Smart Export Guarantee (SEG)
Annual Report

SEG Year 4 (1 April 2023 to 31 March 2024)

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for energy consumers

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Foreword

The Smart Export Guarantee (SEG) is one of twelve schemes Ofgem administers on behalf of the UK government. These schemes are designed to advance decarbonisation and support vulnerable consumers and were worth around £10 billion in the financial year 2023 to 2024.

Launched in January 2020, the Smart Export Guarantee ensures that there are options available for small-scale generators to be paid for exporting low-carbon electricity to the National Grid. By requiring participating suppliers to offer at least one export tariff to any eligible small-scale generator, the SEG is developing a competitive market where suppliers must offer innovative tariff designs and fair prices in order to remain attractive to customers. In turn, this competition produces greater opportunities for consumers to benefit from installing small-scale low-carbon generation and battery storage technologies. The SEG not only works to increase the availability of smart solutions, but also encourages consumer engagement with the energy market as part of a flexible, affordable and net zero energy system.

The Department for Energy Security and Net Zero (DESNZ) maintains overall responsibility for the SEG, and Ofgem has been appointed to administer certain aspects on their behalf. Our role involves assessing suppliers' compliance with their obligations, producing and publishing guidance for suppliers and generators on how the scheme works and how to apply, publishing a SEG annual report, and publishing a list of participating suppliers. Participating suppliers are responsible for assessing applications from generators and making payments for exported electricity.

This annual report provides information on the tariffs offered or in use during the fourth year of the SEG, along with information on the installations registered, the electricity exported, and payments made to generators. I am particularly impressed that the range of tariffs on offer has grown markedly since the scheme's launch, increasing from 21 tariffs available in the first year to 42 in SEG Year 4 – reflecting the development of a competitive and robust export market. We are now seeing a broad selection of tariffs on offer, some of which demonstrate innovative design, for example, by offering dynamic tariff rates that track wholesale electricity prices, or by pairing with battery storage systems to optimise charging and discharging to achieve the best tariff rates for consumers, whilst also helping to balance the grid.

I am also pleased to report that the amount of electricity exported and the total payments made have grown over threefold since SEG Year 3. Since the start of the scheme, over £39 million has been paid to SEG generators for the export of 342 GWh of low-carbon electricity to the grid, supporting the decarbonisation of our energy sector by providing enough to power 126,803 typical UK homes for a year.

Looking forward to the fifth year of the SEG, we will continue our engagement with suppliers to ensure that they are performing well against their obligations. Where we find suppliers are underperforming, we will work with them to ensure the SEG is working as expected and that consumers are not being adversely affected.

It is exciting to see the development of this new market for export from small-scale generators. In their 2023 report 'Delivering a reliable decarbonised power system', the Climate Change Committee stated that "market design needs to unlock flexibility from small-scale assets through effective customer engagement".[1] This requires building a market which rewards consumers for active, flexible and smart usage of small-scale generation and storage technologies. The SEG is well placed to help achieve this outcome, whilst keeping consumers firmly at its heart.

We welcome comments from readers on the content of this report, so if you want to get in touch, please contact us at SchemesReportingFeedback@ofgem.gov.uk.

Neil Lawrence
Director, Delivery & Schemes

[1] The CCC: Delivering a reliable decarbonised power system - March 2023 page 72 <https://www.theccc.org.uk/wp-content/uploads/2023/03/Delivering-a-reliable-decarbonised-power-system.pdf>

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Tariffs

Thirteen SEG licensees provided or offered support to generators via 42 different tariffs during SEG Year 4. Of these, 21 were bundled, for example, with conditions on the purchase or use of certain products.

283,666

Installations

A total of 283,666 installations were registered to a SEG tariff during 2023 to 2024.[2] This is more than a threefold increase from the 92,946 installations reported in 2022 to 2023.

1,563 MW

Capacity

The 283,666 installations registered had a combined Total Installed Capacity[3] of 1,563.2 MW. This is equivalent to 3.5% of peak UK electricity demand.[4]

£30.7M

Paid in 2023-24

Payments totalling £30.7 million were paid out to SEG generators in 2023 to 2024. This is a 327% increase compared to the £7.2 million paid in 2022 to 2023.

238 GWh

Export

The 238.1 GWh of low carbon electricity exported during 2023 to 2024 was enough to power 88,198 typical UK homes for a year.

[2] As we receive anonymised data from SEG licensees we are unable to identify unique installations. As such when a generator switches tariffs during the year they will be double counted.
[3] The maximum capacity at which an installation could be operated for a sustained period without damaging it (assuming the eligible low-carbon energy source was available to it without interruption).
[4] Peak electricity demand in 2023 was 44 GW – National Grid Energy System Operator <https://www.nationalgrideso.com/news/britains-electricity-explained-2023-review>

Executive Summary

The Smart Export Guarantee (SEG) is a government-backed initiative in Great Britain which ensures that there are options available for small-scale generators to be paid for exporting low-carbon electricity to the National Grid. Electricity suppliers subject to the SEG ('SEG licensees') are required to offer at least one export tariff to any eligible small-scale generators. This is designed to guarantee that there is a route to market for any small-scale low-carbon generators and that they are fairly compensated for the value of their exported electricity. By providing greater opportunities for consumers to benefit from small-scale low-carbon generation and battery storage technologies, the SEG will support the transition to net zero by increasing the share of clean power and unlocking flexibility within the energy system.

Licensees' mandatory tariffs must offer support to all SEG-eligible technology types and provide rates above 0p/kWh at all given times. As the SEG is a market-led initiative which relies on competition and supplier innovation to drive market development, beyond these minimal requirements, licensees are free to set their own tariff designs - including the tariff rate, contract length, and other relevant contractual terms.

Since it came into force on 1 January 2020, Ofgem have administered the SEG on behalf of the Department for Energy Security and Net Zero (DESNZ).[5] Our role includes publishing a list of SEG licensees, publishing guidance for both licensees and generators, assessing licensees' compliance with their obligations, and reporting annually on activity under the initiative.

This annual report summarises activity under the SEG during its fourth year (SEG Year 4), covering the period from 1 April 2023 to 31 March 2024.

SEG Tariffs (page 14)

SEG licensees are obligated to offer an export tariff available to any generator with a SEG-eligible installation. Licensees can choose to offer additional SEG tariffs, including 'bundled tariffs' which are only available if specific conditions are met. For example, requiring generators to import electricity from the same supplier, or to purchase or use certain products.

There was a total of 42 tariffs from 13 SEG licensees providing or offering support to SEG generators during SEG Year 4. This is up from the 39 tariffs available or in use during SEG Year 3. Of the SEG Year 4 tariffs, 21 were bundled and 21 were unbundled.

The highest rate available was 27p/kWh with Octopus' '*Intelligent Octopus Flux Export*' tariff. This bundled tariff was only available to customers with solar panels, Octopus import and export tariffs, and a GivEnergy battery which they must allow Octopus to control.

[5] The Department for Energy Security and Net Zero (DESNZ) are responsible for SEG policy in GB. This responsibility was previously held by the Department for Business, Energy & Industrial Strategy (BEIS).

The highest unbundled tariff rate available was 12p/kWh with Scottish Power's '*SmartGen*' tariff.[6] The lowest tariff offered was 1p/kWh with E's '*E SEG January 2020 v1*' tariff. As in previous years, no generators registered on E's tariff.

On average, bundled tariffs offered a higher rate of 13.4p/kWh compared to 4.4p/kWh for unbundled tariffs. Where suppliers offered bundled tariffs in addition to their unbundled tariffs, the bundled rates were always higher. However, when looking across suppliers, bundled tariffs with lower tariff rates are outpriced by some of the unbundled tariffs with higher tariff rates, meaning if consumers are not actively engaging with the tariff market and comparing all available options, bundled tariffs do not always guarantee the greatest returns.

Registered installations (page 26)

The fourth year of the SEG saw a total of 283,666[7] installations registered to one of the available tariffs, with a combined capacity of 1,563.2 MW. This is a threefold increase from the 92,946 installations registered during Year 3, with a combined capacity of 496.0 MW.

Of the installations registered in SEG Year 4, 224,250 (79.1%) were on bundled tariffs, and the remaining 59,416 (20.9%) were on unbundled tariffs. Accordingly, bundled tariffs accounted for 1,173.3 MW (75.1%) of total installed capacity in SEG Year 4, compared to 390.0 MW (24.9%) for unbundled tariffs.

Octopus had the highest number of registrations in SEG Year 4 with 197,109 - accounting for 69.5% of the annual total. Following Octopus, registration numbers were highest for British Gas (21,350), accounting for 7.5% of total registrations, then followed by Bulb[8] (18,628 – 6.6%) and E.ON (16,846 – 5.9%). Registrations with the remaining nine suppliers formed around 10.5% of total registrations in SEG Year 4. As in previous years, the supplier E registered zero installations. The lowest number of registrations besides this came from Rebel Energy, who registered two installations in SEG year 4.

Solar PV made up 99.98% (283,597) of installations registered and 99.93% (1,562 MW) of installed capacity on the SEG in Year 4. There were 69 installations for other technology types – comprised of 39 micro-combined heat and power (micro-CHP), 19 wind, nine hydro and two anaerobic digestion (AD) installations.

[6] Between 1st January 2020 and 30th June 2023, Utilita's 'Smart Export Guarantee' tariff paid a rate of 30p/kWh, however, the tariff was advertised and contracted at a rate of 3p/kWh. Customers received the higher rate due to a rounding error, and the tariff has since been replaced by a tariff with the same name but a corrected rate. Utilita will not be recovering the overpayments.
[7] As we receive anonymised data from SEG licensees we are unable to identify unique installations. As such when a generator switches tariffs during the year they will be double counted.
[8] Bulb was put into special administration following insolvency in 2021, which led to the acquisition of Bulb's customers by Octopus in 2022, and Octopus' complete acquisition of Bulb in June 2023. As some of the installations in this SEG year were still registered with Bulb as their supplier, they have been separated out here. However, for SEG Year 4, all tariffs registered with Bulb were Octopus tariffs, i.e. their rates, conditions, information and branding were identical to the tariffs offered by Octopus.

The majority of registered installations had an installed capacity between 4 kW and 10 kW, with this capacity band accounting for 61.3% of total registrations. Overall, 96.8% of registered installations had a capacity below 10 kW.

Electricity exported and payments made (page 37)

In SEG Year 4, payments to registered installations totalled £30,749,485, and 283.1 GWh of low-carbon electricity export was recorded. This is a significant increase on the £7,193,527 in payments made and 77.3 GWh exported in SEG Year 3. Between SEG Years 3 and 4, the amount of electricity exported on SEG tariffs tripled, and the amount paid to generators quadrupled.

Of the eligible export registered in SEG Year 4, 182.1 GW (76.5%) was on bundled tariffs and the remaining 56.0 GW (23.5%) was on unbundled tariffs. Accordingly, of the total £30.7 million paid in SEG Year 4, bundled tariffs accounted for £27.2 million (88.4%) compared to £3.6 million (11.6%) for unbundled tariffs.

99.86% of the export in SEG Year 4 came from solar PV installations, and 91.1% of this was through installations with an installed capacity below 10 kW. Collectively, the other non-solar technology types accounted for the remaining 0.33 GWh (0.14%). Wind installations accounted for 79.2% of the non-solar total export. The majority (57.0%) of non-solar export was from installations with a capacity between 10 kW to 50 kW.

To date, £39.1 million has been paid out through the SEG for the export of 342.4 GWh of low-carbon electricity – equivalent to the amount of energy needed to power 126,803 typical UK homes for a year.

Licensee compliance (page 44)

It is the responsibility of licensees to ensure they are meeting their obligations on time and in full, including ensuring that their reporting to Ofgem is accurate, timely and complete. This includes any licensees that join the SEG voluntarily who are bound by the same obligations as mandatory licensees.

Depending on the nature of the non-compliance, we may deem it appropriate to add details to the Supplier Performance Report (SPR).[9] The SPR documents incidents where energy suppliers have not complied with their obligations under the environmental, energy efficiency and social programmes we administer. This helps to hold suppliers to account for non-compliance which

[9] Supplier Performance Report <https://www.ofgem.gov.uk/environmental-programmes/environmental-programmes-ofgem-s-role-and-delivery-performance/supplier-performance-report-spr>

can impact the effectiveness of the schemes and increase the costs that are passed on to consumers.

SEG licensees are required to submit data to Ofgem by 30 June after the end of the relevant SEG year.[10] One supplier submitted their data on the 01 July and was added to the SPR for this late submission. There were also 4 licensees who submitted erroneous data. We contacted these licensees, and all of the data was corrected. These incidents will also be added to the SPR.

Please note: a spreadsheet containing the data used in the production of this report is published alongside the report on our website

Contacts

We welcome comments from readers on the content of this report, so if you want to get in touch, please contact us at SchemesReportingFeedback@ofgem.gov.uk

For more information about the SEG scheme, please visit our website[11]. If you can't find the information you need, you may find it helpful to refer to our SEG guidance[12]. Alternatively, please email us at renewable.enquiry@ofgem.gov.uk

Press enquiries

For press enquiries please contact Ofgem's press office at press@ofgem.gov.uk

[10] Guidance for SEG licensees paragraph 5.3 <https://www.ofgem.gov.uk/publications/guidance-seg-licensees>
[11] About the SEG <https://www.ofgem.gov.uk/environmental-and-social-schemes/smart-export-guarantee-seg>
[12] SEG - Contacts, guidance and resources <https://www.ofgem.gov.uk/environmental-and-social-schemes/smart-export-guarantee-seg/smart-export-guarantee-seg-contacts-guidance-and-resources>

1. About the SEG

This chapter introduces the context and background to the Smart Export Guarantee, including the responsibilities of SEG licensees and Ofgem's administrative duties.

