Solar Panels for Cedar Chase houses

General details

Photo Voltaic (PV) solar panels were installed at number 19 (March 2024), 23 & 2 (April ‘24).

All followed the reference design for 6 panels on each of the south and west facing roofs with cabling down the back of the house in the corner by the kitchen window. All opted for the new GivEnergy 9.5kWh battery. 2 and 19 have put the inverter and battery in the utility room with cabling at floor level through the kitchen; Cris & Carol have the battery and inverter in their covered bike store in the back garden.

We all used Jim Ingram, working through Hepplethwaite Green Building Solutions, to do the installation which took between 1 and 2 weeks depending on weather, though scaffolding tended to be up for longer. The battery and inverter have a 12-year warranty; the solar panels have a 20-year warranty.

You will need a smart meter before you can export electricity.

Number 2 cost for the installation was £12,195.

We have all switched utility supplier to Octopus as they have good export tariffs and a green energy policy. Experience with Octopus is generally very positive.

We have been surprised how much energy we have generated, even on dull days.

The GivEnergy app works well and provides useful, immediate information.

Timings

There is a delay between having the solar panels installed and getting paid for electricity exported. You need to get:

- An email from Scottish & Southern Energy (SSE) confirming that the installation meets the requirements of the “G98 process”. This is applied for and delivered to you by the PV installer (Jim Ingram). Ours arrived about 1 week after installation was completed. G98 is an approval process that certifies that your solar installation is approved by your local DNO (District Network Operator.) A G98 makes your local energy grid aware that you have a solar installation. SSE is our “DNO” regardless of who you actually pay for electricity.
- A Microgeneration Certification Scheme (MCS) certificate. The MCS organisation creates and maintains standards relating to low-carbon products, installers and installations. Again, applied for and delivered by the PV installer.

Our installation was completed on April 24th, we got our G98 letter on May 1st, the MCS certificate on May 13th, applied to Octopus to switch from Octopus Flexible to Octopus Flux on May 13th and started getting credited for exporting energy on June 9th.

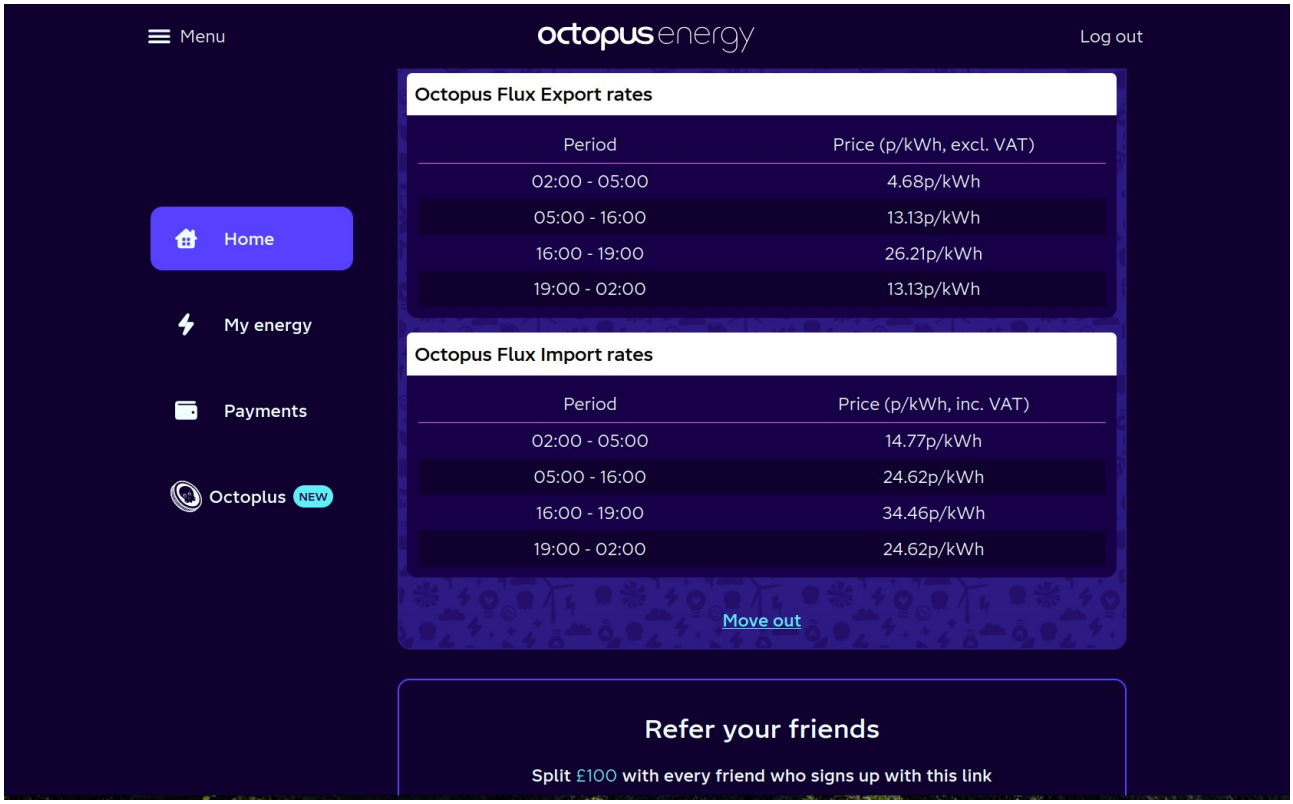
From June 9th to September 15th we have received £314.37 for exported electricity and paid £144.66 for imported electricity.

