Octopus Energy
Time of Use Tariffs; the next step for smart meters and innovation

Philip Steele

7th February 2019

octopus energy

Octopus Group (Octopuses / Octopi / Octopodes)

octopus investments

- £8bn funds managed
- £2.1bn in renewables
- 600+ employees

octopus energy

- Launched 2016
- 400,000+ customers
- 100+ employees

octopus electric vehicles

- Launched 2017
- EV experts
- 10+ employees

We use technology to bring lower and more transparent pricing, better service and more sustainable energy to customers

uSwitch
SUPPLIER
OF THE YEAR
WINNER 2018

Recommended Provider
Which?
Energy Companies January 2019

MoneySavingExpert.com

Founder & Chair, Martin Lewis · Editor-in-Chief, Jason Mills

CUTTING YOUR COSTS. FIGHTING YOUR CORNER!

Energy company service rating, May 2018 (results and ranking from November 2017 in brackets)				
Rank	Provider	'Great'	'OK'	'Poor'
1 (3)	Octopus Energy	93% (90%)	6% (6%)	1% (3%)
1 (-)	Zog Energy	94% (96%)	4% (2%)	2% (2%)
3 (2)	Bulb	90% (95%)	8% (3%)	3% (2%)
4 (4)	Tonik Energy	76% (86%)	17% (10%)	7% (5%)
5 (5)	Ovo Energy	76% (80%)	16% (16%)	9% (5%)
6 (6)	Avro Energy	66% (73%)	26% (20%)	7% (7%)
7 (10)	SSE (i)	53% (44%)	31% (35%)	16% (21%)
8 (7)	First Utility	53% (60%)	26% (24%)	22% (16%)
9 (9)	EDF	43% (46%)	34% (34%)	23% (19%)
10 (11)	Flow Energy	48% (44%)	20% (22%)	32% (34%)
11 (13)	E.on	36% (36%)	42% (36%)	22% (28%)
12 (15)	British Gas	28% (30%)	41% (33%)	32% (37%)
13 (16)	Scottish Power	29% (29%)	30% (31%)	41% (41%)
14 (17)	Npower	23% (27%)	31% (31%)	46% (41%)

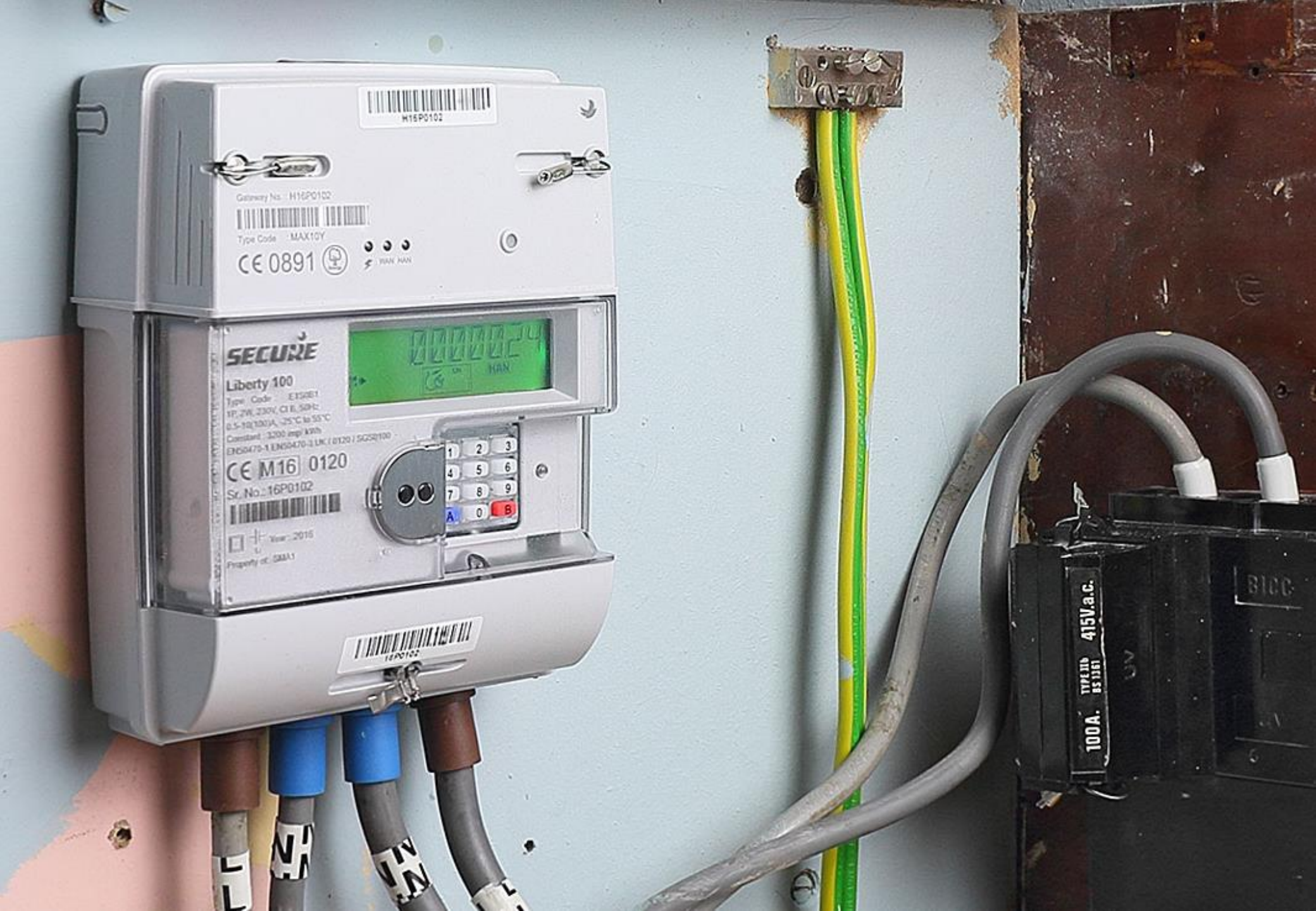
octopus energy

Octopus Energy

Reviews (2,066) • Excellent

Claimed

Excellent	92%
Great	5%
Average	1%
Poor	1%
Bad	2%


H16P0102
Gateway No. : H16P0102
Type Code : MAX10Y
CE 0891
WAN HAN
SECURE
Liberty 100
Type Code : E350E1
1P, 2W, 230V, Cl B, 50Hz
0.5-10(100)A, -25°C to 55°C
Constant : 3200 imp/ kWh
EN50470-1 EN50470-3 UK / 0120 / SGS2100
CE M16 0120
Sr. No.: 16P0102
Year : 2016
Property of: SMA1
HAN
1 2 3
4 5 6
7 8 9
A 0 B
16P0102
100A.
TYPE III
BS 1361
415V.a.c.
BICC