Introduction

1.1 The Smart Export Guarantee (SEG) is a government-backed initiative that enables small-scale low-carbon generators in Great Britain (known as SEG generators) to receive payments from electricity suppliers (known as SEG licensees) for the electricity they export to the National Grid. Providing certain criteria are met, the SEG ensures that there is a route to market for small scale generators to sell their exported electricity, thereby supporting the transition to low-carbon generation and net zero.

1.2 The SEG came into force on 1 January 2020 under the Smart Export Guarantee Order 2019.[13] The Department for Energy Security and Net Zero (DESNZ)[14] is responsible for the SEG policy and Ofgem administer the SEG on their behalf, in line with the policy design.[15]

Eligibility

1.3 SEG generators must use one or more of the following eligible technologies in their installation:

- Anaerobic digestion (AD)
- Hydro
- Micro-combined heat and power (micro-CHP)
- Onshore wind
- Solar photovoltaic (PV)

1.4. To be eligible for a SEG tariff, generators will be asked to demonstrate that their installation is suitably certified. For installations up to 50kW this will mean presenting a Microgeneration Certification Scheme (MCS) certificate[16] or equivalent.

[13] Smart Export Guarantee Order 2019 <https://www.legislation.gov.uk/uksi/2019/1005/contents/made>
[14] DESNZ (Department for Energy Security and Net Zero) are responsible for SEG policy in GB. This responsibility was previously held by the former Department for Business, Energy & Industrial Strategy.
[15] The future for small-scale low-carbon generation: part A <https://www.gov.uk/government/consultations/the-future-for-small-scale-low-carbon-generation>
[16] Information on the MCS: <https://mcscertified.com/>

1.5. Installations have a maximum permitted capacity of 5 megawatts (MW); with the exception of micro-CHP installations, which must be no more than 50kW total installed capacity (TIC).[17]

1.6. It should be noted that the eligible technologies on the SEG are the same as those on the Feed-in Tariffs (FIT) scheme[18], which closed to new applicants on 1 April 2019. Under the FIT, generators receive payments for total eligible generation, as well as export to the grid. Those eligible to receive support under the FIT can choose to opt out of the export element of the FIT to join the SEG. Those that opt out can continue to receive FIT generation payments but will receive export payments via the SEG.

SEG Licensees

1.7. Licenced electricity suppliers participate in the SEG as either mandatory or voluntary SEG licensees:

- **Mandatory SEG licensees** are licenced electricity suppliers with at least 150,000 domestic electricity customers. Mandatory SEG licensees must offer at least one SEG compliant tariff.
- **Voluntary SEG licensees** are licensed electricity suppliers with fewer than 150,000 domestic electricity customers that choose to offer a SEG tariff. Voluntary SEG licensees have the same responsibilities as mandatory SEG licensees and must comply with all SEG obligations but can withdraw at the end of a SEG year.

1.8. A list of mandatory and voluntary SEG licensees for SEG Year 4 can be found in Appendix 1.[19]

1.9. The obligations placed on SEG licensees (summarised below) are set out in Standard Conditions 57 and 58 of the Electricity Supply Standard Licence Conditions[20]:

- Offering at least one SEG tariff to eligible installations
- Assessing the eligibility of installations
- Making SEG payments based on export meter readings
- Handling any complaints from SEG generators
- Providing data to Ofgem on tariff offerings, uptake and payments.

[17] Total Installed Capacity (TIC): The maximum capacity at which an installation could be operated for a sustained period without damaging it (assuming the source of power or eligible low-carbon energy source was available to it without interruption).
[18] Feed-in Tariffs (FIT) < https://www.ofgem.gov.uk/environmental-and-social-schemes/feed-tariffs-fit>
[19] Appendix 1: Supplier List for SEG Year 4
[20] Electricity Supply Standard Licence Conditions <https://epr.ofgem.gov.uk/Content/Documents/Electricity Supply Standard Licence Conditions Consolidated - Current Version.pdf>

1.10. SEG licensees must offer at least one SEG tariff available to any generator with an eligible installation. This mandatory tariff must offer support for all eligible technologies. All SEG tariffs must pay a rate greater than 0p/kWh at all times.[21]

1.11. Licensees decide how their tariffs work, setting the tariff rate, term length, as well as other relevant contractual terms. SEG licensees may choose to offer multiple SEG tariffs, and in this case, only one tariff is required to be available to all eligible technologies. Additional tariffs can come bundled with specific conditions, for example, sourcing import electricity from the same supplier. For more details, see Chapter 2: SEG Tariffs.

Ofgem's Role

1.12. Having been appointed to administer the SEG on behalf of government, Ofgem has several administrative functions:

- Publication of guidance for SEG generators and SEG licensees[22]
- Publishing an annual list of mandatory and voluntary SEG licensees
- For AD installations, assessing whether the sustainability criteria and reporting requirements are met, and notifying the relevant generator of the outcome[23]
- Publishing an annual report on the SEG.

1.13. This report fulfils Ofgem's obligation under Article 7 of the Smart Export Guarantee Order 2019[24] to prepare and publish a report on the SEG at least once each calendar year. Publishing this annual report helps to provide transparency to stakeholders and the general public around SEG policy outcomes. This report covers the period from 1 April 2023 to 31 March 2024 (SEG Year 4).

1.14. It should be noted that Ofgem does not hold a database of SEG installations. As such we require an annual submission of anonymised data from all mandatory and voluntary SEG licensees. A spreadsheet containing the data used in this report is published alongside the report on our website.[25]

[21] Electricity Supply Standard Licence Conditions - Condition 57, Paragraph 3.1 <https://www.ofgem.gov.uk/energy-policy-and-regulation/industry-licensing/licences-and-licence-conditions>
[22] Guidance documents are available on the Ofgem website: <https://www.ofgem.gov.uk/environmental-and-social-schemes/smart-export-guarantee-seg/contacts-guidance-and-resources>
[23] Guidance for anaerobic digestion generators: SEG sustainability criteria and reporting requirements <https://www.ofgem.gov.uk/publications/guidance-anaerobic-digestion-generators-seg-sustainability-criteria-and-reporting-requirements>
[24] Article 7 of the The Smart Export Guarantee Order 2019: <https://www.legislation.gov.uk/uksi/2019/1005/article/7/made>
[25] Though licensees are obligated to provide complete and accurate information, we cannot guarantee the accuracy of the information we receive. Readers should bear this in mind when viewing the published data.

2. SEG Tariffs

This chapter provides an update on the SEG tariffs offered by licensees or in use by generators during SEG Year 4. It includes information on the types of tariff on offer, including those available to all SEG-eligible installations ('unbundled tariffs'), and those only available to generators who meet additional criteria ('bundled tariffs').

2.1 As part of their obligations, SEG licensees must offer at least one SEG tariff to any generator with an eligible installation. There are no requirements on the rate, contract type or term length for this mandatory tariff except that the tariff must offer a rate greater than 0p/kWh at all times.[26]

2.2 Licensees can choose to offer additional SEG tariffs, including 'bundled tariffs' which are only available if specific conditions are met. For example, if import electricity is purchased from the same supplier, or the generator purchases or uses certain products. If licensees decide to offer bundled tariffs, this must be alongside an unbundled SEG export tariff which is available to all eligible generators.

2.3 As licensees have freedom in how they structure any additional tariffs, this allows for varying tariff designs within the market. Design aspects which can differ between tariffs include the tariff rate, the term length, the variability of rates, and any bundled conditions. Some tariffs may run for a specific period of time (with payments stopping after the agreed date unless a new contract is signed) and others may have no fixed term length. Similarly, some tariffs may have a fixed rate, whereas others may pay rates which vary over time in response to dynamic factors like supply and demand. The variability in tariff design should enable suppliers to offer preferential rates for adopting certain technologies or services, and in turn, incentivise consumers to actively engage with small-scale low-carbon assets.

2.4 A total of 42 tariffs from 11 mandatory and two voluntary SEG licensees[27] provided or offered support to generators throughout SEG Year 4. Of these tariffs, 21 were bundled and 21 were unbundled. Note that some tariffs which closed to new registrations before the start of SEG Year 4 are included here. This is because generators on these tariffs continued to register export and/or receive payment during SEG Year 4.

[26] Paragraph 3.1 of Schedule A to Standard Licence Condition 57 of the Standard Conditions of Electricity Supply Licence.

[27] The supplier Bulb was put into special administration following insolvency in 2021, leading to the acquisition of Bulb's customers by Octopus in 2022, and Octopus' complete acquisition of Bulb in June 2023. Some of the installations in this SEG year were still registered with Bulb as their supplier. However, for SEG Year 4, all tariffs registered with Bulb were Octopus tariffs, i.e. their rates, conditions, information and branding were identical to the tariffs offered by Octopus. As such, we have not counted duplicate tariffs, nor have we included Bulb within the count of SEG licensees.

2.5 The data within this report is provided to us by licensees as part of their obligations. While we perform quality checks on this data, we cannot assure its completeness and accuracy as we are reliant on the information that suppliers submit.

2.6 The tariffs in this report are those that have been reported to us by licensees as being their SEG tariffs. There may be export tariffs on the market that are similar in design to SEG tariffs but the suppliers either do not report them to us as SEG tariffs or the suppliers are not SEG licensees, and therefore they are not represented in this report.

Unbundled Export Tariffs

2.7 A summary of the 21 unbundled SEG tariffs (available to any SEG-eligible generator) offered or in use during SEG Year 4 is shown in **Figure 2.1**.

Figure 2.1: Unbundled export tariffs

SEG Licensee	Tariff name	Tariff start date[28]	Tariff end date[29]	Tariff rate (p/kWh)[30]	Flat rate/ Variable[31]
British Gas	Export and Earn Flex	01/01/2020	N/A	6.4	Flat rate - changeable
E	E SEG January2020 v.1	01/01/2020	N/A	1	Flat rate - changeable
EDF	Export+Earn	01/07/2022	30/06/2023	1.5	Flat rate
EDF	Export Variable Tariff	01/12/2022	N/A	3	Flat rate - changeable
E.ON	Next Export v1	01/01/2020	N/A	3	Flat rate
Octopus	Octopus Outgoing Smart Export Guarantee Export Only	07/07/2020	N/A	4.1	Flat rate
Octopus	Octopus Outgoing Smart Export Guarantee July 2020 v1	07/07/2020	N/A	4.1	Flat rate
Octopus	Octopus Outgoing Smart Export Guarantee July 2020 v1	07/07/2020	N/A	4.1	Flat rate

[28] The first date a Licensee started offering this tariff to the market.
[29] The last date a Generator would have been able to register on this tariff. The subsequent length of the tariff after this registration date would then be determined by the terms of the agreement.
[30] Where the rate has varied, the average tariff rate is shown.
[31] 'Flat rate' refers to tariffs which offer a consistent tariff rate. 'Flat rate – changeable' refers to tariffs with a consistent tariff rate, however the supplier is able to change this rate during the tariff's term. 'Variable' refers to tariffs which offer a dynamic tariff rate, for example, those that vary to wholesale market pricing.

SEG Licensee	Tariff name	Tariff start date[28]	Tariff end date[29]	Tariff rate (p/kWh)[30]	Flat rate/ Variable[31]
Octopus	Affect Smart Export Guarantee November 2020 v1	11/11/2020	N/A	4.1	Flat rate
Octopus	Co-op Smart Export Guarantee November 2020 v1	11/11/2020	N/A	4.1	Flat rate
Octopus	My London Smart Export Guarantee November 2020 v1	11/11/2020	N/A	4.1	Flat rate
Octopus	Octopus Energy Smart Export Guarantee November 2020 v1	11/11/2020	01/04/2023	4.1	Flat rate
OVO	OVO SEG Tariff (AET20)	01/01/2020	N/A	4	Flat rate
Pozitive Energy	SEG1	11/01/2023	N/A	5	Flat rate - changeable
Rebel Energy	Export Tariff Snail	01/01/2022	N/A	10	Flat rate - changeable
Scottish Power	SmartGen	16/02/2023	N/A	12	Flat rate - changeable
Shell	Smart Export Guarantee	01/01/2020	26/01/2024	3.5	Flat rate
SO Energy	So Altair – Export	16/06/2020	19/07/2023	5	Flat rate - changeable
SO Energy	So Export Flex – Export	20/07/2023	N/A	4.5	Flat rate - changeable
Utilita	Smart Export Guarantee	01/01/2020	30/06/2023	3[32]	Flat rate - changeable
Utilita	Smart Export Guarantee	01/07/2023	N/A	3	Flat rate - changeable
Utility Warehouse	UW Smart Export Guarantee - Standard	01/01/2020	N/A	2	Flat rate

[32] Utilita's 'Smart Export Guarantee' tariff was advertised and contracted at a rate of 3p/kWh However, between 1st January 2020 and 30th June 2023, this tariff paid a rate of 30p/kWh due to a rounding error. It has since been replaced by a tariff with the same name but with a corrected rate. Utilita will not be recovering the overpayments.

Bundled Export Tariffs

2.8 A summary of the 21 bundled SEG tariffs (available to SEG-eligible generators if they meet additional criteria) offered or in use during SEG Year 4 is shown in **Figure 2.2**.

