Electricity Market Study (M-008)

EY Final Report for the Jersey Competition Regulatory Authority – Non-Confidential – Redacted for publication

December 2024

This report has been prepared by Ernst & Young LLP, a limited liability partnership registered in England and Wales with registered number OC300001, in accordance with an engagement agreement for professional services with the Jersey Competition Regulatory Authority (the Authority). Ernst & Young LLP's obligations to the Authority are governed by that engagement agreement. This disclaimer applies to all other parties (including the Authority's affiliates and advisors).

This report has been prepared for general informational purposes only and is not intended to be relied upon as accounting, tax, or other professional advice. Refer to your advisors for specific advice.

Ernst & Young LLP accepts no responsibility to update this report in light of subsequent events or for any other reason.

This report does not constitute a recommendation or endorsement by Ernst & Young LLP to invest in, sell, or otherwise use any of the markets or companies referred to in it.

To the fullest extent permitted by law, Ernst & Young LLP and its members, employees and agents do not accept or assume any responsibility or liability in respect of this report, or decisions based on it, to any reader of the report. Should such readers choose to rely on this report, then they do so at their own risk.

Contents

Executive Summary

The Jersey Competition Regulatory Authority (the Authority) announced on 5th October 2023 that it would be carrying out a market study into the electricity market in Jersey (the Electricity Market Study). A market study explores whether a market, or features of a market, are working well for consumers. It considers consumer behaviour, business behaviour, and the market structure. A market study can enable policymakers to determine whether there is a need for action to help address any issues identified.

The Authority last conducted an Electricity Market Study in 2012 (the 2012 Market Study). That study concluded that electricity prices in Jersey broadly provided fair value to consumers, but noted that areas, such as the development of new connection charges and self-generation, may require a future review.[1]

The Authority's terms of reference for the Electricity Market Study are to consider:[2]

- the efficiency of electricity supply in Jersey, taking into account the resilience of supply.
- market characteristics, including consumer demand, market structure and market outcomes.
- comparative data and findings from the previous market study carried out by the Authority.
- features of the electricity market, including investment in renewables and alternative generation, which potentially impact present and future competition.

The Authority has engaged EY to support the assessment of the electricity market. As part of its support, EY prepared a Draft Report (the Draft Report). The content of the Draft Report was based on EY's analysis of publicly available information and information provided by Jersey Electricity, as well as discussions with 11 stakeholders in Jersey and in adjacent geographic markets.[3] The Authority consulted on its draft recommendations alongside the Draft Report between 27th June 2024 and 9th August 2024.

EY has incorporated the feedback to the Authority's consultation into this Final Report (the Final Report). The Final Report should be read in conjunction with the Authority's Findings and Recommendations Paper for the Electricity Market Study. The Authority's paper provides further context on the study and sets out the Authority's recommendations, drawing on the key findings set out in this report.

Background: The Jersey electricity market

Electricity is a significant component of the energy mix in Jersey. In 2022, electricity represented 38.4% of final energy consumption in Jersey.[4] The current share of electricity in the energy mix is similar to that reported in the 2012 Market Study. Electricity represents a higher share of the energy mix in Jersey than in the UK and the European Union (EU). Jersey had a 19% higher reliance on electricity as part of its energy mix than the UK in 2022.[5] Compared to the EU, Jersey had a 23% higher share of electricity in the energy mix in 2021.[6]

For this study, we have defined the electricity market as comprising of the procurement, generation, transport (including transmission and distribution) and retail of electricity in Jersey. We have considered cross-market effects of ancillary service provision only to the

[1] Jersey Competition Regulatory Authority, https://www.jcra.je/cases/2012/a850j-electricity-market-study-jersey/
[2] Jersey Competition Regulatory Authority (Case – M-008), Electricity Market Study - Terms of Reference | JCRA
[3] EY has not validated the accuracy of the information publicly available or provided by any of the stakeholders interviewed.
[4] Jersey Statistics, Jersey Energy Trends 2022 (gov.je)
[5] BEIS, UK ENERGY IN BRIEF 2023 (publishing.service.gov.uk)
[6] Eurostat, Energy statistics - an overview - Statistics Explained (europa.eu)

extent that they affect the electricity market directly. The Jersey electricity market is vertically integrated, with Jersey Electricity being the only company directly responsible for procuring, generating, transporting, and distributing electricity in Jersey. Other participants in this market include Sunworks, an energy optimisation provider, including through batteries and solar photovoltaic (PV)[7] generators, and Rubis, a liquid fuel provider that offers home management services, including solar PV. Note, the electricity sector in Jersey is not currently subject to any form of sector-specific economic regulation.

Jersey Electricity has imported at least 94%[8] of Jersey's electricity demand in the past five years from France. The supply of this electricity is based on a contract with Électricité de France (EDF), a French electricity company. The contract was established in 2012 and will expire in 2027.[9] The remaining electricity demand is met by the Government of Jersey's Energy Recovery Facility and electricity procured from distributed generation assets.[10] Other generation assets owned by Jersey Electricity produce a negligible amount of electricity and are mainly used to provide resilience to the island in emergencies.[11]

The energy crisis has had a significant impact on the wholesale electricity prices faced by consumers across Europe, including Jersey. Between April 2020 and August 2022, average day ahead electricity prices in France increased significantly from EUR13.45/MWh to EUR492.49/MWh,[12] following increased global demand for gas, Russia's invasion of Ukraine, and prolonged nuclear outages in France. These wholesale prices then flowed through retail consumer bills in most markets at different rates depending on the hedging strategy of each retailer.

The Jersey electricity market is expected to evolve following the Government of Jersey's Carbon Neutral Roadmap.[13,14] The roadmap sets out the Government's target pathway to decarbonise Jersey by 2050. In order to achieve the Carbon Neutral Roadmap targets, significant electrification of transport and heating is required. Electrification of heat and transport will increase reliance in Jersey on the Jersey Electricity network, not only putting more load on the system but also on the consumer service teams if there are no structural changes in the market.

Relatedly, the Government of Jersey launched a consultation in November 2023 in relation to a proposed project to develop an offshore windfarm of up to 1GW that would both supply Jersey and enable exports of electricity.[15] At the same time, some consumers are considering whether to install distributed generation on their properties. The development of on-island generation, in particular at a large scale, will require greater coordination of electricity flows over the subsea cables with France.

Key findings

Our study of the Jersey electricity market has highlighted that overall, the market is currently serving consumers relatively well and the subsections below, consistent with the terms of reference, set out our consideration of:

- The efficiency of Jersey Electricity.
- Consumer outcomes.

[7] Solar Photovoltaic or solar PV is a technology of generation that utilises photovoltaic material to convert sunlight into electrical energy.
[8] Jersey Electricity, Figures and Reports - Jersey Electricity (JE.co.uk)
[9] Information provided by Jersey Electricity.
[10] Distributed generation assets are small electricity generation plants that are connected to the electricity distribution network rather than the electricity transmission network.
[11] Jersey Electricity, je_annual_report_dec_2023.pdf (jec.co.uk)
[12] Average day-ahead hourly prices in France from EEX.
[13] Government of Jersey, Carbon Neutral Roadmap (gov.je)
[14] The Carbon Neutral Roadmap builds on the Carbon Neutral Strategy published in 2019 and the Carbon Neutral preferred strategy published in 2021.
[15] Government of Jersey, Offshore wind farm consultation opens (gov.je)

- Cross market effects.
- Future supply and requirements of the Jersey electricity market.

Efficiency of Jersey Electricity

Jersey Electricity, a vertically integrated company, does not have any direct comparators in the structurally separated GB market. However, it is possible to compare the breakdown of Jersey Electricity's costs to the breakdown of the retail electricity bill for the average domestic consumer in GB under the Default Tariff Cap (DTC).[16] This is because the DTC includes the costs for all the different activities in the GB electricity market.[17] The largest proportion of Jersey Electricity's costs is administrative and operating costs at [✂], followed by wholesale costs at [✂] and lastly "targeted" profit[18] at [✂]. This compares to 60% of the retail electricity bill in GB accounting for wholesale costs, which is considerably higher than in Jersey, despite domestic Jersey consumers having higher average electricity consumption. Administrative and operating costs, as well as "targeted" profits, account for a higher proportion of costs in Jersey than in the electricity retail bill in GB, at 37% and 3% respectively. When comparing the proportion of costs that covers "targeted" profits, it is important to note that Jersey Electricity's profits represent profits for all of the activities in the electricity market, but the profits in the GB retail electricity bill only reflect the profits for electricity retail.[19,20]

For 2023, Jersey Electricity retail costs, i.e. those that do not relate to the maintaining and investing in the Jersey electricity network, were [✂] higher than the retail operating cost benchmark under the GB DTC. However, it is important to note that the DTC retail operating cost benchmark was set based on GB suppliers with at least 250,000 consumers compared to the 54,214 consumers served by Jersey Electricity. In addition, the DTC retail operating benchmark was set at the lower quartile of the GB supplier costs minus £5. Given this, some of the difference between Jersey Electricity retail costs and the DTC retail operating benchmark could be explained by economies of scale in GB as well as reflect that most GB suppliers' costs were above the GB DTC benchmark at the time it was set.

Over the past five years Jersey Electricity has significantly increased its headcount[21] leading to a 34% reduction in units sold per FTE and a 64% decrease in operating profit per FTE in real terms. Jersey Electricity has indicated that the increased headcount is primarily driven by its preparation to support net zero and Government of Jersey policy objectives. During this period, the increase in FTEs was not matched by the increase in direct labour costs. This led to a 26% decrease in the direct labour cost per FTE from 2018-23. It will be important to continue to monitor the growth in FTEs and whether this is justified by Jersey Electricity's contribution to the successful and timely delivery of decarbonisation in Jersey.

In addition to the assessment of the evolution of costs per FTE, we conducted a similar assessment of costs per consumer. Jersey Electricity's Energy Division operating profit per consumer fell by 51%, from £225 per consumer in 2018 to £111 per consumer in 2023. This was driven by revenue per consumer falling by 12%, but the cost of sales and operating expenses per consumer only falling by 9%. Jersey Electricity has continued to post a return on assets within its target of between 6%-7%.[22] These target returns have remained the same since the 2012 Market Study and are higher than the Weighted Average Cost of Capital (WACC) set by regulators for infrastructure companies in comparable utility sectors.[23] The

[16] The DTC was introduced by the UK Government in 2018 to apply as a cap on domestic retail electricity and gas bills for GB consumers. The cap is set by Ofgem, the energy regulator in GB, and updated periodically.
[17] This can be measured through the Default Tariff Cap set by Ofgem, the GB energy regulator, to cap on domestic retail electricity and gas bills for GB consumers on variable tariffs.
[18] Targeted profits are added by Jersey Electricity to its calculation of its unit rates to target a return on assets of between 6%-7%.
[19] The profits for the generation, transmission and distribution of electricity will be included in the cost of these that the supplier incurs and passes onto electricity consumers.
[20] Jersey Electricity provided data and tariff information.
[21] Headcount is measured by Full Time Equivalents (FTEs), i.e., the number of full-time hours worked by considering all employees' hours in aggregate.
[22] Jersey Electricity, je_annual_report_dec_2023.pdf (jec.co.uk)
[23] It is important to note that while both return on assets and WACC capture return on equity and debt, there are differences in their calculation.

variance could reflect a difference in risk exposure between Jersey Electricity and the companies in the comparable sectors.

Additional analysis was also performed comparing the Jersey Electricity WACC and Return on Regulated Equity (RORE) to those of Distribution Network Operators (DNOs) in GB. [✂][24]

Jersey Electricity has delivered an electricity system with fewer consumer minutes lost than in similar markets. Jersey has a more secure system[25] than Guernsey and the Isle of Man. For the period 2012-2021, Jersey's median consumer minutes lost was 8 minutes, compared with 34 minutes in Guernsey and 19 minutes in the Isle of Man. It also had a more secure system than GB, which had an average of 37 minutes consumer minutes lost for the 2015-2023 period.

Jersey Electricity's contract with EDF has resulted in Jersey consumers not being exposed to the full degree of European wholesale market price fluctuations experienced in 2021-2022.

The available evidence does not imply that Jersey Electricity is operating in an inefficient manner.

Consumer outcomes

Jersey consumers spend on average £25 per week on electricity.[26] This cost is influenced by Jersey Electricity's contract with EDF for the supply of electricity. However, this contract is due to expire in 2027 and it is not possible to know what price levels will be agreed under any new contract.[27]

Only 6% of households have been in arrears on their electricity, gas or oil bills in the last 12 months in Jersey.[28] This is similar to 6% of electricity and gas consumers in GB (Q2 2024)[29] and 7% of the EU population (2023) in arrears.

The average consumer in Jersey has a lower cost of electricity than the average consumer in four similar and adjacent markets. Jersey has a lower standing charge (p/day) and unit rate (p/kWh) than Guernsey, Isle of Man, and Great Britain. While it has a higher unit rate than in the regulated tariff in France[30] (17.09p/kWh in Jersey compared to 14.72p/kWh in France), it has a significantly lower standing charge (18.64p/day in Jersey compared to 34.72p/day in France). Out of the sample of countries we considered, only Malta[31] had both a lower standing charge and unit rate than Jersey.

52% of domestic Jersey consumers are on the General Domestic tariff while 92% of commercial Jersey consumers are on the General Commercial tariff. While there is some adoption of 'time of use' tariffs for both domestic and commercial consumers, some of these tariffs require installation of additional metering. Time of use tariffs can provide consumer savings as well as enable Jersey Electricity to better manage flows and network demand. We understand that, for its time of use tariffs, Jersey Electricity spreads consumer demand across a time-range to smooth overall network demand.[32]

In 2023, 235 consumers in Jersey switched tariff, which represents 0.5% of total domestic consumers in Jersey. Over the 2018-2023 period, the total number of switches has not

[25] We define secure system based on the number of consumer interruptions measured in minutes experienced by the Jersey Electricity system when compared with those occurring in other jurisdictions.
[26] Jersey Statistics, Opinions and Lifestyle Survey 2023 Report.pdf (gov.je)
[27] It is important to note that JE is able to enter into contracts with any market participant in France.
[28] Jersey Statistics, Opinions and Lifestyle Survey 2023 Report.pdf (gov.je)
[29] Ofgem, Debt and Arrears Indicators
[30] Assessment of France includes the tariff shield applied to regulated tariffs. Energy tariffs -Electricity: prices increase in February! | Entreprendre.Service-Public.fr
[31] Since 2022, electricity retail prices are subsided by the government. Malta: 2023 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Malta (imf.org)
[32] Jersey Consumer Council, data provided on consumer experience.

exceeded 325 per year, representing 0.7% of total domestic consumers. This switching rate is lower than the 7% of GB domestic consumers that switched tariffs in 2023.[33,34]

On average, consumer switching time (i.e. the time between a consumer requesting a switch to a new tariff and being switched) in Jersey has remained constant over the 2018-2023 period at approximately 6 weeks.[35] In comparison, GB switching times have fallen from 15 calendar days in 2022 to 6 calendar days in 2023.[36]

With regards to customer satisfaction, Jersey Electricity scored higher than most utilities in GB in an Institute of Customer Survey. Jersey Electricity scored 77.5 out of 100 in the UK Customer Satisfaction Index, which was higher than the utilities average score of 69.8 and the UK all-sector average of 75.8. Compared against individual UK utilities, only UK Power Networks scored higher at 79.2, with Octopus Energy scoring 0.6 points lower than Jersey Electricity at 76.8. Jersey Electricity is responsible for delivering select government funded schemes relating to electric vehicles (EV),[37] EV charging and low-carbon heating. In addition, Jersey domestic consumers can finance large expenditures for at home chargers for EVs and fuel switching, via Jersey Electricity's Easycharge subscription service and finance for electric heating. The type and level of support varies across these programmes. However, similar types of support are not provided to commercial consumers that seek to decarbonise.

Cross-market effects in Jersey

Jersey Electricity undertakes a number of other roles in the sector, such as the operation of electricity-related government schemes and ongoing development of a public EV charger network across the island. In addition, it participates in several adjacent competitive markets, with a strong partnership between JEBS[38] and Jersey Electricity. It will be important to keep under review the impact of the level of separation in public facing communications between Jersey Electricity Group's businesses, including JEBS, in the adjacent competitive markets.
Future supply and requirements of the Jersey electricity market

The electricity market is expected to change significantly over the coming decade, with expected increases in electricity demand as the economy decarbonises, the renegotiation of the contract with EDF[39] and the potential commissioning of large-scale onshore generation. It will be important to consider the implications of these changes in the Jersey electricity market as well as the role played by Jersey Electricity in this context: ensuring the electricity market and Jersey Electricity operate efficiently in an evolving market, support electricity consumer engagement, and enable a wide range of market participants to support the delivery of the Carbon Neutral Roadmap in the future.

