Households energy management in the UK

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- Good Energy
- It’s personal
- Power of analytics and innovation
- Real time benefits
- Flexible load potential
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Good Energy

Who we are

Good Energy's Purpose

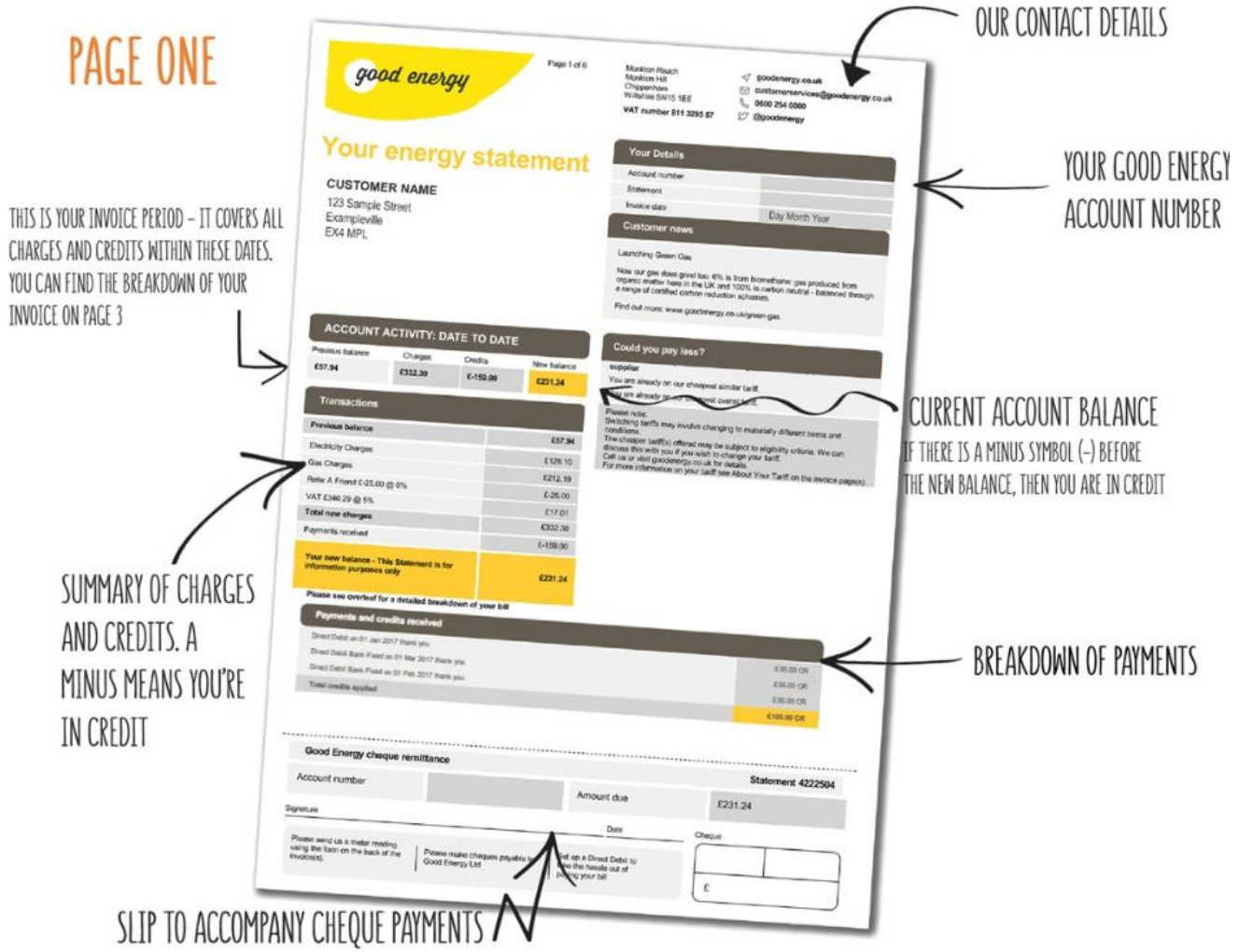
Powering the choice for a cleaner, greener future together

- 100% renewable electricity supply
- Carbon neutral gas supply
- Feed-in-tariff administration services
- Operating UK wind and solar farms

It’s personal

Moving from Transactions to Customer Relationships

Transactions



Customer Relationships

Power of analytics and innovation

Home Innovation Trial

Home Innovation Trial

Home Innovation Trial set up

February 2018

STAGE 1
Energy Basis; one month

An opportunity for us to get to know you better and create a deeper understanding of your energy needs

June 2018

STAGE 2
Energy Awareness; two months

Get all the information you need up-front about your key appliances and overall energy usage

July 2018

STAGE 3
Energy Attention; six months

Your opportunity to translate this Energy Awareness into CO_2 reduction and cost savings