Import and Export tariffs

Different utilities offer different rates for both import and export of electricity but Octopus currently seem to be the best. Tariff offerings and pricing seems to change fairly regularly.

We started with Flexible Octopus before the PV work started, and switched both gas and electricity from EDF – pretty painless. We had a "referral" from Martin & Cath which gave them and us £50 credit (the "refer a friend" scheme is still active at 11/9/2024). The tariff from April 1st 2024 was 23.48p/kWh and standing charge of 58.35p/day for electricity. Gas was 5.83p/kWh and standing charge of 27.34p/day; gas unit rate went down to 5.29p/kWh on 1/7/24 (standing charge unchanged); gas is going up again from October to 6.02p/kWh and standing charge of 27.86p/day. All these prices are EXCLUSIVE of VAT at 5%.

Once solar power was approaching, we swapped our electricity tariff to Octopus Flux; the gas just automatically stays on Flexible Octopus. Again, the change (online) was painless. Flux offers both electricity import and export rates though you don't get your "export MPAN" until you provide Octopus with your G98 email and your MCS certificate (ie. no paperwork, no money). The Flux tariff has a high rate per kWh and a low rate to try and encourage people to use / export electricity when it is least / most needed. These are the rates and times in October 2024:

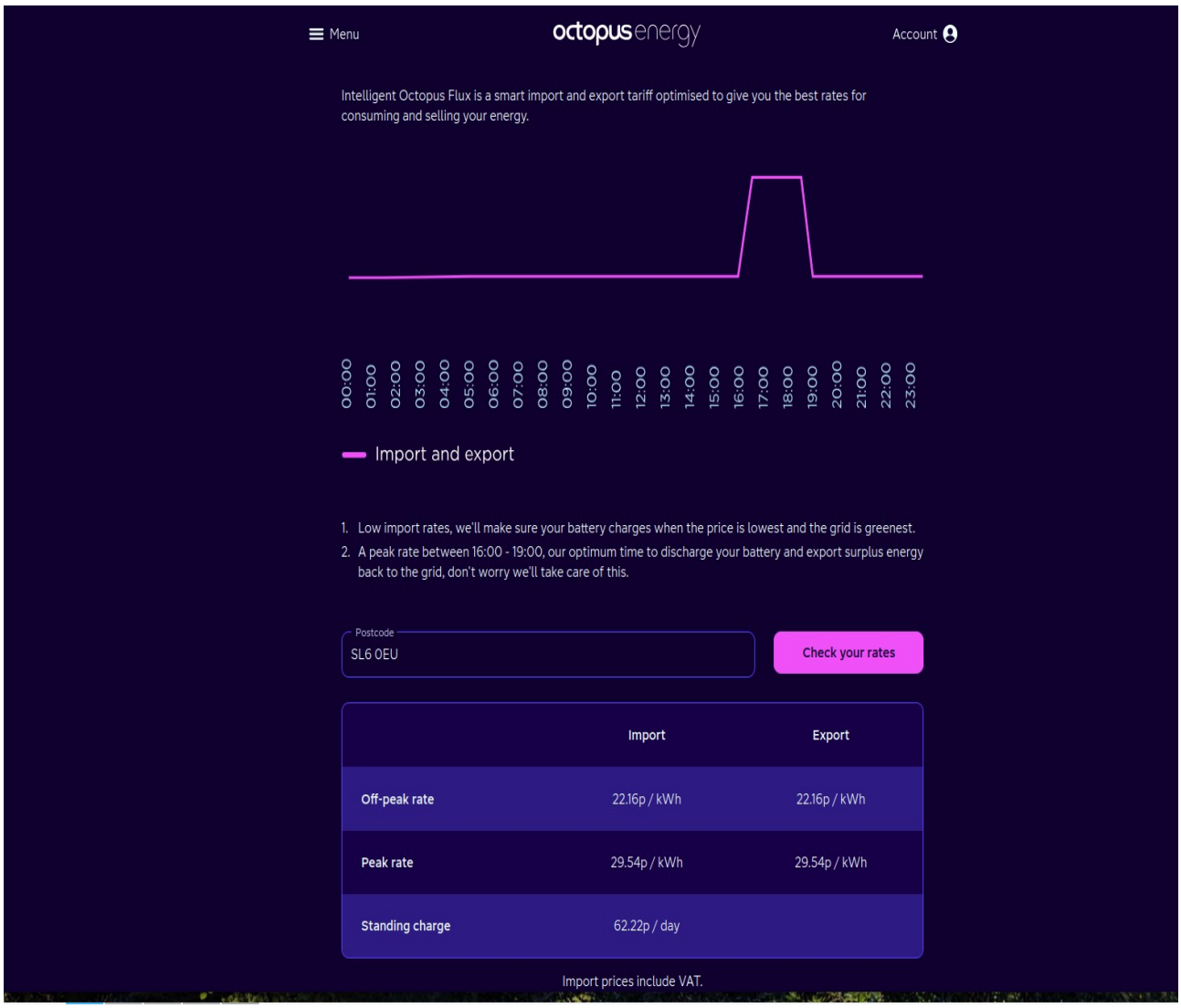


From June 9th (when we started on Flux Export) for a month, we imported almost no electricity. During the day we were largely fed by solar; in the evening and night, the battery kept us going. During the day, the battery was topped up; it never got close to empty. The only time we imported

electricity was if we ran both ovens at once which was more than the battery could deliver at one time.