[33] Ofgem, Retail market indicators | Ofgem
[34] Prior to 2021, GB experienced a higher number of switches by electricity consumers. Between 2018 (the last year before the introduction of the Default Tariff Cap) and 2021, the average annual number of domestic switches represented 23% of domestic consumers in GB.
[35] Jersey Electricity, information provided for this study.
[36] Ofgem, Retail market indicators | Ofgem
[37] An electric vehicle is a vehicle powered by an electric motor that draws electricity from a battery that is charged from external sources.
[38] JEBS, Jersey Electricity Building Services is one of the businesses of the Jersey Electricity Group. Our Businesses - Jersey Electricity (JE.co.uk)
[39] Jersey Electricity could procure electricity from any supplier in France, however EDF is the largest generator and supplier in the market.

1. Introduction

The Jersey Competition Regulatory Authority (the Authority) is the independent body responsible for promoting competition and consumer interests in Jersey through economic regulation and competition law.

The Authority announced on 5th October 2023 that it would be carrying out a market study into the electricity market in Jersey.[40] The Authority previously reviewed the electricity market in 2012 (the 2012 Market Study) where it identified that Jersey electricity prices were broadly fair value.[41]

The Jersey electricity market is vertically integrated, with Jersey Electricity being the only company directly responsible for supplying, transporting, and distributing electricity in Jersey. The electricity sector is not currently subject to any form of sector-specific economic regulation, for example sector-specific tariff regulation. However, Jersey Electricity's operations are within the remit of the Competition (Jersey) Law 2005. This law promotes competition in the supply of goods and services in Jersey and is designed to address anti-competitive arrangements, abuse of a dominant position in a market, and mergers that are harmful to competition.

The Authority has engaged EY to support the assessment of the electricity market. As part of its support, EY prepared the Draft Report. The Authority consulted on its draft recommendations alongside the Draft Report between 27th June 2024 and 9th August 2024.

EY has incorporated the feedback to the Authority's consultation into this Final Report. The Final Report should be read in conjunction with the Authority's Findings and Recommendations Paper for the Electricity Market Study. The Authority's paper provides further context on the study and sets out the Authority's recommendations, drawing on the key findings set out in this report.

1.1 Terms of Reference of the Authority

The Authority's terms of reference for the Jersey electricity market study are to consider:[42]

- the efficiency of electricity supply in Jersey, taking into account the resilience of supply.
- market characteristics, including consumer demand, market structure and market outcomes.
- comparative data and findings from the previous market study carried out by the Authority.
- features of the electricity market, including investment in renewables and alternative generation, which potentially impact present and future competition.

1.2 Scope of EY analysis

EY has been engaged by the Authority to carry out a market study of the electricity market in Jersey. In this context, we have conducted analysis to understand whether the electricity market is working well with regards to companies being efficient, passing those efficiencies on to consumers and consumers being well served.

[40] Jersey Competition Regulatory Authority (Case – M-008), Competition Regulator to undertake a market study into electricity | JCRA
[41] Channel Islands Competition & Regulatory Authorities, A850J - Electricity market study (Jersey) | JCRA
[42] Jersey Competition Regulatory Authority (Case – M-008), Electricity Market Study - Terms of Reference | JCRA

Findings resulting from our study will inform, where appropriate, any recommendations the Authority makes for changes to business practices, changes to regulation, or consumer focused actions.

1.3 Approach to the study

A market study is a flexible tool to explore whether a market, or features of a market, are working well for consumers. It considers the relationship between consumer behaviour, business behaviour, and the market's structure. Through analysing these relationships, a regulatory authority can determine whether there is a need for action to help address any issues identified. This action could focus on enabling changes to consumer behaviour, business behaviour, or both. A market study is not targeted at the actions of any specific business.

The Authority uses market studies as one of its key regulatory tools. In recent years, the Authority has carried out market studies on a range of markets, including groceries, alcohol pricing and promotions, freight logistics and school uniforms.

We have followed an evidence-based approach to assess the specific characteristics of the electricity market in Jersey and analyse the effectiveness of the market. As part of this evidence-based approach, we have gathered data from a variety of sources. As part of this study, we have met with a variety of stakeholders, both in Jersey and outside of it, to understand their experiences of the Jersey electricity market. Below we list the organisations interviewed in preparation of this Draft Report:

- Jersey Electricity
- Government of Jersey
- Jersey Statistics
- Guernsey Competition Regulatory Authority
- Jersey Consumer Council
- Institute of Directors
- Jersey Business
- Rubis
- Sunworks
- Ener.je
- Foresight

We thank all stakeholders that engaged with us in the preparation of this report. The Draft Report was subject to consultation. Where available responses have been published on the JCRA website and this Final Report has been updated to reflect, as appropriate, the comments received. A summary of the updates made from Draft to Final Report is provided in Appendix B.

Most of the company-specific information cited in this report has been obtained directly from Jersey Electricity. The company's published reports and accounts, in addition to publicly available information from other electricity providers and regulators, and economic research material have been used to inform the analysis.

1.4 Previous electricity market study

The 2012 Market Study was the previous study on the electricity market.

That study concluded that electricity prices in Jersey broadly provided fair value to consumers, but noted areas, such as the development of new connection charges and self-generation, may require a future review. Since the 2012 Market Study the Authority has not carried out any further work into the electricity sector.

1.5 Structure of the report

The remainder of this report is structured in the following manner:

- Section 2 provides an overview of the current electricity market in Jersey, and its key characteristics.
- Section 3 discusses the efficiency of Jersey Electricity. It provides an overview of its current operations in the market.
- Section 4 assesses the consumers outcomes in the Jersey electricity market.
- Section 5 assesses the cross-market effects of the different roles held by Jersey Electricity.
- Section 6 considers the future of the Jersey electricity market as it decarbonises and evaluates its supply mix.
- Section 7 summarises the key findings from the study.

2. Overview of the electricity market in Jersey

This section sets out key characteristics of the Jersey electricity market, including the role of Jersey Electricity. The characteristics of demand, as well the characteristics of the supply of electricity, including the role of contracts with Électricité de France (EDF), a French electricity company, are considered. We have also considered the financial position of Jersey Electricity, given the importance of its role.

2.1 Overview of electricity markets

Electricity markets enable consumers to procure the electricity they need to power their homes and businesses. In order to provide context to the Jersey Electricity market, we summarise the key parts of electricity markets, including those in the GB and the EU. In these markets, there is often a division of ownership and responsibility for the different activities in the electricity market and differing regulatory arrangements.

Wholesale electricity markets are the markets that enable suppliers to procure electricity on behalf of consumers from electricity generators connected to the network. These trades between parties are either arranged bilaterally via contracts (also known as Over The Counter (OTC) trades) or via power exchanges. Similar to many other commodities, electricity is often traded years in advance of consumption, known as future markets, and also up to the time when consumers demand it in intraday markets. Price formation in electricity markets is directly or indirectly based on the marginal cost of electricity, i.e., the cost of producing an additional megawatt (MW) of power. Future markets are based on the expected marginal cost of electricity at time of delivery, while often day-ahead or intraday markets are explicitly based on a pay-as-clear basis. Electricity generators are often licensed or require approval to operate in the market. Generators are typically subject to regulation regarding how they trade electricity.

Network companies transport electricity from its source to consumers. Transmission companies are responsible for transporting electricity long distances at a higher voltage, while distribution companies connect homes and businesses to the electricity network. Network companies can bring markets together via electricity interconnection. Interconnection enables generators in a country to sell electricity in other markets. Network companies are licensed or appointed and are subject to regulatory regimes determined by the energy regulator that limit their prices or revenue for a predetermined period.

The structure of **cross-border markets** varies and depends on the market structure of each interconnected market and agreement between parties and regulators. Within the EU, cross-border markets are harmonised under the Electricity Regulation. These regulations, and their subsidiary network codes set out common rules for suppliers and generators to procure both interconnection capacity and electricity from across the EU. In other markets, such as in the Channel Islands and Isle of Man, the incumbent energy company is responsible for procuring electricity directly from the adjacent market.

Finally, **retail electricity markets** involve suppliers selling electricity to consumers. Retail electricity prices include the cost of electricity, as well as the cost of the electricity being transported through the network, the cost of select government schemes (some of which may be delivered by the supplier), and the supplier's internal costs and returns. Electricity suppliers are often subject to regulatory obligations, for example detailing how they should engage with consumers. In some countries they can be subject to price controls or require approvals to change prices.

Box 1: Energy trilemma

Governments' various energy policies impact all parts of the electricity market, as set out above. The **energy 'trilemma'** represents the three key objectives that governments often aim to balance in the energy sector, including electricity markets, when developing these policies. These objectives are:

- decarbonisation.
- security of supply.
- affordability for consumers.

The challenge of achieving all three objectives simultaneously requires policy trade-offs to be made. Countries across Europe, including Jersey, are considering these trade-offs in the development of their national energy policies, such as the Carbon Neutral Roadmap in Jersey, discussed in Section 6.

2.2 Jersey market structure

Electricity is a stable and significant component of the energy mix in Jersey. In 2022, electricity represented 38.4% of final energy consumption in Jersey.[43] This has remained constant since the 2012 electricity market study by the Authority. This is higher than the share of final electricity on final share of energy consumption by in both the UK[44] and the EU.[45] In the UK electricity accounted for approximately 19% of final energy consumption in 2022. In the EU, electricity represented approximately 23% of final energy consumption in 2021.

Electricity represented a greater share of final energy consumption by Jersey households compared to the market in general. In 2022, electricity accounted for 56% of households final energy consumption,[46] which was higher than in both the UK[47,44] and the EU,[48] where electricity represented approximately 24% of households final energy consumption.

The Jersey electricity market is a vertically integrated market. Jersey Electricity is the only company responsible for procuring, transporting, and selling electricity in Jersey. Jersey Electricity's main assets include power plants, 1,700km of distribution and transmission electricity network, and a share of the interconnection to France and Guernsey, which is owned by Jersey Electricity and Guernsey Electricity.[49] Note, the electricity sector on Jersey is not currently subject to any form of sector-specific economic regulation. Unlike electricity companies in many other markets, such as those in GB and the EU, Jersey Electricity is not directly regulated by a regulatory authority.

Over the last five years, Jersey Electricity has bought at least 94% of the electricity required to meet the demand in Jersey from France via a contract with EDF and this contract is long standing, having been agreed in 2012 and it is due to expire in 2027. Further information on this contract and other sources of electricity are discussed below in the sub-section on characteristics of supply.

Jersey Electricity is part of Jersey Electricity Group, which is a publicly listed company on the London Stock Exchange with a mix of ordinary shares and preference shares. 62% of the ordinary share capital is owned by the Government of Jersey, but this is not listed.[50] Jersey

[43] Jersey Statistics, Jersey Energy Trends 2022 (gov.je)
[44] BEIS, UK ENERGY IN BRIEF 2023 (publishing.service.gov.uk)
[45] Eurostat, Energy statistics - an overview - Statistics Explained (europa.eu)
[46] Jersey Statistics, Jersey Energy Trends 2022 (gov.je)
[47] BEIS, UK ENERGY IN BRIEF 2023 (publishing.service.gov.uk)
[48] Eurostat, Energy consumption in households - Statistics Explained (europa.eu)
[49] Jersey Electricity, je_annual_report_dec_2023.pdf (jec.co.uk)
[50] Jersey Electricity, https://www.jec.co.uk/investors/shares/

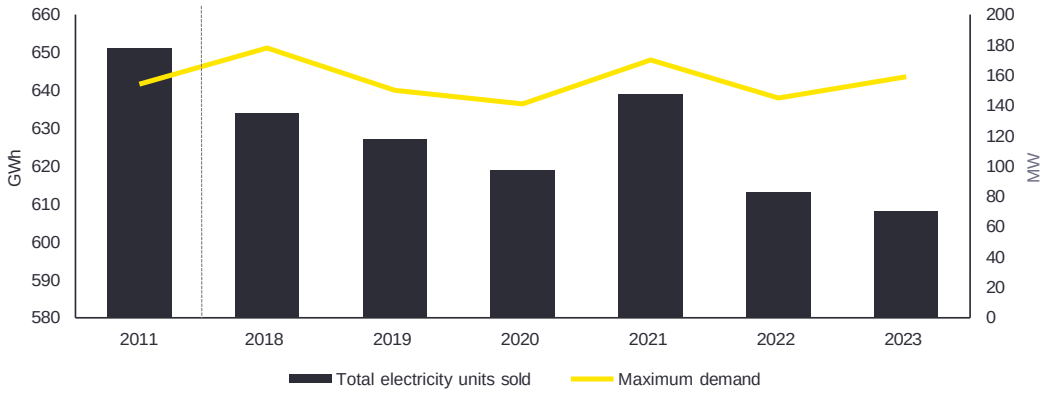
Electricity Group had an annual turnover of over £100m over the 2018-23 period. In 2023, approximately 77% of Group revenues originated from Jersey Electricity. In addition to Jersey Electricity, Jersey Electricity Group operates several businesses,[51] including Jendev, Jersey Deep Freeze, JEBS, the Powerhouse and Smarter Living and Property. See section 5 for a description of Jersey Electricity Group's Businesses.

2.3 Characteristics of demand

Jersey consumers spend on average £25 per week on electricity. Only 6% of households have been in arrears of their electricity, gas or oil bills in the last 12 months in Jersey.[52] This is similar to 6% of electricity and gas consumers in GB (Q2 2024)[53] and 7% of the EU population (2023) in arrears.[54] When compared with island nations in the EU, Jersey has a higher share of households in arrears compared to Malta (4.9% in 2023) but lower than Cyprus (9% in 2023).[55]

In 2023, Jersey consumers demanded 608GWh[56] of electricity, which is 7% lower than the 651GWh demanded in 2011. Figure 1 shows that the total number of electricity units sold has declined steadily over the 2018-23 period considered. Jersey Electricity reported that the fall in demand between 2022 and 2023 was due to a combination of a mild winter and energy efficiency offsetting demand growth.[57]

Figure 1:Evolution of electricity demand in Jersey



Source: Jersey Electricity data

In addition to powering lights and electrical appliances, electricity is the main source of heating for households in Jersey. In 2023, electricity was the main heating fuel for 63% of households in Jersey, however this figure varies by ownership type; 94% of adults living in social rented properties used electricity as the main heating fuel compared to 49% of owner-occupiers. Furthermore, the proportion of households using electricity as their main fuel type decreases with household income.

Consumers with lower incomes or in social rented properties are more likely to have most of their home energy use impacted by changes in electricity prices when compared with consumers with higher household income. This indicates that they are more likely to benefit from tariffs that prioritise lower unit rates of electricity for heating and water systems when compared to the average consumer.

[51] Jersey Electricity, Our Businesses - Jersey Electricity (JE.co.uk)
[52] Jersey Statistics, Opinions and Lifestyle Survey 2023 Report.pdf (gov.je)
[53] Ofgem, Debt and Arrears Indicators
[54] Eurostat, https://doi.org/10.2908/ILC_MDES07
[55] The study focused on arrears given comparable data available across markets. It is possible that unaffordability of electricity tariffs would also impact the level of bad debt in any market or the rate of electricity theft, which was not assessed.
[56] Information provided by Jersey Electricity.
[57] Jersey Electricity, je_annual_report_dec_2023.pdf (jec.co.uk)

Use of electricity for heating also varied by property type and geography. In 2023, 89% of adults living in flats used electricity as the main heating fuel compared to 33% of those in detached houses. Households in St Helier also use significantly more electricity for heating than those in rural parishes (78% and 46% respectively).[58]

Maximum demand in Jersey usually occurs at approximately 9:30pm in the evening during winter.[59] Over the period studied, maximum demand for electricity did not show the same decrease as in total demand. Median maximum demand for the 2018-2023 period was only 0.3% higher than maximum demand observed in 2011, indicating that it has not changed significantly, despite the value varying from year to year as can be seen in the table below.