Consumers know energy cost varies through the day

Agile gives them the tool to take advantage

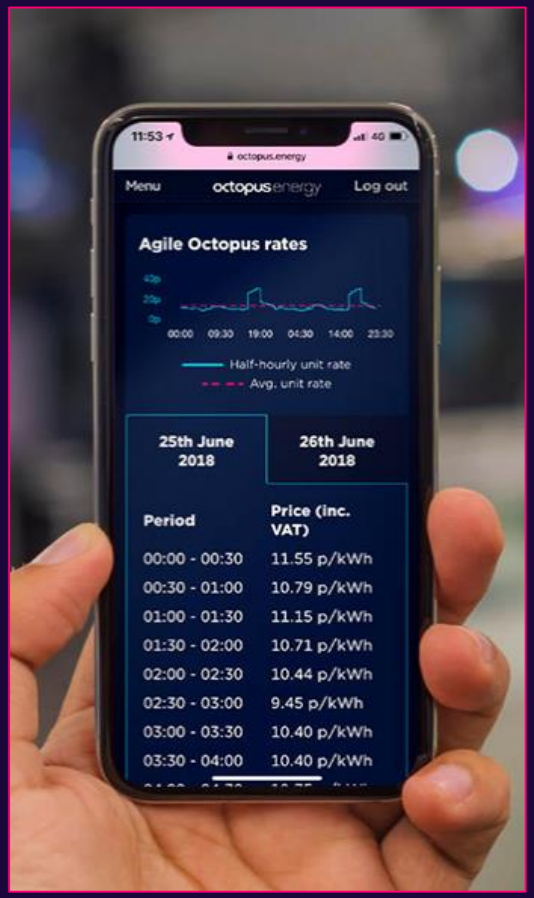
Car charge at night

Washing machine use on a sunny day

Agile Octopus: Powering the way to a low carbon future

=

Agile: innovation in energy



https://octopus.energy/agile-report

16:00
Tuesday 20 February
now
MESSAGES
Octopus Energy
Plunge pricing alert!
You'll be paid for any electricity you use between 2:00-3:00am tonight

Your Charges In Detail

Electricity	Supply number	S	1	801	902

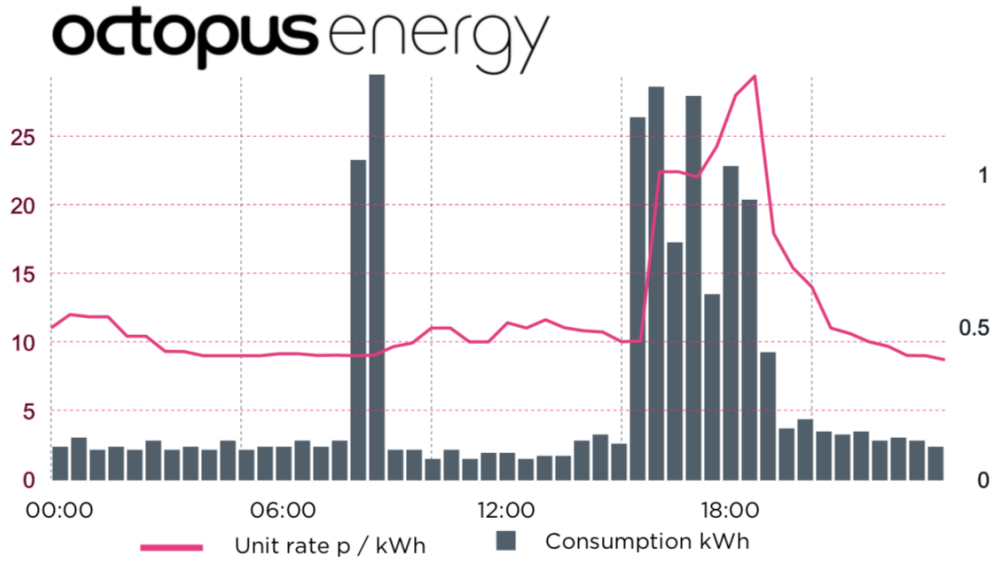
Supply Address:

Agile Octopus (2nd January 2019 - 1st February 2019)

Energy Charges for Meter		
2nd Jan. 2019	3944.6 Smart meter reading	
2nd Feb. 2019	4236.1 Smart meter reading	
Energy Used	291.5 kWh @ 12.36p/kWh†	£36.02
Standing Charge	31 days @ 20.00p/day	£6.20
Subtotal of charges before VAT		£42.22
VAT @ 5.00%		£2.11
Total Electricity Charges		**£44.33**