Figure 2.2: Bundled export tariffs

SEG Licensee	Tariff name	Tariff start date[33]	Tariff end date[34]	Tariff rate (p/kWh)[35]	Flat rate/ Variable[36]
British Gas	Export and Earn Plus	28/07/2023	N/A	15	Flat rate - changeable
E.ON	Next Export Exclusive v1	01/01/2020	26/06/2023	5.5	Flat rate
E.ON	Next Export Exclusive v2	26/06/2023	N/A	16.5	Flat rate
EDF	EDF Export Variable Value Tariff	22/07/2022	N/A	5.6	Flat rate - changeable
Octopus	Agile Outgoing Octopus May 2019	13/05/2019	N/A	8	Variable
Octopus	Agile Outgoing Octopus February 2023 v1	28/02/2023	N/A	8	Variable
Octopus	Octopus Flux Export February 2023 v1	14/02/2023	N/A	19	Variable
Octopus	Octopus Flux Export February 2023 v1	14/02/2023	N/A	19	Variable
Octopus	Intelligent Octopus Flux Export	14/07/2023	N/A	27	Variable
Octopus	Intelligent Octopus Flux Export	14/07/2023	N/A	27	Variable
Octopus	Outgoing Octopus 12M Fixed February 2019 v1	13/05/2019	N/A	15	Flat rate
Octopus	Outgoing Octopus 12M Fixed February 2023 v1	09/02/2023	N/A	15	Flat rate
Octopus	Outgoing Octopus Fixed Lite	12/09/2023	N/A	8	Flat rate

[33] The first date a Licensee started offering this tariff to the market.
[34] The last date a Generator would have been able to register on this tariff. The subsequent length of the tariff after this registration date would then be determined by the terms of the agreement.
[35] Where the rate has varied, the average tariff rate is shown.
[36] 'Flat rate' refers to tariffs which offer a consistent tariff rate. 'Flat rate – changeable' refers to tariffs with a consistent tariff rate, however the supplier is able to change this rate during the tariff's term. 'Variable' refers to tariffs which offer a dynamic tariff rate, for example, those that vary to wholesale market pricing.

SEG Licensee	Tariff name	Tariff start date[33]	Tariff end date[34]	Tariff rate (p/kWh)[35]	Flat rate/ Variable[36]
Octopus	Outgoing Octopus Fixed Lite	12/09/2023	N/A	8	Flat rate
Octopus	Powerloop Export June 2021 v1	23/06/2021	N/A	5	Flat rate
Octopus	Tesla Outgoing October 2019 v1	28/10/2019	05/05/2021	8	Flat rate
Octopus	Tesla Outgoing April 2021 v1	07/04/2021	28/07/2022	11.29	Flat rate
Octopus	Tesla Outgoing April 2021 v1	07/04/2021	28/07/2022	11.42	Flat rate
Octopus	Tesla Outgoing July 2022 v1	28/07/2022	14/02/2023	25.48	Flat rate
Octopus	Tesla Lite Outgoing October 2020 v1	16/10/2020	05/05/2021	11	Flat rate
Octopus	V2G Export 12m Fixed December 2022[4]	01/12/2022	01/12/2023	15	Flat rate
OVO	OVO Solar SEG	01/07/2022	N/A	15	Flat rate
OVO	OVO Solar & Battery SEG	01/07/2022	N/A	20	Flat rate
Scottish Power	SmartGen+	16/02/2023	N/A	15	Flat rate - changeable
SO Energy	So Bright - Export	16/10/2023	N/A	20	Flat rate - changeable
Utility Warehouse	UW Smart Export Guarantee - Bundle	01/05/2022	N/A	5.6	Flat rate

2.9 Information on the conditions required to qualify for these bundled tariffs is shown in **Figure 2.3**.

Figure 2.3: Bundled Tariff descriptions

SEG Licensee	Tariff name	Bundle description
British Gas	Export and Earn Plus	Customers must purchase import electricity from British Gas.
EDF	EDF Export Variable Value Tariff	Customers must purchase import electricity from EDF.
E.ON	Next Export Exclusive v1	Customers must purchase their solar installation from E.ON Solar.
E.ON	Next Export Exclusive v2	Customers must purchase import electricity from E.ON, or customers must purchase their solar installation from E.ON Solar.
Octopus	Agile Outgoing Octopus May 2019	Customers must purchase import electricity from Octopus. Export tariffs vary according to time-of-use, based on wholesale price tracking.
Octopus	Intelligent Octopus Flux Export	Only available for installations with solar PV plus GivEnergy battery storage. Customers must also have or sign up to an Octopus Intelligent Flux import tariff. Customers have to use Octopus Intelligent Flux, which varies import/export tariff rates and automates control of battery charging/discharging according to grid demand and wholesale price tracking.
Octopus	Octopus Flux Export February 2023 v1	Only available for installations with solar PV plus battery storage. Customers must also have or sign up to an Octopus Flux import tariff. Customers have to use Octopus Flux, where import/export tariffs vary according to time-of-use, based on wholesale price tracking.
Octopus	Outgoing Octopus 12M Fixed February 2019 v1	Customers must purchase import electricity from Octopus. Export tariff is a flat rate.
Octopus	Outgoing Octopus Fixed Lite	Customers must have an electric vehicle and V2G charging. Customers have to use Octopus Go import tariff, which offers cheaper import rates overnight. Export tariff is a flat rate.
Octopus	Powerloop Export June 2021 v1	Customers must have an electric vehicle and V2G charging. Customers have to use Octopus Powerloop, which offers different flat import/export rates according to time-of-day (not based on wholesale tracking).

SEG Licensee	Tariff name	Bundle description
Octopus	Tesla Lite Outgoing October 2020 v1	Customers must have a Tesla Powerwall. Customers must allow Tesla to manage the electricity generated by the solar panels.
Octopus	Tesla Outgoing April 2021 v1	Customers must have a Tesla Powerwall. Customers must allow Tesla to manage the electricity generated by the solar panels.
Octopus	Tesla Outgoing July 2022 v1	Customers must have a Tesla Powerwall. Customers must allow Tesla to manage the electricity generated by the solar panels.
Octopus	Tesla Outgoing October 2019 v1	Customers must have a Tesla Powerwall. Customers must allow Tesla to manage the electricity generated by the solar panels.
Octopus	V2G Export 12M Fixed December 2022	Customers must have purchased a Vehicle-to-Grid (V2G) charger. Offers different flat import/export rates according to time-of-day (not based on wholesale tracking).
OVO	OVO Solar & Battery SEG	Exclusive to customers who purchased solar and battery installations through OVO. Customers must purchase import electricity from OVO.
OVO	OVO Solar SEG	Exclusive to customers who purchased solar installations through OVO. Customers must purchase import electricity from OVO.
ScottishPower	SMART GEN +	Exclusive to customers who installed solar panels and/or batteries through ScottishPower.
SO Energy	So Bright – Export	Exclusive to customers who purchased solar panels from So Energy
Utility Warehouse	UW Smart Export Guarantee - Bundle	Customers must purchase import electricity from Utility Warehouse, plus two or more additional services to qualify.

Comparison of bundled and unbundled tariffs

2.10 Bundled tariffs typically offer tariff rates 218% higher than their unbundled counterparts, on average offering 13.8p/kW and 4.3p/kW respectively.

2.11 Where suppliers offered bundled tariffs in addition to their unbundled tariffs, the bundled rates were always higher. However, when looking across suppliers, bundled tariffs with low rates are outpriced by some of the unbundled tariffs with high rates.

2.12 Note that as some bundle conditions require customers to own or purchase certain technologies or services, there are other considerations involved here. Therefore, tariff rates should not always be regarded as a direct reflection of the returns of a SEG tariff.

2.13 For example, Octopus's '*Tesla Outgoing July 2022 v1*' tariff offered one of the highest rates available at 25.48p/kWh, and required operating a Tesla Powerwall (a home energy storage battery manufactured by Tesla Energy). Energy storage batteries can be a significant investment for consumers, typically costing thousands of pounds[37], and therefore, these higher tariff rates can offer customers additional returns through the SEG alongside the direct benefits of owning and operating these technologies. This can help to incentivise consumer engagement with small-scale low-carbon generation and storage systems.

2.14 Furthermore, tariffs such as the Octopus's '*Octopus Flux Export February 2023 v1*' can reward intelligent and dynamic usage of small-scale systems by offering fluctuating rates that encourage exporting to the grid when demand is highest, and importing to charge storage batteries when demand is lowest – helping to unlock flexibility within the grid. Bundled tariff designs can work to motivate certain consumer behaviours in this manner.

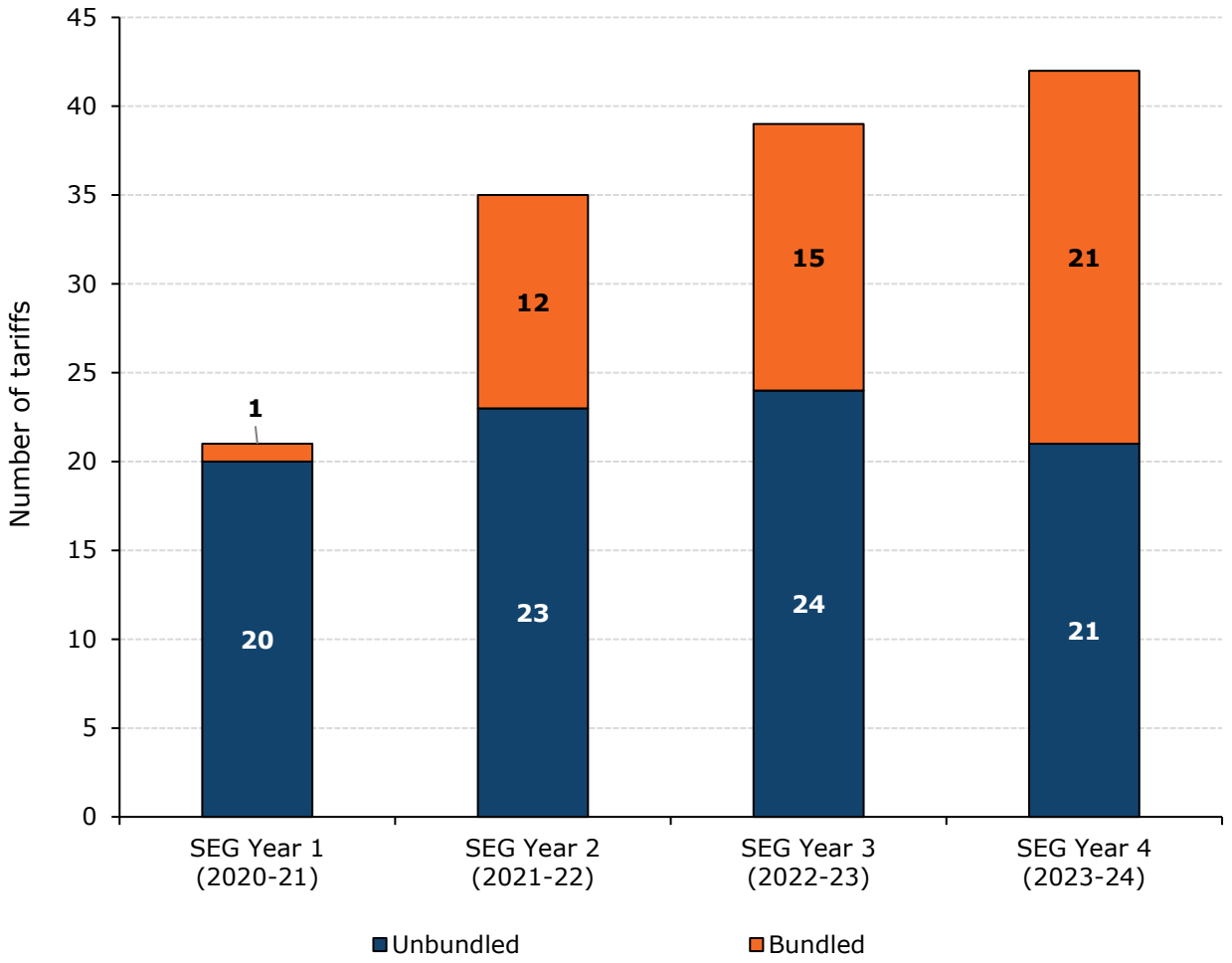
Tariff Changes Over Time

2.15 **Figure 2.4** shows how the number of SEG tariffs has grown over the initiative's lifetime. The number of tariffs available in SEG Year 4 has increased by around 7.7% compared to SEG Year 3 and has doubled compared to SEG Year 1.

2.16 Similarly, the number of bundled tariffs has risen dramatically from only one in SEG Year 1 to 21 in SEG Year 4, representing a further 40% increase compared to SEG Year 3. This expanding range of tariff types available for small-scale low carbon generators reflects innovation in the market, where new tariff structures or new ways of engaging with small-scale technologies are being made accessible to consumers through novel bundled offers.