Table 1: Jersey Electricity consumers

Characteristics of electricity demand in Jersey from 2018 to 2023							
	unit	2018	2019	2020	2021	2022	2023
Number of residential consumers	n.	43,953	44,735	45,189	45,807	46,428	47,034
Number of commercial consumers	n.	7,291	7,319	7,295	7,259	7,313	7,180
Average consumption for residential consumers	kWh	7,313	7,108	7,464	7,949	7,230	7,135
Average consumption of commercial consumers	kWh	43,148	42,000	38,761	38,233	37,647	38,174

Source: Jersey Electricity annual reports and internal company data

The table above sets out the number of Jersey Electricity residential and commercial consumers from 2018 to 2023, including the composition of average consumption by consumer type. The total number of consumers has increased by 7% since 2018, to more than 54,000 consumers in 2023. Residential consumers represent the largest proportion of Jersey Electricity consumers by number (c. 87%).

Average consumption for residential consumers in Jersey was 7,135kWh in 2023, which is approximately 2% less than in 2018. Average consumption for residential consumers is significantly higher than the average annual electricity consumption for an average household in Great Britain, which is estimated to be 2,700 kWh.[60] Average consumption for Jersey commercial consumers in 2023 was 38,174kWh, 12% lower than in 2018.

2.4 Characteristics of supply

Jersey Electricity procures and generates electricity to meet the electricity demand of its consumers from three different generation sources:

1. Subsea cables to France*:* Over the last five years, Jersey Electricity has imported at least 94% of electricity to meet demand in Jersey from France through three undersea cables: Normandie 1, Normandie 2, and Normandie 3. Jersey Electricity contracts with EDF to procure the electricity and the source of the electricity is either from nuclear power plants or hydro generation power plants.

1. Self-generation: Jersey Electricity generates electricity from its own solar power units in its own estate and on leased roofs. Jersey Electricity also generates electricity from its La Collette Power Station and Queen's Road.[61]

2. Energy Recovery Facility (formerly known as Energy from Waste plant): Jersey Electricity buys electricity from the government owned energy-from-waste plant,[62] which burns refuse to generate electricity through steam turbines.

3. Distributed generation assets:[63] Jersey Electricity buys electricity from distributed generation at a buy-back tariff rate.

[58] Jersey Statistics, Opinions and Lifestyle Survey 2023 Report.pdf (gov.je)
[59] Jersey Electricity, Standby Charge - Jersey Electricity (jec.co.uk)
[60] Ofgem, Average gas and electricity usage | Ofgem
[61] See section 6 in this report for further analysis on investments in the wind farm.
[62] Up to 8MW of electricity produced by the Energy Recovery Facility plant is provided to Jersey Electricity. La Collette Power Station - JE (JE.co.uk)
[63] Distributed generation assets are small electricity generation plants that are connected to the electricity distribution network rather than the electricity transmission network.

In 2023, Jersey Electricity imported 94.5% of the electricity it sold to Jersey consumers from EDF in France and procured 5.1% of electricity demand from the Energy Recovery Facility. This level of imports is a part of a continued trend; Jersey Electricity has imported over 94% of the electricity to meet demand in Jersey every year in the 2018-2022 period.

The remaining 0.4% was generated on the island from Jersey Electricity's self-generation. Jersey Electricity heavily relies on international electricity supply to meet demand in Jersey, and the total amount of electricity imported has increased since 2020. However, while importing power represents the cheapest option, it requires Jersey to have sufficient generation capacity to mitigate the impact of any interruptions to imports. For example, lightning in Normandy in 2014 led to power outages of less than 2.5 hours in total.[64,65]

JE's contract with EDF is based on a mix of indices that reflect the wholesale electricity price in France. The current pricing of the contract is composed of three components: [✂]

The prices of these components are subject to a negotiated cap and collar specific to the component. In addition, JE procures certificates of guarantee of origin for low carbon electricity, as well as incurring supply costs in France.

JE has the ability to affect the overall prices through the selection of dates at which to fix electricity prices, these are still fundamentally based on the cost of generation of the electricity market in France.

Under the current contract, there is no volume cap with JE being able to access all the electricity it needs.

The global energy crisis has demonstrated the importance of energy sovereignty and security of supply.[66] Between April 2020 and August 2022, average day ahead electricity prices in France increased significantly from EUR13.45/MWh to EUR492.49/MWh,[67] following increased global demand for gas, Russia's invasion of Ukraine, and prolonged nuclear outages in France. In addition, subsea cable outages in 2014 highlighted the risk of technical failures to the submarine cables and other disruptions to supply.[68] These events provide additional context to Jersey's Electricity's upcoming review of energy sourcing strategy, including the viability and role of offshore wind generation which has fallen significantly in cost.[69]

Some domestic and commercial Jersey consumers generate their own electricity using distributed generation, e.g., from solar photovoltaic (PV)[70] panels installed on roofs. Distributed generation reduces the amount of electricity that needs to be supplied by Jersey Electricity, although these consumers still need to be connected to Jersey Electricity's network and purchase any additional electricity needed e.g., at night. All exports of electricity from consumers to Jersey Electricity is paid via the buy-back rate. This was set at 7.76p/kWh

[64] Jersey Electricity, Power restoration complete - Jersey Electricity (jec.co.uk)
[65] Since then, Jersey Electricity and Guernsey Electricity have both replaced the original EDF1 subsea cable with the Normandie 1 and expanded capacity with the introduction of the Normandie 3 subsea cable.
[66] Jersey Electricity, je_annual_report_dec_2023.pdf (jec.co.uk)
[67] Average day-ahead hourly prices in France from EEX.
[68] Jersey Electricity, Power restoration complete - Jersey Electricity (jec.co.uk)
[69] Studies of potential wind output in Jersey include the Met department study sponsored by Jersey Electricity for renewable energy planning from 2013 (Met Department's offshore wind project (gov.je)), as well as the more recent proposals by the Jersey Government (Offshore wind power (gov.je)).
[70] Solar Photovoltaic or solar PV is a technology of generation that utilises photovoltaic material to convert sunlight into electrical energy.

in 2023.[71] Jersey Electricity recommends that domestic consumers size solar PV to meet baseline demand in order to save customers money. This recommendation would also minimise solar export to the network.[72] Commercial consumers with a solar PV generation pay a standby charge to reflect the network and standby costs incurred by Jersey Electricity and that would normally be charged via the electricity unit tariff.[73] A charge of £3.97/kWp per month is paid by commercial consumers with up to 50kWp of capacity. Charges for commercial consumers with greater than 50kWp installations are defined on a case-by-case basis by Jersey Electricity.

2.5 Key features of the Jersey electricity market

The Jersey electricity market is currently characterised as follows:

- Electricity represented 38.4% of final energy consumption in Jersey in 2022. This is higher than in GB or the EU.
- The Jersey electricity market is vertically integrated, with Jersey Electricity being the only company responsible for procuring, transporting, and selling electricity in Jersey.

Jersey consumers have similar levels of arrears when compared to GB consumers, and 1 percentage point lower than the EU.

- The electricity sector in Jersey is not currently subject to any form of sector-specific economic regulation.
- Electricity demand has decreased despite an increase in number of consumers, indicating increasing energy efficiency in Jersey.
- Maximum demand has remained stable over the period 2018-23 and occurs generally at 9:30pm during winter.
- Jersey Electricity has imported over 94% of the electricity from France via subsea cables to meet demand in Jersey every year over the 2018-2023 period based on a contract signed in 2012, which is due to expire in 2027.
- Distributed generation in Jersey received the Jersey Electricity buy-back rate at 7.76p/kWh in 2023.

[71] 11863_buy_back_tariff_domestic_nov_22_v4.pdf (jec.co.uk)
[72] Jersey Electricity, Solar PV - Jersey Electricity (jec.co.uk)
[73] Jersey Electricity, Standby Charge - Jersey Electricity (jec.co.uk)

3. Efficiency of Jersey Electricity in the Jersey electricity market

The efficiency of Jersey Electricity's operations has a significant impact on the Jersey electricity market as it is the only company responsible for procuring, transporting, and selling electricity in Jersey. This section sets out key metrics on Jersey Electricity's operating performance, along with historical performance on security of supply and network losses, such as consumer minutes lost. All monetary values in this section of the report unless otherwise marked are presented in 2011 real prices.[74]

3.1 Jersey Electricity revenue and costs

As stated in Section 2, Jersey Electricity is part of the Jersey Electricity Group, which is a publicly listed company. The average mid-price of the listed shares[75] was 497p over the 2018-2023 period, and dividends averaged 10p per share.[76]

Revenue

Jersey Electricity energy division revenue decreased by 12% between 2018 and 2023, from £70million to £62million as shown in Table 2 below. When compared to the 2012 Market Study, revenues have decreased by 17%, from £75million.

This decrease in revenue can be partly explained by the 7% decrease in units sold since 2011 discussed in section 2.

Cost of sales

Between 2018 and 2023, Jersey Electricity Energy Division cost of sales has reduced by 7% from £32million to £30million. Data on cost of sales for the Jersey Electricity Energy Division is not available for a comparison with the 2012 Market Study.

As a proxy, it is possible to compare the cost of sales for the Jersey Electricity Group for the period 20112023 given that cost of sales for the energy division represents 58% of Group cost of sales in the 2018-2023 period. Between 2011 and 2023, Jersey Electricity Group cost of sales decreased by 27%.

The significant decrease in cost of sales for Jersey Electricity Group is consistent with the increased ability of Jersey Electricity to procure cheaper electricity from France. In 2014, there was a doubling of subsea cable capacity to Jersey as a result of the commissioning of the Normandie 3 subsea cable.[77] Greater imports from France replaced more expensive on-island generation in Jersey. It also replaced import capacity no longer available following the failure of the Normandie 1 subsea cable.

Operating profit

Operating profit also decreased in this period. This was driven mainly by revenue decreasing more than cost of sales in the period. Jersey Electricity's Energy Division operating profit decreased by 48% from £12million to £6million between 2018 and 2023. For the same period, Jersey Electricity Group operating profit decreased by 35% from £14million to £9million.

[74] 2011 real prices means that monetary values from any subsequent year have been deflated back to 2011 to present them on an equivalent basis, i.e., the impact of inflation has been removed from the prices in subsequent years.
[75] 62% of the ordinary share capital is owned by the Government of Jersey, but this is not listed.
[76] Bloomberg
[77] Jersey Electricity, Normandie 3 - Jersey Electricity (jec.co.uk)

Table 2:Jersey Electricity Energy division key financials from 2011 to 2023 in real terms

Jersey Electricity Energy division key financials from 2018 to 2023 (£millions)							
	2011	2018	2019	2020	2021	2022	2023
RPI (2011=100)	100.0	116.6	119.5	120.6	125.2	141.1	156.3
Energy Division Revenue	75	70	73	70	71	63	62
Energy Division Cost of sales		32	35	33	34	31	30
Energy Division Gross profit	8	39	38	37	38	32	32
Energy Division Operating expenses		27	28	27	29	27	26
Energy Division Operating profit		12	10	10	9	5	6
Energy Division Net assets	141	153	150	150	144	127	115

Source: Jersey Electricity public accounts and submitted information, EY analysis

Cost breakdown

Jersey Electricity has stated that it structures its tariffs to reflect the underlying costs it incurs to provide electricity to consumers, as well as the "targeted" profit consistent with the delivery of the Group return discussed above.

Administrative and operating costs are the largest at [✂], followed by wholesale costs at [✂] and lastly “targeted” profit at [✂] [78] as shown in Table 3 below.

Jersey Electricity sets its tariffs in two parts:

- A daily service charge, which is a fixed flat daily charge to recover its administration costs associated with metering.[79]
- Unit rates, which is a charge per kWh to recover its remaining operating costs, wholesale costs, and targeted profit.

Cost breakdown comparison with GB

There are no direct comparators in the structurally separated GB market to Jersey Electricity activities. However, the GB Default Tariff Cap (DTC)[80] can be compared, with limitations, to Jersey Electricity’s cost stack to provide an indicative view of the similarities and differences between total cost to serve consumers in the two markets.

We note that there are two main limitations to this approach:

- Jersey consumers have a higher average consumption than GB consumers which affects the cost comparison.
- Jersey Electricity profits represent the entire electricity market, while those under the DTC account only for supplier profits[81]

Compared to an average GB consumer in the DTC, an average domestic consumer in Jersey was expected to:

- pay 25% less;[82]
- pay an equivalent administrative and operating costs [✂];
- pay [✂] lower wholesale costs; and

[78] [✂]
[79] Jersey Electricity information provided for this study.
[80] The DTC was introduced by the UK Government in 2018 to apply to a cap on domestic retail electricity and gas bills for GB consumers. The cap is set by Ofgem, the energy regulator in GB, and updated periodically.
[81] The DTC profit does not classify as profit those associated with and generation, transmission, and distribution of electricity.
[82] Based on each market’s own typical electricity consumption. If electricity consumption was adjusted to Jersey levels, Jersey consumers would pay 160% less than a similar level of consumption in GB for 2023.

- pay [✂] higher in “targeted” profits.

However, the share of the wholesale, and operating and administrative costs, and “targeted” profits breakdown of the retail bill differs for Jersey and GB electricity consumers. Table 3 below illustrates how 60% of the GB DTC is composed of wholesale costs compared to [✂] in Jersey, while administrative and operating costs, as well as “targeted” profits, account for a higher proportion of costs in Jersey at [✂] and [✂] than in the electricity retail bill in GB at 37% and 3%.

Table 3: Comparison of cost breakdowns for domestic consumers in Jersey and GB

[✂]

Cost to serve retail consumers in comparison with GB

An additional comparison is between the retail cost to serve consumers in Jersey and GB. Table 4 below compares the retail costs in Jersey to the GB DTC supplier operational costs. Jersey Electricity’s retail costs do not include the costs of maintaining and investing in the network that delivers power for consumers in Jersey, making it more comparable to suppliers’ costs in the GB retail market. For GB, the DTC provides a benchmark for the costs of operating a supplier (e.g. the cost of call centres to engage with consumers), metering costs, and specific costs to serve consumers that either pay on receipt of bills or have a pre-payment meter.

Under this measure, the cost to serve each consumer in Jersey is [✂] or [✂] higher than the DTC retail operating cost benchmark in GB in 2023. It is important to note that the cost to serve each consumer will include both fixed costs that do not vary by consumer number and costs that increase in proportion with its consumer base. As a result, at least some of the difference between those two cost levels could be a result of economies of scale between Jersey Electricity and GB suppliers. For the DTC retail operating cost benchmark, GB suppliers with fewer than 250,000 customer accounts were excluded from the sample.[83] Also, the DTC retail operating cost benchmark was set using a lower quartile of GB supplier costs minus £5. This highlights that the majority of GB suppliers at the time of benchmarking had higher costs than the allowance set by the regulator.

Table 4: Operating and capital costs to serve each consumer in 2023[84]

[✂]

The analysis in this section indicates that Jersey consumers have lower electricity costs than GB consumers, while paying a similar amount for the overarching administration and operation costs. When retail costs are isolated, the cost to serve retail consumers in Jersey is somewhat higher than in the GB DTC. However, there are reasons of economies scale and stringency of the benchmark that could indicate that Jersey Electricity costs are not unrepresentative of cost to serve customers in the GB market.

Growth in headcount

The total number of units of electricity sold has declined, while the number of Jersey Electricity Full Time Equivalents (FTEs)[85] has steadily increased since 2018. In 2018, there were 186 Jersey Electricity FTEs and this increased to 269 FTEs by 2023. This represents an increase of approximately 25% in Jersey Electricity’s FTEs. When compared to Guernsey, Jersey Electricity had 16% more FTEs than Guernsey in 2022, down from 18% more FTEs in 2021.[86,87]

[83] Ofgem, Consultationtemplate2018
[84] Information available for one year did not enable comparison across the 2018-2023 period.
[85] FTEs is a measure of headcount that considers the number of full-time hours worked by considering all employees’ hours in aggregate.
[86] Guernsey Electricity, 12222-GE ANNUAL REPORT 2022.indd (electricity.gg)
[87] Number of FTEs was not available to compare the full time series from 2018 between Jersey Electricity and Guernsey Electricity.

Jersey Electricity has reported that the growth in headcount addressed different business needs:

- The initial increase in FTEs in 2019 was related to Jersey Electricity hiring to fill existing vacancies rather than growth in its workforce.
- Since 2020, Jersey Electricity has reported that the increase in FTEs is required to prepare Jersey Electricity to deliver decarbonisation of the energy system and to renew its workforce.