From mid-July, Andrew programmed our system to export as much as possible from solar and battery at the high-rate time between16:00 and 19:00. This drains our battery typically down to about 20% in summer; we top it up by importing electricity at the cheap time between 02:00 and 05:00. Because of the tariff rates, although we are importing more electricity, overall we save more money. Mid-June – mid-July was £25 imported with £78 exported, we win by £53; mid-July – mid-August was £58 imported with £122 exported, net credit to us of £64; mid-August – mid-September was £61.07 imported, £101.41 exported, net credit £40.34. Obviously these numbers are dependent on the amount of sunshine and clearly this will go down in the autumn and winter months.

We wanted to try and understand our usage for a while, hence staying with the Octopus Flux tariff; however there is an Intelligent Octopus Flux tariff where you hand over control of your battery to Octopus to charge / discharge your battery at their optimum times. At the moment, you can only get the Intelligent Flux tariff if you have a GivEnergy battery. The Intelligent Flux tariff (at October 2024) is below.



Note that import and export gets the same rate. We may swap to Intelligent Flux at some stage. With Intelligent Flux you have virtually no control over your battery.

Conclusions

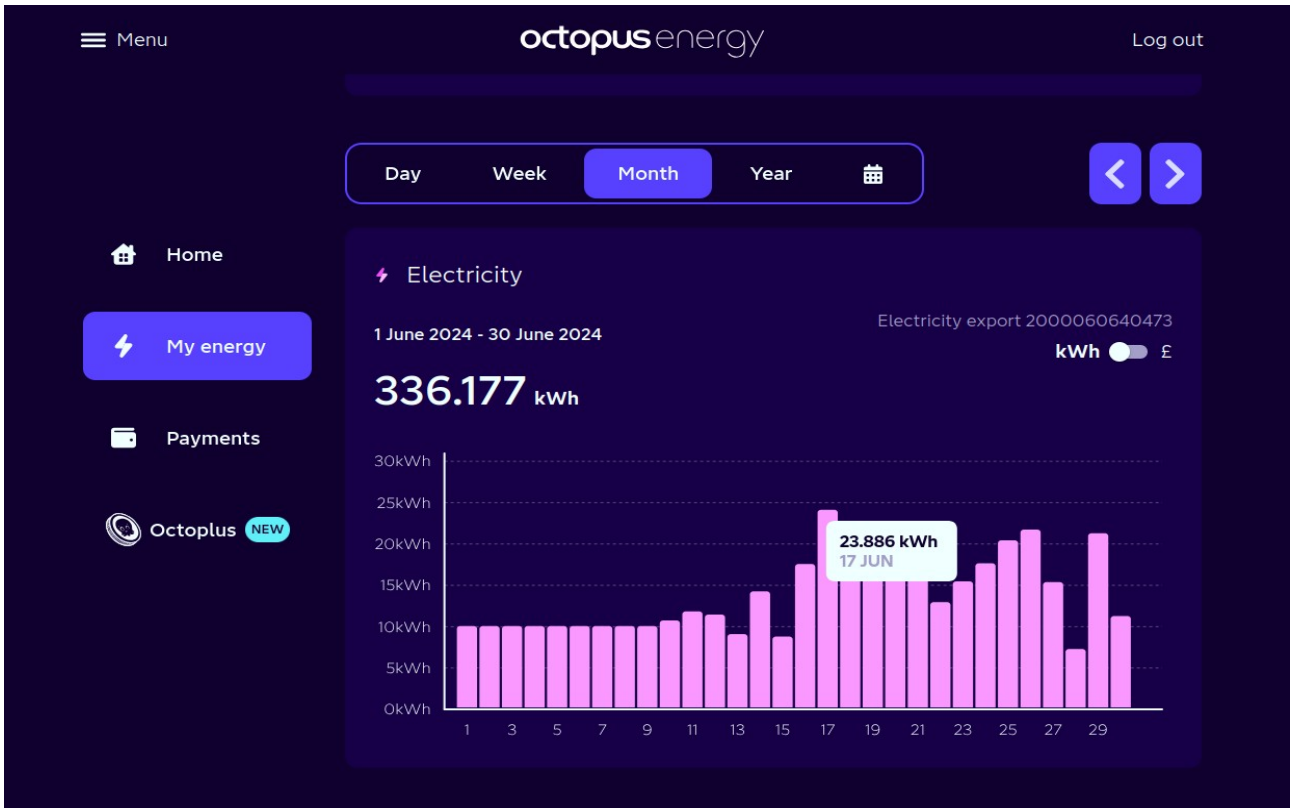
Overall, we are guessing that our combined utility bills will go down from around £1500 to about £500 / year.

Octopus is a good supplier, whether you have solar or not; they also have tariffs tailored for those with an electric vehicle (EV).