Sunday
18th March 2018

For electricity meter 17P3001648



Total cost

£ 2.26

Total consumption

13.82 kWh

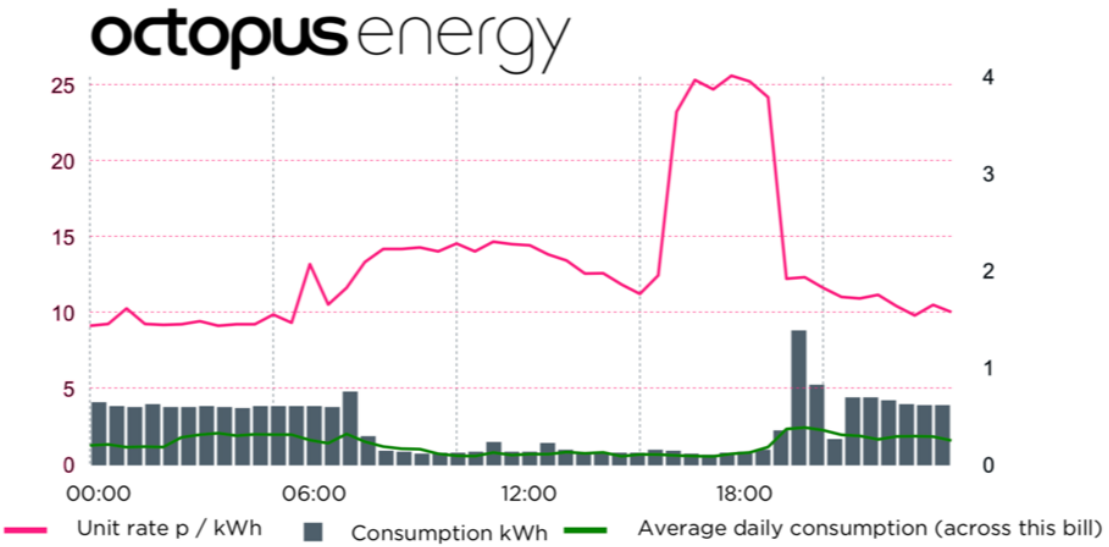
Weighted average unit rate

16.36 p / kWh

Period	Rate p / kWh	Consumption kWh	Cost p
00:00 - 00:30	11.00	0.10	1.100
00:30 - 01:00	11.98	0.13	1.557
01:00 - 01:30	11.82	0.09	1.064
01:30 - 02:00	11.82	0.10	1.182
02:00 - 02:30	10.40	0.09	0.936
02:30 - 03:00	10.40	0.12	1.248
03:00 - 03:30	9.30	0.09	0.837
03:30 - 04:00	9.28	0.10	0.928
04:00 - 04:30	8.98	0.09	0.808
04:30 - 05:00	8.98	0.12	1.078
05:00 - 05:30	8.98	0.09	0.808
05:30 - 06:00	8.98	0.10	0.898
06:00 - 06:30	9.12	0.10	0.912
06:30 - 07:00	9.12	0.12	1.094
07:00 - 07:30	9.00	0.10	0.900
07:30 - 08:00	9.02	0.12	1.082
08:00 - 08:30	8.98	1.04	9.339
08:30 - 09:00	9.02	1.32	11.906
09:00 - 09:30	9.64	0.09	0.868
09:30 - 10:00	9.91	0.09	0.892
10:00 - 10:30	11.00	0.06	0.660
10:30 - 11:00	11.00	0.09	0.990

Friday
1st February 2019

For electricity meter



Total cost

£ 2.04

Total consumption

18.14 kWh

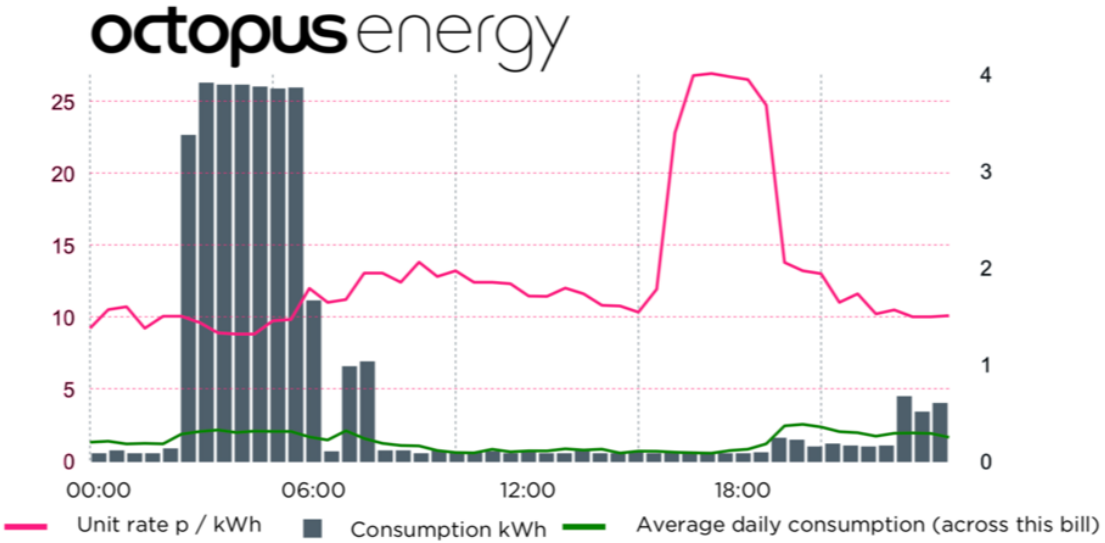
Weighted average unit rate

11.26 p / kWh

Period	Rate p / kWh	Consumption kWh	Cost p
00:00 - 00:30	9.10	0.62	5.642
00:30 - 01:00	9.22	0.58	5.348
01:00 - 01:30	10.24	0.57	5.837
01:30 - 02:00	9.22	0.60	5.532
02:00 - 02:30	9.16	0.57	5.221
02:30 - 03:00	9.20	0.57	5.244
03:00 - 03:30	9.40	0.58	5.452
03:30 - 04:00	9.10	0.57	5.187
04:00 - 04:30	9.20	0.56	5.152
04:30 - 05:00	9.20	0.58	5.336
05:00 - 05:30	9.84	0.58	5.707
05:30 - 06:00	9.30	0.58	5.394
06:00 - 06:30	13.16	0.58	7.633
06:30 - 07:00	10.50	0.57	5.985
07:00 - 07:30	11.60	0.73	8.468
07:30 - 08:00	13.30	0.27	3.591
08:00 - 08:30	14.16	0.12	1.699
08:30 - 09:00	14.16	0.11	1.558
09:00 - 09:30	14.26	0.09	1.283
09:30 - 10:00	14.00	0.10	1.400
10:00 - 10:30	14.52	0.10	1.452
10:30 - 11:00	14.00	0.11	1.540
11:00 - 11:30	14.64	0.21	3.074
11:30 - 12:00	14.48	0.11	1.593