It is noted that, according to Jersey Electricity, this increase did not relate primarily to physical investment on the network, but rather the capability of the organisation to prepare for the decarbonisation of the island. The increase in FTEs is also associated with workforce renewal.

The additional FTEs contracted have skills in a variety of areas, including project management, procurement, engineering, and data security. Below, we summarise the skills that Jersey Electricity expects those additional FTEs to deliver:

- Project management – delivery of carbon neutral roadmap, as well as managing the multiple change projects needed within the organisation, e.g. for human resources.
- IT and Data security – refresh and develop new technological capability as well as develop governance to comply with legislation on data security.
- Service Delivery – working on the increased number of connection requests.
- Solutions and procurement – develop new products that will support electrification, such as on EV charging, home heating, wind and solar generation, as well as procurement to deliver savings for Jersey Electricity
- Asset Management and HSE – optimise the network during the energy transition as well as managing the safety in the delivery of increased activities.
- Sustainability – focus on Jersey Electricity's own energy transition as well as biodiversity.

As a result, we would expect to see an increase in the pace of decarbonisation of the electricity network. In its annual report, Jersey Electricity noted digitalisation, consumer service, and delivery of electrification of EV and heating as key areas of focus for the company.[88]

Table 5: Jersey Electricity FTEs

Jersey Electricity staff from 2018 to 2023						
	2018	2019	2020	2021	2022	2023
Number of Electricity FTEs	186	188	199	238	253	269
Number of Other FTEs	102	94	97	88	92	92
Number of trainees FTEs	14	11	9	21	18	17
Total FTEs	**302**	**293**	**305**	**347**	**363**	**378**

Source: Jersey Electricity annual reports and internal company data

The increase in FTE has led to direct labour costs in the period 2018-2023 period to increase by 6.5% from £7.3million to £7.8million. However, this FTE increase was not associated with an increase in direct labour cost per FTE during this period. Direct labour cost per electricity FTE decreased from £39,199 in 2018 to £28,879 in 2023, a 26% decrease over the period assessed. Table 6 below summarises the evolution in Jersey Electricity direct labour costs per FTE in the period assessed.

[88] Jersey Electricity, je_annual_report_dec_2023.pdf (jec.co.uk)

Table 6: Evolution of Cost per electricity FTE

Cost per energy FTE from 2018 to 2023							
	2018	2019	2020	2021	2022	2023	Average 2018-2023
RPI (2011=100)	116.6	119.5	120.6	125.2	141.1	156.3	
Number of Electricity FTEs	186	188	199	238	253	269	222
Direct labour costs (excludes support costs)	£ 7,291,022	£ 7,333,130	£ 7,715,410	£ 7,731,714	£ 7,846,878	£ 7,768,351	£ 7,614,417
Cost per FTE	**£ 39,199**	**£ 39,006**	**£ 38,771**	**£ 32,486**	**£ 31,015**	**£ 28,879**	**£ 34,273**

Source: Jersey Electricity annual reports and internal company data

Our approach to reviewing Jersey Electricity's efficiency has been relatively high level, but ratios of the number of the units of electricity sold, number of consumers and profits to FTEs can provide insight into how effectively Jersey Electricity's FTEs are being employed.[89] As noted above, the number of Jersey Electricity's FTEs has increased over the last six years. Over the same period:

- electricity demand decreased by 4%, resulting on the number of units sold per FTE to decrease by 34% in the period.
- the number of consumers increased by 7%, resulting in the number of consumers per FTE falling by 26%.
- Jersey Electricity's operating profit decreased by 48%, resulting in a reduction in operating profit per FTE of 64% in the period considered.

When compared to data for Guernsey Electricity for 2022, Jersey has both a higher level of units per FTE and customer per FTE ratio when compared to Guernsey.[90] For 2022, Guernsey Electricity had a 42% lower units per customer and 32% lower number of customers per FTE. This highlights that Jersey Electricity has a relatively less resource intensive operation than a similar island market for the consumers and demand it serves.

Table 7 below sets out the trend in declining ratios of units of electricity sold, number of consumers and profits to electricity FTEs over the 2018-2023 period. The declining ratios indicate that the increase in Jersey Electricity's FTEs are not being employed to drive increases in electricity sold, number of consumers or profits. This is consistent with the Jersey Electricity description of the additional roles created as described earlier in this section.

Table 7:Jersey Electricity FTE ratios

Jersey Electricity Efficiency from 2018 to 2023							
	2018	2019	2020	2021	2022	2023	Average 2018-2023
Unit sold per electricity FTEs (kWh)	3,411,000	3,336,000	3,112,000	2,686,000	2,422,000	2,260,223	2,871,204
Change from previous year	-	-2%	-7%	-14%	-10%	-7%	
Number of customers per electricity FTEs	272	272	259	218	207	202	238
Change from previous year	-	0%	-5%	-16%	-5%	-3%	
(£2011 real)							
Energy Operating profit per electricity FTEs	62,097	55,261	51,496	35,943	21,011	22,353	41,360
Change from previoius year	-	-11%	-7%	-30%	-42%	6%	

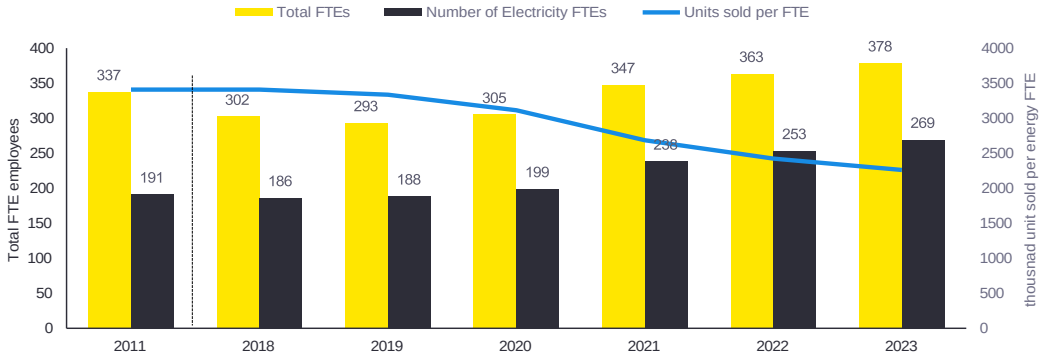
Source: Jersey Electricity annual reports and internal company data

Figure 2 below illustrates this pattern of declining units sold per FTE for Jersey Electricity. It also highlights that there has been a decline from the levels reported in the 2012 Market Study.

[89] Benchmarking Jersey Electricity's performance on its FTE number is one of the possible approaches to infer efficiency. This metric is also consistent with the 2012 Market Study that assessed units sold and number of customers per energy employee. As noted in the assessment, growth in FTE is related to factors other than growth in units sold, including supporting decarbonisation.

[90] Guernsey Electricity, 12222-GE ANNUAL REPORT 2022.indd

Figure 2:Evolution of units sold per FTE since 2011



Source: Jersey Electricity annual reports and internal company data

Evolution of revenue and costs per number of consumers

In addition to the assessment of the evolution of costs per FTE, EY conducted a similar assessment of costs as a share of the number of consumers in the period. Table 8 summarises the evolution of the key financial metrics per consumer for the period 2018-2023. Jersey Electricity's operating profit per consumer has fallen by 51% from £225 per consumer in 2018 to £111 per consumer in 2023, due to revenue per consumer falling by 12%, but the cost of sales and operating expenses per consumer only falling by 9%.

It is important to note that between 2022 and 2023 operating profits per consumer increased for the first time in the time period considered. Operating profits per consumer increased by 12%, as both revenue and operating expenses per consumer decreased by 3%, and cost of sales per consumer decreased by 6%, as electricity market prices decreased.

Table 8: Key financials from 2018 to 2023 per consumer (£, real 2011 prices)

[✂]

Returns

Jersey Electricity Group has stated that it targets a return before tax and interest[91] of 6-7% on a rolling 5-year basis.[92] [✂].[93]

Table 9: Energy business: return on assets

[✂]

We have benchmarked Jersey Electricity's returns on assets against returns set by regulators in comparable sectors, as measured by the Weighted Average Cost of Capital (WACC). Return on assets measures actual net income in relation to total assets. Therefore, it captures the return of both the equity and debt elements deployed to develop a company's assets. A WACC set by a regulator covers the regulator's view of a fair return on equity and cost of debt for an assumed debt to equity ratio.

Jersey Electricity is a vertically integrated electricity company, and there are no direct comparators in the structurally separated GB market. However, infrastructure companies in utility sectors have similarities with Jersey Electricity, given that it owns and operates electricity networks. Table 10 below compares the WACC set by the regulator in comparable sectors in GB to the actual returns on assets by Jersey Electricity. The table shows that Jersey Electricity's return is higher than WACC in the comparable sectors.

However, it is important to note the differing context of Jersey Electricity compared to the comparable sectors in GB. In GB, returns in the comparable sectors are regulated and

[91] Return before tax and interest is a measure of a company's revenues minus expenses, excluding tax and interest.
[92] Jersey Electricity, je_annual_report_dec_2023.pdf (jec.co.uk)
[93] [✂]

shortfalls in revenue in a year are returned to the regulated company in the following periods. However, in Jersey there are no guaranteed revenues for Jersey Electricity, which would explain, to some extent, some of the differences between return levels.

Table 10: Jersey Electricity returns in comparison with return on equity in comparable sectors[94]

[✂]

Jersey Electricity's role is broader than that of the DNOs in GB, and they are subject to different regulatory approaches. However, DNOs in GB provide a reasonable comparator to the cost of capital for Jersey Electricity due to the significance of Jersey Electricity's network on its expenditure and returns. Table 11 below compares Jersey Electricity's cost of capital, gearing, and Return on Regulated Equity (RoRE) to DNOs in GB under their current regulatory price control, RIIO-ED2, and the expected value of WACC under different gearing levels.

[✂][95]

This analysis highlights that while Jersey Electricity has a higher cost of capital and lower gearing than a DNO in GB, its RORE approximates baseline returns and is within the range that is deemed appropriate for a distribution company by the regulator in GB.

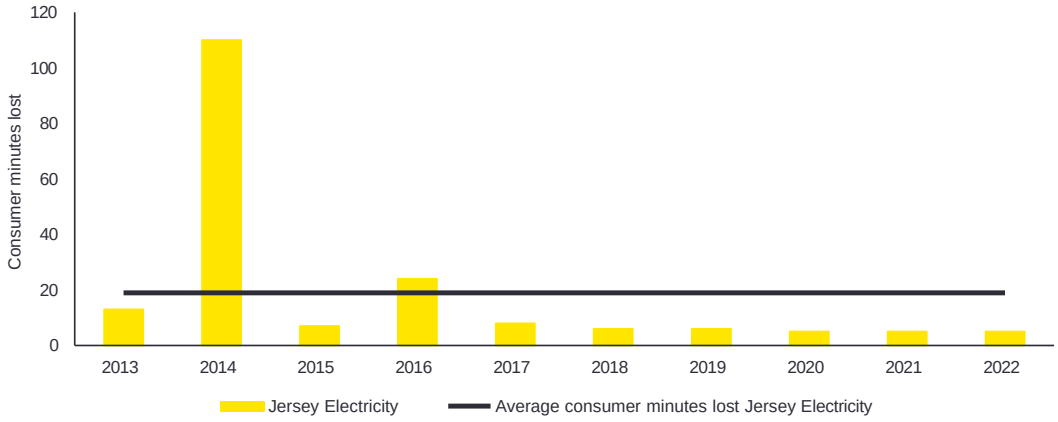
Table 11: UK DNOs: RoRE based on Notional Gearing – RIIO-ED2 period

[✂]

3.2 Jersey Electricity consumer minutes lost

Jersey Electricity has operated a secure network, with a declining number of consumer minutes lost.[96] With the exception of 2014,[97,98] consumer minutes lost did not exceed 24 minutes, as illustrated in Figure 3 below. In 2023, consumer minutes lost reached its lowest level (4 minutes) over the time period considered.

Figure 3: Consumer minutes lost since 2013



Source: Jersey Electricity annual report

[94] It is important to note that WACC (both vanilla and pre-tax) and return on assets for Jersey Electricity are not identical metrics. While both metrics incorporate returns on equity and debt, WACC is a real return either pre-tax or vanilla (post-tax equity and pre-tax debt), while return on assets is a nominal return over its total assets.

[95] [✂]

[96] Consumer minutes lost is calculated using the following formula:

$$Minutes\ lost = \frac{Duration\ of\ supply\ interruption\ x\ Number\ of\ consumers\ affected}{Total\ number\ of\ consumers}$$

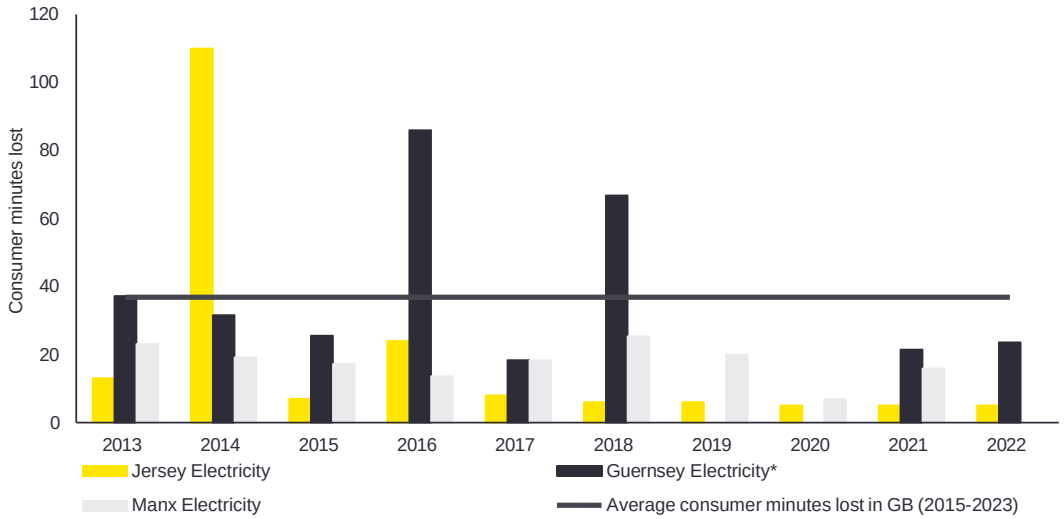
[97] Jersey Electricity, Power restoration complete - Jersey Electricity (jec.co.uk)

[98] In 2014, an outage at the remaining Normandie 2 subsea cable due to a lightning strike in Normandy led to an outage of less than 2.5hours. Since then, Jersey Electricity and Guernsey Electricity have both replaced the original EDF1 subsea cable with the Normandie 1 and expanded capacity with the introduction of the Normandie 3 subsea cable.

We have compared the consumer minutes lost in Jersey to minutes lost in other countries. The Figure below shows the median disruption for period 2012-2022 for Jersey (8 minutes), Guernsey (34 minutes) and Isle of Man (19 minutes), respectively. It also shows the average consumer minute lost in GB across DNOs (37 minutes) for the 2015-2023 period.

Since 2014, Jersey has had a lower number of consumer minutes lost when compared to Guernsey and Manx Electricity. However, supply disruptions have meant that Jersey has had higher consumer minutes lost in 2014, as well as in 2012 (not shown given scale, disruption of 293 minutes).

Figure 4: Consumer minutes lost in each compared market



Source: Jersey Electricity, company websites, EY Analysis

Note: * Data for Guernsey electricity for 2020 is for the period April 2019 and September 2020

3.3 Efficiency of Jersey Electricity in supplying consumers

Jersey Electricity adopts a hedging strategy when procuring electricity from EDF that insulates the majority of the electricity it procures from short-term fluctuation in market prices. Jersey Electricity hedges against both the power price of electricity quoted on the French power exchange, as well as its pound-euro exchange rate exposure. Hedging is a common practice for risk management for electricity suppliers. It enables suppliers to maintain tariffs fixed for consumers while reducing the risk that the suppliers' costs vary significantly when compared to its revenues.

There are three elements to Jersey Electricity's agreement with EDF to procure electricity:[99]

- A fixed price component, with the price set for the duration of the contract.
- A fixed price component, where the price has historically been set three years in advance based on market data selected by Jersey Electricity. This component covers the largest share the electricity purchased.
- A market-based price component set for 12 months based on the average French wholesale electricity market price for the last 12 months. This component covers the smallest share of electricity purchased.

