIIs provide value to the grid

4.5. The discounts in the **Netherlands** are based on an argument that the large and flat consumption pattern of EIIs adds value to the grid by creating stability. For example, EIIs may be able to provide inertia during low periods of demand and off-peak hours which can assist with balancing demand and supply.[33] High operation time during off-peak hours is part of the eligibility criteria. The Dutch also argue that the stable and significant use of electricity by EIIs means the increase and decrease of generation or consumption by other smaller parties such as households have a comparatively lower effect on the total network. This supposedly reduces the comparative size of volatility in consumption by other consumers, especially during off-peak hours.

4.6. **Germany** seems to go further and suggests large and stable electricity users also provide benefits outside of off-peak hours (evidenced by the eligibility criteria which includes all hours, not just off-peak hours). In Germany, it is argued large and

[31] Electro-intensive definition: power consumed/value added >2,5 kWh/EUR; trade intensity >4%; annual power consumption >50 GWh
[32] Hyper electro-intensive definition: power consumed/value added >6 kWh/EUR; trade intensity >25%; annual power consumption- not applicable
[33] Overheid (2013): The Netherlands Parliamentary Paper 33777 and European Commission (2018): State aid decision

stable users generate lower costs than other users due to their stable and predictable consumption (for example through reduced balancing costs).[34] Therefore, it is argued this should be reflected through lower network charges and all consumption hours should be considered.

4.7. **France**'s eligibility criteria suggests there is similar rationale as Germany and the Netherlands for network cost discounts. It grants discounts to firstly high baseload consumers, which reflects the German rationale for EIIs generating lower costs. Secondly, EIIs with high off-peak grid utilisation are also eligible, which would reflect the Dutch rationale about stability benefits during off-peak hours.

Discounts funded in part by higher costs for households

4.8. In Germany, network costs for EIIs are comparatively low at least in part due to higher costs for German household electricity prices. Overall, Germany has the highest household electricity price in the EU.[35] There is less data available on the funding of discounts in France and the Netherlands.

4.9. A breakdown of a typical German household electricity bill is detailed in Table 4.2 overleaf. This table also details the potential reductions EIIs can receive on the same components. For example, grid fees are the largest component of household electricity bills but EIIs can receive a discount of up to 90% on the same charge.

4.10. In Germany, households pay a levy for industry rebate on grid fees (known as the StromNEV surcharge). This charge exists specifically to help recover the costs of industry discounts from network costs. In 2021, this levy adds €15.60 euros to the typical annual household bill (around £13.50 with 2021 exchange rates).[36] The share of this levy in a household bill has more than doubled from 0.6% of a typical household bill in 2012, to 1.4% in 2021.[37]

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[34] European Commission (2018): State aid decision
[35] Eurostat (2020): Electricity Price Statistics
[36] German Association of Energy and Water Industries (2021): Electricity price analysis. The 2021 average annual electricity bill for households and small businesses in Germany is €1,116.
[37] German Association of Energy and Water Industries (2021): Electricity price analysis.

Table 4.2: Typical household electricity bill in Germany (2021)[38]

Component of household bill	Proportion of household bill (%) [39]	Potential discount for EIIs on the same components [40]
Grid charges	25	Up to 90% reduction
Supplier's cost	24	
Renewable energy levy	20	Up to 85% reduction
VAT	16	
Electricity tax	6	25% reduction
Concession levy	5	66% reduction [41]
Levy for industry rebate on grid fees	1.4	
Offshore liability levy	1.2	Up to 85% reduction
Surcharge for CHP plants	0.8	Up to 85% reduction
Levy for interruptible loads	0.03	
TOTAL [42]	100	

[38] Annual consumption 3,500kWh
[39] German Association of Energy and Water Industries (2021): Electricity price analysis.
[40] CREG and pwc (2020): A European comparison of electricity and natural gas prices
[41] The discount offered is a basic rate of €1.1/MWh. The concession levy for households has been €1.66 since 2012.
[42] Does not equal 100% due to rounding

5. Conclusions

5.1. We have found that there are three primary drivers of high GB electricity costs for EIIs.

5.2. Wholesale price is the largest component of EIIs' electricity cost and GB has tended to have a higher **wholesale electricity price** than many Eeuropean countries. This is partly due to an electricity mix that uses comparatively expensive natural gas as the marginal plant. The Carbon Price Support has also increased the marginal cost of electricity.

5.3. While GB offers sizeable **policy cost** reductions for EIIs, these reduced policy costs appear larger than the reduced policy costs in the countries we looked at.

5.4. Finally, **network costs** are also an important component of overall electricity cost. GB network costs appear higher mainly because Germany, France and the Netherlands offer discounts on network costs.