[37] Price comparison of solar panel battery storage - Which? <https://www.which.co.uk/reviews/solar-panels/article/solar-panels/solar-panel-battery-storage-a2AfJ0s5tCyT>

Figure 2.4: Changes in the number of tariffs from SEG Year 1 to SEG Year 4



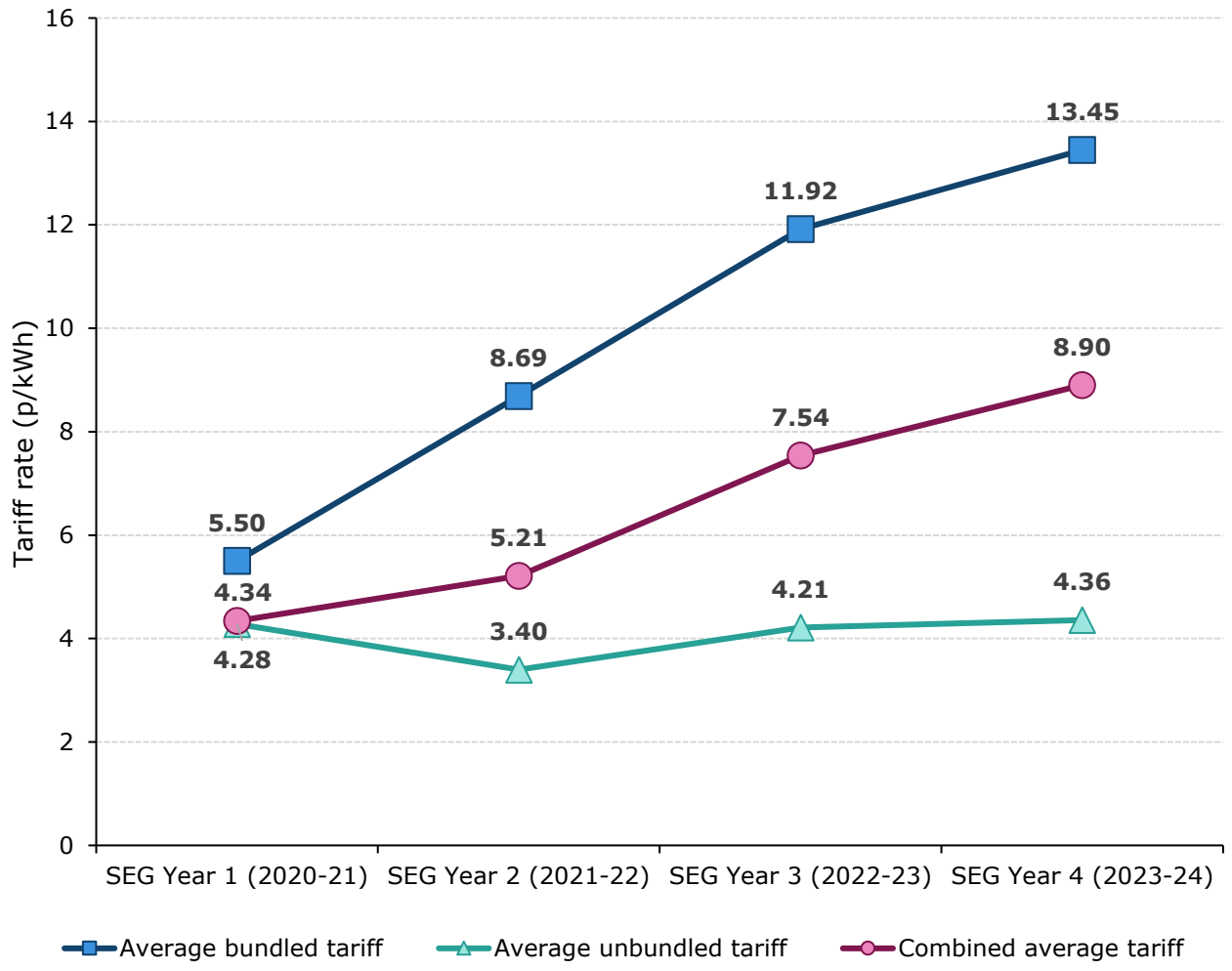
This column chart shows how the number of SEG tariffs has changed over time. The number of available tariffs has increased since the launch of the SEG, starting at 21 in SEG Year 1, rising to 35 in SEG Year 2, 39 in SEG Year 3, and 42 in SEG Year 4. Particularly, the number of bundled tariffs offered by SEG licensees has significantly increased from one in SEG Year 1, to 12 in SEG Year 2, 15 in SEG Year 3, and 21 in SEG Year 4.

2.17 The average tariff rate offered or in use during SEG Year 4 was 8.90p/kWh, a further 18.8% increase from SEG Year 3. Overall, this is a major increase of 102.1% from the SEG Year 1 average rate offered of 4.34p/kWh.

2.18 **Figure 2.5** shows how the tariff rates offered or in use during each SEG year have changed over time.[38] The averages detailed are calculated based on the number of tariffs on offer or in use during the SEG Year, meaning that they are not indicative of the customer uptake of these tariffs.

[38] Though licensees are obligated to provide complete and accurate information, we cannot guarantee the accuracy of the information we receive. Readers should bear this in mind when viewing the report.

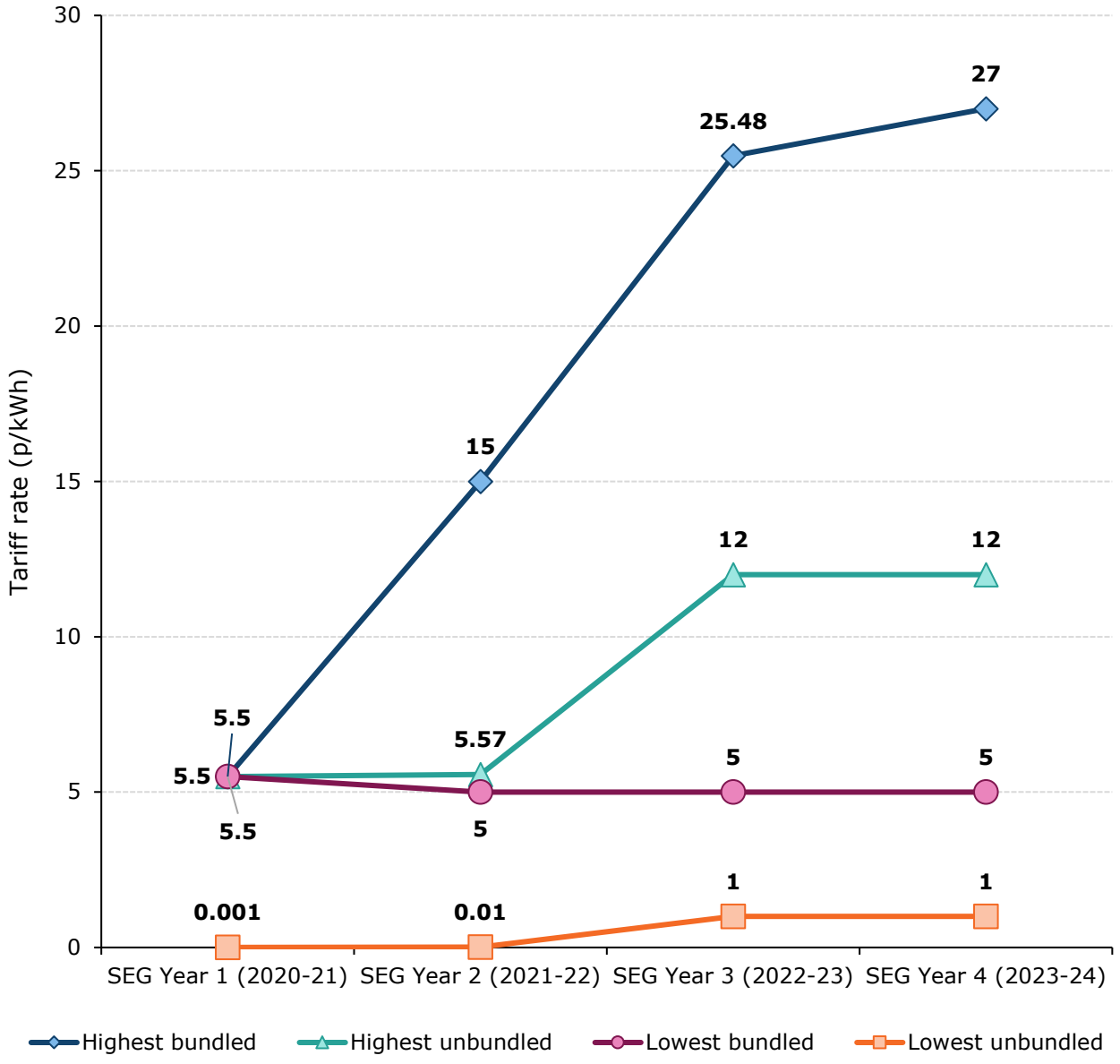
Figure 2.5: Average tariff rates offered – SEG Years 1 to 4



This line graph shows how the average tariff rates offered or in use during each SEG year have changed over the initiative's lifetime. The average tariff rate offered or in use has steadily increased, from 4.34p/kWh in SEG Year 1, to 5.21p/kWh in SEG Year 2, 7.54p/kWh in SEG Year 3, and 8.90p/kWh in SEG Year 4. Similarly, the average bundled tariff rate offer has increased linearly, from 5.5p/kWh in Year 1, to 8.69p/kWh in Year 2, 11.92p/kWh in Year 3, and 13.45p/kWh in this year. The average unbundled tariff rate offer decreased from 4.28p/kWh in Year 1 to 3.40p/kWh in Year 2, but slightly increased to 4.21p/kWh in Year 3 and 4.36p/kWh in Year 4. As the unbundled tariff rates have seen slower increase, the gap between bundled and unbundled tariffs has widened from a 1.22p/kWh price difference in Year 1 to a 9.09p/kWh difference in Year 4.

2.19 **Figure 2.6** shows the highest and lowest tariffs on offer, by bundle type, in each SEG year.

Figure 2.6: Highest and lowest tariffs – SEG Years 1 to 4



This line graph shows changes in the highest and lowest bundled and unbundled tariff rates offered or in use during each SEG Year. In SEG Year 1, there was only one bundled tariff and its rate was equal to the highest unbundled tariff, at 5.5p/kWh. Since SEG Year 2, the lowest bundled tariff rate remained at a baseline of 5p/kWh. The lowest unbundled tariff rate offer started at 0.001p/kWh in Year 1, increasing to 0.01p/kWh in Year 2, and has remained at 1p/kWh for the past two SEG Years. The highest unbundled tariff rate offer increased slightly from 5.5p/kWh in Year 1 to 5.57p/kWh in Year 2, before doubling to 12p/kWh in Year 3 and remaining at 12p/kWh for Year 4. The highest bundled tariff rate offer has increased, from 5.5p/kWh in Year 1, to 15p/kWh in Year 2, to 25.48p/kWh in Year 3, to 27p/kWh in Year 4. In SEG Year 4, the difference between the highest bundled tariff and the highest unbundled tariff is 12p/kWh. The difference between the highest and lowest bundled tariffs is 22p/kWh, and the difference between the highest and lowest unbundled tariffs is 11p/kWh.

2.20 The highest bundled tariff has increased 390.9% since SEG Year 1, and the highest unbundled tariff 118.2%. Meanwhile, the lowest tariffs offered for each type have stagnated, remaining at 1p/kWh and 5p/kWh for unbundled and bundled tariffs respectively for the past two SEG years.

2.21 Overall, the difference between the highest and lowest tariffs for both unbundled and bundled tariffs has consistently increased. Similarly, the difference between the highest bundled and unbundled tariff rates offered has continually increased, now sitting at 15p/kWh in SEG Year 4.

2.22 The highest rate available was 27p/kWh with Octopus' '*Intelligent Octopus Flux Export*' tariff. This bundled tariff was only available to customers with solar panels, Octopus import and export tariffs, and a GivEnergy battery which they must allow Octopus to control.

2.23 The highest unbundled tariff rate available was 12p/kWh with Scottish Power's '*Smart Gen'* tariff.[39] The lowest bundled tariff rate available was E.ON's '*Next Export Exclusive v1' tariff at 5.5p/kWh.* The lowest unbundled tariff offered was 1p/kWh with E's '*E SEG January 2020 v1'* tariff. As in previous years, no generators registered on E's tariff.

2.24 When looking across suppliers, bundled tariffs with lower tariff rates are outpriced by some of the unbundled tariffs with higher tariff rates, meaning if consumers are not actively engaging with the tariff market and comparing all available options, bundled tariffs do not always guarantee the greatest returns.

[39] Between 1st January 2020 and 30th June 2023, Utilita's 'Smart Export Guarantee' tariff paid a rate of 30p/kWh, however, the tariff was advertised and contracted at a rate of 3p/kWh. Customers received the higher rate due to a rounding error, and the tariff has since been replaced by a tariff with the same name but a corrected rate. Utilita will not be recovering the overpayments.

3. Registered Installations

This chapter provides a profile of the installations registered to a SEG tariff during SEG Year 4. This includes the number of installations registered to each SEG licensee and a breakdown of installations by technology type, capacity, and region.

3.1. The number of registrations refers to any installations that have been registered, reported export or received payment through a SEG tariff at any point during the SEG Year. It should be noted that as we receive anonymised data from SEG licensees we are unable to identify unique installations. As such, an installation's registration can be double counted, for example, if a generator switches tariffs during the year.

3.2. In SEG Year 4, a total of 283,666 installations were registered on a SEG tariff, just over a threefold increase on the 92,946 registered in SEG Year 3. The total installed capacity for all registered installations was 1,563.2 MW, also increasing just over three times from the 496.0 MW registered in SEG Year 3.

Registered installations by tariff

3.3. Of the 283,666 installations registered in SEG Year 4, 224,250 (79.1%) were on bundled tariffs, and the remaining 59,416 (20.9%) were on unbundled tariffs. Accordingly, bundled tariffs accounted for 1,173.3 MW (75.1%) of total installed capacity in SEG Year 4, compared to 390.0 MW (24.9%) for unbundled tariffs.