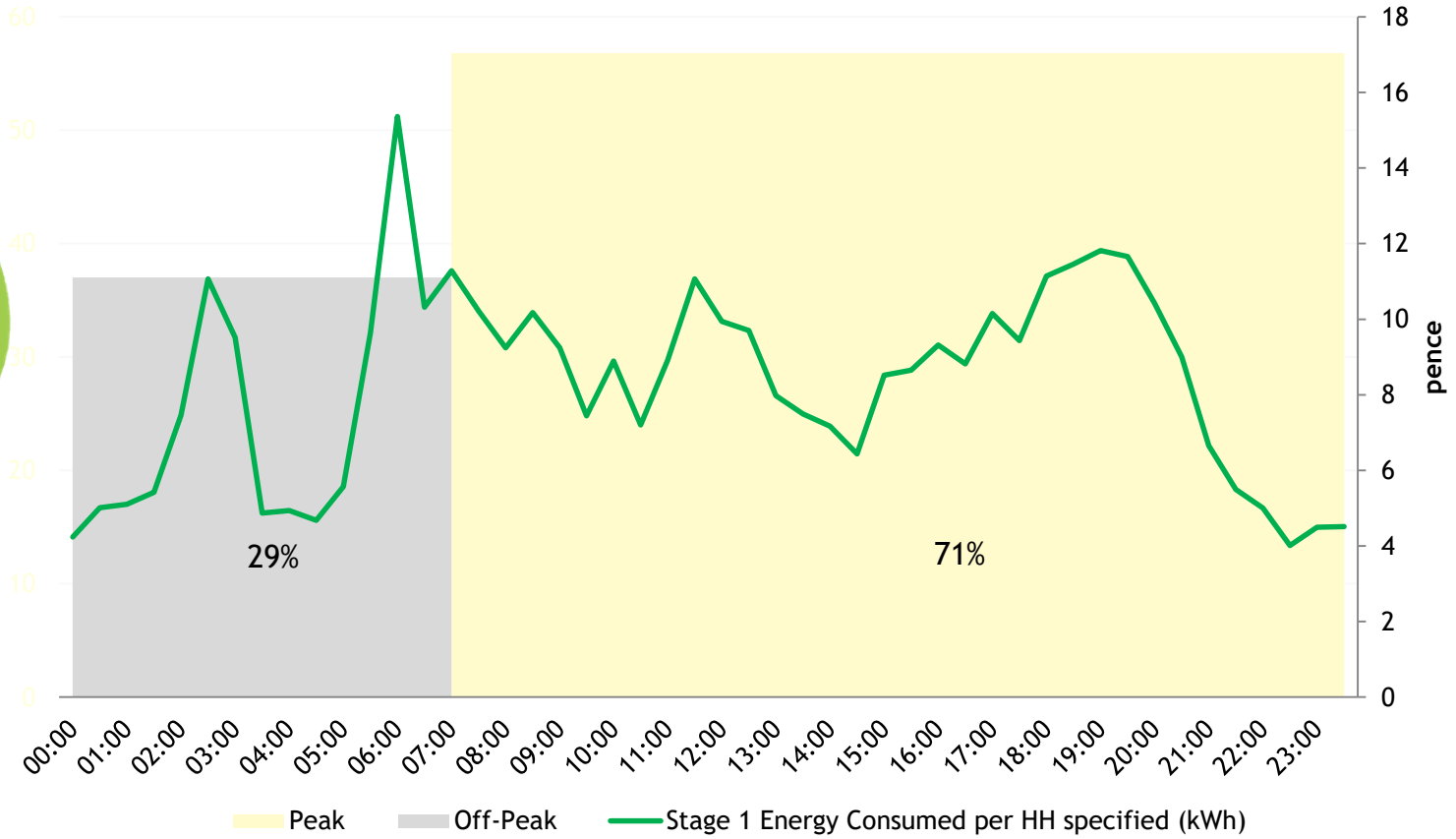
September 2018

Collecting Baseline data

Daily Consumption Profile of typical household during Energy Basis (June 2018)

STAGE 1
Energy Basis; one month

An opportunity for us to get to know you better and create a deeper understanding of your energy needs

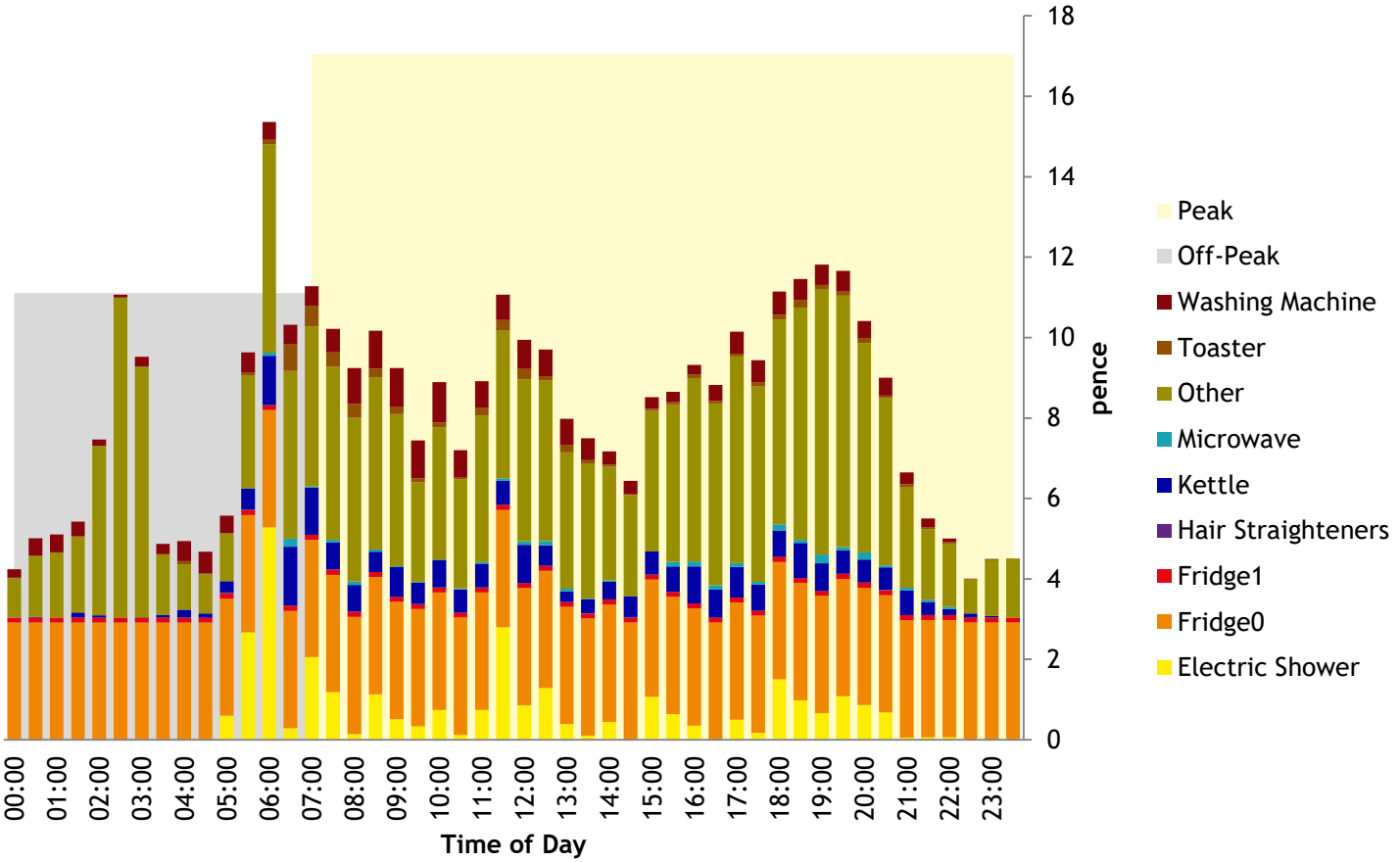


Collecting Baseline data

Daily Consumption Profile of typical household during Energy Basis (June 2018) disaggregated