Tuesday
15th January 2019

For electricity meter



Total cost

£ 3.51

Total consumption

34.97 kWh

Weighted average unit rate

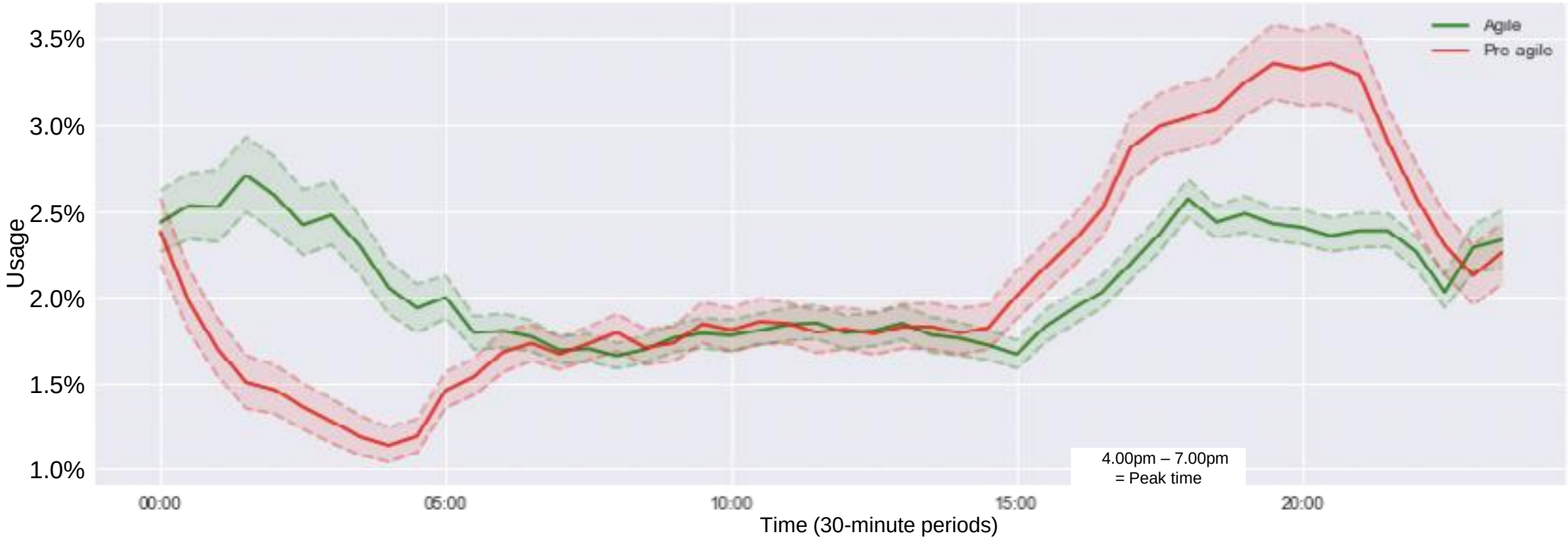
10.05 p / kWh

Period	Rate p / kWh	Consumption kWh	Cost p
00:00 - 00:30	9.20	0.06	0.552
00:30 - 01:00	10.50	0.09	0.945
01:00 - 01:30	10.70	0.06	0.642
01:30 - 02:00	9.20	0.06	0.552
02:00 - 02:30	10.04	0.11	1.104
02:30 - 03:00	10.04	3.35	33.634
03:00 - 03:30	9.60	3.89	37.344
03:30 - 04:00	8.88	3.87	34.366
04:00 - 04:30	8.80	3.87	34.056
04:30 - 05:00	8.80	3.85	33.880
05:00 - 05:30	9.72	3.83	37.228
05:30 - 06:00	9.82	3.84	37.709
06:00 - 06:30	11.98	1.64	19.647
06:30 - 07:00	11.00	0.08	0.880
07:00 - 07:30	11.20	0.96	10.752
07:30 - 08:00	13.04	1.01	13.170
08:00 - 08:30	13.04	0.09	1.174
08:30 - 09:00	12.40	0.09	1.116
09:00 - 09:30	13.80	0.06	0.828
09:30 - 10:00	12.80	0.09	1.152
10:00 - 10:30	13.20	0.06	0.792
10:30 - 11:00	12.40	0.07	0.868
11:00 - 11:30	12.40	0.08	0.992
11:30 - 12:00	12.30	0.06	0.738

Agile customer cohort	Annual savings vs Octopus 12M Fixed Tariff	Annual Savings vs Big 6 average SVT
Full sample	£45	£188
Top 25% most engaged	£91	£229
Bottom 25% most engaged	£0.80	£170
EV drivers	£132	£338