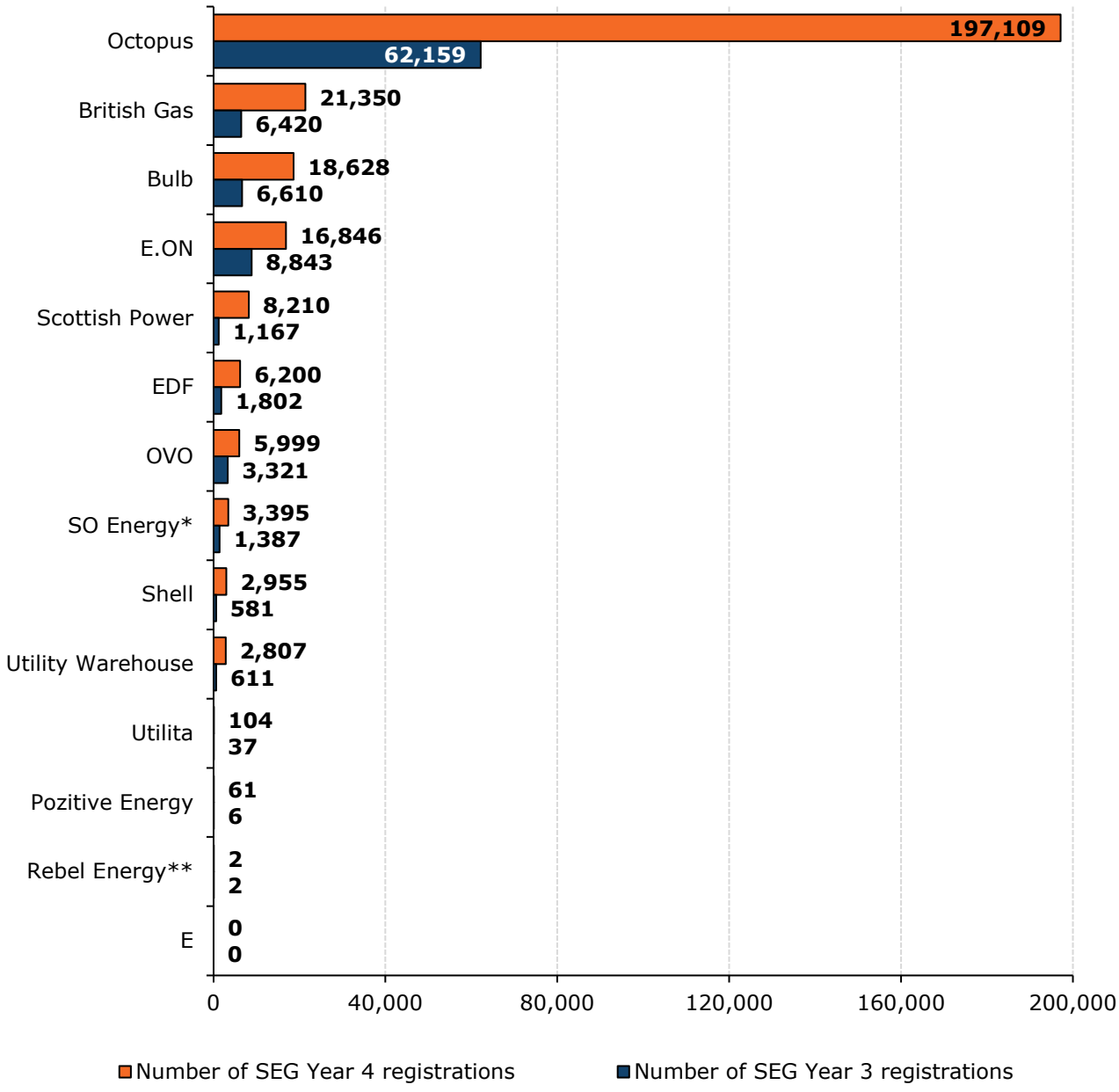
3.4. While unbundled tariffs were less common than unbundled tariffs, the average installed capacity for installations registered on unbundled tariffs (6.57 kW) was 25.5% higher than the average installed capacity for installations registered on bundled tariffs (5.23 kW). Despite unbundled tariffs accounting only 20.9% of SEG registrations, 63.0% of installations with a capacity in excess of 400 kW were registered on unbundled tariffs. 18.3% of capacity registered on unbundled tariffs came from installations with a capacity in excess of 1 MW, compared to 2.1% for bundled tariffs, skewing the average capacity for unbundled tariffs to be higher.

3.5. As shown in **Figure 3.1** the number of installations registered varied significantly between SEG licensees. Octopus had the highest number of registrations at 197,109, accounting for 69.5% of all installations on the SEG[40]. This is over a threefold increase on

[40] The supplier Bulb was put into special administration following insolvency in 2021, leading to the acquisition of Bulb's customers by Octopus in 2022, and Octopus' complete acquisition of Bulb in June 2023. Some of the installations in this SEG year were still registered with Bulb as their supplier. However, for SEG Year 4, all tariffs registered with Bulb were Octopus tariffs, i.e. their rates, conditions, information and branding were identical to the tariffs offered by Octopus. We have counted registrations under Bulb separately to registrations under Octopus in these figures.

their SEG Year 3 registrations, which stood at 62,159 (66.9% of the Year 3 total), when they also had the highest number of registrations.

Figure 3.1: Number of SEG registrations by licensee in SEG Years 3 and 4

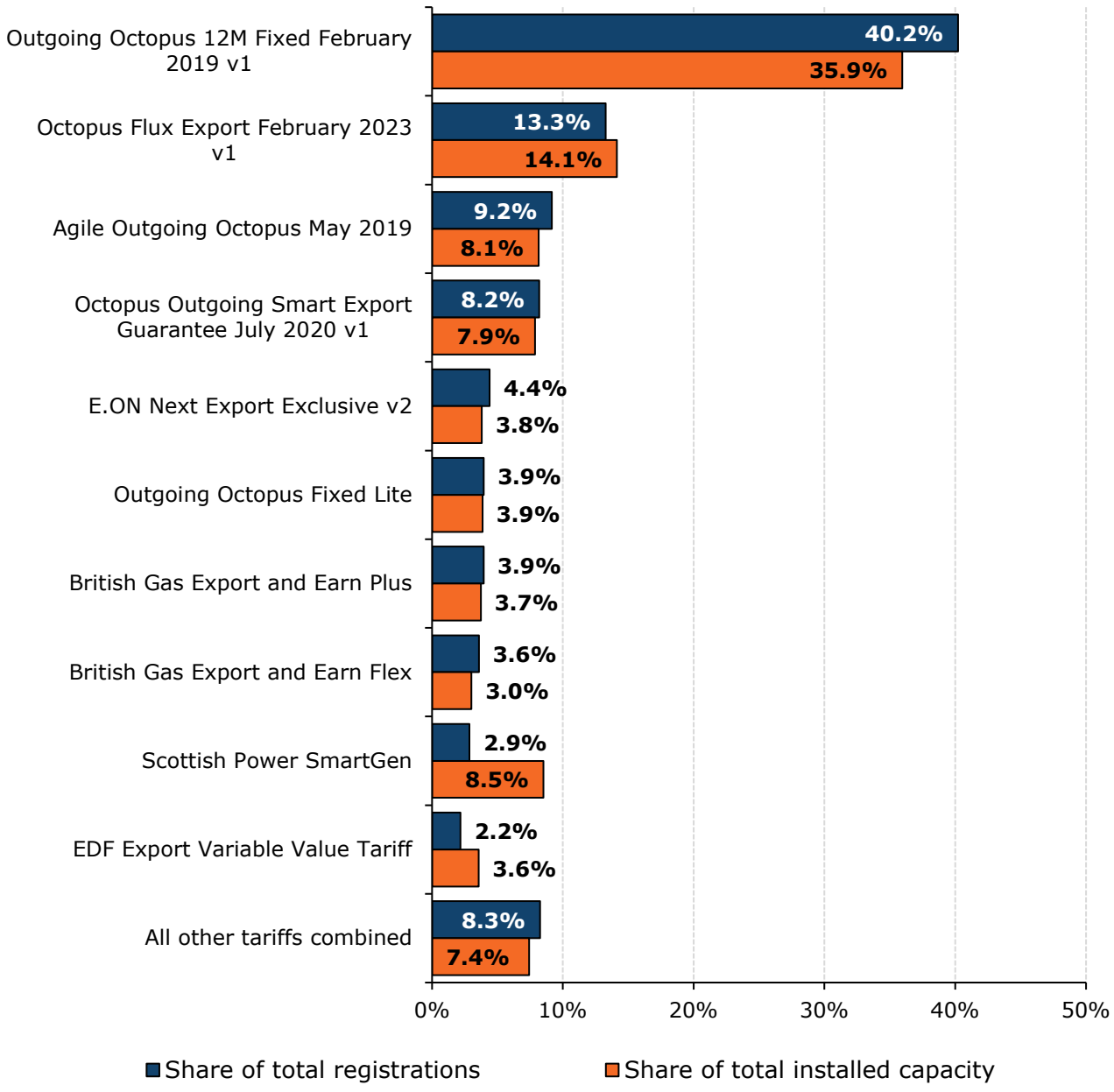


This bar chart shows the number of installations registered with licensees under the SEG in SEG Year 4 compared to SEG Year 3. All licensees registered higher registration numbers in SEG Year 4 compared to SEG Year 3, with the exception of the supplier E who had zero registrations in both years. Octopus had the most registrations with 69.5% of the total during SEG Year 4. Following Octopus, registration numbers were highest for British Gas with 7.5%, and then Bulb and EON, with 6.6% and 5.9% respectively. Registrations with the remaining nine suppliers formed 10.5% of total registrations in SEG Year 4.

*SO Energy were trading under the license of ESB in SEG Year 3.
**Rebel Energy were trading under the license of Cilleni in SEG Year 3.

3.6. **Figure 3.2** shows the share of total registered installations and their installed capacity in SEG Year 4 for the top ten tariffs by the number of registrations, plus all other tariffs combined.

Figure 3.2: Share of SEG registrations and installed capacity by top ten tariffs



This bar chart shows the share of total registered installations and total installed capacity for the top ten tariffs by number of registrations, plus all other tariffs combined. The top three tariffs were all licensed by Octopus, and were as follows: the 'Outgoing 12M Fixed February 2019 v1' (40.2% of registrations, 35.9% of installed capacity), the 'Flux Export February 2023 v1' (13.3% of registrations, 14.1% of installed capacity), and the 'Agile Outgoing May 2019' (9.2% of registrations, 8.1% of installed capacity). The top two tariffs accounted for over half of all registrations and installed capacity, meaning they account for more registrations and installed capacity than all other tariffs combined.

3.7. The top three tariffs, all licensed by Octopus, accounted for 62.6% of installations registered in SEG Year 4. These three tariffs accounted for 58.2% of installed capacity in SEG Year 4. Note that as customers registered with Bulb were supported through Octopus tariffs for this SEG year, installations registered with Bulb are counted towards the statistics for Octopus's tariffs.

3.8. Amongst the top ten, there were seven bundled tariffs. These were the '*Octopus Outgoing 12M Fixed February 2019 v1*' (first place), '*Octopus Flux Export February 2023 v1*' (second place), '*Octopus Agile Outgoing May 2019*' (third place), '*E.ON Next Export Exclusive v2*' (fifth place), '*Octopus Outgoing Fixed Lite*' (sixth place), '*British Gas Export and Earn Plus*' (seventh place), and '*EDF Export Variable Value Tariff*' (ninth place) tariffs.

3.9. For most tariffs in the top ten, their share of total registrations and total installed capacity is relatively equal. However, Scottish Power's *SmartGen* tariff has a disproportionate ratio - the share of capacity accounted for by the *SmartGen* tariff being almost three times higher than the share of registrations. This is because the *SmartGen* tariff disproportionately has the largest installation capacities on the scheme; of the 29 installations with a capacity in excess of 1 MW, 20 were on the *SmartGen* tariff. Note that the *SmartGen* tariff is the highest unbundled tariff rate available.

Registered installations by technology type and capacity band

3.10. As shown in **Figure 3.3**, of the 283,666[41] eligible installations that were registered on a SEG tariff in SEG Year 4, 283,597 (99.98%) were solar PV installations with a total capacity of 1,562,075 kW. This is a significant increase on the 92,916 solar PV installations with 495,832 kW capacity registered in SEG Year 3.

3.11. The remaining 69 SEG installations account for 1,147 kW of installed capacity – meaning the installed capacity for non-solar technologies has increased 670% from the 149 kW installed capacity registered in SEG Year 3. Of these 69 installations, 39 are micro-CHP generators, 19 are wind, nine are hydro, and two are anaerobic digestion (AD). As there were zero active hydro and AD installations in SEG Year 3, and only five wind installations, this represents a significant expansion of these technologies under the SEG.

[41] As we receive anonymised data from SEG licensees we are unable to identify unique installations. As such when a generator switches tariffs during the year they will be double counted.