STAGE 1
Energy Basis; one month

An opportunity for us to get to know you better and create a deeper understanding of your energy needs

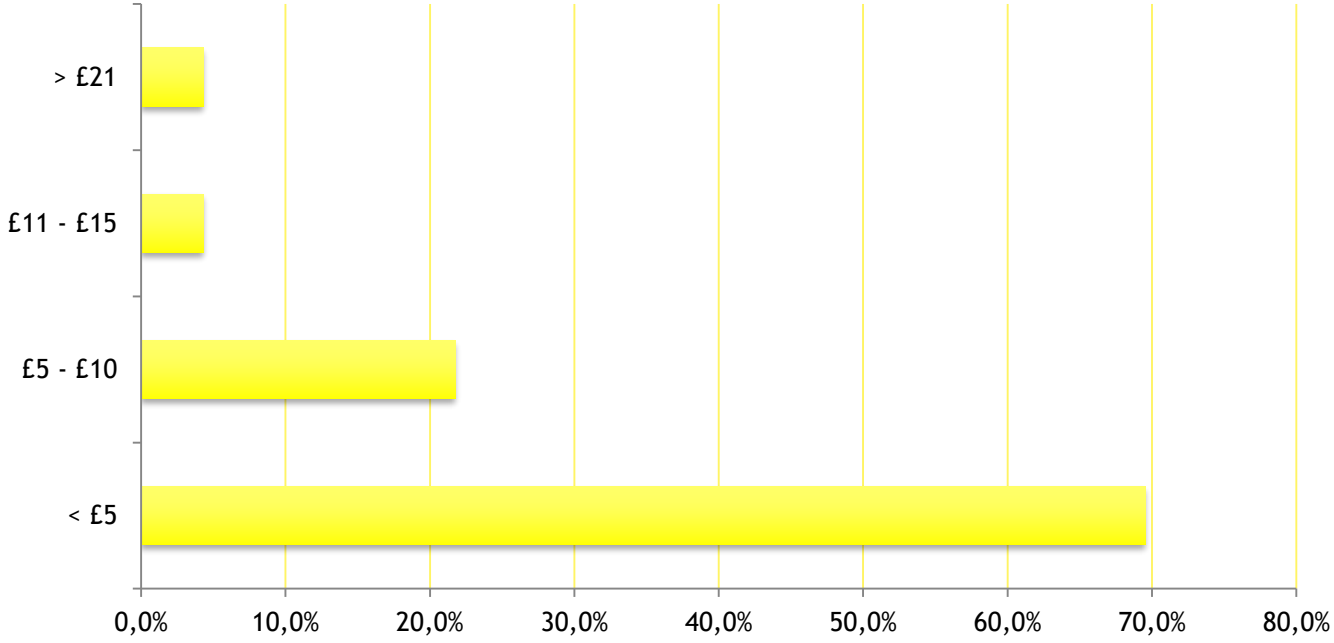


Primary Research Results

How much do you think you will be able to save on your electricity bill in the first month?

STAGE 1
Energy Basis; one month

An opportunity for us to get to know you better and create a deeper understanding of your energy needs