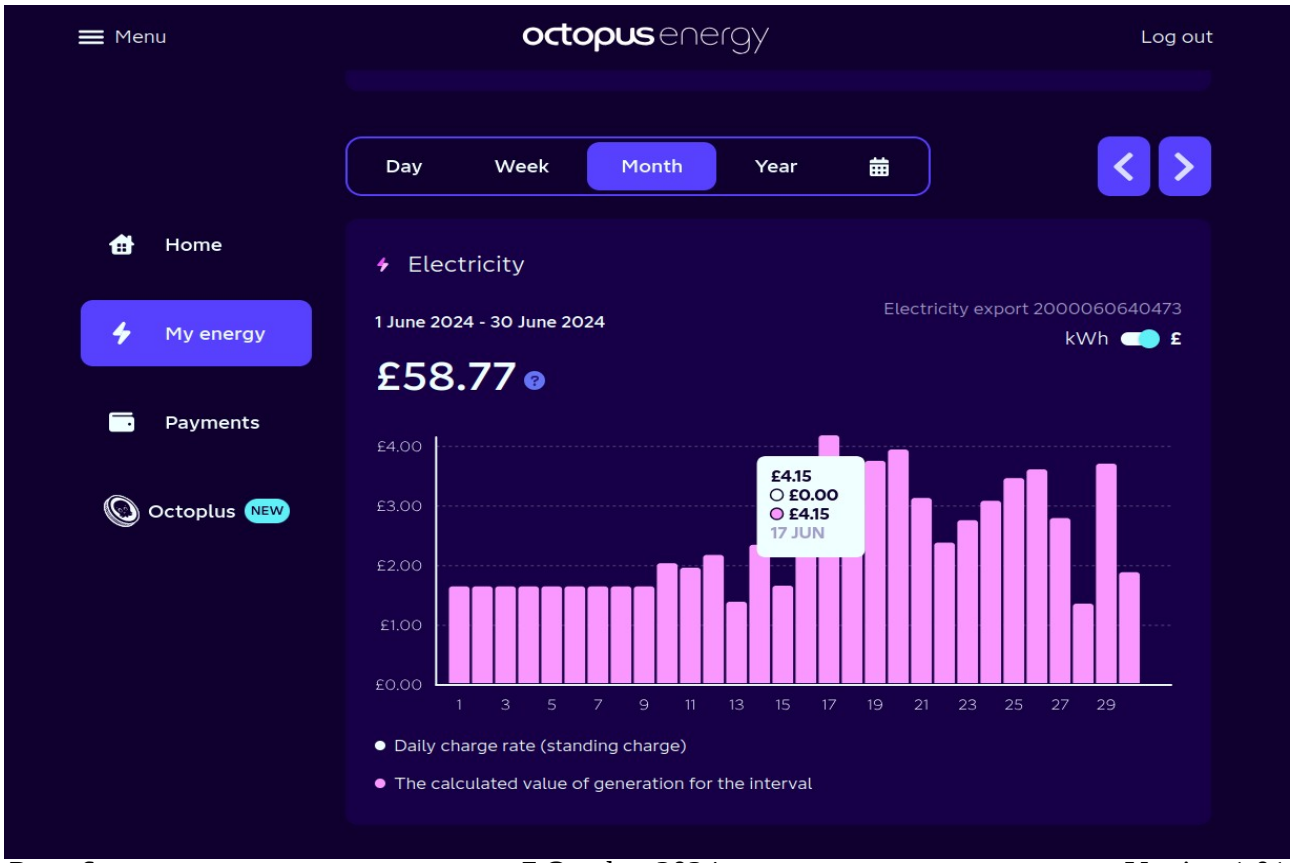
The estimate we received for the PV installation suggested that the payback time, with the 9.5kWh battery, would be a little over 10 years; we suspect we may do better than this.