Figure 3.3: Registrations and installed capacity by technology type

Technology	Number of registrations	Installed capacity (kW)	Average installed capacity (kW)
Solar PV	283,597	1,562,075	5.5
Micro CHP	39	121	3.1
Wind	19	958	50.4
Hydro	9	67	7.4
AD	2	3	1.3
Total	**283,666**	**1,563,222**	**5.5**

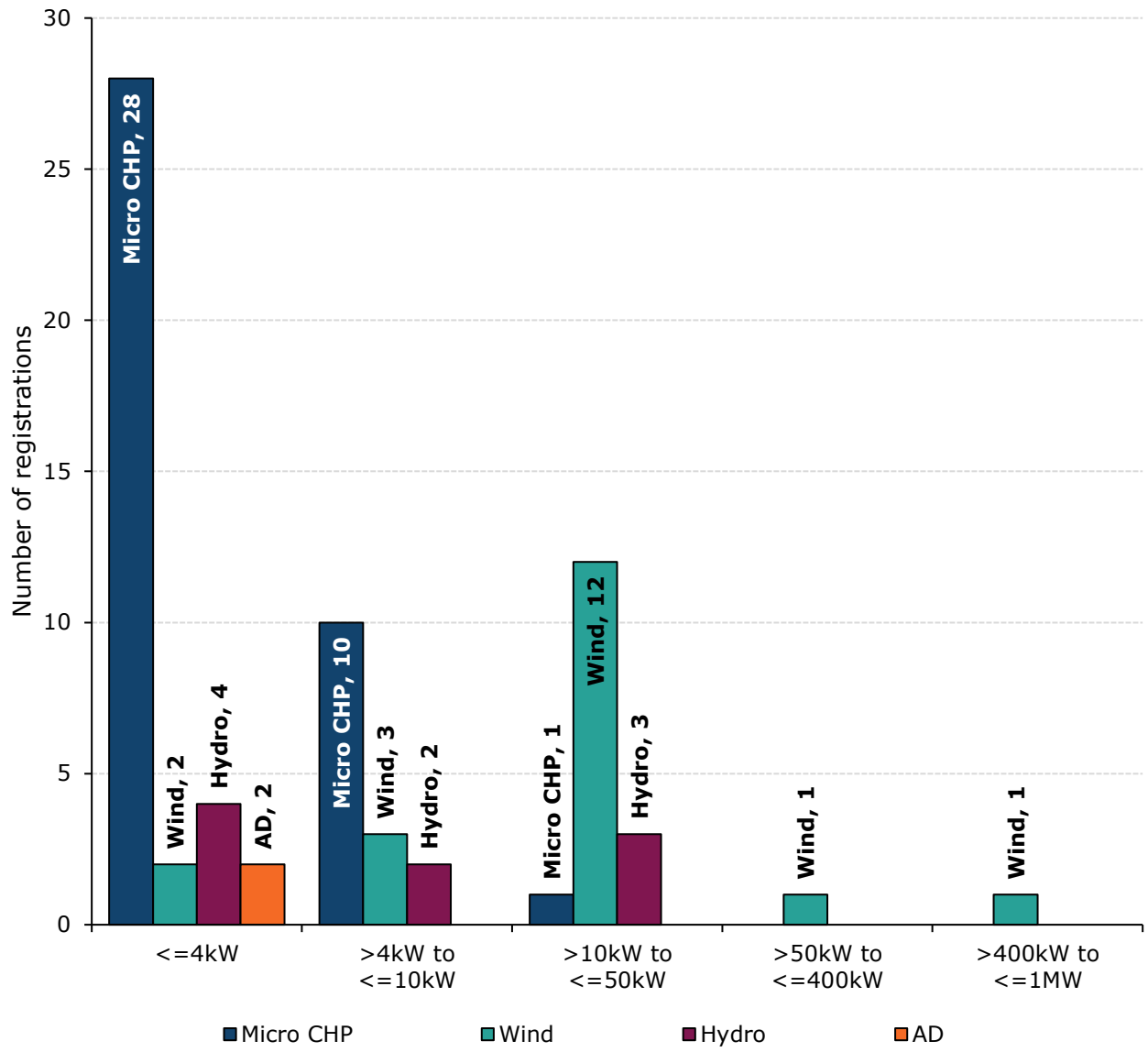
3.12 **Figure 3.4** provides a breakdown of all registered solar PV installations and their installed capacity by capacity band. 96.8% of the 283,597 solar PV registrations had a capacity of 10 kW or less. Similarly, 82.4% of total solar PV capacity was contributed by installations with a capacity of 10 kW or less.

3.13 Figure 3.5 looks at registrations for the other technology types, by capacity band. Almost 74% of registrations had a capacity of 10 kW or less – with 74.5% of registrations in the lower two bands being comprised of micro-CHP installations. Wind installations accounted for 75% of registrations in the 10 kW to 50 kW capacity band, and all of the registrations in the top two capacity bands. None of installations registered with a non-solar PV technology type had a capacity exceeding 1 MW.

3.14 **Figure 3.6** shows the installed capacity for non-solar PV technology types. The majority, or 83.4%, of non-solar installed capacity came from wind installations. More specifically, two wind installations, one with an installed capacity of 600 kW (400kW to 1 MW band) and the other with an installed capacity of 160 kW (100 kW to 400 kW band), accounted for almost two-thirds of non-solar capacity. Wind also accounted for 75.5% of capacity in between 10 kW to 50 kW, in line with comprising 75% of registrations in this band. Most of the capacity under 10 kW came from micro-CHP installations – accounting for 68.8% of installed capacity across the lowest two capacity bands.

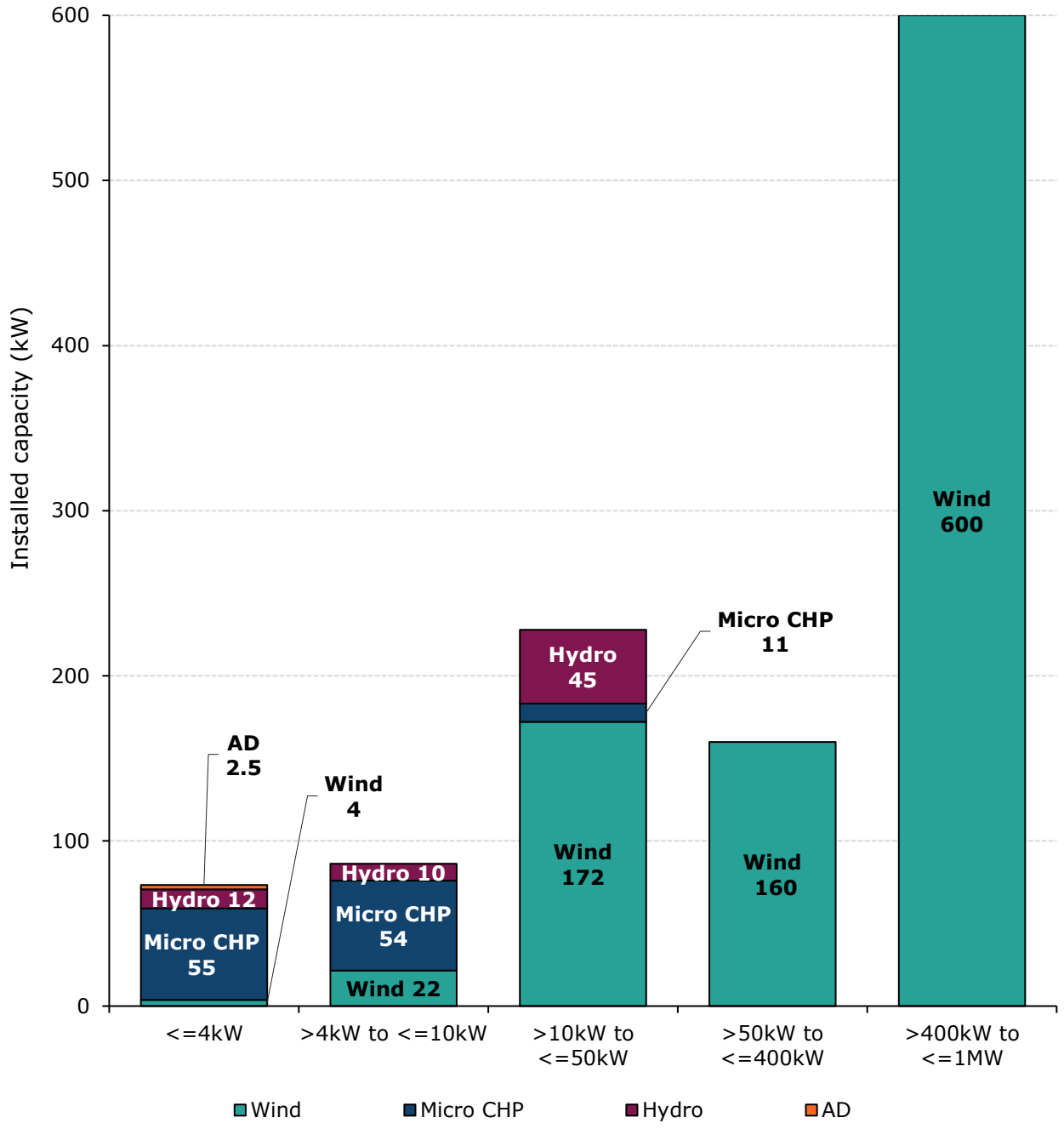
3.15 **Figure 3.7** shows the registration and installed capacity figures of the non-solar PV technologies in a table format.

Figure 3.5: Other technologies - registrations by capacity band



The column chart shows the number of SEG registrations within each capacity band, split by technology type. Micro-CHP installations account for the majority of registrations in the 4 kW or less band, representing 28 of the 36 installations in the band (77.8%) – followed by hydro (4 installations, 11.1%), then wind and AD with 2 installations each (5.6% each). In the 4 kW to 10 kW band, micro CHP again accounts for the majority of registrations, with 10 installations (66.7% within the band) – followed by wind with 3 registrations (20%) and hydro with 2 registrations (13.3%). In the 10 kW to 50 kW band, 12 wind installations accounted for the majority of registrations (75%), followed by hydro (3 registrations, 18.8%) and then micro CHP (1 registration, 6.3%). Both the 50 kW to 400 kW and the 400 kW to 1 MW bands only had one registration each, and the technology type was wind in both cases.

Figure 3.6: Other technologies – installed capacity by capacity band



The stacked column chart shows the installed capacity within each capacity band, split by technology type. Micro CHP installations account for the majority of capacity in the 4 kW or less band, representing 55.3 kW of the total 73.3 kW installed in the band (75.5%) – followed by hydro (11.7 kW, 15.9%), then wind (3.8kW, 5.2%) and finally anaerobic digestion (2.5 kW, 3.4%). In the 4 kW to 10 kW band, micro CHP again accounts for the majority of capacity, with 54.4 kW (63.1% within the band) – followed by wind with 21.6 kW (25%) and hydro with 10.2 kW (11.9%). In the 10 kW to 50 kW band, wind installations accounted for the majority of capacity with 172.2 kW (75.5%), followed by hydro (44.8 kW, 19.6%) and then micro CHP (11.0 kW, 4.8%). Wind installations accounted for 100% of the capacity in the 50 kW to 400 kW and 400 kW to 1 MW bands, with 160 kW and 600 kW respectively.

Figure 3.7: Other technologies – registrations and installed capacity by capacity band

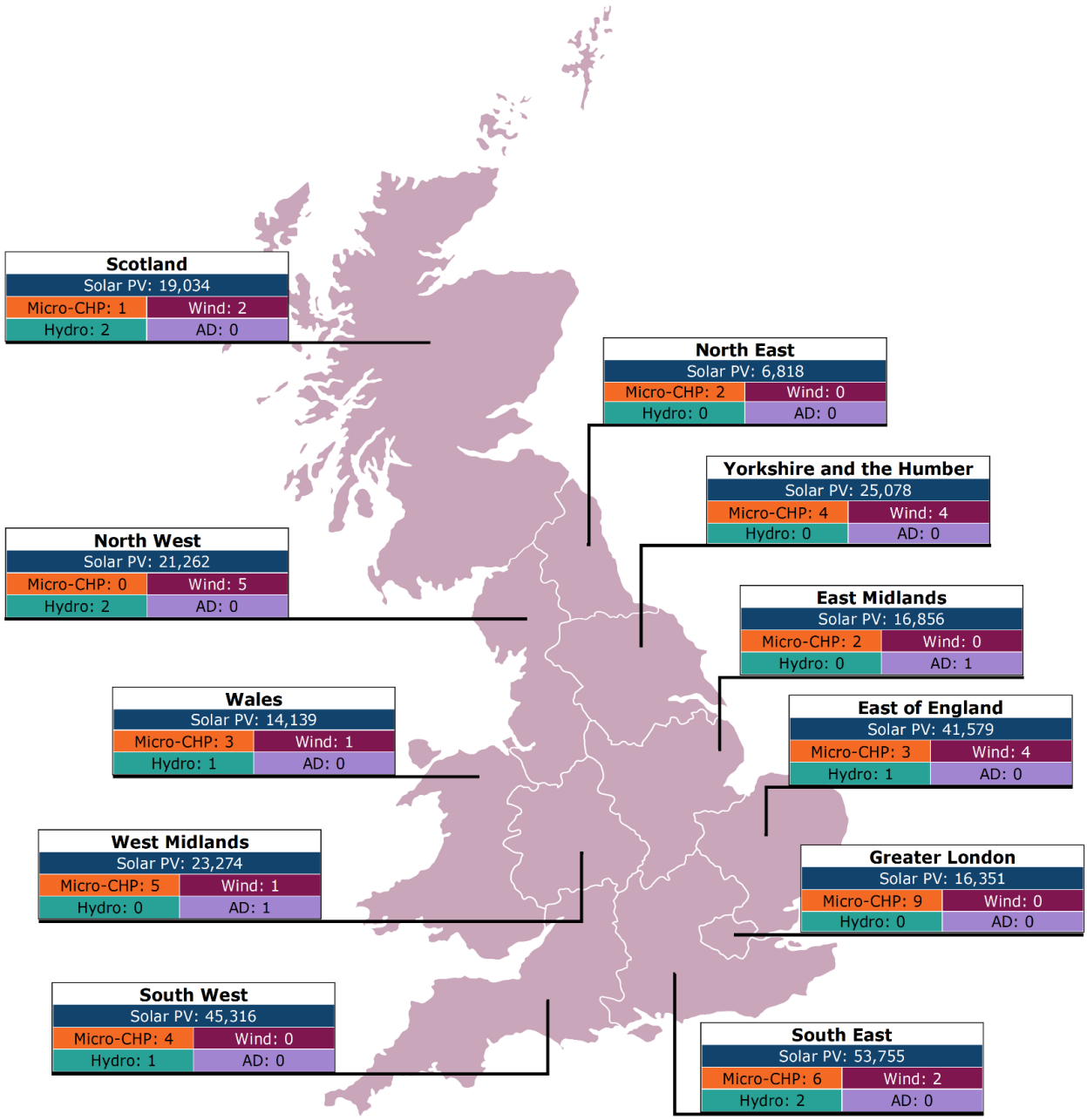
Capacity band	Micro-CHP regs.	Wind regs.	Hydro regs.	AD regs.	Micro-CHP capacity (kW)	Wind capacity (kW)	Hydro capacity (kW)	AD capacity (kW)
≤4kW	28	2	4	2	55.3	3.8	11.7	2.5
>4kW to ≤10kW	10	3	2	0	54.4	21.6	10.2	0.0
>10kW to ≤50kW	1	12	3	0	11.0	172.2	44.8	0.0
>50kW to ≤400kW	0	1	0	0	0.0	160.0	0.0	0.0
>400kW to ≤1MW	0	1	0	0	0.0	600.0	0.0	0.0
Total	**39**	**19**	**9**	**2**	**120.8**	**957.6**	**66.7**	**2.5**

Geographical Distribution

3.16 Figure 3.8 shows the geographical distribution of installations registered to a SEG tariff in Year 4 by technology type. Figure 3.9 shows the total registrations and installed capacity for each region. Note that we did not receive geographical information, or we received incorrect data, for 135 registrations (0.05% of total registrations) and therefore the location of these installations is unknown.