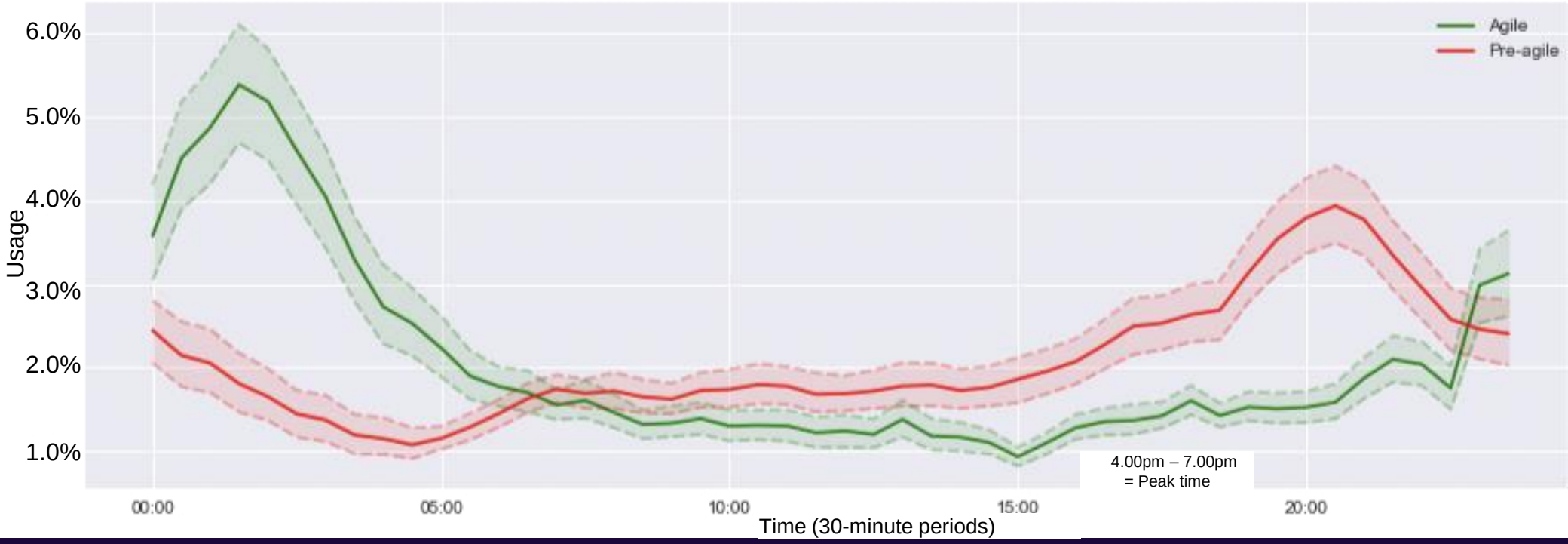
EV drivers demonstrate the greatest sensitivity to price signals.

Behaviour change of whole cohort



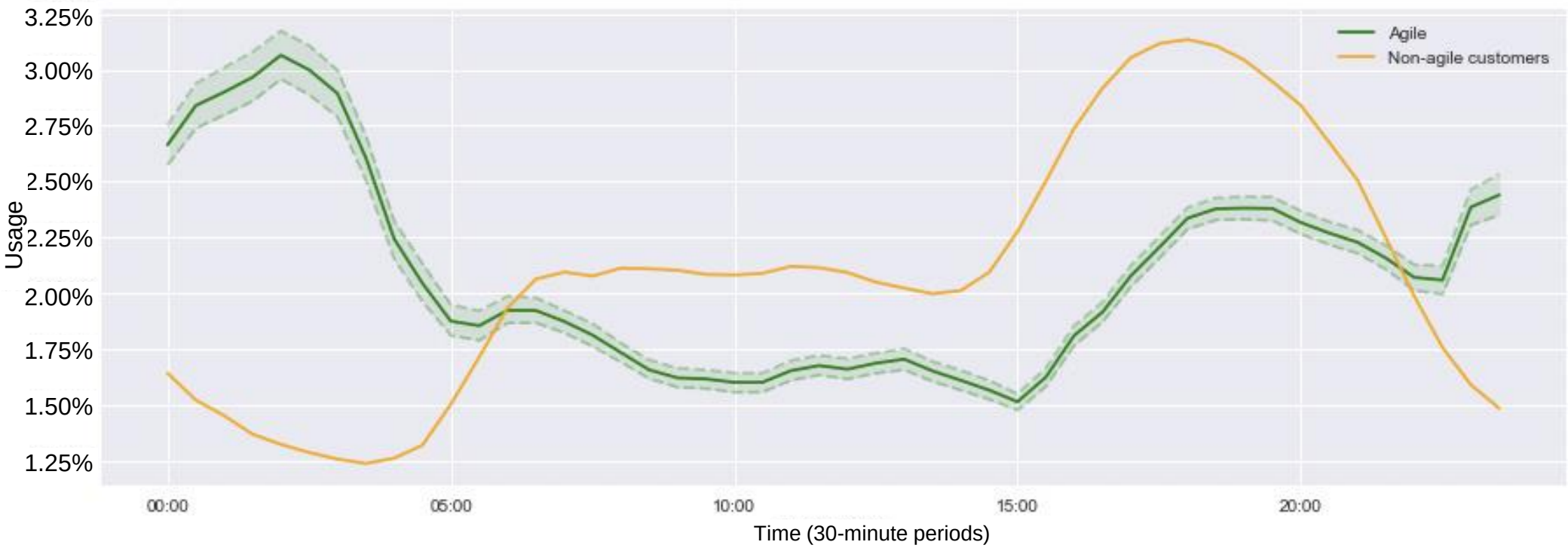
Agile Octopus consumers shifted consumption out of the peak period by 28%
And reduced CO2 emissions (UK Carbon Intensity data)

EV drivers demonstrate the greatest sensitivity to price signals



Electric Vehicle Agile Octopus customers reduced their peak-period consumption by 47%

Comparing Agile to all Octopus Customers



Agile Octopus customers have a markedly different consumption profile compared to all other Octopus customers – Agile works.

Why does this work?

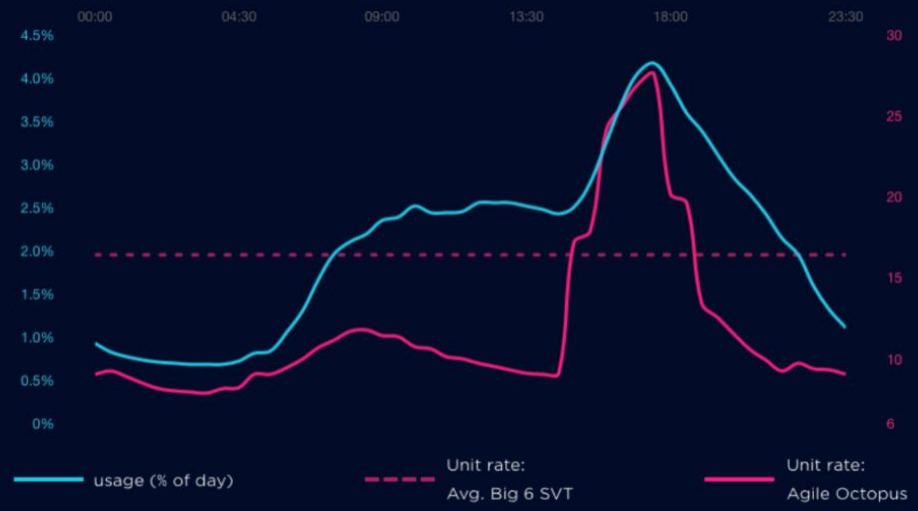
5p plastic bag tax = 95% reduction in use

Challenges

- Technology
- Complex for consumer
- Impact on different consumer types
- Cannot give accurate projections
- Consumer behaviour change

Try it for yourself

Explore how shifting your electricity use could save you even more, using the profiles beneath the chart.