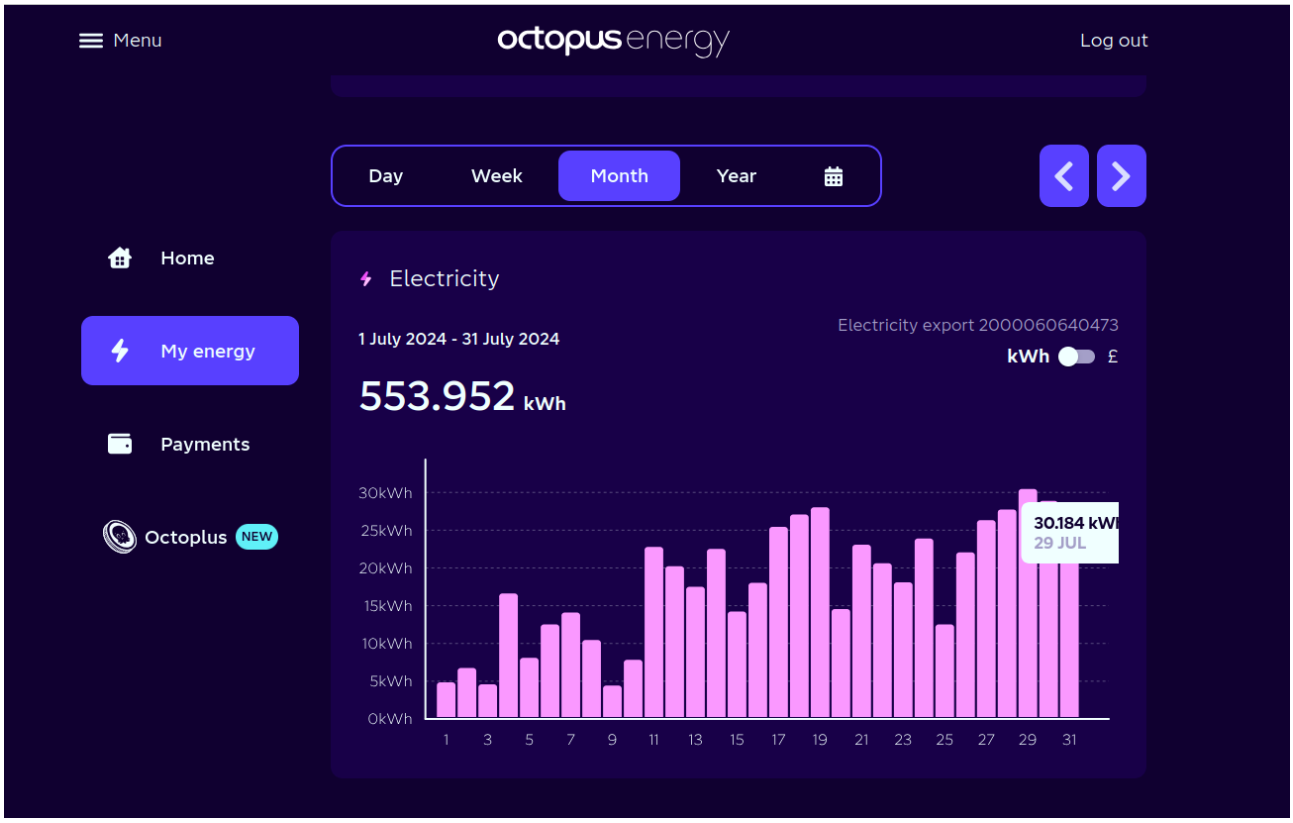
Appendix

Graphs of electricity **export** for 2 Cedar Chase, in kWh and money, June, July, August, September 2024.