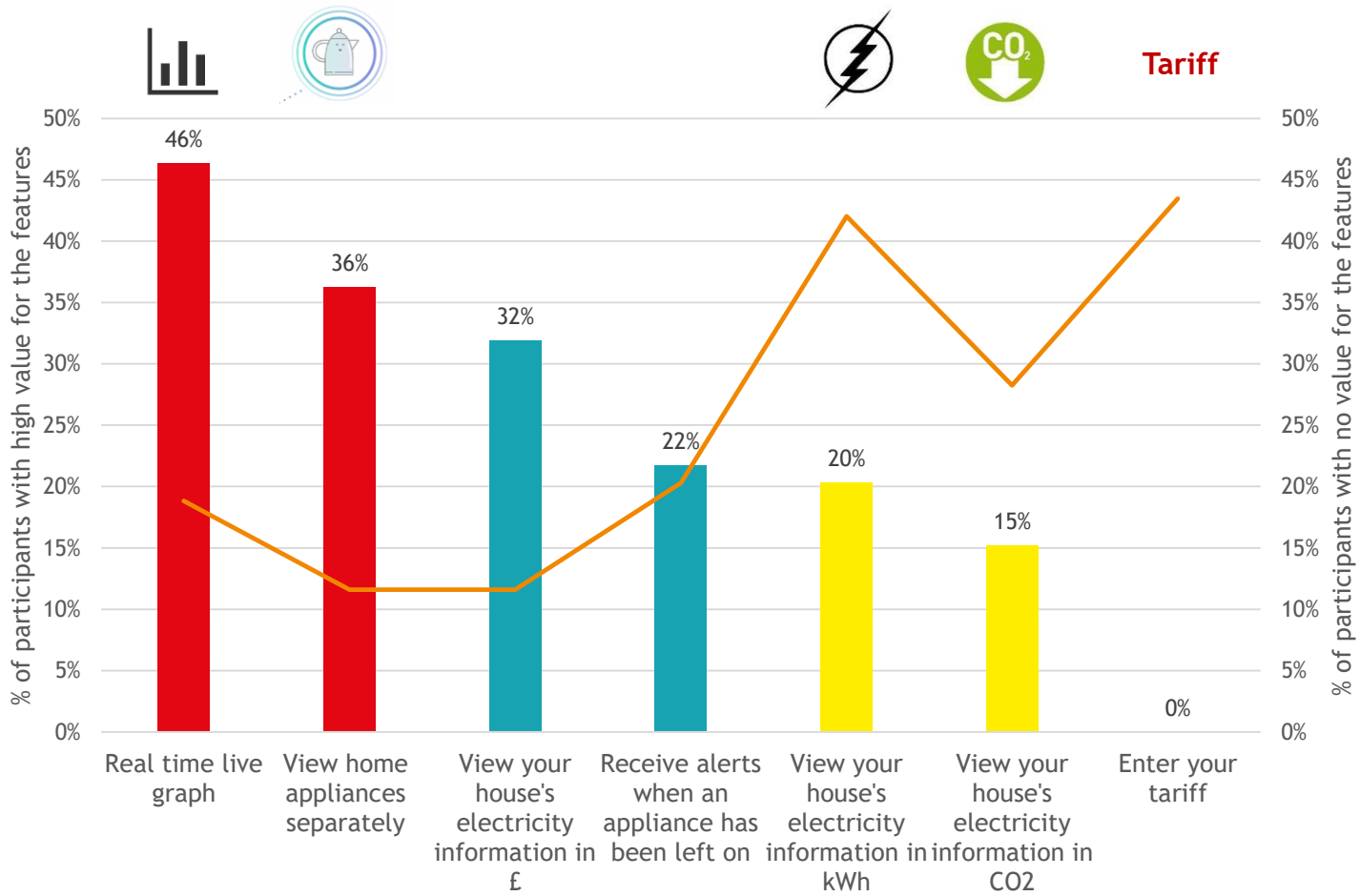
Sample size 23 households

Primary Research Results

Most and least valuable features

STAGE 1
Energy Basis; one month

An opportunity for us to get to know you better and create a deeper understanding of your energy needs