Half-hourly unit rates over the last 12 months, averaged across all regions (including VAT).

Select a profile to see how your costs change, based on when you use electricity

Family home | **Working 9 to 5** | **Night chargers**

A home with one or more school age children, with energy use rising from 3pm to a 6pm peak, then tailing off quickly.

£42.09	£40.56	£48.43
Agile Octopus	Octopus 12M Fixed	Avg. Big 6 SVT

Enter your actual consumption to see what you would've paid over the last 12 months.

USAGE
3100

Or choose an average:
Low **Med** High

Update

Agile Octopus is the first tariff of its kind, so there's a few things you really ought to know:

1.

- [ ] **Agile Octopus is not for everyone.**

Unit prices are set at 4pm for the following day according to wholesale costs, with a different price for every 30 minutes of every day. Prices may rise as well as fall.

If you prefer the security of fixed prices, you should consider our Fixed or Super Green Octopus tariffs.

2.

- [ ] The variable nature of Agile Octopus means any prediction of future costs will be inaccurate and historical data will not predict future performance.

The cost explorer above is based on the average unit rates for the last 12 months, and in no way constitutes a guarantee of future rates.

3.

- [ ] In the absence of half-hourly smart meter data, we will charge you as we would a customer on our Flexible Octopus variable tariff, based on typical Profile 1 usage attribution.

4.

- [ ] The in-home display of your smart meter will not display realtime prices, but it will show your consumption. You can check your prices at any time, from anywhere, in your online account

Make sure you've read and agree to the above

Sign me up

Octopus Hackathon; May 2018 100 engineers, 22 companies

"Alexa, can you do my washing when it's cheapest?"

- Electric Vehicle Chargers
- Washing machines
- Ground Source Heat Pumps
- Home Battery Storage
- Smart Home Platforms

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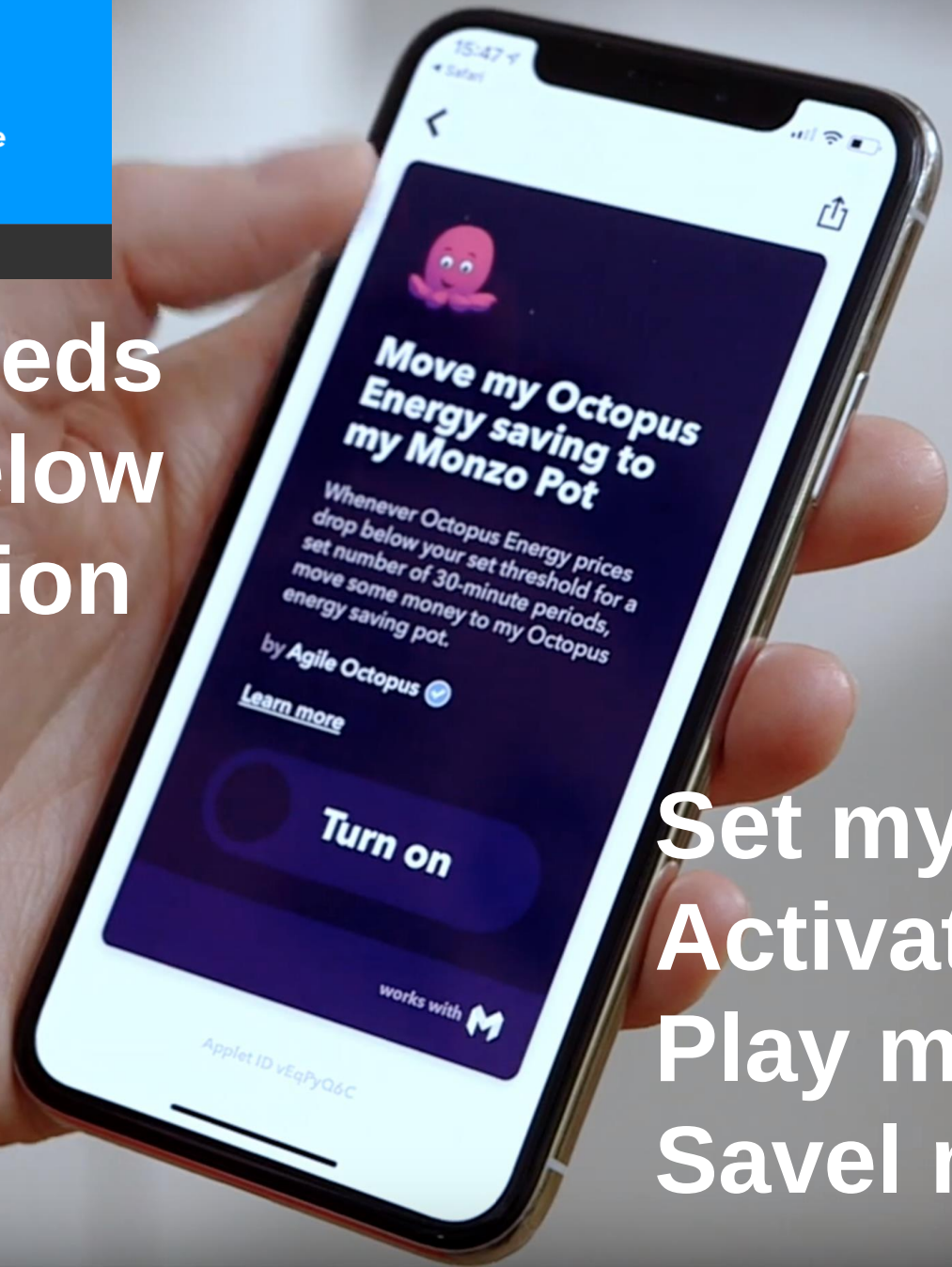
IFTTT