We discuss the impact of the contract on consumers in more detail in section 4.

[99] Jersey Electricity provided information for study.

3.4 Summary

The section considered Jersey Electricity's revenues and costs performance regarding security of supply and procurement of electricity.

- Jersey Electricity's revenues have fallen over the period 2018-23, due to the decrease in electricity demand. At the same time, Jersey Electricity's cost of sales has fallen, but not to the same extent that revenues have, and so Jersey Electricity's operating profit has declined.

- The breakdown of Jersey Electricity's costs, i.e. its underlying cost structure, for all activities in the electricity market, are different to the breakdown of costs in the retail electricity bill for an average domestic consumer in GB. However, this is considered to be driven by procurement of electricity from different sources and the different structures of the electricity sector across the two countries.

- Comparison between the retail operating cost of serving consumers in Jersey when compared to the GB DTC benchmark, showed that Jersey has a [✂] higher cost per consumer. This can be partly explained by economies of scale given the sample used in GB to calculate the benchmark, and that many GB suppliers had higher retail operating costs than the benchmark.

- Jersey Electricity's headcount has grown over the period 2018-23. This coincided with a period of declining sales of electricity and declining operating profit. Consumer numbers did increase during this period, but not to the same extent as headcount. Jersey Electricity has said that the increase in headcount is to prepare for the decarbonisation of the electricity network. At the same time, the direct labour cost per electricity FTE has fallen by 26% indicating that the growth in FTEs was not matched by the growth in direct labour costs. It will, nevertheless, be important to continue to monitor the growth in FTEs and whether this is justified by Jersey Electricity's contribution to the successful and timely delivery of decarbonisation targets in Jersey.

- Jersey Electricity's operating profit per consumer has fallen during the 2018-2023 period, [✂]. Between 2022 and 2023 operating profits per consumer increased for the first time in the time period considered, [✂].

- [✂] However, Jersey Electricity's rate of return reflects that its revenues are not guaranteed, and it operates in a relatively small sector in comparison to GB utility sectors.

- [✂]

- Jersey Electricity has operated a secure network, with a declining number of consumer minutes lost. In 2023, consumer minutes lost reached its lowest level (4 minutes) over the 2013-2023 period considered.

- Jersey Electricity adopts a hedging strategy when procuring electricity from EDF that insulates the majority of the electricity it procures from short-term fluctuations in market prices.

The available evidence does not imply that Jersey Electricity is operating in an inefficient manner. Looking to the future, it will be important to consider how Jersey Electricity can operate efficiently as the electricity market transforms, with expected increases in electricity demand to decarbonise the economy, the renegotiation of the contract with EDF and the potential commissioning of large-scale onshore generation.

4. Consumer outcomes in the Jersey electricity market

Jersey Electricity is the only company responsible for selling electricity and its tariffs and the quality of the service it provides has a significant impact on domestic and business consumers. This section discusses consumer outcomes in the Jersey electricity market. We consider electricity prices, tariff choice and the process for switching tariffs, and quality of supply metrics.

4.1 Retail electricity prices

Retail electricity prices are what consumers pay for the electricity they use. The retail electricity price reflects wholesale costs, transmission and distribution costs, metering costs, supplier's cost and profits, as well as taxes. Figure 5 below sets out the range of Jersey Electricity tariffs and how their electricity unit rates increased between 2021 and 2023.

Jersey Electricity offers tariffs to four group of consumers[100]:

- Small and medium homes – homes with a service capacity of up to 100A (two phase)
- Larger homes – homes with service capacity greater than 100A (three phase)
- Small and medium businesses – businesses with a service capacity of up to 100A (two phase)
- Large businesses and commercial premises – businesses with service capacity greater than 100A (three phase)

There are a set of tariffs available for each consumer group. Tariffs can either have a single unit price for electricity or have different unit prices for electricity consumed at different times of the day (time of use tariffs). Some tariffs also apply a lower unit rate to approved heating for premises or water. Those consumers with embedded generation also have access to an additional tariff for their electricity export into the grid (the buy-back rate). Below, we summarise the types of tariffs available to Jersey consumers:[101]

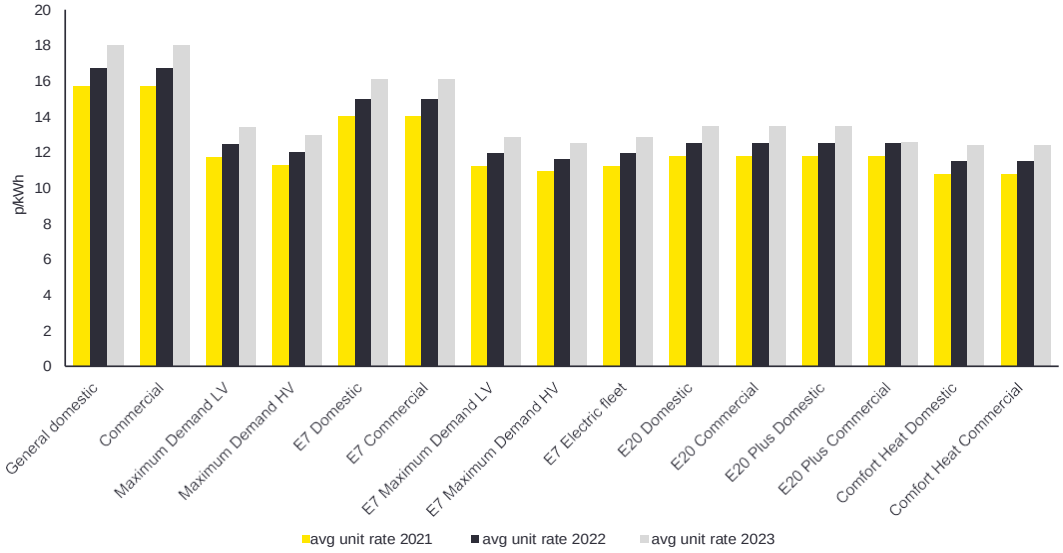
- General Domestic tariff/Standard Commercial/Maximum Demand Domestic/Commercial – these tariffs provide a single unit rate for all electricity use, including for heating of premises or water. Jersey Electricity notes that these tariffs are likely to suit consumers that use most of their electricity during the day and don't regularly use electricity to heat their homes or businesses or water.
- Economy 7 (E7) Domestic/Commercial/Maximum Demand/Electric Fleet – these tariffs provide a lower price for electricity consumed over a 7 hour period at night. The actual unit rate that a consumer will pay on a time of use tariff will be a weighted average of the different unit rates and the proportion of electricity used during the relevant time periods. Absent this data, Figure 5 below shows a time-weighted average between the different unit rates.
- Economy 20 (E20) Domestic/Commercial/Plus Domestic/Plus Commercial – these tariffs provide 20 hours of electricity at a lower unit price for approved heating and water systems. These tariffs differ in that E20 tariffs have an interruptible supply arrangement for the four peak hours, while this is not the case for the E20 Plus Domestic/Commercial tariffs. All other consumption is charged at the General Domestic or Standard Commercial rates.

[100] Jersey Electricity, Tariffs & rates - Jersey Electricity
[101] In addition, there is an Economy 8 tariffs that is intended for use by homes powered by heat battery storage. These provide 8 hours of lower unit price electricity for approved heating and water systems.

- Comfort Heat Domestic/commercial – these tariffs provide a lower unit price of electricity for four hours at night (between midnight and 7am), two hours during the day (between 10am and 5pm) and two hours in the evening (between 7pm and midnight).[102]

At present there is no bespoke tariff for energy storage or other onsite energy storage besides the buy-back rate (in section 6 we describe the recent Jersey Electricity proposal to introduce a Power Purchase Agreement (PPA) process in Jersey). There is also no bespoke tariff available for particular energy uses beyond heating or water systems, such as solar PV or vehicle to home.[103]

Figure 5: Average electricity unit rates in Jersey, by tariff type between 2021 and 2023

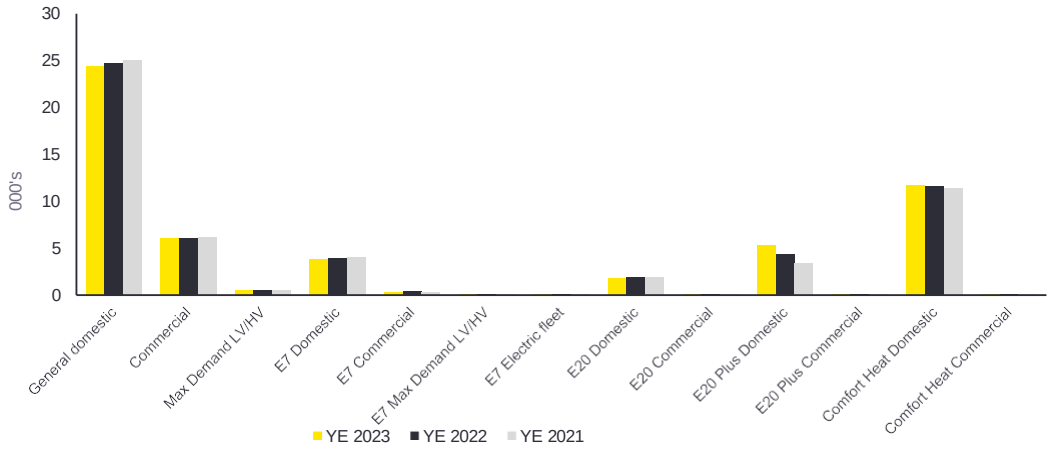


Source: Jersey Electricity data

Figure 6 illustrates consumer contracts across tariff types. In 2023, 52% of Jersey Electricity's domestic consumers were on the general domestic tariff. The percentage is consistently high over the period studied. Given that 63% of households in Jersey used electricity as the main source of heating fuel in 2023 (including 94% of adults living in social rented property, as discussed in section 2), it is possible that some of these consumers could benefit from switching to E7, E20 or Comfort tariffs. This is because these tariffs price some unit rates at a discount to the General Domestic tariff rates for periods of time or for approved heating and water systems. This may also be particularly relevant for consumers with lower incomes that are more likely to use electricity than the average consumer.

[102] Actual hours within those windows are determined by Jersey Electricity and may change from time to time.
[103] Vehicle to home tariffs refer to EV output being used in the home to provide grid flexibility. JE, through its Easycharge service offering, offers support for EV drivers wishing to install home charging equipment, including overnight charging for a fixed price. Jersey Electricity, Easycharge - Hassle-free Electric Vehicle Charging at Home - Jersey Electricity.

Figure 6: Number of consumers by tariff type, 2019-2023



Source: Jersey Electricity data

There are different metering requirements for different tariffs in Jersey. The General Domestic, Commercial, Max Demand and Economy 7 tariffs only require a single meter. Economy 20 and Comfort Heat tariffs require a meter to measure the units of electricity used for heating and hot water systems that are connected to a dedicated supply circuit, independent from metering of the consumer's use of electricity for all other purposes.[104] As a result, consumers wishing to switch between these groups of tariffs would need to change their meter in advance of switching.

The process of switching meters in Jersey Electricity is outlined on the Jersey Electricity website.[105] The following steps are required to switch meters:

- A contractor performs the necessary electrical works in the property to dedicate the supply to the water and heating systems.
- Once this is completed, a form providing a description of the site, as well as the type of meter to be installed is submitted to Jersey Electricity by e-mail, post or by hand.
- Jersey Electricity aims to process all applications within 10 clear working days of receiving it.
- A new meter is then installed in the property.

4.2 Comparison of domestic retail electricity prices against other markets

Cross-country comparisons can provide insight into how Jersey's electricity market is performing relative to those in other countries.

The figures below compare Jersey Electricity's average electricity tariffs for domestic consumers against similar tariffs offered in other markets, namely: Guernsey, Isle of Man, Malta, GB, and France for 2023. The benchmark countries have been selected based on size (Guernsey, Isle of Man, Malta) and relevance (Guernsey, GB, and France). They also allow a direct comparison with the 2012 Market Study.

In 2023, Jersey consumers paid the second lowest prices for electricity compared to their peers in the benchmark areas, with only Malta (where electricity prices have been fixed since 2014 and subsidised since 2022) having a lower electricity bill.[106] if Jersey Electricity

[104] Jersey Electricity, Tariffs & rates (JE.co.uk)
[105] Jersey Electricity, Preparing for a new meter - Jersey Electricity
[106] These results do not materially change following price changes in several of these markets in 2024, including Jersey.

consumers faced unit and standing charges of the benchmark countries, they would pay for their average consumptions respectively: 97% more in GB, 67% more in the Isle of Man, 34% more in Guernsey, and 1% more in France. However, they would pay 41% less in Malta under its current subsidised regime.[107,108]

Figure 7: Total Rate: average of general tariff rates across benchmark countries in 2023[109,110111]

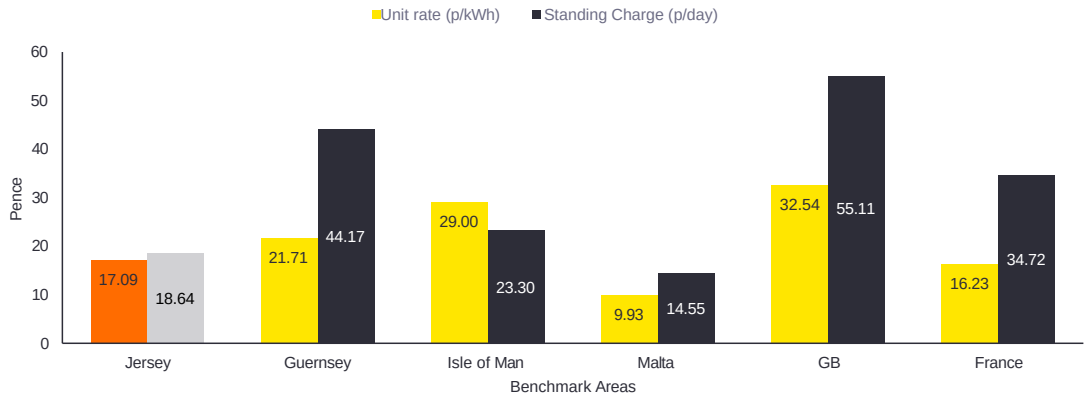
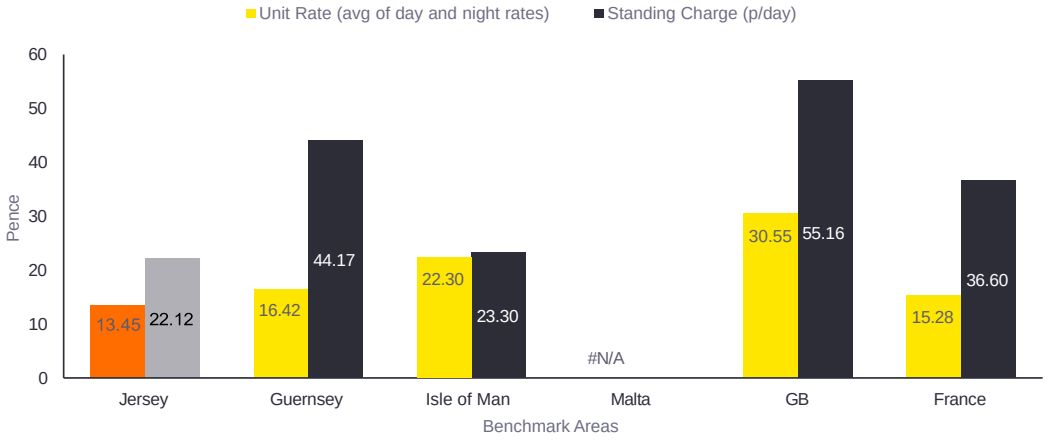


Figure 8: Total Rate: average of time of use unit rates (p/kWh) across benchmark countries in 2023



Source: company websites, Ofgem

[107] Malta's domestic tariffs have been fixed since 31st March 2014 by the Regulator for Energy and Water Services. It is calculated based on bands of cumulative electricity consumption, with different prices for different bands. Regulator for Energy and Water Services > en/fa/31 (rews.org.mt).

[108] Since 2022, electricity retail electricity prices have remained constant as a result of government subsidies. Malta: 2023 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Malta (imf.org)

[109] Assessment for GB includes the effect of the Energy Price Guarantee that limited the impact of high energy prices in GB during 2023. The Energy Price Guarantee was in place until 30th June 2023 - GOV.UK (www.gov.uk)

[110] Prior to the period with high energy prices, GB prices were significantly lower. In 2020, unit rates for electricity under the DTC averaged 18p/kWh and standing charges were approximately 28p/day, which would be higher than Jersey electricity market prices in 2023.