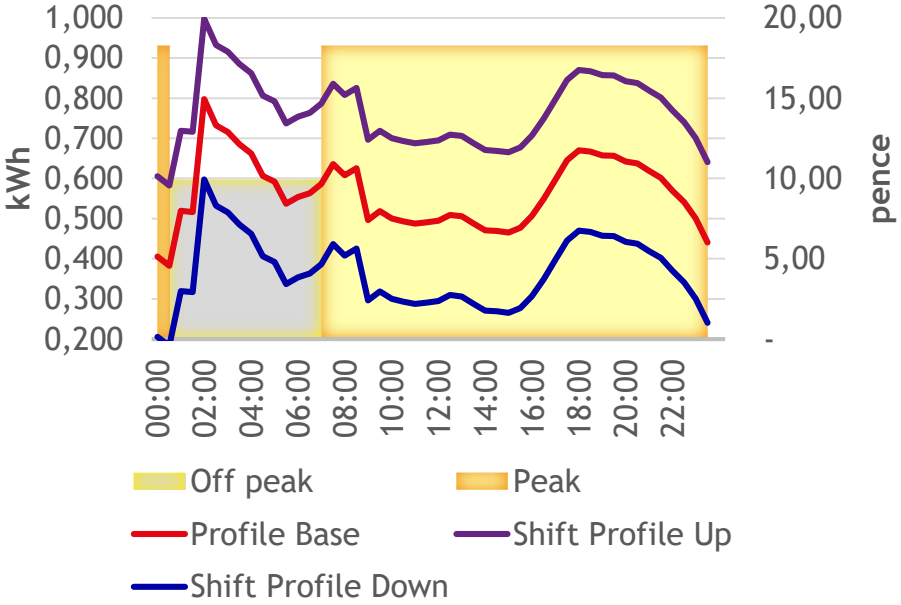


Real time benefits

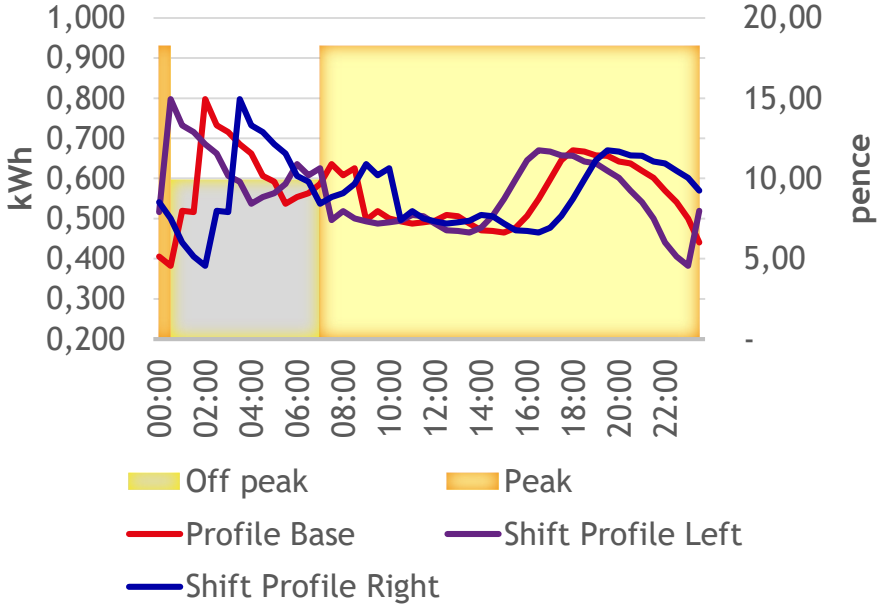
Data observations

Two types of behaviour that can influence energy consumption

VOLUME: Up / Down



SHIFT: Left / Right

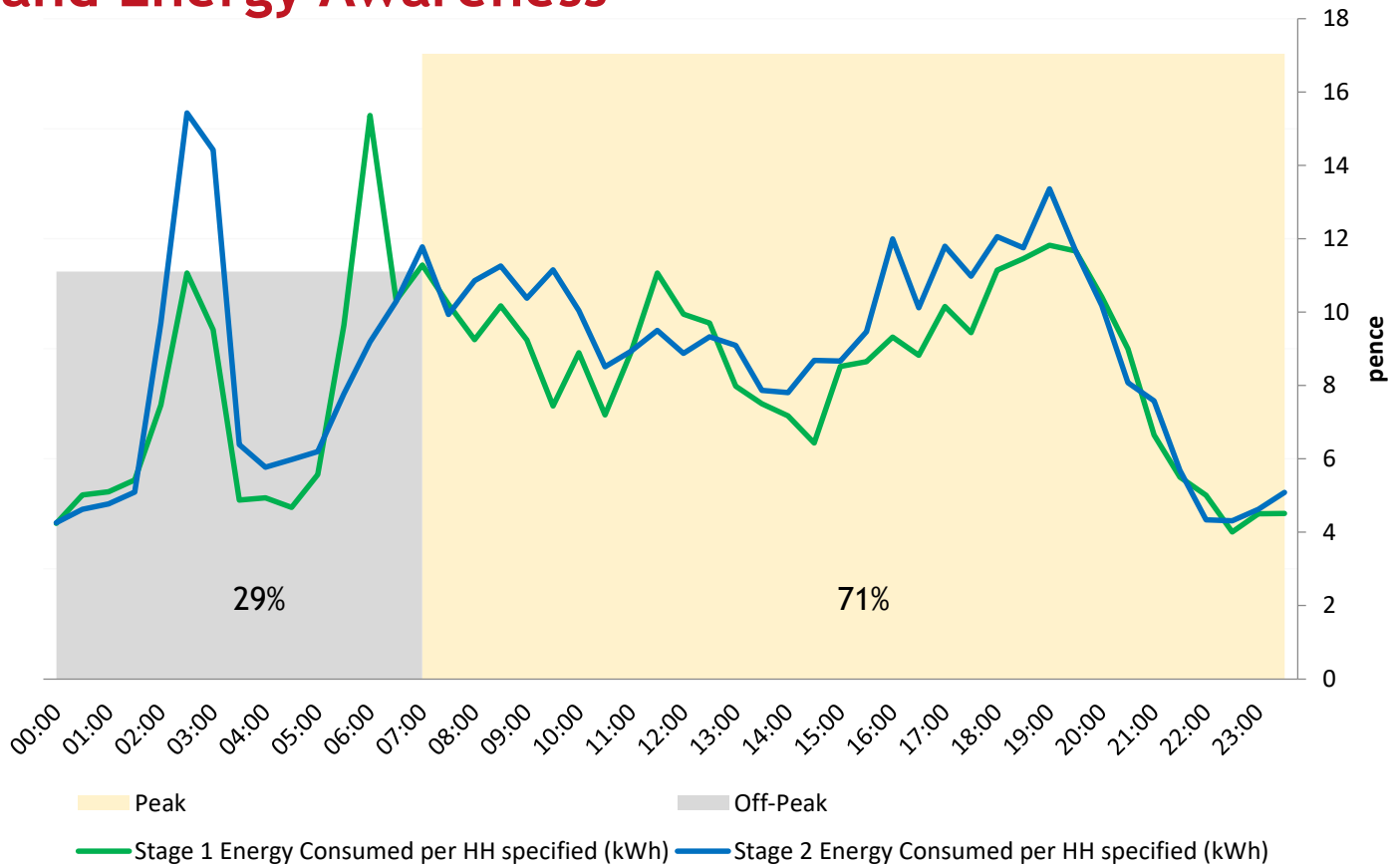


Measured impact of access to real time data

Daily Consumption Profile of typical household during Energy Basis and Energy Awareness

STAGE 2
Energy Awareness; two months

Get all the information you need up-front about your key appliances and overall energy usage