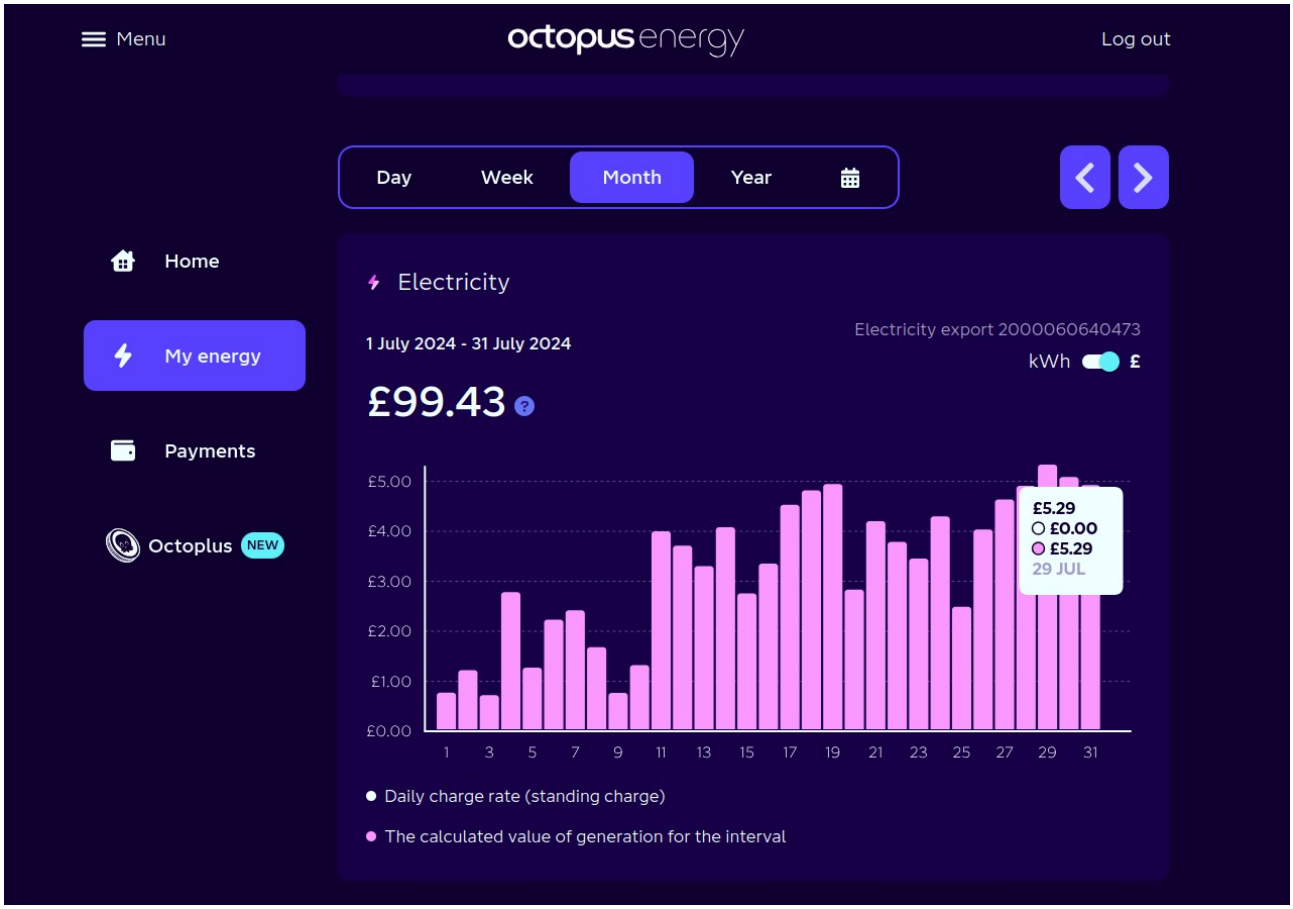


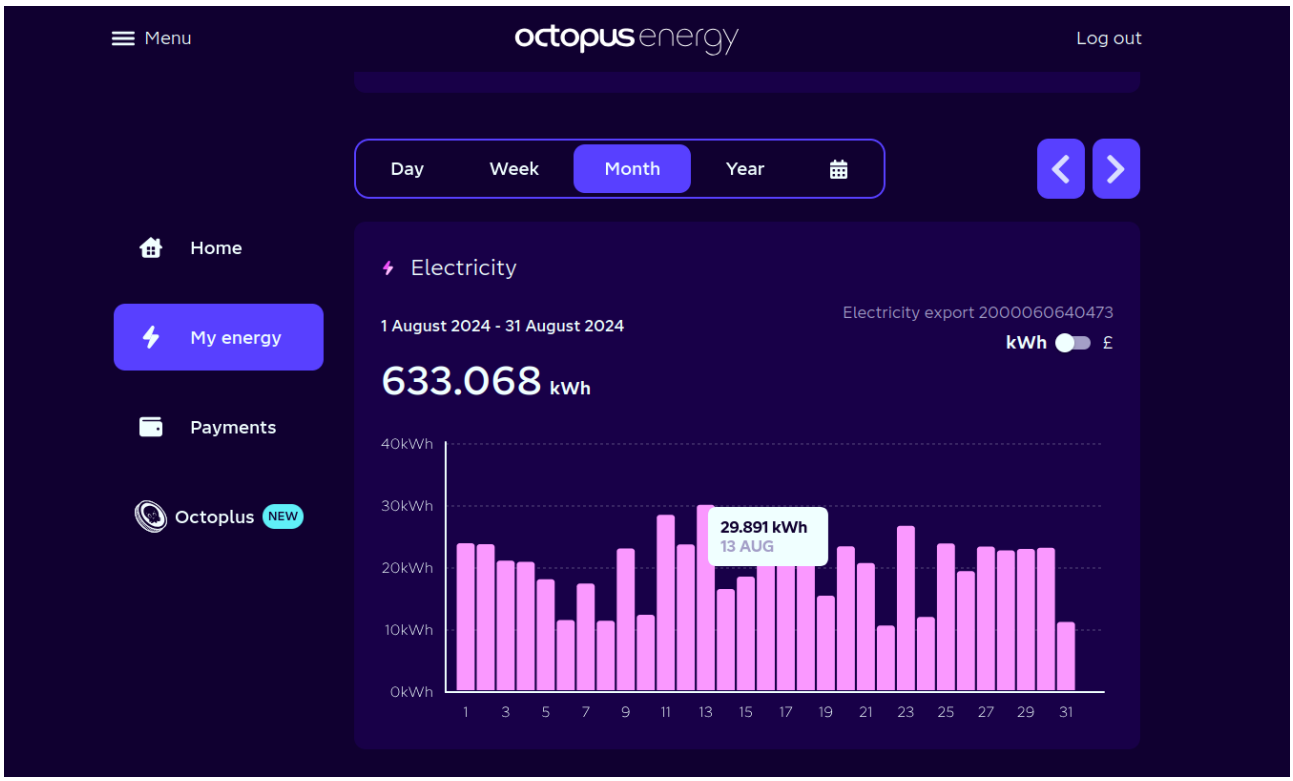
June (estimated June 1 -9)