Do more with the services you love

If price exceeds
If price is below
If consumption



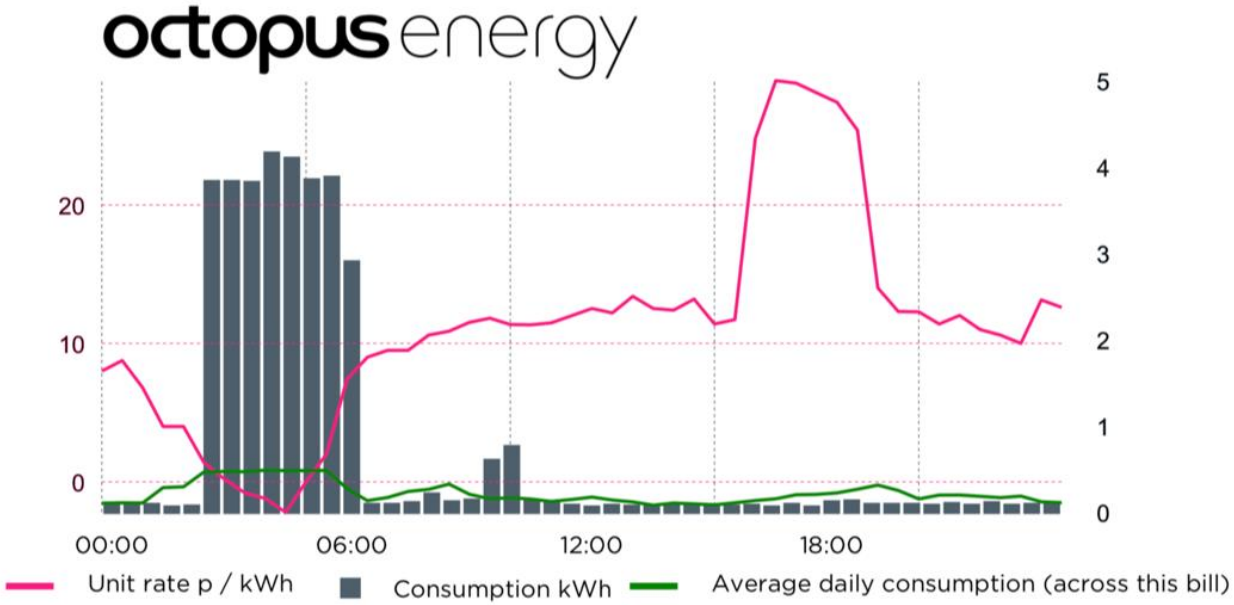
Set my heating
Activate a plug
Play music
Savel money

17p
8th December 2018

-2.31p
8th December 2018

Saturday
8th December 2018

For electricity meter



Total cost

£ 0.80

Total consumption

35.20 kWh

Weighted average unit rate

2.29 p / kWh

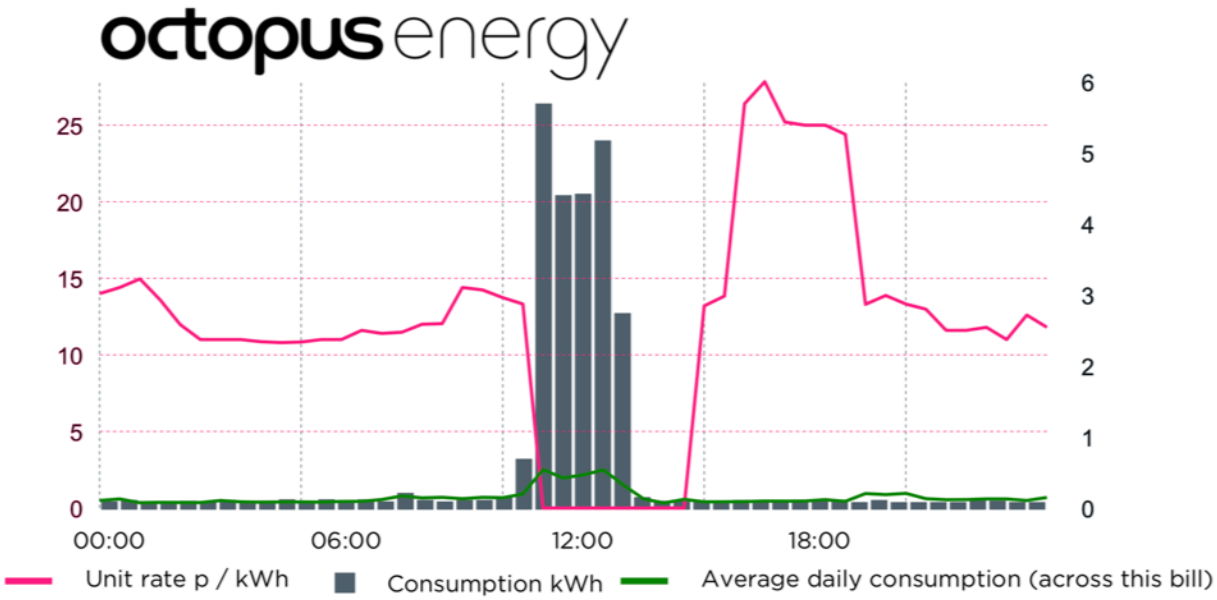
Period	Rate p / kWh	Consumption kWh	Cost p
00:00 - 00:30	8.00	0.08	0.640
00:30 - 01:00	8.76	0.08	0.701
01:00 - 01:30	6.80	0.09	0.612
01:30 - 02:00	4.00	0.06	0.240
02:00 - 02:30	4.00	0.07	0.280
02:30 - 03:00	1.40	3.83	5.362
03:00 - 03:30	0.20	3.83	0.766
03:30 - 04:00	-0.80	3.82	-3.056
04:00 - 04:30	-1.20	4.16	-4.992
04:30 - 05:00	-2.20	4.10	-9.020
05:00 - 05:30	0.00	3.85	0.000
05:30 - 06:00	2.00	3.88	7.760
06:00 - 06:30	7.40	2.90	21.460
06:30 - 07:00	9.00	0.09	0.810
07:00 - 07:30	9.50	0.09	0.855
07:30 - 08:00	9.50	0.11	1.045
08:00 - 08:30	10.60	0.21	2.226