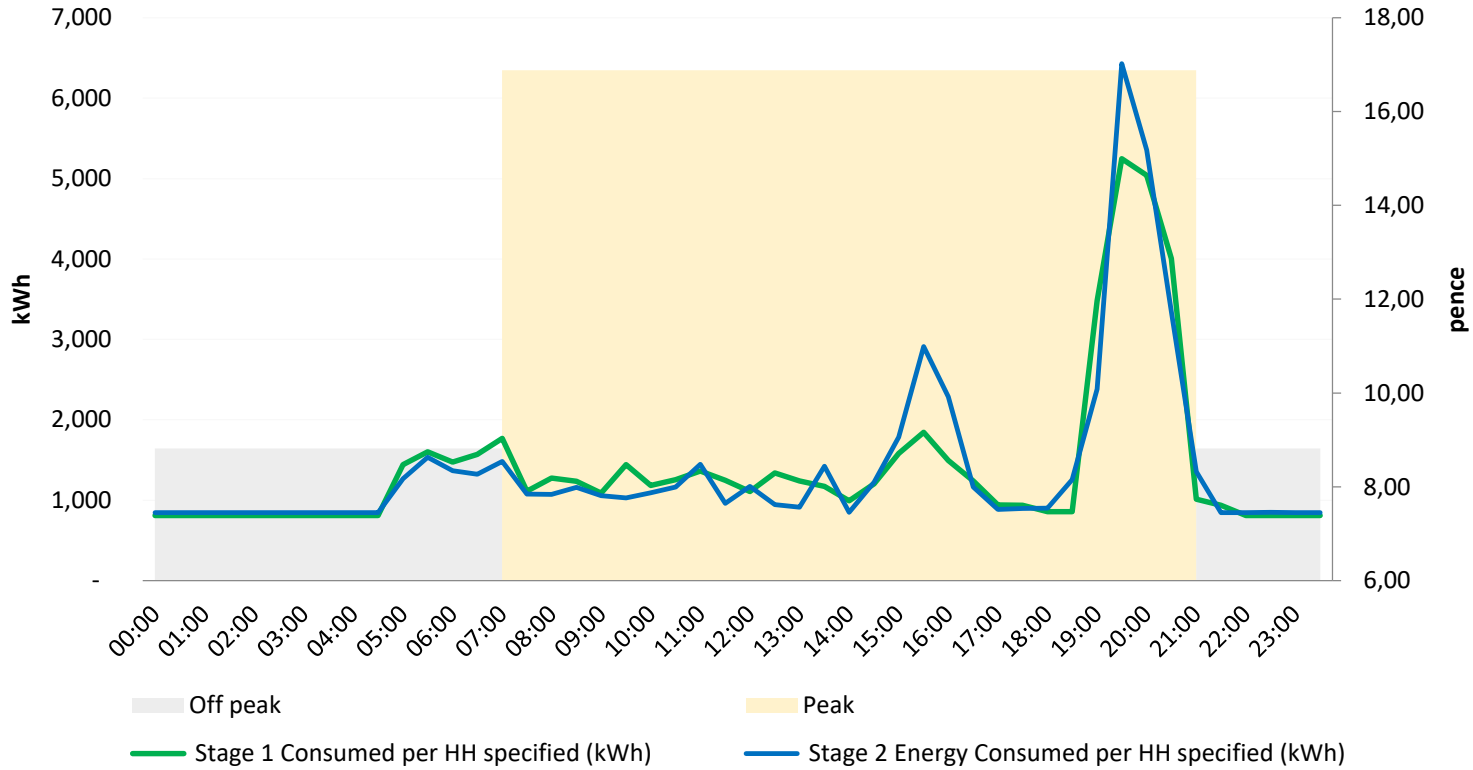


HH1 Daily Consumption Profile

Energy Basis: Consumption 70kWh, Peak/Off peak: 71%/29%
Energy Awareness: Consumption 70kWh, Peak/Off peak: 71%/29%

STAGE 2
Energy Awareness; two months

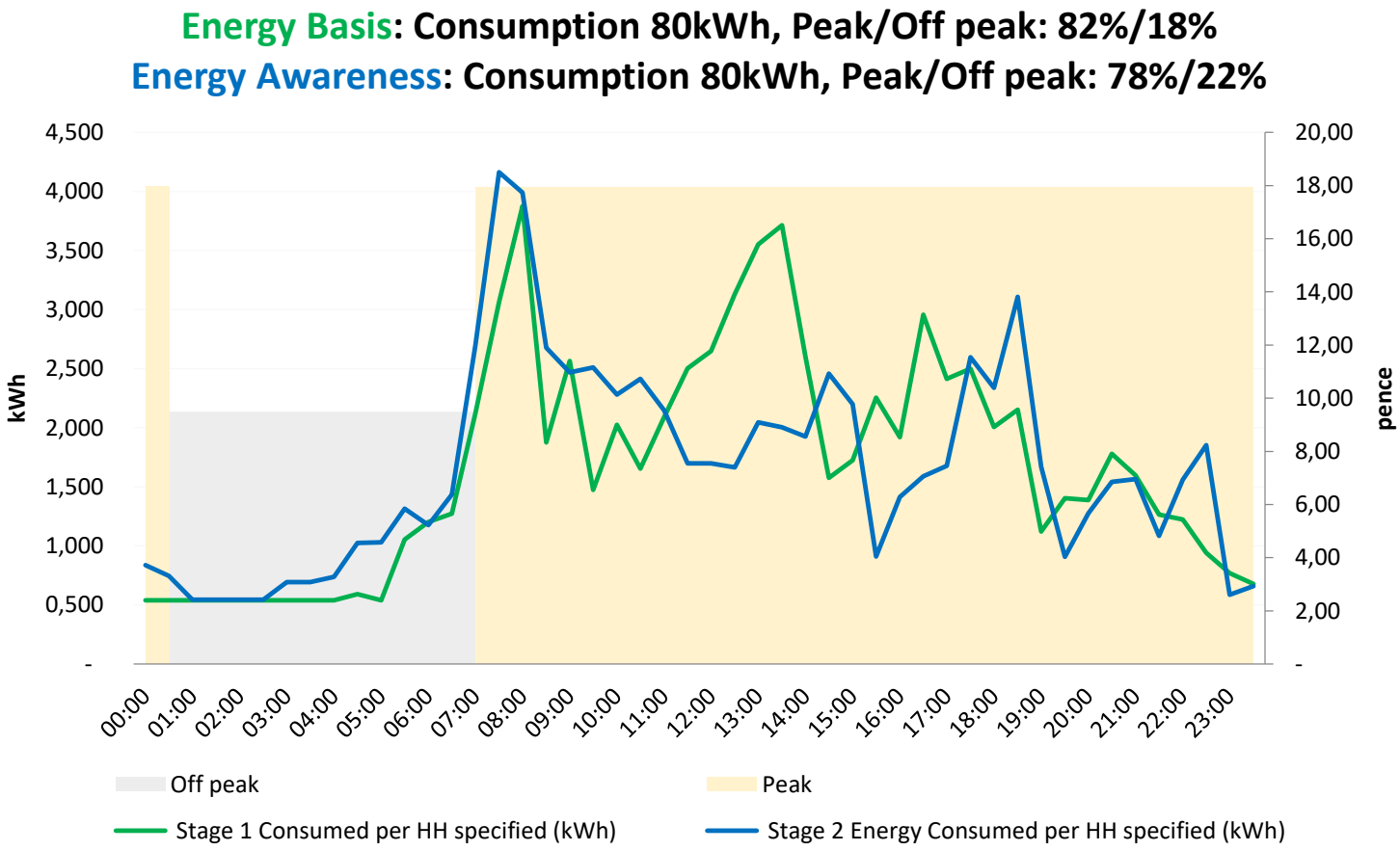
Get all the information you need up-front about your key appliances and overall energy usage



HH3 Daily Consumption Profile

STAGE 2
Energy Awareness; two months

Get all the information you need up-front about your key appliances and overall energy usage