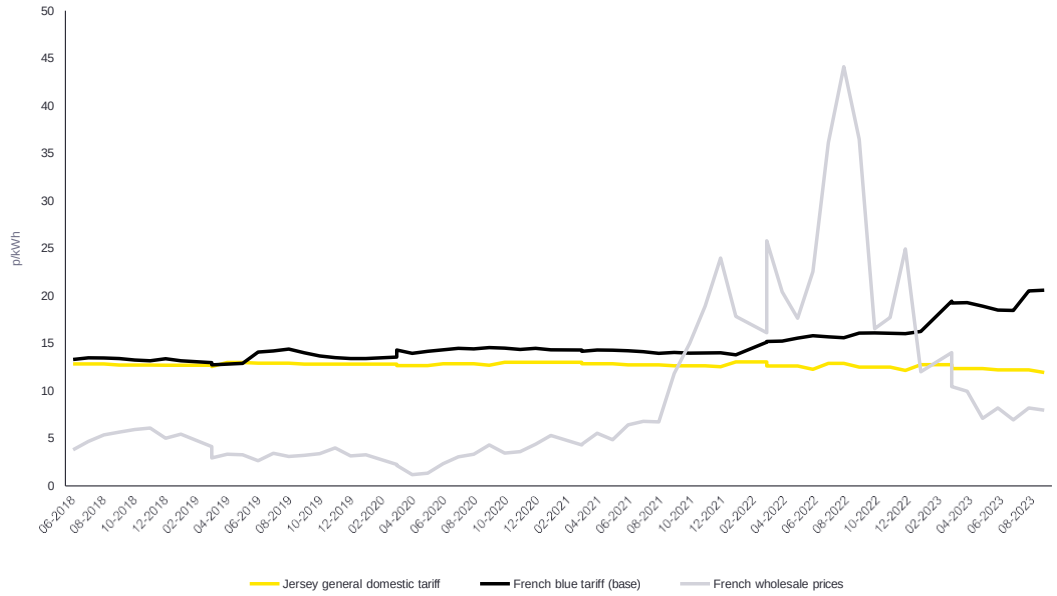
[111] Assessment of France includes the tariff shield applied to regulated tariffs. Energy tariffs -Electricity: prices increase in February! | Entreprendre.Service-Public.fr

Impact of the energy crisis on Jersey compared to France

The global energy crisis has demonstrated the importance of energy sovereignty and security of supply.[112] Between April 2020 and August 2022, average day ahead electricity prices in France increased significantly from EUR13.45/MWh to EUR492.49/MWh.[113]

Given that the largest source of electricity for Jersey is imports from France, the energy crisis provides a recent event that can be used to compare how electricity consumers in Jersey fared against their peers in France during the crisis.

Figure 9: Retail tariffs comparison Jersey vs France



Source: EY Analysis

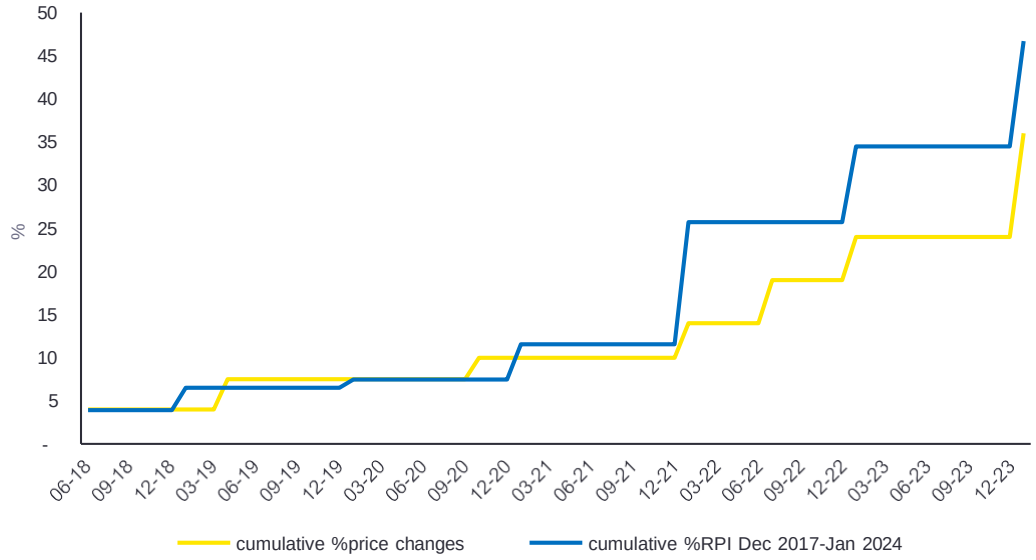
The graph shows how domestic tariffs in Jersey and France moved since 2018 against French wholesale prices. We have compared the General Domestic in Jersey and the Base regulated tariff in France.[114]

Jersey domestic tariffs remained steadily below the French prices for electricity since 2018. This is despite the high fluctuations that affected the underlying wholesale prices during the energy crisis.

The Jersey Electricity approach to lock in wholesale energy prices with long-term contracts has protected Jersey consumers from the recent energy crisis. However, retail prices have increased multiple times since 2021, following the recent increases in inflation of input prices. Figure 10 below illustrates how Jersey prices have varied over time compared to inflation. Prices have followed the trend in inflation often with a lag. However, the magnitude of those changes differs. Electricity prices have cumulatively increased in Jersey by 36%, including the January 2024 price increase, while RPI is expected to increase by 47% over the period.

[112] Jersey Electricity, je_annual_report_dec_2023.pdf (jec.co.uk)
[113] Average day-ahead hourly prices in France from EEX.
[114] We used French regulated tariffs (*tariffs bleu*) as a proxy for French retail domestic prices. For French wholesale prices, we used monthly averages of French half-hourly power prices from Jan 2017 to Sep 2023.

Figure 10: Tariff pricing cumulative variation against RPI



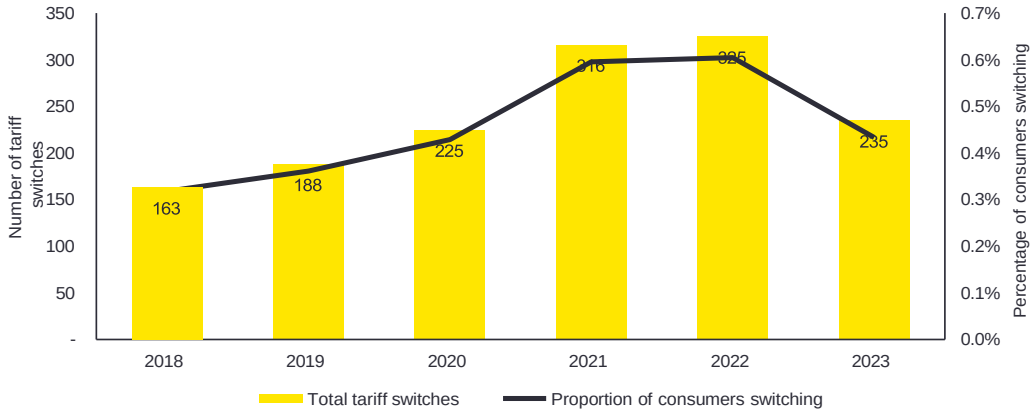
Source: EY Analysis

4.3 Consumer choice and switching tariffs

In 2023, Jersey Electricity offered a range of 13[115] domestic and commercial tariffs to choose from that allow consumers to select the option that best suits their energy needs.[116] These tariffs are set out in Figure 5 and Figure 6 above. Most tariffs have both domestic and commercial versions that differ only in price. Some tariffs bundle together a range of utilities, i.e. the tariff also includes pricing for heating and hot water.

The figure below shows switching rates between Jersey Electricity tariff types between 2018 and 2023.

Figure 11: Annual movements of Jersey Electricity switching rates (2018-2023)



Source: Jersey Electricity internal data

Since 2018 consumers have started switching to cheaper tariffs. The total number of Jersey Electricity domestic consumers on the General Domestic tariff decreased by 6% from 2018 to 2023, whereas those in the E20 Plus domestic tariff increased by 199% from 2018 to 2023, reaching a total of 5,299 on this tariff type. Figure 11 above shows annual movements of total Jersey Electricity switching rates between 2018 and 2023. The total number of switches

[115] There is no distinction between low and high voltage for Maximum Demand tariffs.
[116] Jersey Electricity, Tariffs & rates (JE.co.uk)

increased, on average, by 10% from 2018 and 2023. Although the total number of switches reported in 2023 decreased by 28% compared to the previous year, it was still higher than the total switching rates in 2019 and 2020. However, over the 2018-2023 period, total switching has not exceeded 325 per year, representing 0.7% of total domestic consumers. In 2023, 235 consumers in Jersey switched tariff, which represents 0.5% of total domestic consumers in Jersey.

This is dissimilar to the experience in GB where switching rates are higher. In 2023, the switching rate in GB was equal to 7% of GB domestic consumers.[117] This rate of switching is significantly lower than it was prior to Russia's invasion of Ukraine; between 2018 (the last year before the introduction of the DTC) and 2021, the average annual number of domestic switches represented 23% of domestic consumers in GB.[118,119]

It is important to consider switching in conjunction with other measures of customer satisfaction to assess consumer outcomes, such as the rate at which consumers could benefit from a different tariff amongst those offered. For example, low numbers of switching in conjunction with the share of consumers on the general tariff and the share that use electricity for heating (such as those consumers in social rented accommodation) implies that these customers may not be maximising the potential benefit under the current electricity tariffs available. Since 2018, switching time (i.e. the time between a consumer requesting a switch to a new tariff and being switched) in Jersey has remained constant at approximately 6 weeks.[120]

This compares to switching times in GB, that have fallen from 15 calendar days in 2022 to 6 calendar days in 2023.[121][122] Consumers seeking to switch tariffs need to contact Jersey Electricity by phone or e-mail to initiate this process.[123] In the future, Jersey Electricity plans to offer more comprehensive information and advice online regarding tariffs and pricing. This initiative is intended to help consumers make more informed decisions about their energy usage and to ensure they are aware of the tariff options available to them, ultimately promoting better energy management and cost savings.

4.4 EV charging

Jersey Electricity supports Electric Vehicle (EV) charging by providing a public charging network around the island that consisted of 109 public charging points in 2022 and has also started including the next generation of fast charging facilities to offer faster charging specifically for new vehicles with larger batteries.[124] The cost of using Jersey Electricity's public charging network depends on the electricity tariff each consumer has subscribed to. EV drivers can also use an app to find the closest charging point among those currently available, which also provides the directions to get to the selected public charger, and the ability to view charging tariffs.[125]

In 2022, Jersey Electricity launched Easycharge,[126] a home EV charging subscription service, which offers the opportunity to charge EVs at home and subscribe to different plans. The Government of Jersey also promotes the installation of at home EV charging points through the Electric Vehicle Charger Incentive scheme (EVCI), [127] which came into effect in August

[117] Ofgem, Retail market indicators | Ofgem.
[118] Assumes no change in number of domestic consumers in previous years to those published by Ofgem for 2023.
[119] GB switching rates based on number of customers switching domestic suppliers as a proportion of total domestic accounts, compared to number of consumers switching tariffs in Jersey as a proportion of total domestic consumers.
[120] Jersey Electricity, information provided for this study.
[121] Ofgem, Retail market indicators | Ofgem
[122] Since 2022, GB suppliers have a licence obligation to switch consumers within 5 working days, with Ofgem introducing in 2024 a requirement that a suppliers pay compensation to the consumer of £30 if the switch is not completed in 5 working days, Supplier Guaranteed Standards of Performance for Switching: Decision on amending Guaranteed Standard 6ZA
[123] Jersey Electricity, Tariffs & rates - Jersey Electricity
[124] Jersey Electricity, Electric vehicle charging - Jersey Electricity (JE.co.uk)
[125] Jersey Electricity, Evolve
[126] Jersey Electricity, Easycharge (JE.co.uk)
[127] Government of Jersey, Electric Vehicle Charger Incentive (EVCI) (gov.je). Individuals and businesses can also apply for up to £3,500 towards the purchase of an electric vehicle under a separate scheme: Electric Vehicle Purchase Incentive (EVPI) (gov.je).

2023. The scheme covers individuals and small business and provides £350 towards the cost of an EV smart charger per domestic or commercial property.

Jersey Electricity offers full coverage for maintenance service for each EV installation at home. While this offering can stimulate subscriptions, it may lock in consumers and create a potential barrier for third parties willing to offer a different interface or operation of maintenance services.

4.5 Quality of supply for Jersey consumers

In addition to price, quality of supply is a key element to measure consumer satisfaction. Quality of electricity services was not noted by the stakeholders interviewed as an area of concern.

The table below shows key performance indicators for the quality of service provided by Jersey Electricity over the past five years through the number of consumer complaints.

The total number of complaints to Jersey Electricity has fallen significantly from 1,299 in 2018 to 307 in 2023, as set out in the table below, representing a 76% reduction in complaints over the five-year period. In 2023, Jersey Electricity's number of complaints per 100,000 consumers was 89% lower than in GB.

Table 12: Jersey Electricity Quality of service provision

Jersey Electricity Supply Quality measurements from 2018 to 2023						
	2018	2019	2020	2021	2022	2023
Customer complaints	1,299	831	486	701	529	307
Change in number of complaints	-	-36%	-42%	44%	-25%	-42%
Customer complaints per 100k consumers	-	1,596	926	1,321	984	566
GB level of complaints per 100k consumers	7,600	6,837	5,256	5,903	6,249	5,107

Source: Jersey Electricity annual reports and internal company data

The survey commissioned by Jersey Electricity from the Institute of Customer Survey highlights a higher level of customer satisfaction for Jersey Electricity when compared with most of the UK utilities.[128] The survey benchmarks Jersey Electricity against the UK Customer Satisfaction Index (UKCSI) survey published twice a year. This survey of consumers measures customer satisfaction through several customer experience metrics developed by the Institute. In the report, Jersey Electricity scored 77.5 out of 100 on customer satisfaction, which was higher than the utilities average score of 69.8 and the UK all-sector average of 75.8. Compared against the UK utilities, only UK Power Networks scored higher at 79.2, with Octopus Energy scoring 0.6 points lower than Jersey Electricity at 76.8.

Jersey Electricity provides a number of different types of support to consumers, including relating to cost of EV charging (and charger installation), as well as financing for electrification of hot water and heating.

Some stakeholders noted that Jersey Electricity provided good quality service to consumers. Other stakeholders, however, observed that while Jersey Electricity service is good, businesses receive less support from Jersey Electricity than households, including on fuel switching, EV charging point, and use of online apps for business management.

Jersey Electricity plans to develop a MyJE app specifically designed for Business-to-Business (B2B) interactions.[129] This app aims to enhance the user experience for customers by providing a convenient platform for managing their energy accounts, accessing detailed usage data, and receiving tailored support.

[128] Information provided by Jersey Electricity for this study.
[129] Jersey Electricity, Response to Draft Report.

4.6 Summary

The section considered retail electricity prices, how they compare to domestic retail electricity prices in other countries, tariff switching, EV charging, and the quality of service received by consumers.

- The majority of domestic and business consumers are on a general tariff, despite tariffs with lower average unit rates being available.
- In 2023, domestic consumers on Jersey Electricity's General Tariff paid the lowest prices for electricity compared to their peers in Guernsey, Isle of Man, GB, and France (assuming the same level of electricity consumption as the average domestic consumer in Jersey). Only domestic consumers in Malta paid less.
- Jersey Electricity's retail electricity prices are dependent on French wholesale prices due to Jersey Electricity's contract with EDF, which has historically provided at least 94% of electricity demand on Jersey. However, the rate of increase in Jersey retail electricity prices between 2021 and 2023 was much smaller than the increase in French retail prices.
- Between 2019 and 2022, there has been an increase in consumers switching between Jersey Electricity tariffs. This led to the number of domestic consumers on the domestic General Tariff decreasing by 6% from 2018 to 2023.
- Switching times in Jersey have remained consistent at approximately 6 weeks throughout the assessed period, and significantly exceed switching times in GB, where times have fallen to 6 calendar days by 2023, and are subject to a regulatory requirement for switches to be completed in 5 working days.
- Jersey domestic consumers receive financial support from Jersey Electricity on large expenditures for at home chargers for EVs and fuel switching. However, the same support is not available to business consumers.
- The total number of complaints to Jersey Electricity has significantly fallen from 1,299 in 2018 to 307 in 2023. In 2023, Jersey Electricity's number of complaints per 100,000 consumers was 89% lower than in GB.
- Jersey consumers report a higher level of satisfaction with Jersey Electricity when compared to benchmarks of UK utilities. Only one DNO in GB, UK Power Networks had a higher score from the companies assessed.