17p

0.00p

Tuesday
25th December 2018

For electricity meter



Period	Rate p / kWh	Consumption kWh	Cost p
00:00 - 00:30	14.00	0.07	0.980
00:30 - 01:00	14.40	0.09	1.296
01:00 - 01:30	14.96	0.07	1.047
01:30 - 02:00	13.60	0.07	0.952
02:00 - 02:30	11.98	0.08	0.958
02:30 - 03:00	11.00	0.06	0.660
03:00 - 03:30	11.00	0.09	0.990
03:30 - 04:00	11.00	0.06	0.660
04:00 - 04:30	10.86	0.08	0.869
04:30 - 05:00	10.80	0.10	1.080
05:00 - 05:30	10.84	0.08	0.867
05:30 - 06:00	11.00	0.10	1.100
06:00 - 06:30	11.00	0.08	0.880
06:30 - 07:00	11.60	0.10	1.160
07:00 - 07:30	11.40	0.07	0.798
07:30 - 08:00	11.48	0.19	2.181
08:00 - 08:30	12.00	0.09	1.080
08:30 - 09:00	12.04	0.07	0.843

Total cost

£ 0.54

Total consumption

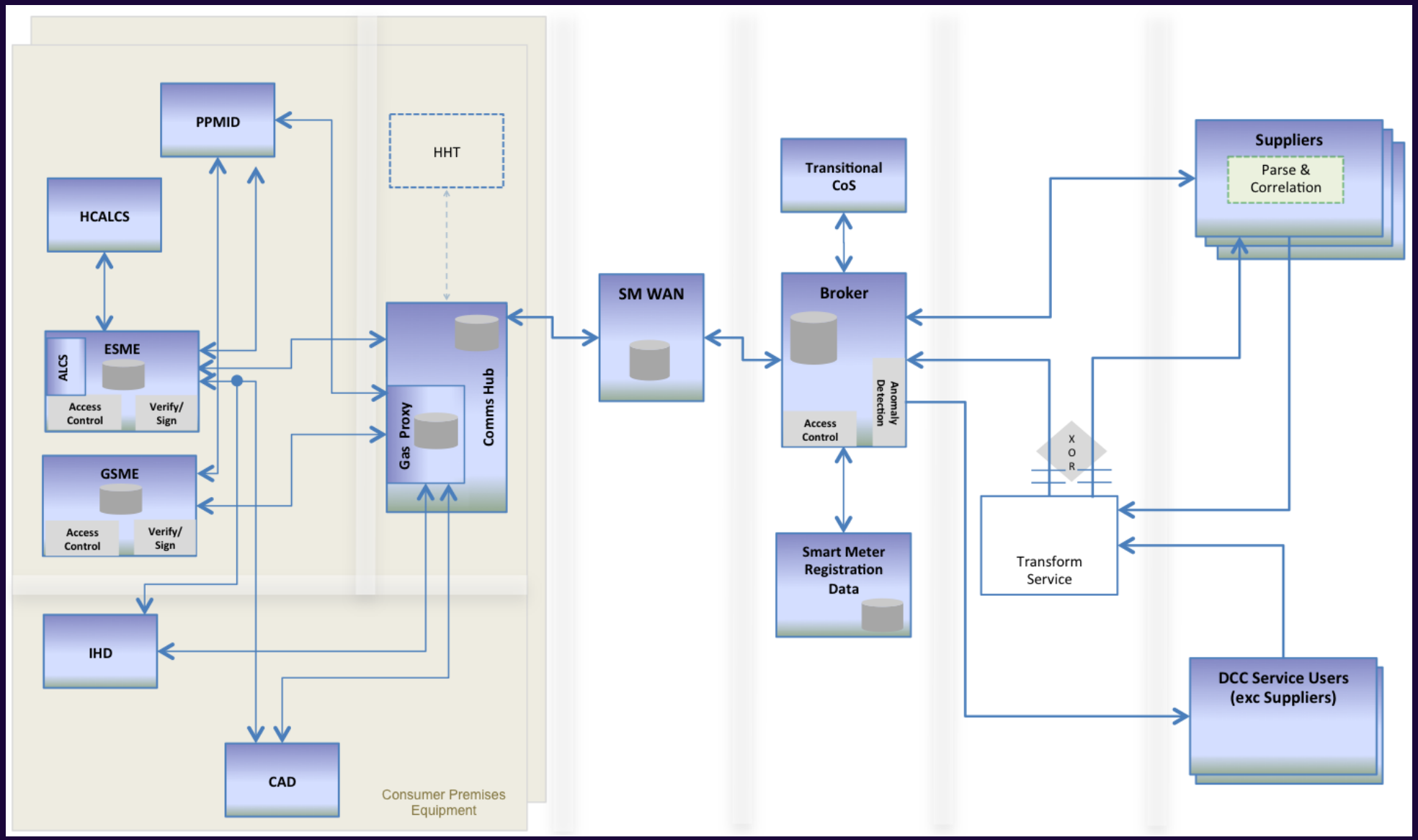
26.41 kWh

Weighted average unit rate

2.03 p / kWh

PowerLoop

HCALCS


PPMID
HHT
HCALCS
ESME
ALCS
Access Control
Verify/ Sign
GSME
Access Control
Verify/ Sign
Gas Proxy
Comms Hub
IHD
CAD
Consumer Premises Equipment
SM WAN
Transitional CoS
Broker
Access Control
Anomaly Detection
Smart Meter Registration Data
Suppliers
Parse & Correlation
X O R
Transform Service
DCC Service Users (exc Suppliers)

Where to from here?

- The analysis shows us Agile has significant benefits
- Adoption is there
- High-energy consuming devices are a good driver
- We want to connect many products and services
- Storage is going to play a big part in this

- Watch this space…

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HOW IT SHOULD BE