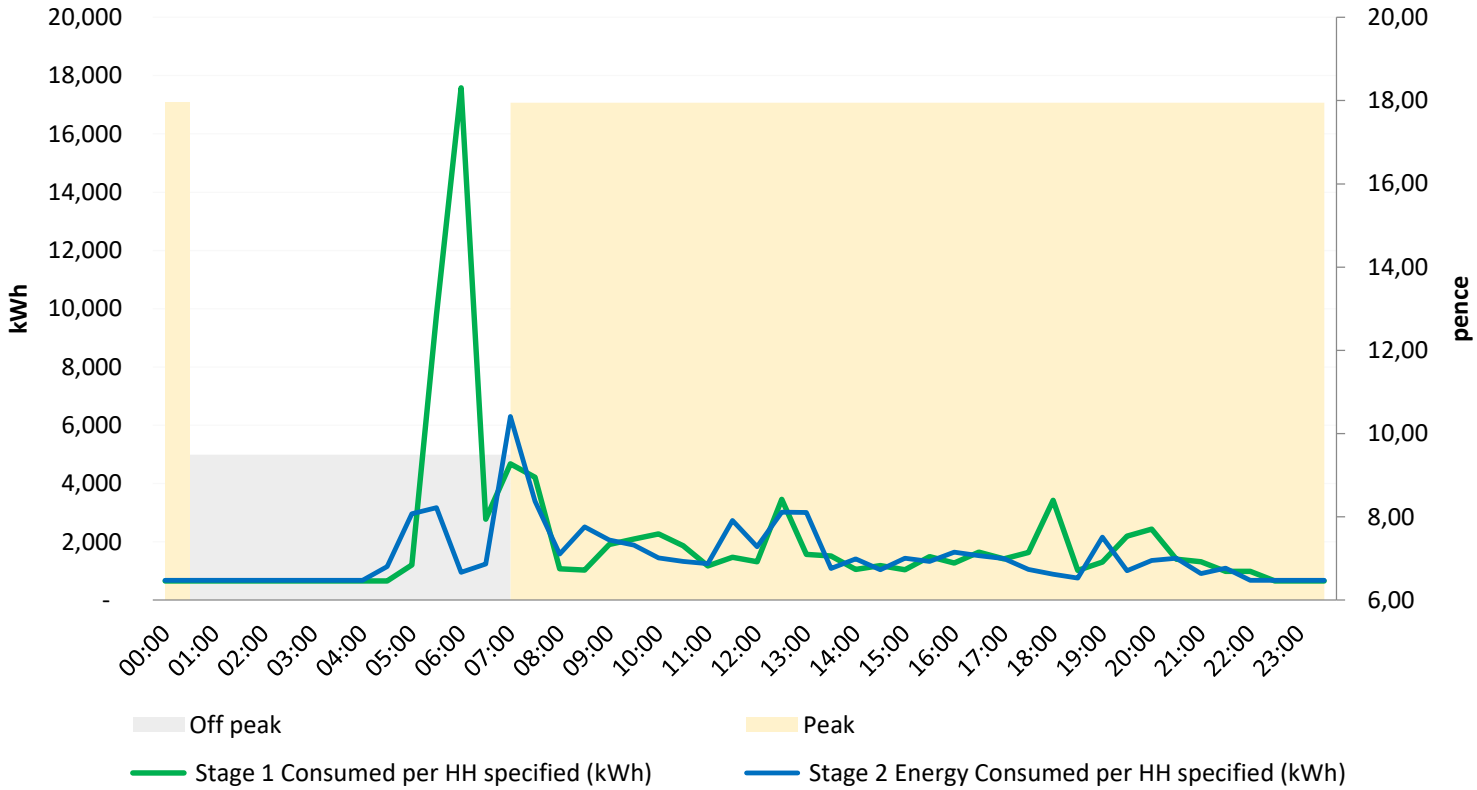


HH6 Daily Consumption Profile

STAGE 2
Energy Awareness; two months

Get all the information you need up-front about your key appliances and overall energy usage

Energy Basis: Consumption 95kWh, Peak/Off peak: 60%40%
Energy Awareness: Consumption 75kWh, Peak/Off peak: 78%22%



Does app analytics provide evidence of behaviour changes in data?

STAGE 2
Energy Awareness; two months

Get all the information you need up-front about your key appliances and overall energy usage

- 25% of households logging on in last 96 hours
- Twice a day on average
- 90% of those households are looking at their budget settings
- More households are interested in viewing appliance info at a summary level than single
- When viewing appliance information, more households are interested in kWh than £

Measured impact of access to real time data

STAGE 2
Energy Awareness; two months

Get all the information you need up-front about your key appliances and overall energy usage

Volume

- Although the portfolio's monthly consumption increased by 7%
  - 63% of households had a lower consumption of 16% on average
    - Insufficient data
    - No conclusive evidence other than app engagement at this stage
    - Other independent studies state customers are saving around £32 a year on their energy bills since the installation of their smart meters.

Measured impact of access to real time data

STAGE 2
Energy Awareness; two months

Get all the information you need up-front about your key appliances and overall energy usage