The available evidence indicates that consumers in Jersey pay lower electricity prices than in some other countries and are satisfied with the quality of service provided by Jersey Electricity. While there has been an overall increase in switching between Jersey Electricity tariffs in recent years, the majority of domestic and business consumers have not switched from a general tariff, and could possibly reduce their electricity bills if they switched to another tariff. Continued increases in the rates of switching from the general tariffs could improve consumer outcomes.

Electricity is expected to be an increasingly important source of energy as the Jersey economy decarbonises and therefore will have a larger impact on households' and businesses' finances. Electricity consumers' engagement with the sector will be key to delivering decarbonisation at least cost.

5. Cross-market effects on Jersey electricity market

Jersey Electricity is the only company responsible for buying, transporting, and selling electricity in Jersey. In addition, Jersey Electricity Group has a series of businesses that operate in competitive markets. It is important that Jersey Electricity Group's businesses that operate in competitive markets are not leveraging their relationship with Jersey Electricity to gain market advantage. In this section, we explore the different Jersey Electricity Group businesses and the extent to which they interact with Jersey Electricity.

5.1 Jersey Electricity Group businesses

Jersey Electricity Group is a conglomerate of businesses mostly centred around electricity and energy.[130,131] See Table 13 below for a comprehensive list of Jersey Electricity Group businesses, other than Jersey Electricity.

Table 13: List of Jersey Electricity Group businesses

Company	Area of work
Energy Solutions	Advisor on low carbon electrical technologies, fuel switch from gas and oil, and electric vehicle charging for both domestic and commercial consumers.
Jersey Electricity Building Services (JEBS)	Provides building services to domestic and commercial consumers. JEBS designs, installs, and maintain services on electric heating systems, air conditioning, electric vehicle chargers, amenity lighting, as well as the CosyCare maintenance packages.
Jersey Energy/Channel Design Consultants	Provides consultancy services to domestic and commercial construction projects on the design of mechanical, electrical, and public health services.
Jendev	Provides software services aimed at efficiency and effectiveness of business systems for the utility industry.
Jersey Deep Freeze	Designs, installs, and maintenance of refrigeration and catering equipment for hospitality industry. It also is a distributor for different brands of catering equipment
Powerhouse	Electrical retailer focused on domestic electrical appliance needs, home computing, smart tech, mobile phone, and electric transport.
Smarter Living	Smarter Living focuses on showcasing low-carbon heating and smart home technologies.
Property portfolio	Portfolio of properties composed of Powerhouse Retail Park, where tenants include B&Q, telecommunications company Sure, and a medical centre, as well as 30 residential properties. It also leases aerial sites and fibre optics to telecommunication companies.

Source: Jersey Electricity website

[130] Jersey Electricity, Our Businesses - Jersey Electricity (jec.co.uk)
[131] In addition, Jersey Electricity also owns and operates the Evolve network, the public charging network for Jersey. Virta; Virta & Jersey Electricity to renew Jersey's EV charging network;.

In addition to its business functions, Jersey Electricity also operates roles delivering government schemes. Jersey Electricity has been nominated by government as the scheme administrator for a number of Government of Jersey schemes,[132] including:

- the Electric Vehicle Purchase Incentive (EVPI).
- The Electric Vehicle Charger Incentive (EVCI).
- Low Carbon heating incentive.
- Evolve charging network.

For 2023, Jersey Electricity represented 77% of Group revenue.[133] This has remained broadly constant since 2011, when the energy division represented 74% of the Group revenue.[134]

5.2 Jersey Electricity Group financial and operational separation

Jersey Electricity Group financial accounts differentiate between Jersey Electricity and the other businesses in the Group. In its 2023 annual report, it outlined revenue and operating profit for Jersey Electricity, building services, property, and other businesses.[135] For personnel, Jersey Electricity Group publishes its FTEs for Jersey Electricity and for its other businesses.

The Jersey Electricity Group website describes all the activities in the Group, and includes links to dedicated websites, where those exist. Four of the companies (Jersey Energy, Jendev, Jersey Deep Freeze and Powerhouse) have their own dedicated websites linked from the Jersey Electricity website with their own domain name and colour palette. However, Energy Solutions, and JEBS, do not have a dedicated website with the corporate names. These two companies are also the ones that have the closest alignment between the services they offer and Jersey Electricity.

Operationally Jersey Electricity has reported, that while it is one group, each company has its own feel and autonomy on operation given the differing work performed. Through our review, we have identified two instances where differing Jersey Electricity businesses are marketed together. For example, Jersey Electricity's page on electric boilers notes that:

"Choosing the right installer is just as important as choosing the right solution. JEBS are our trusted installers, and you can count on them for your electric boiler installation.[136]"

Moreover, installations by either Jersey Electricity or JEBS for a new electric boiler or air source heat pump are eligible for the Jersey Electricity payment scheme. This allows consumers to pay for the system over 10 years up to £15,000 at 0% interest. At the same time, if a consumer chooses their own contractor, Jersey Electricity can provide a 0% interest payment plan for up to £6,000 over 5 years for a similar new heating solution.[137]

In another instance, for commercial electric vehicle charging, the Jersey Electricity website highlights that:

> "JEBS are our trusted installers, and you can count on them for your EV charging installation".[138]

[132] Other technologies, such as solar PV or batteries do not receive an incentive from the Government of Jersey.
[133] Jersey Electricity, Figures and Reports - Jersey Electricity (JE.co.uk)
[134] Channel Islands Competition & Regulatory Authorities, A850J - Electricity market study (Jersey) | JCRA
[135] Jersey Electricity, Figures and Reports - Jersey Electricity (JE.co.uk)
[136] Jersey Electricity, Electric boilers - Jersey Electricity (jec.co.uk)
[137] Jersey Electricity, Finance for electric heating - Jersey Electricity (jec.co.uk)
[138] Jersey Electricity, Commercial electric vehicle charging - Jersey Electricity (jec.co.uk)

The joint marketing of Jersey Electricity and other Jersey Electricity Group businesses could impact demand for other Jersey Electricity Group businesses' goods or services in competitive markets as Jersey Electricity is a well-known brand to people and businesses in Jersey.

5.3 Summary

This section considered Jersey Electricity Group's businesses and their financial and operational separation.

- In addition to Jersey Electricity, Jersey Electricity Group has seven other businesses. However, Jersey Electricity is the largest of the businesses and accounted for 77% of the group's revenue in 2023.
- Jersey Electricity Group's financial reporting differentiates between its different businesses, and Jersey Electricity has reported that each business has autonomy over its operations.
- However, Jersey Electricity is marketed with other Jersey Electricity Group businesses on its website, which could impact demand for other Jersey Electricity Group businesses' goods or services in competitive markets.

It will be important to keep under review the impact of the level of separation in public facing communications between Jersey Electricity Group's businesses, including JEBS, in the adjacent competitive markets.

6. Future supply and requirements of the Jersey electricity market

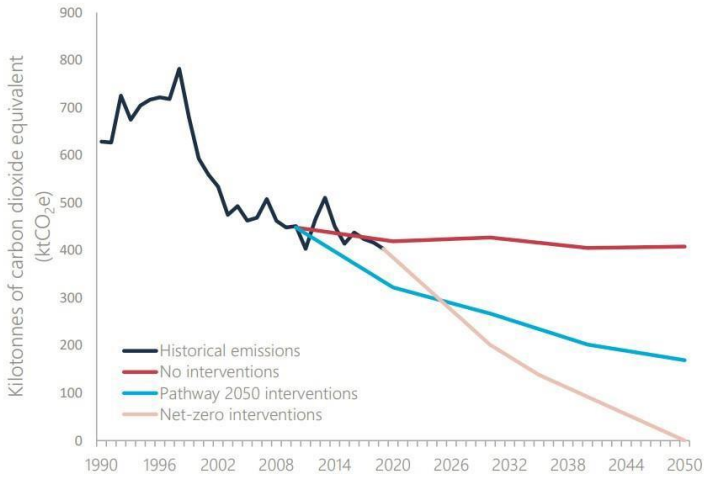
This report has focused on how the Jersey electricity market has been performing historically, however, it is expected to evolve in the coming years. This section discusses the supply of electricity to Jersey, focusing on the future of procurement of electricity from France, the process for obtaining connections and contracting for new generation in Jersey, and the development of large capacity generation in Jersey.

6.1 Carbon neutral roadmap

The States of Jersey Assembly approved the Carbon Neutral Roadmap on 29th April 2022. The Carbon Neutral Roadmap superseded Pathway 2050: An Energy Plan for Jersey (the Pathway 2050 plan). The Pathway 2050 plan set out the Government of Jersey's policy positions on energy use and decarbonisation, including delivery targets.[139]

The Carbon Neutral Roadmap[140] outlines the necessary steps to be taken between 2022 and 2026 to achieve a 68% reduction (as a minimum) in emissions compared to the 1990 baseline by 2030, and a further reduction to 78% from the baseline by 2035. Ultimately, the Carbon Neutral Roadmap envisions Jersey becoming net zero by 2050. Figure 12 below highlights the possible pathways for emission reductions in Jersey, with only the 'Net-zero interventions' pathway leading to Jersey meeting its net zero target. It is important to note that, as stated in the roadmap, in order for Jersey to be able to achieve carbon neutrality by 2030, it will need to purchase carbon offsets on an annual basis that support removal of carbon from the atmosphere in other jurisdictions.

Figure 12:Carbon neutral roadmap pathway to deliver net zero in Jersey



Source: Government of Jersey, Carbon Neutral Roadmap

In the Carbon Neutral Roadmap, the Government of Jersey has also set out how it envisions balancing the energy trilemma (i.e. the need to balance energy affordability and security with decarbonisation). In the Government's view, any viable path to become carbon neutral by 2030 will require rapid electrification of a large proportion of road transport and space heating on the island.[141] This approach would seek to benefit from low carbon sources of electricity, which is currently predominantly from nuclear and hydro sources in France. Jersey Electricity

[139] Government of Jersey, Pathway 2050: An Energy Plan for Jersey (gov.je)
[140] Government of Jersey, R Carbon Neutral Roadmap 20220525 JB.pdf (gov.je)
[141] Government of Jersey, R Carbon Neutral Roadmap 20220525 JB.pdf (gov.je)

forecasts that achieving the 2050 net zero target will increase maximum demand by 25% and an overall increase in unit sales of 70%.[142]

At the same time, the Carbon Neutral Roadmap also envisages greater energy sovereignty for Jersey through a diversification of its energy mix rather than solely an increase in reliance on imports from France. The Government of Jersey considers the potential for large-scale generation in Jersey, complemented by an increase in smaller scale energy generation.

On affordability, the Government of Jersey sets out how there could be higher short- and medium-term costs in Jersey as the price-premium for decarbonised electricity supply could increase despite, in the Government of Jersey's view, potential longer-term savings for consumers.

The Carbon Neutral Roadmap also sets out the Government of Jersey's potential scenarios that all new buildings have renewable energy capabilities in the 2030s-2040s, as well as for 50% of Jersey electricity to come from on-island renewable generation in the 2040s.[143]

The Carbon Neutral Roadmap sets some roles for Jersey Electricity, mostly in relation to the operation of the government schemes discussed in Section 5. However, there is no guidance on whether Jersey Electricity should prioritise energy sovereignty over the import of electricity from France. It also does not specify the technical pathway that Jersey Electricity should consider in supporting the decarbonisation of Jersey. This lack of guidance is particularly relevant given the need for Jersey Electricity to negotiate a new procurement contract in 2027 for electricity supply to Jersey, although it does provide Jersey Electricity with flexibility to choose its desired contracting approach.

6.2 Review of electricity procurement contract

Jersey Electricity has imported at least 94%[144] of Jersey's electricity demand in the past five years from France, reflecting its contract with EDF which commenced in 2012 and will expire in 2027. The contract contains two fixed price components and a market-based price component. The fixed price components are applied to the largest share of electricity purchased.

Contract renegotiation is a standard practice of electricity procurement. Electricity suppliers periodically review their procurement strategies and renegotiate with counterparties. These new contracts then update and reflect the expected cost of electricity for the term of the contract.

However, given that the largest source of electricity for Jersey is imports, the renegotiation of this contract will be a key determinant of future electricity prices in Jersey.[145] At the same time, the contract will also need to consider how it dovetails with the projected changes in both electricity demand and on island generation following the Carbon Neutral Roadmap. In particular, Jersey Electricity will need to consider how the balance between expected growth in both maximum and overall demand will balance with increased on island generation, and therefore any volume that is procured on a fixed basis by Jersey Electricity. Moreover, it will need to consider how the new contract with EDF will need to accommodate the potential impact of new large-scale generation in Jersey on metered flows and the resulting impact on retail electricity prices.

6.3 Expected investment in Jersey's electricity network

Jersey Electricity has primarily invested in network expansion since 2018, with a lower level of investment related to replacing the network. In its business plan from 2024 to 2026,[146]

[142] Jersey Electricity, Figures and Reports - Jersey Electricity (JE.co.uk)
[143] Government of Jersey, Figures 18 and Figure 19, Carbon Neutral Roadmap
[144] Jersey Electricity, Figures and Reports - Jersey Electricity (JE.co.uk)
[145] It is important to note that Jersey Electricity is not required to sign a contract with EDF and could procure electricity from any other market participant in the French electricity market.
[146] Jersey Electricity, shared by Jersey Electricity for study.

Jersey Electricity has set out its objective of retaining the current supply reliability and improving overall asset health by setting up a [✂]-. Despite the decline in electricity demand in recent years due to increased energy efficiency, planned investments also include those necessary to respond to the expected growth in demand in response to the Carbon Neutral Roadmap.

Figure 13 below illustrates the investment profile until 2028 of Jersey Electricity's capital investment. [✂]

Figure 13: Expected investment on Jersey's electricity network

[✂]

The analysis highlighted in Figure 13 reflects some of the investment envisioned by the Big Upgrade announced by Jersey Electricity since the draft report. The Big Upgrade is projected to lead to £120million investment on infrastructure for net zero 2050.[147] The Big Upgrade amends the investment profile and also includes investment on other areas of investment.[148] Jersey Electricity expects that as a result of net zero, electricity peak demand in Jersey will increase by approximate 25%. In order to enable electrification in Jersey, Jersey Electricity plans to add 20 new substations. It is also planning to replace or install 30 new transformers and lay 100km of cables.

6.4 Connections and contracting for new generators and demand

In electricity markets, it is common that new electricity generation or demand incur a connection charge to cover at least some of the costs related to their connection. Electricity connection charges are often defined as either:

- "Shallow": an upfront charge where the network user pays only for the costs for the cost of equipment needed to make the physical connection of the generator to the nearest practical point of the existing network.
- "Shallow-ish": an upfront charge where the network user pays for the physical connection of the generator to the network, as well as a proportion of the necessary network reinforcements beyond the connection point.
- "Deep": an upfront charge where the network user pays for the total costs that will be incurred as a result of connecting new load or generation to the system, including all necessary network reinforcements beyond the connection point.

Jersey Electricity has reported that in Jersey, connection charges are set in a shallow-ish manner, incorporating some of the necessary network reinforcements beyond the connection point. Figure 14 illustrates the connection arrangements highlighting the share of the total network spend that is paid directly by consumers via connection charges. In periods where Jersey Electricity is expecting to invest relatively less, capital contributions are higher, suggesting that the investment is mainly driven by new consumer connections. [✂]. During the 2018-2028 period, capital contribution by consumers represent [✂].

Figure 14: Expected investment on network reinforcement and capital contribution by consumers.

[✂]

Consumers, and existing and prospective market entrants, do not have information on the cost of adding a connection or increasing the connection size to the network, or visibility of areas where there is spare capacity ahead of an application. Several potential market entrants have identified that the lack of this information has impacted how they made decisions, for example on location and sizing of connection requests of new demand and distributed generation. This will be particularly important as stakeholders aim to meet the

[147] Jersey Electricity, The BIG Upgrade - Jersey Electricity.
[148] Jersey Electricity provided information for this study.