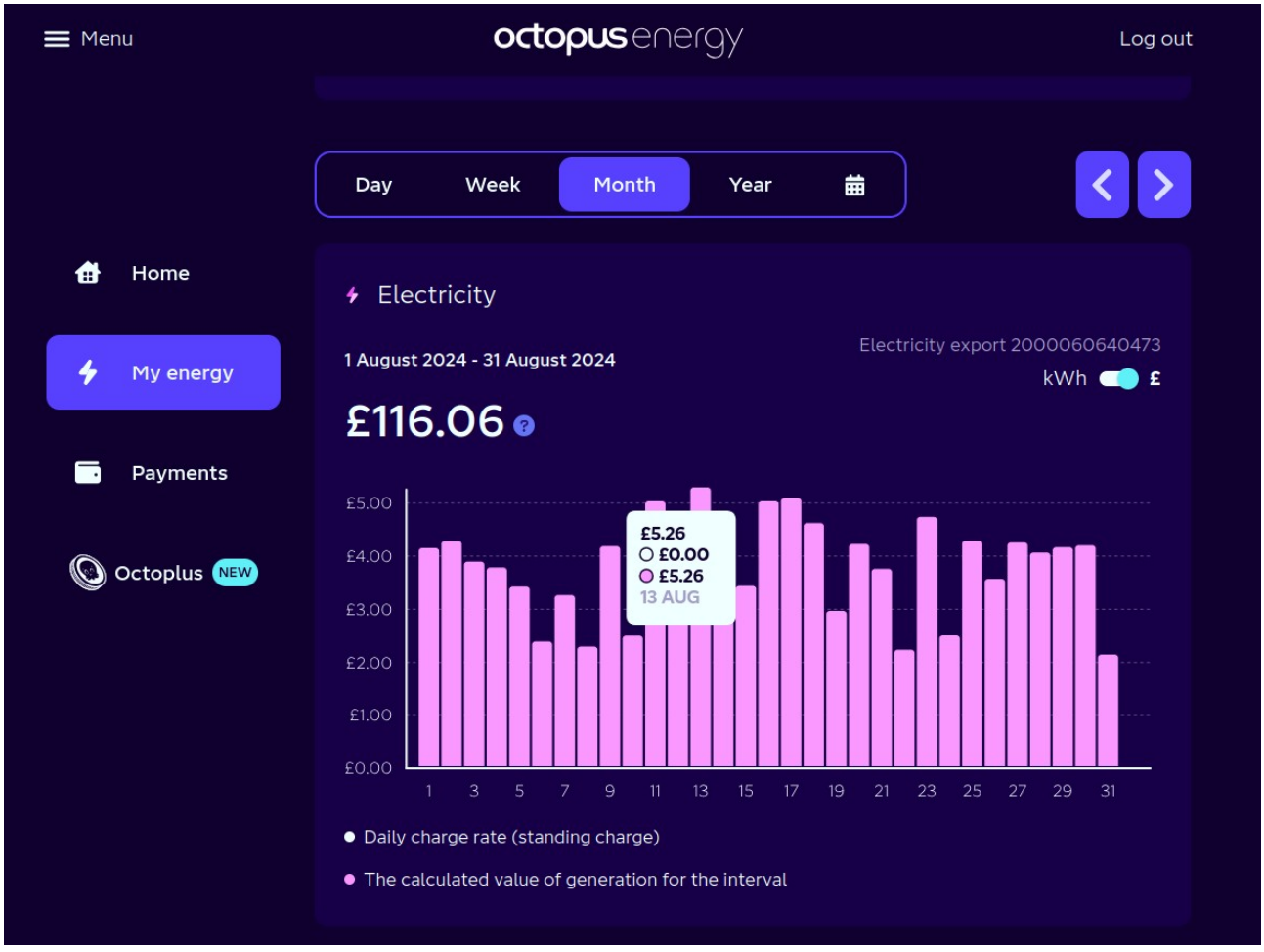

Menu
octopus energy
Log out
Day
Week
Month
Year
Home
My energy
Payments
Octoplus NEW
Electricity
1 July 2024 - 31 July 2024
Electricity export 2000060640473
kWh £
553.952 kWh
30kWh
25kWh
20kWh
15kWh
10kWh
5kWh
0kWh
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
30.184 kWh
29 JUL