3.17 Of the 283,666 installations registered in SEG Year 4, 88.3% (250,348) were located in England, 6.7% (19,039) in Scotland and 5.0% (14,144) in Wales. In line with this, 89.0% (1,391.5 MW) of installed capacity was in England, 5.4% in Scotland (84.5 MW) and 5.3% in Wales (82.8 MW). The 135 unknown installations accounted for the remaining 0.3% (4.4 MW).

Figure 3.8: Geographic distribution of SEG generators by technology type



Map of Great Britain showing number of registrations by technology type in each region. The South East has the highest number of registered installations with 53,765. In contrast, the North East has the lowest number of registered installations at 6,818.

Figure 3.9: Registrations and installed capacity by region

Location	Number of registrations	% of total registrations	Total installed capacity (MW)	% of total installed capacity
South East	53,765	18.95%	297.8	19.05%
South West	45,321	15.98%	246.0	15.74%
East of England	41,587	14.66%	228.9	14.64%
Yorkshire and the Humber	25,086	8.84%	143.0	9.15%
West Midlands	23,281	8.21%	141.0	9.02%
North West	21,269	7.50%	116.3	7.44%
Scotland	19,039	6.71%	84.5	5.41%
East Midlands	16,859	5.94%	96.1	6.15%
Greater London	16,360	5.77%	89.2	5.71%
Wales	14,144	4.99%	82.8	5.30%
North East	6,820	2.40%	33.3	2.13%
Unknown	135	0.05%	4.4	0.28%
Total	**283,666**		**1,563.2**	

4. Electricity Exported and Payments

This chapter provides a breakdown of export reported and payments received by SEG installations, split by technology type and capacity band during SEG Year 4.

4.1 SEG licensees obtain meter readings and make payments in line with the terms and conditions of their SEG contract. As these terms and conditions vary between licensees, there can be differences in how licensees process data and payments. Resultingly, not all of the export that occurred during SEG Year 4 will be represented in this report as some licensees may not obtain meter readings to show this and/or make payments against this export until SEG Year 5. Similarly, a proportion of the payments in SEG Year 4 will relate to export that took place during SEG Year 3.

4.2 Of the 283,666[42] installations registered during SEG Year 4, a total of 268,638 registrations received payment for their exported electricity by the end of the reporting period. A further 118 reported export but had not received any payment. 14,910 had not yet reported any export or received payment within SEG Year 4.[43]

Export and payments by tariff

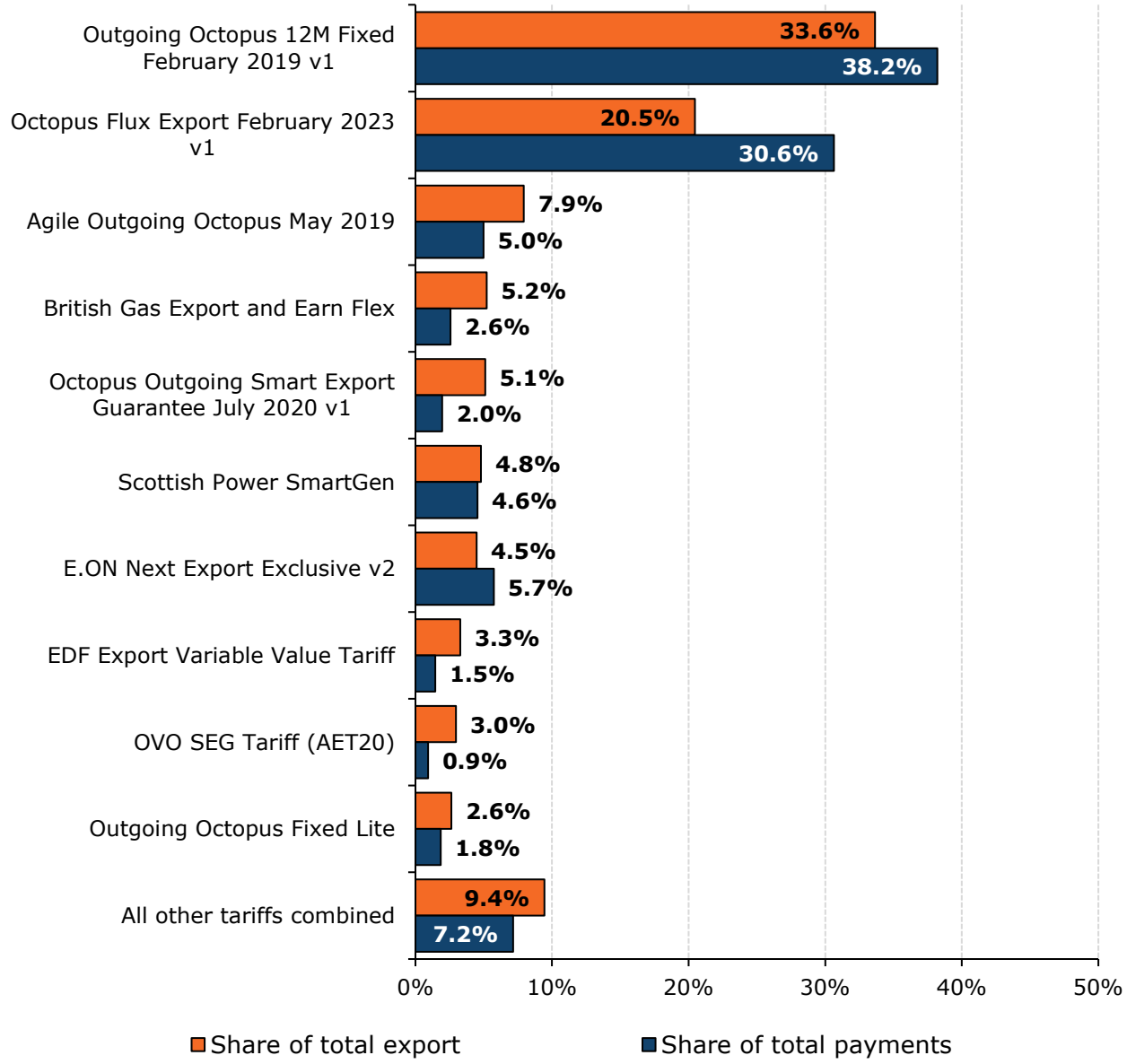
4.3 Of the 238.1 GW of eligible export registered in SEG Year 4, 182.1 GW (76.5%) was on bundled tariffs and the remaining 56.0 GW (23.5%) was on unbundled tariffs. Accordingly, of the total £30.7 million paid in SEG Year 4, bundled tariffs accounted for £27.2 million (88.4%) compared to £3.6 million (11.6%) for unbundled tariffs.

4.4 Compared to installations on unbundled tariffs, those on bundled tariffs, on average, registered 13.9% lower export, roughly in line with them having an average installed capacity 20.3% lower. Despite this, the average SEG payment was 102.5% higher for installations on bundled tariffs, typically paying £121.28 per installation compared to £59.90 for unbundled tariffs. This suggests that generators on bundled tariffs tend to receive better returns for their export.

4.5 **Figure 4.1** shows the share of total SEG eligible export and total SEG payments in SEG Year 4 for the top ten tariffs by share of export, plus all other tariffs combined. The majority (62.0%) of eligible export attributed to SEG Year 4 was on three tariffs, all offered by Octopus. These three tariffs accounted for 73.8% of payments in SEG Year 4.

[42] As we receive anonymised data from SEG licensees we are unable to identify unique installations. As such when a generator switches tariffs during the year they will be double counted.
[43] Though licensees are obligated to provide complete and accurate information, we cannot guarantee the accuracy of the information we receive. Readers should bear this in mind when viewing the published data.

Figure 4.1: Share of total SEG eligible export and payments by top ten tariffs



Bar chart showing the share of total eligible electricity export and total payments in SEG Year 4 for the top ten tariffs by share of total export, plus all other tariffs combined. The top three tariffs were all licensed by Octopus, and were as follows: the 'Outgoing 12M Fixed February 2019 v1' (33.6% of export, 38.2% of payments), the 'Flux Export February 2023 v1' (20.5% of export, 30.6% of payments), and the 'Agile Outgoing May 2019' (7.9% of export, 5.0% of payments). The top two tariffs accounted for over half of all export and payments, meaning they account for more export and payments than all other tariffs combined.

4.6 Of the top ten tariffs, six were bundled tariffs. These were the '*Octopus Outgoing 12M Fixed February 2019 v1*' (first place), '*Octopus Flux Export February 2023 v1*' (second place), '*Octopus Agile Outgoing May 2019*' (third place), '*E.ON Next Export Exclusive v2*' (seventh place), '*EDF Export Variable Value Tariff*' (eighth place), '*Octopus Outgoing 12M Fixed February 2023 v1*' (ninth place) tariffs.

4.7 Of the six bundled tariffs, four were offered with the sole condition of importing electricity from the same supplier. The *'E.ON Next Export Exclusive v2'* tariff was also offered with the condition of importing from the same supplier, but could also be used with an import tariff from a different supplier under the condition of purchasing solar panels with the E.ON Solar team. Bundles based around the condition of importing from the same supplier represent the least stringent criteria on offer, compared to other tariffs which require specific import tariffs, specific solar panel installers, or specific battery storage brands.

4.8 The only tariff with conditions beyond importing from the same supplier in the top ten tariffs by electricity exported was the *'Octopus Flux Export February 2023 v1'* tariff in second place, which accounted for over 13.5% of registrations and 20.5% of export in SEG Year 4. This tariff required customers to be on an Octopus Flux import tariff, a variable import tariff designed to be used in conjunction with the Flux export tariff, in addition to having a solar PV plus battery storage installation. This tariff design uses variable rates to incentivise the dynamic import or export of electricity in response to grid demand and wholesale energy prices.

4.9 The average tariff rate paid to installations was 13.0p/kWh, 45.7% higher than the average tariff rate offered by suppliers, suggesting that generators tend to register on the tariffs with rates above the average tariff offer. The average tariff rates paid for unbundled and bundled tariffs were 5.7p/kWh and 14.9p/kWh respectively. The average bundled tariff rate paid to installations was 10.8% higher than the average bundled tariff rate offered by suppliers, whereas for unbundled tariffs, the average tariff rate paid to installations was 30.4% higher than the average unbundled tariff rate offered.

4.10 The larger difference between the average rate paid and the average rate offered for unbundled tariffs implies that consumers shopping for unbundled tariffs tend towards higher-paying tariffs, whereas those shopping for bundled tariffs are less inclined to choose the higher-paying tariffs. This may be because customers have more freedom to choose between unbundled tariffs and fewer limitations on opting for the highest offer, whereas the additional conditions on bundled tariffs mean that the highest tariff rates are only available to a smaller pool of customers with specific assets. Furthermore, the most popular bundled tariffs suggest that customers may opt towards tariffs with less rigorous conditions, mostly choosing tariffs with the condition of importing from the same supplier.

4.11 When looking at tariffs which require additional technologies, customers are still more likely to opt towards tariffs with less strict criteria. For example, Octopus's '*Flux Export February 2023 v1'* and '*Intelligent Flux Export'* tariffs both require solar PV installations with battery storage, however, the former is compatible with any battery whereas the latter is only compatible with a GivEnergy branded battery. Despite the *Intelligent Flux*

Export tariff offering the highest rate of any SEG tariff at 27p/kWh, it was only responsible for 0.8% of export, compared to 20.5% for the less specific tariff which offered 19p/kWh. This could be because less specific tariffs allow consumers who have already invested in generation and storage technologies to shop around for the best deal available, whereas specific tariffs may only be competitive for a small customer base who already have, or are willing to invest in, novel technologies.

Export and payments by technology type and capacity band

4.12 The following figures show details for the registered installations reporting export and/or receiving payments within SEG Year 4, split by technology type and capacity band. **Figure 4.2** provides this information for solar PV installations, **Figure 4.3** for micro-CHP installations, **Figure 4.4** for wind installations, **Figure 4.5** for hydro installations, and **Figure 4.6** for anaerobic digestion installations. Please note that the solar PV export figures are shown in MWh whereas all other technologies are presented in kWh.