Carbon Neutral Roadmap goal of greater diversification of electricity sources for Jersey, including plans to increase renewable capacity of buildings.

6.5 Development of future on-island generation in Jersey

As highlighted in this section, the Government of Jersey is considering whether investment in large capacity generation in Jersey complemented by smaller investment would provide Jersey with greater energy sovereignty.

Solar PV

Jersey Electricity has developed five solar PV projects with an installed capacity of 929kWp.[149] It has set itself an aim to increase Solar PV generation to 20MWp by 2026 and has reported greater focus on development of ground-based solar on low grade agricultural land that has limited alternative uses.[150] This builds on its approach of entering lease agreements for installation of rooftop solar PV.

Sunworks has also reported that it has installed an additional 1MWp of commercial solar projects and 3MWp of residential solar in addition to those installed by Jersey Electricity.[151] As a result, Jersey has over 5MWp of already installed capacity compared to the 20MWp target for 2026.

At present, there is no consolidated public data on commercial solar PV generation in Jersey that is not related to Jersey Electricity. Below, we list the publicly available information on the solar PV generation in Jersey:

- Powerhouse – 19kWp solar PV on the roof of Jersey Electricity's Powerhouse
- Queen's Road car park – 53kWp as a carport solar array
- La Collette – 81kWp installed on the roofs of La College Power Station
- Woodside Farm – 255kWp installed on the roof of its warehouse
- Jersey Dairy Solar – 521kWp installed on the roof of Jersey Dairy

In addition, Sunworks has converted 500 properties in addition to the five solar PV arrays developed by Jersey Electricity.[152]

There is also no requirement for data on solar PV output to be shared with Jersey Electricity in real time. Consideration could be given to whether data on the output produced by these solar PV units would be relevant to inform the total level of domestic generation in Jersey.

Any non-Jersey Electricity solar PV distributed generation on commercial consumers pay a standby charge to reflect the network and standby costs incurred by Jersey Electricity and that would normally be charged via the electricity unit tariff.[153] A charge of £3.97/kWp per month is paid by commercial consumers with up to 50kWp of capacity. Charges for commercial consumers with greater than 50kWp installations are defined on a case-by-case basis by Jersey Electricity. The standby charges are reviewed annually based on the output of the embedded generator.

This is dissimilar to the experience in GB where solar PV generators do not face a similar standby charge and often bilaterally contract with consumers via PPAs from a variety of

[149] Jersey Electricity, Solar PV Arrays - Jersey Electricity (jec.co.uk)
[150] Jersey Electricity, Figures and Reports - Jersey Electricity (JE.co.uk)
[151] Sunworks provided information for this study.

[153] Jersey Electricity, Standby Charge - Jersey Electricity (jec.co.uk)

sources and market participants. Over the last year 1.1GW of new solar PV capacity was added, which continues to be driven by smaller scale installations.[154]

Domestic and commercial consumers with distributed generation receive a buy-back rate for any electricity exported to the network. In 2023, the buy-back rate was 7.76p per kWh. The buy-back rate is set by Jersey Electricity and can change over time.

In order to receive the buy-back rate, an additional meter needs to be installed. It has been reported by Sunworks that the electrical nature of the network for solar PV production and co-located consumption leads to no netting of demand for consumers.

Historically, there has not been PPA contracts in Jersey for solar PV producers, which are used in electricity markets in other countries. A PPA is a long-term contract, between the owner of a generating asset and the purchaser, that sets out mutually agreed conditions, such as the price and the amount of electricity to be supplied.

Jersey Electricity plans to introduce Power Purchase Agreements contracts for embedded generation in Jersey.[155] These PPAs are designed to facilitate the integration of locally generated renewable energy into the grid by allowing Jersey Electricity to purchase electricity directly from producers. This initiative aims to support the growth of renewable energy sources, enhance energy security, and provide a stable revenue stream for local energy producers.

Offshore wind farm

The Government of Jersey launched a consultation on 10 November 2023 on a project to build a 1,000MW offshore wind farm in Jersey. The designed capacity is approximately 6.3 times the maximum demand in Jersey. The planned windfarm is expected to not only meet Jersey electricity needs, but also enable Jersey to become a net exporter of electricity to France. In its consultation the Government of Jersey highlights the energy security, economic and income benefits of the windfarm, that would not only create a new sector for the Jersey economy, but also increase government income for other projects.[156]

At this stage, the Government of Jersey is still considering the delivery model for the offshore windfarm. While it recognises that Jersey Electricity will be a key partner in the delivery, it is considering different delivery mechanisms and partnerships.[157] If constructed, the offshore windfarm will fundamentally alter the dynamics of the Jersey electricity market. While the government reports Jersey Electricity is supportive of the windfarm in the long-term, rules around network use, network sizing, and use of the subsea cable and access to the market in France will be needed to enable the offshore windfarm to fully participate in the market.

6.6 Jersey's future security of supply

At present, Jersey electricity security of supply primarily depends on the availability of the subsea cable with France. Jersey Electricity provides back-up resilience via an ‘adapted N minus 1 security standard.[158] Jersey’s electricity system is designed to meet three main outcomes (but not the combination of these scenarios):

- A 1-in-8 winter peak demand.
- All normal load in the event of the loss of the largest subsea cable with France and a failure of the largest diesel generator and gas turbine.

[154] Department of Energy Security and Net Zero, Energy Trends December 2023 (publishing.service.gov.uk)
[155] Jersey Electricity, Response to consultation on draft report.
[156] Government of Jersey, Offshore wind farm consultation opens (gov.je)
[157] Government of Jersey, Offshore Wind consultation (gov.je)
[158] Jersey Electricity, Figures and Reports - Jersey Electricity (JE.co.uk)

- 75% of peak winter load for 48 hours from on-island generation without the loss of any on-island capacity.

Following recent events, including the invasion of Ukraine, a fishing dispute threatening supply from the continent, and expected increased prominence of electricity in Jersey following the Carbon Neutral Roadmap, Jersey Electricity has set out that it intends to instal an additional 50MW of gas turbine capacity at La Collette Power Station to deliver an enhanced security of supply standard by summer 2028.[159] Under this enhanced security supply standard, Jersey Electricity will be able to meet the demand in the following scenarios (but not the combination of these scenarios):

- 1-in-20-year winter peak demand.
- 99% of all demand in a 1-in-3 winter in the event of loss of all supplies from France and a simultaneous loss of largest on-island generator.
- 100% of demand in a 1-in-10 winter in the event of loss of any subsea cable and a simultaneous loss of the two largest on-island generators.

6.7 Summary

This section considered the future of Jersey's electricity market, focusing on Jersey's Carbon Neutral Roadmap, Jersey Electricity's procurement of electricity, investment in the electricity network, connections and contracting for new generators and demand, on-island generation, and security of supply.

- The Carbon Neutral Roadmap, published in 2022, sets out a pathway for Jersey to become net zero by 2050. The roadmap set outs a vision for balancing energy affordability and security with decarbonisation, as well as greater energy sovereignty for Jersey. The Carbon Neutral Roadmap does not provide guidance on whether Jersey Electricity should prioritise energy sovereignty over the import of low-price electricity from France. This lack of guidance is particularly relevant given the need for Jersey Electricity to negotiate a new procurement contract with EDF in 2027 for electricity supply to Jersey.
- Jersey Electricity has set out its objective of retaining the current level of supply reliability and improving overall asset health [✂] which is associated with an expected increase in electricity demand due to the move away from other sources of energy with higher CO_2 emissions. [✂]
- Jersey Electricity has reported that in Jersey, connection charges are set in a shallow-ish manner. This means that generators or centres of demand incur an upfront charge for the physical connection to the network, as well as a proportion of any necessary network reinforcements beyond the connection point.
- Consumers, and existing and prospective market entrants, do not have information on the cost of adding a connection or increasing the connection size to the network, or visibility of areas where there is spare capacity ahead of an application, and we understand that, this has impacted their decisions.
- The Government of Jersey is considering whether investment in large capacity generation in Jersey complemented by smaller investment would provide Jersey with greater energy sovereignty. Jersey Electricity will need to consider how the new procurement contract with EDF, that is due to start in 2027, will need to accommodate the potential new large-scale generation.
- Jersey electricity security of supply primarily depends on the availability of the subsea cables with France. Jersey Electricity provides back-up resilience through its own

[159] An additional 50MW of generation capacity also forms part of the Big Upgrade announced by Jersey Electricity since the draft report.

generation assets. Jersey Electricity has set out that it intends to install an additional 50MW of gas turbine capacity at La Collette Power Station to deliver an enhanced security of supply standard by summer 2028.

The Jersey electricity market is expected to experience significant changes in the coming years as the economy decarbonises, and electricity demand and on-island generation grows. The available evidence indicates that Jersey and Jersey Electricity are taking steps to prepare for these changes.

However, there is a lack of transparency with regards to information on the sector, including network capacity, which is impeding some existing and potential market participants activities. It will be important to consider how clarity of roles and responsibilities, as well as improved transparency in the sector could enable a wide range of market participants to support the delivery of the Carbon Neutral Roadmap.

7. Key findings

Our review of the Jersey electricity market has highlighted that overall, the market is currently serving consumers relatively well.

We have summarised the key findings of our study on the electricity market below.

7.1 Key findings

Efficiency of Jersey Electricity

Jersey Electricity has maintained a secure system with 4 consumer minutes lost in 2023, which was 50% below the median of minutes lost for the period between 2018 and 2023.

[✂]

Jersey Electricity's FTEs have increased faster than the number of consumers, units of electricity sold and profits. This may indicate a reduction in how effectively FTEs are being employed, or it may reflect Jersey Electricity preparing for future challenges faced as Jersey decarbonises. It will be important to continue to monitor the growth in FTEs and whether this is justified by Jersey Electricity's contribution to the successful and timely delivery of decarbonisation in Jersey.

Operating profit per consumer has fallen during the 2018-2023 period, predominantly in 2022 when wholesale prices in Europe increased significantly more than Jersey retail prices. Between 2022 and 2023 operating profits per consumer increased, as both revenue and operating expenses per consumer decreased by less than cost of sales per consumer decreased, as electricity market prices decreased.

Development of an offshore wind farm would fundamentally lead to the need to review electricity procurement against a backdrop of contract renegotiation with EDF in preparation for the current contract ending in 2027.

The available evidence does not imply that Jersey Electricity is operating in an inefficient manner.

Consumer outcomes

Jersey Electricity consumers pay a low price for their electricity relative to other markets, with electricity not as significant a factor for the cost of living. Most domestic and business consumers are on the general tariffs. There is a relatively low rate of switching in Jersey, but it has increased overtime with the total number of switches reported in 2023 (235), 44% higher than those in 2018 (163).

Jersey Electricity consumers have experienced increased quality of the service since 2018, measured through consumer complaints. Consumer complaints have decreased by 76% since 2018.

Jersey domestic consumers receive support from Jersey Electricity for EV chargers and fuel switching. Conversely, business consumers do not receive the same type of support as domestic consumers to further decarbonise.

Jersey consumers that would like to install rooftop generation are encouraged to install capacity that is "sufficient for own consumption" rather than exporting to the network.[160] Business consumers can lease their rooftops to Jersey Electricity for installation of PV arrays.

[160] Jersey Electricity, Solar PV - Jersey Electricity (jec.co.uk)

Jersey Electricity had a higher score in a survey of customer satisfaction than an index of UK utilities. It scored lower than only one DNO in GB, indicating a relative higher level of customer service than its comparators.

Cross-country comparison

We have benchmarked the Jersey electricity market against other electricity markets selected based on homogeneity (Guernsey, Isle of Man, Malta) and relevance (Guernsey, GB, and France).

Jersey had the second lowest unit price for electricity and standing charge in 2023 compared to the sample markets assessed for standard tariffs, and the lowest unit price for electricity and standing charges across all the sample markets assessed for time of use tariffs.

Where possible, we have also used the consumer minutes lost metric to compare the performance of the electricity networks in the selected countries. The electricity market in Jersey is the most reliable as the median disruption for period 2012-2022 is 8 minutes, compared to 34 minutes for Guernsey and 19 minutes for Isle of Man.

Cross-market effects

The Jersey Electricity website does not present significant differentiations between Jersey Electricity and JEBS for work on installations. JEBS is referred to as Jersey Electricity's preferred partner on other websites, which may impact likelihood of consumers contracting with competitors.

Future supply and requirements of the Jersey electricity market

The Jersey electricity market is expected to change significantly over the coming decade, with expected increases in electricity demand as the economy decarbonises, the renegotiation of the contract with EDF (or any other supplier) and the potential commissioning of large-scale onshore generation. It will be important to consider the implications of these changes in the Jersey electricity market as well as the role played by Jersey Electricity in this context; ensuring the electricity market and Jersey Electricity operate efficiently in an evolving market, support electricity consumer engagement, and enable a wide range of market participants to support the delivery of the Carbon Neutral Roadmap in the future. It will also be relevant to consider the Government of Jersey's ambitions as set out in the Carbon Neutral Roadmap, including the role that it envisions Jersey Electricity will play in delivering the activities set out in the plan.

Appendix A Notes to figures on total rate across benchmark countries

- All tariffs exclude GST/VAT (5%) and are expressed in pence per unit (kWh). Malta's rates are based on average euro/pound exchange rate of euro/GBP 0.86.
- For Jersey, we used the General Domestic tariff, single phase, as a proxy for the Standard tariff, and the Economy 7 tariff as a proxy for the Economy tariff. Economy 7 is a two-rate tariff which offers cheaper electricity at night for a total of seven hours, from 11 pm to 7.30 am.
- For Guernsey, we used the Super Economy 12 tariff as proxy for the Economy tariff. This tariff has a low-rate period for a total of 10 hours between 7:45pm and 8:15am and 2 hours between 12:00 noon and 4:40pm.
- For the Isle of Man, domestic and prepayment consumers have the same tariff. The Standard tariff and the Economy tariff are assumed to be equal. However, prepayment meter consumers who are on two rate Comfy Heat tariff will have an off-peak rate of 15.6p from 1am to 7am and from 3pm to 5pm.
- For Malta, figures are weighted averages of tariffs for bands of cumulative consumption up to 6000kWh. The Standard tariff and the Economy tariff are assumed to be equal and correspond to the tariff for residential property services.
- For GB, we used the average Standard Credit values across GB from the DTC. Multi-rates have been used as a proxy for Economy tariff.

Appendix B Updated from the Draft Report

Table 14 below summarises the main changes in this report following feedback received to the Draft Report.

Table 14: Summary of the updates from the Draft Report

Section	Summary of updates
Section 2	• Expanded description of market dynamics for electricity procurement • Expanded description of Jersey consumer characteristic including electricity consumer arears
Section 3	• Additional analysis on retail cost to serve consumers in comparison with the GB market • Additional description of roles created by Jersey Electricity in its expansion of FTE and comparison with Guernsey • Additional analysis on cost of capital and return on regulated equity in Jersey compared to GB • Additional analysis on Jersey Electricity financial performance in comparison with consumer numbers
Section 4	• Additional analysis on switching times for Jersey Electricity consumers, as well as customer satisfaction with Jersey Electricity. • Further description of the requirement and process to obtain an additional meter • Description of developments in customer service provision since the Draft Report
Section 5	• No change
Section 6	• Expanded description of solar PV programmes in Jersey, including Jersey Electricity proposals since the Draft Report • Expanded information on volume of solar PV in Jersey following stakeholder feedback.

EY | Building a better working world

About EY

EY exists to build a better working world, helping to create long-term value for clients, people and society and build trust in the capital markets.

Enabled by data and technology, diverse EY teams in over 150 countries provide trust through assurance and help clients grow, transform and operate.

Working across assurance, consulting, law, strategy, tax and transactions, EY teams ask better questions to find new answers for the complex issues facing our world today.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. Information about how EY collects and uses personal data and a description of the rights individuals have under data protection legislation are available via ey.com/privacy. EY member firms do not practice law where prohibited by local laws. For more information about our organization, please visit ey.com.

Ernst & Young LLP

The UK firm Ernst & Young LLP is a limited liability partnership registered in England and Wales with registered number OC300001 and is a member firm of Ernst & Young Global Limited.

Ernst & Young LLP, 1 More London Place, London, SE1 2AF.

ey.com/uk