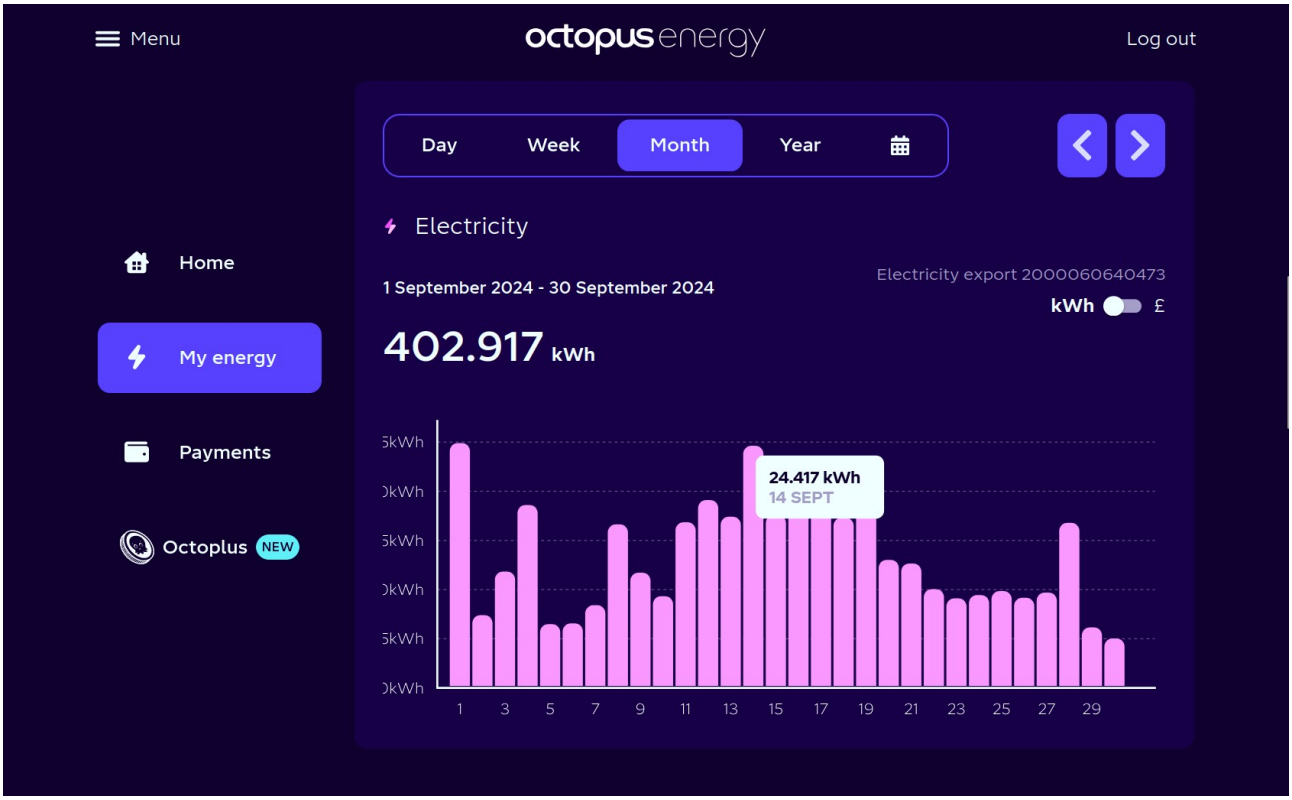
July

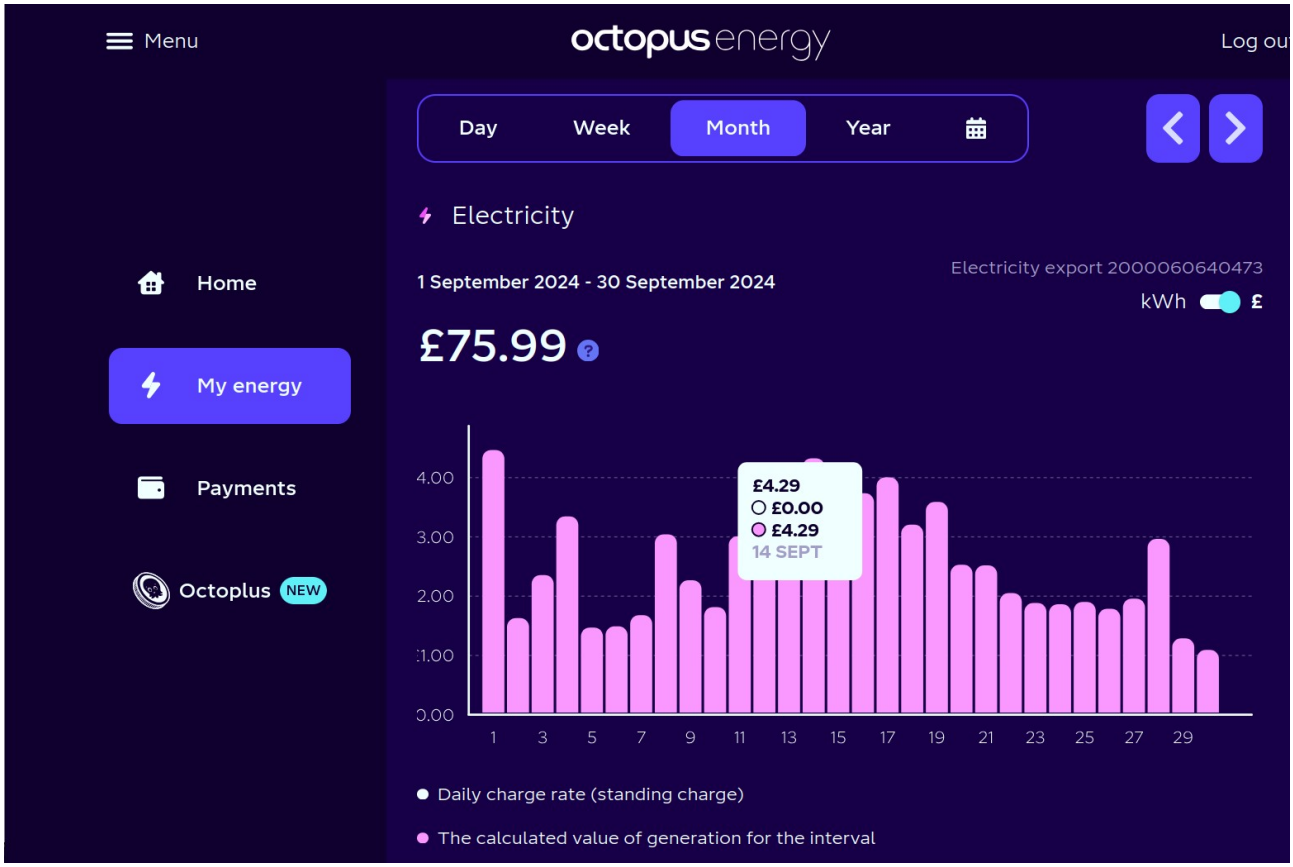

Menu
octopus energy
Log out
Day
Week
Month
Year
Home
My energy
Payments
Octoplus NEW
Electricity
1 July 2024 - 31 July 2024
Electricity export 2000060640473
kWh £
£99.43
£5.00
£4.00
£3.00
£2.00
£1.00
£0.00
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
£5.29
£0.00
£5.29
29 JUL
Daily charge rate (standing charge)
The calculated value of generation for the interval


Menu
octopus energy
Log out
Day
Week
Month
Year
Home
My energy
Payments
Octoplus
NEW
Electricity
1 August 2024 - 31 August 2024
Electricity export 2000060640473
kWh
£
633.068 kWh
40kWh
30kWh
20kWh
10kWh
0kWh
29.891 kWh
13 AUG
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31

August


Menu
octopus energy
Log out
Day
Week
Month
Year
Home
My energy
Payments
Octoplus
NEW
Electricity
1 August 2024 - 31 August 2024
Electricity export 2000060640473
kWh
£
£116.06
£5.00
£4.00
£3.00
£2.00
£1.00
£0.00
£5.26
£0.00
£5.26
13 AUG
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
Daily charge rate (standing charge)
The calculated value of generation for the interval


Menu
octopus energy
Log out
Day
Week
Month
Year
Home
My energy
Payments
Octoplus
NEW
Electricity
1 September 2024 - 30 September 2024
Electricity export 2000060640473
kWh
£
402.917 kWh
24.417 kWh
14 SEPT
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29


Menu
octopus energy
Log ou
Day
Week
Month
Year
Home
My energy
Payments
Octoplus
NEW
Electricity
1 September 2024 - 30 September 2024
Electricity export 2000060640473
kWh
£
£75.99
£4.29
£0.00
£4.29
14 SEPT
4.00
3.00
2.00
0.00
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
Daily charge rate (standing charge)
The calculated value of generation for the interval