Figure 4.2: Solar PV – breakdown of reported export and payments

Capacity band	Solar PV stations registering export	Solar PV Export (MWh)	Solar PV stations receiving payment	Solar PV payments*
≤4kW	100,672	60,258.4	93,719	£7,116,174
>4kW to ≤10kW	173,798	156,361.3	166,223	£20,818,749
>10kW to ≤50kW	8,810	17,919.5	8,383	£2,478,618
>50kW to ≤400kW	272	2,758.6	209	£256,973
>400kW to ≤1MW	16	471.3	11	£28,354
>1MW to ≤5MW	29	43.3	27	£4,628
Total	**283,597**	**237,812.3**	**268,572**	**£30,703,495**

*Payments have been rounded to the nearest pound (£)

Figure 4.3: Micro CHP – breakdown of reported export and payments

Capacity band	Micro-CHP stations registering export	Micro-CHP Export (kWh)	Micro-CHP stations receiving payment	Micro-CHP Wind payments*
≤4kW	28	20,639.8	27	£2,289
>4kW to ≤10kW	10	13,542.0	10	£1,948
>10kW to ≤50kW	1	-	-	-
>50kW to ≤400kW	-	-	-	-
>400kW to ≤1MW	-	-	-	-
>1MW to ≤5MW	-	-	-	-
Total	**39**	**34,181.8**	**37**	**£4,237**

*Payments have been rounded to the nearest pound (£)

Figure 4.4: Wind – breakdown of reported export and payments

Capacity band	Wind stations registering export	Wind Export (kWh)	Wind stations receiving payment	Wind payments*
≤4kW	2	400.0	2	£35
>4kW to ≤10kW	3	18,101.7	3	£3,030
>10kW to ≤50kW	12	172,112.3	12	£24,345
>50kW to ≤400kW	1	0.0	-	-
>400kW to ≤1MW	1	69,603.7	1	£10,441
>1MW to ≤5MW	-	0.0	-	-
Total	**19**	**260,217.6**	**18**	**£37,851**

*Payments have been rounded to the nearest pound (£)

Figure 4.5: Hydro – breakdown of reported export and payments

Capacity band	Hydro stations registering export	Hydro Export (kWh)	Hydro stations receiving payment	Hydro payments*
≤4kW	4	5,916.0	4	£240
>4kW to ≤10kW	2	2,871.0	2	£115
>10kW to ≤50kW	3	15,137.0	3	£2,331
>50kW to ≤400kW	-	-	-	-
>400kW to ≤1MW	-	-	-	-
>1MW to ≤5MW	-	-	-	-
Total	**9**	**23,924.0**	**9**	**£2,686**

*Payments have been rounded to the nearest pound (£)

Figure 4.6: Anaerobic Digestion – breakdown of reported export and payments

Capacity band	AD stations registering export	AD Export (kWh)	AD stations receiving payment	AD payments*
≤4kW	2	10,140.0	2	£1,217
>4kW to ≤10kW	-	-	-	-
>10kW to ≤50kW	-	-	-	-
>50kW to ≤400kW	-	-	-	-
>400kW to ≤1MW	-	-	-	-
>1MW to ≤5MW	-	-	-	-
Total	**2**	**10,140.0**	**2**	**£1,217**

*Payments have been rounded to the nearest pound (£)

4.13 The 268,756 generators who registered export in SEG Year 4 reported a total of 238.1 GWh of electricity exported to the National Grid across all technology types. The total export represents a threefold increase from SEG Year 3 levels, in line with a threefold increase in the number of registered installations reporting export over the same period.

4.14 Of the 238.1 GWh of eligible export, 99.86% of this came from solar PV installations, the technology type which represents 99.98% of registrations. Of the contributions from solar PV installations, 90.98% of total export came from installations with an installed capacity of 10 kW or less – in accordance with 96.8% of solar PV registrations having an installed capacity of 10 kW or less.

4.15 Collectively, the other non-solar technology types accounted for 328.5 MWh (0.14%) of the total export in SEG Year 4. Wind installations accounted for 79.2% of the non-solar total export. The majority (57.0%) of non-solar export was from installations with a capacity between 10 kW to 50 kW – the bulk of this coming from wind installations, which registered 91.9% of export within this band. The 400 kW – 1 MW capacity band, which consisted of a single 600 kW wind installation, accounted for 21.2% of non-solar export. The remaining 21.8% of total non-solar export came from installations with an installed capacity below 10 kW, and of this, 47.7% came from micro-CHP installations and 25.8% from wind installations.

4.16 A total of £30,749,485 was paid to 268,638 registered generators in SEG Year 4, meaning the annual total of payments has increased over four times since SEG Year 3. Again, as expected, the vast majority of payments (99.85%) went to solar PV installations, and 91% of the payments for solar generation went to registered installations with a capacity of 10 kW or less. The remaining £45,990, or 0.15% of payments, went to the 69 non-solar installations.

4.17 Of the payments made to non-solar PV installations, 82.3% went to 18 wind registrations, 9.2% to 37 micro-CHP registrations, 5.8% to nine hydro registrations, and the remaining 2.6% to the two anaerobic digestion registrations. The majority, or 58.0%, of non-solar payments went to installations in the 10 kW to 50 kW capacity band, and 91.3% of payments in this band were made to wind installations. A further 22.7% of total non-solar payments were registered to the single wind installation in the 400 kW to 1 MW capacity band. The remaining 19.3% of non-solar payments were made to installations with a capacity under 10 kW. 47.7% went to micro-CHP and 34.5% to wind installations.

5. Licensee Compliance

This chapter provides detail on SEG licensees' compliance and Ofgem's activity monitoring licensee compliance during SEG Year 4. This includes information on incidents of non-compliance and the action taken as a result.

5.1 It is the responsibility of licensees to ensure they are meeting their obligations on time and in full, including ensuring that their reporting to Ofgem is accurate, timely and complete. This includes any licensees that join the SEG voluntarily.

5.2 Licensee obligations regarding the SEG scheme are set out in the Standard Electricity Supply Licence Conditions.[44] Mandatory and voluntary SEG licensees have the same obligations under the SEG and are subject to the same compliance regime.

5.3 Where a non-compliance is identified, Ofgem works with licensees to resolve the issue. This helps to ensure that the SEG is being delivered in accordance with the regulations and that consumers are not being disadvantaged by any issues identified.

5.4 Depending on the nature of the non-compliance, we may deem it appropriate to add details to the SPR.[45] The SPR documents incidents where energy suppliers have not complied with their obligations under the environmental, energy efficiency and social programmes we administer. We publish this data to provide transparency of the delivery and administration of these government schemes. This helps to hold suppliers to account for non-compliance which can impact the effectiveness of the schemes and increase the costs that are passed on to consumers.

5.5 A summary of non-compliances observed on the SEG in Year 4 is set out in below.

Data Submission

5.6 SEG licensees are required to submit data to Ofgem by 30 June after the end of the relevant SEG year.[46] This data facilitates the production of this annual report which helps to provide transparency to stakeholders and the general public around SEG policy outcomes.

[44] Electricity Supply Standard Consolidated Licence Conditions <https://www.ofgem.gov.uk/sites/default/files/2023-03/Electricity%20Supply%20Standard%20Consolidated%20Licence%20Conditions%20-%20Current.pdf>
[45] Supplier Performance Report <https://www.ofgem.gov.uk/environmental-programmes/environmental-programmes-ofgem-s-role-and-delivery-performance/supplier-performance-report-spr>
[46] Guidance for SEG licensees paragraph 5.3 <https://www.ofgem.gov.uk/publications/guidance-seg-licensees>

5.7 One supplier submitted their data late on the 01 July. There were also 4 licensees who submitted erroneous data to Ofgem. We contacted these licensees, and all of the data was corrected. Each of these incidents were added to the SPR.

Compliance Strategy

5.8 The SEG has been a licensee-led initiative since its launch on 01 January 2020. From SEG Year 5, Ofgem will be undertaking enhanced compliance activity to ensure SEG licensees are complying with their obligations.

5.9 Licensees are reminded of their obligations under the SEG. Specifically, these are:

- To offer a SEG complaint tariff
- To assess the eligibility of generators with the eligibility requirements
- To make SEG payments using export meter readings
- To handle complaints from SEG generators
- To provide accurate and timely data to Ofgem on tariff offerings, uptake and payments
- To publish their SEG status and rates where it is easily accessible to the public
- To provide written confirmation of the tariff to the SEG generator
- Not to materially discriminate against generators without justification
- To inform generators six weeks prior to ceasing to be a SEG licensee
- To assess if a generator is in receipt of FIT payments
- To make payments to an AD generator from the AD reporting date.

5.10 We are engaging with all licensees to ensure they are meeting these obligations. This Compliance Review will allow Ofgem to get a better understanding of how licensees are performing against their obligations. We may publish the outcome of our Compliance Review, including a summary of concerns identified for underperforming licensees and the associated next steps to address any issues.

5.11 Licensees that don't comply with their obligations can expect to be subject to compliance engagement and required to undertake remedial action to achieve a compliant position.

Enforcement

5.12 All licensees are required to comply with their licence conditions and SEG obligations. We may take enforcement action in cases of non-compliance. Decisions on whether to take action and what enforcement action is appropriate are made on a case-by-case basis, in line with Ofgem's Enforcement Guidelines.[47] Within SEG Year 4, we have not yet taken any enforcement action in respect of licensees on the SEG.

[47] Ofgem's Enforcement Guidelines: <https://www.ofgem.gov.uk/publications/enforcement-guidelines>

Appendix 1 – Supplier List for SEG Year 4

Mandatory SEG licensees are licenced electricity suppliers with at least 150,000 domestic electricity customers. Voluntary SEG licensees choose to participate in the SEG and are licenced electricity suppliers with fewer than 150,000 domestic electricity customers.

Mandatory licensees

British Gas

E (Gas & Electricity)

E.ON

EDF

Octopus Energy[48]

OVO Energy

Scottish Power

Shell Energy[49]

So Energy

The Utility Warehouse

Utilita

Voluntary licensees

Pozitive Energy

Rebel Energy

[48] The supplier Bulb was put into special administration following insolvency in 2021, leading to the acquisition of Bulb's customers by Octopus in 2022, and Octopus' complete acquisition of Bulb in June 2023. Some of the installations in this SEG year were still registered with Bulb as their supplier. However, for SEG Year 4, all tariffs registered with Bulb were Octopus tariffs, i.e. their rates, conditions, information and branding were identical to the tariffs offered by Octopus. As such, we have included Bulb within the list of SEG licensees for SEG Year 4.

[49] Shell Energy was officially acquired by Octopus on 1st December 2023. However, Shell Energy were a mandatory SEG licensee at the beginning of SEG Year 4. Hence, there will still generators registered onto Shell's SEG tariff for part of this reporting period, and they have been included as a separate licensee because of this, although support for Shell's tariffs finished by the end of January 2024. From SEG Year 5, Shell will be considered as trading under Octopus.

Appendix 2: Related Documents

The **Smart Export Guarantee Regulations 2019** can be viewed on the legislation.gov.uk website.

Smart Export Guarantee regulations:

<https://www.legislation.gov.uk/uksi/2019/1005/contents/made>

SEG Guidance documents for licensees can be viewed on the Ofgem website.

Guidance for SEG licensees:

<https://www.ofgem.gov.uk/publications/guidance-seg-licensees>

SEG Guidance documents for generators can also be viewed on the Ofgem website.

Guidance for SEG generators:

<https://www.ofgem.gov.uk/publications/smart-export-guarantee-guidance-generators>

Further **information on the policy background** to the SEG can be found by referring to the 'Future for small-scale low carbon generation' consultation.

Consultation on the 'Future for small-scale low carbon generation':

<https://www.gov.uk/government/consultations/the-future-for-small-scale-low-carbon-generation>

You can also find **further information** on the SEG by visiting the SEG pages on the Ofgem website.

SEG information on the Ofgem website:

<https://www.ofgem.gov.uk/environmental-and-social-schemes/smart-export-guarantee-seg>

Appendix 3: Glossary

Many of the terms included in this glossary are defined in the SEG Regulations and those definitions should be consulted for their legal meaning for the purposes of the Regulations.

A

Anaerobic digestion (AD) – Natural process in which micro-organisms break down organic matter (e.g., animal manure or waste food) within a contained environment. This produces biogas which can then be used as fuel to generate electricity.

B

BEIS – The department for Business, Energy and Industrial Strategy (BEIS). In February 2023 the energy policy responsibilities of BEIS were transferred to the Department for Energy Security & Net Zero (DESNZ).

D

DESNZ - The Department for Energy Security & Net Zero (DESNZ) is responsible for UK energy policy, including the SEG policy in Great Britain (GB).

F

Feed-In-Tariffs (FIT) scheme – The FIT scheme is a government scheme (now closed to new applicants) designed to promote the uptake of small-scale renewable and low-carbon electricity generation technologies.

G

GW– Gigawatt, equal to one billion watts.

K

kW – Kilowatt, equal to one thousand watts.

kWh – Kilowatt hour, equivalent to one-thousand-watt hours of heat output.

M

Micro-CHP– Micro combined heat and power (micro-CHP) is a technology that generates heat and electricity simultaneously, from the same energy source, in individual homes or buildings.

Microgeneration Certificate Scheme (MCS) – The MCS is a certification scheme for microgeneration installation companies, products and installations.

MW– Megawatt, equal to one million watts.

MWh– Megawatt hour, equivalent to one-million-watt hours of heat output.

S

Solar PV (Photovoltaic) –A renewable technology that converts energy from the sun into electricity.

Supplier Performance Report (SPR) – The Supplier Performance Report (SPR) is published by Ofgem to document incidents where energy suppliers have not complied with their obligations under the environmental, energy efficiency and social programmes Ofgem administers on behalf of the government.

T

Total Installed Capacity (TIC) – The maximum capacity an installation can be operated at over a sustained period without damaging it (assuming the source of power used by it to generate electricity was available to it without interruption).