<u>Shift</u>

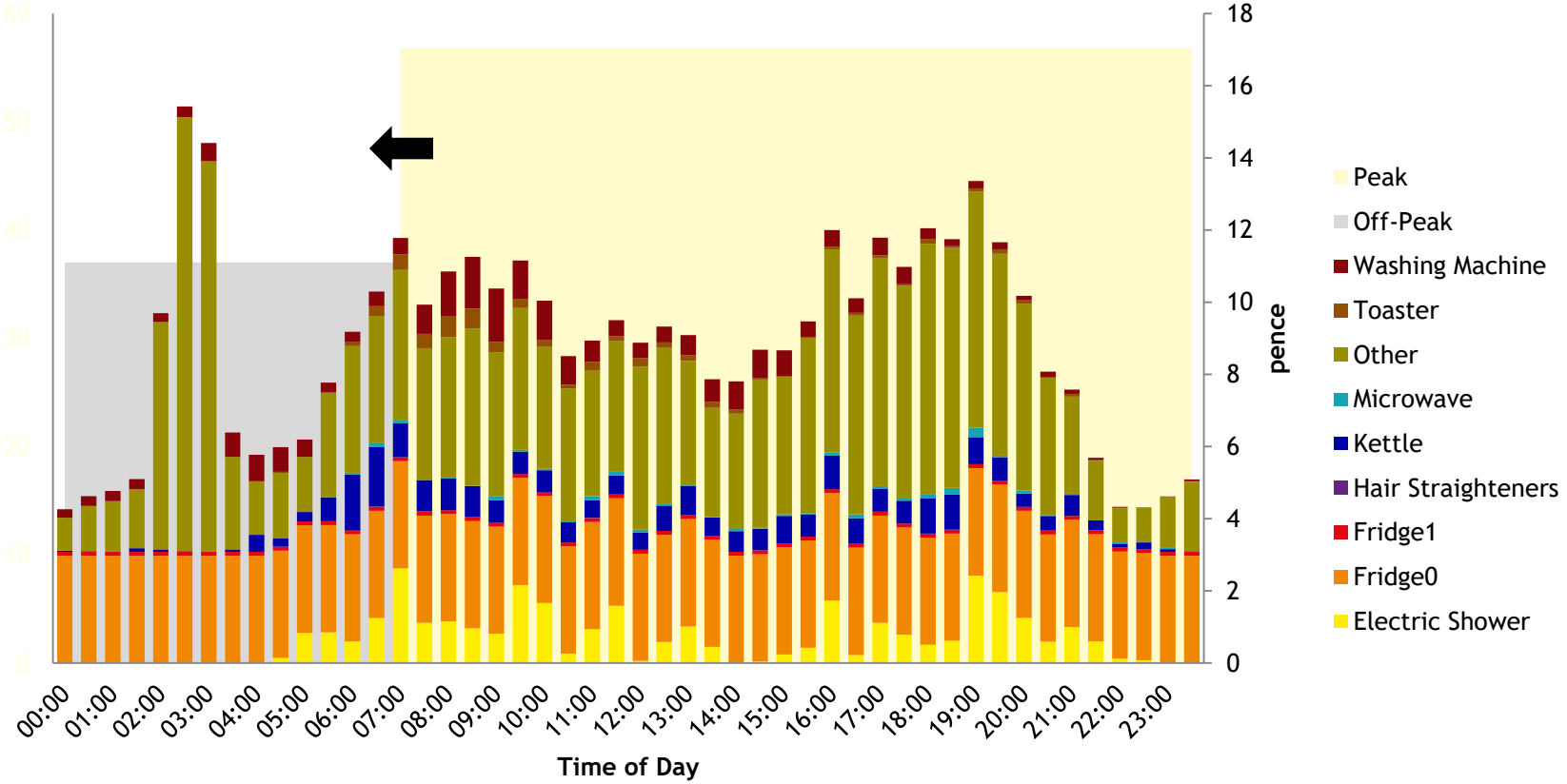
- Although the portfolio's peak: off-peak ratio remained the same
  - 37% of households had a lower percentage peak consumption of 2% on average
    - Insufficient data
    - No conclusive evidence
    - Let's explore potential

Flexible load potential

Exploring additional real time benefits of disaggregation

Identifying Load Shift Potential

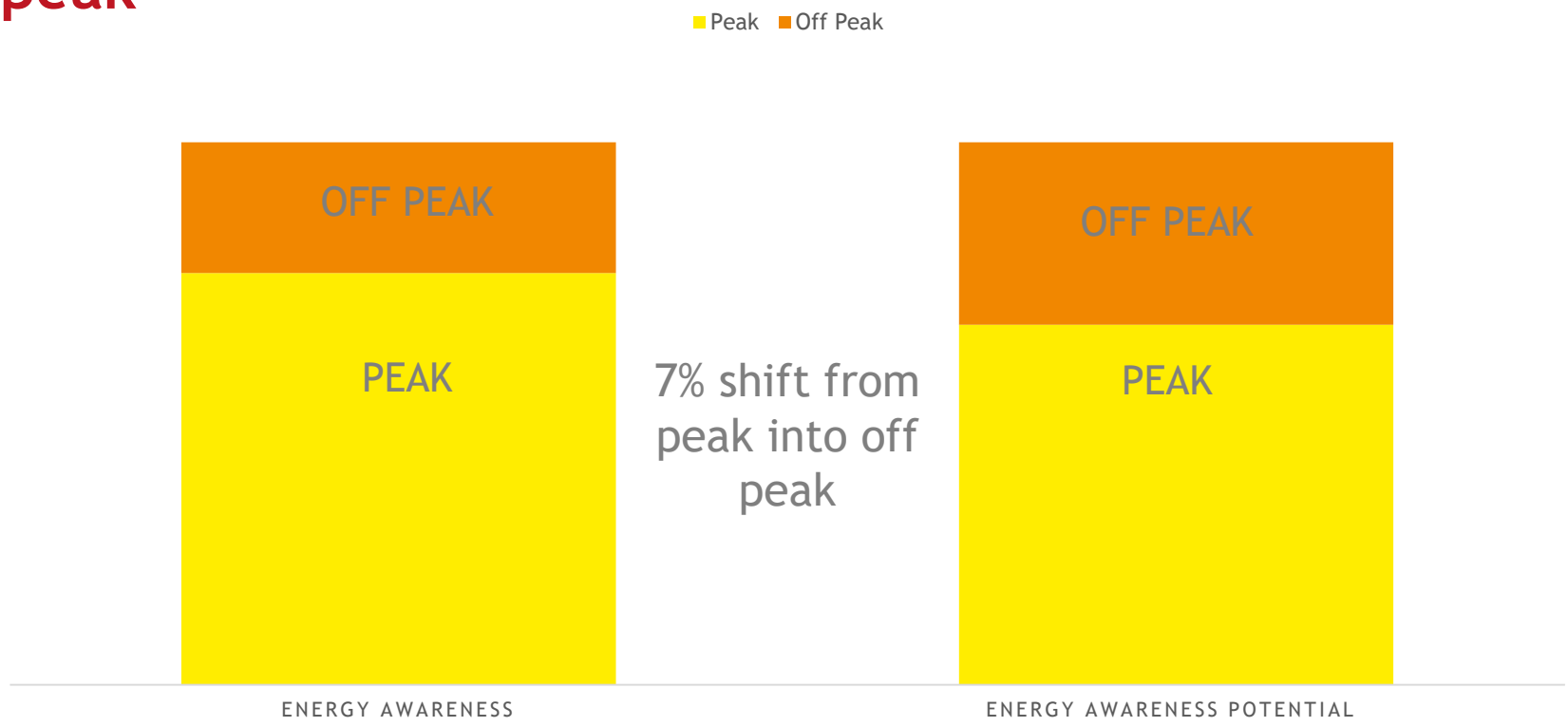
Daily Consumption Profile of typical household during Energy Awareness (July 2018)



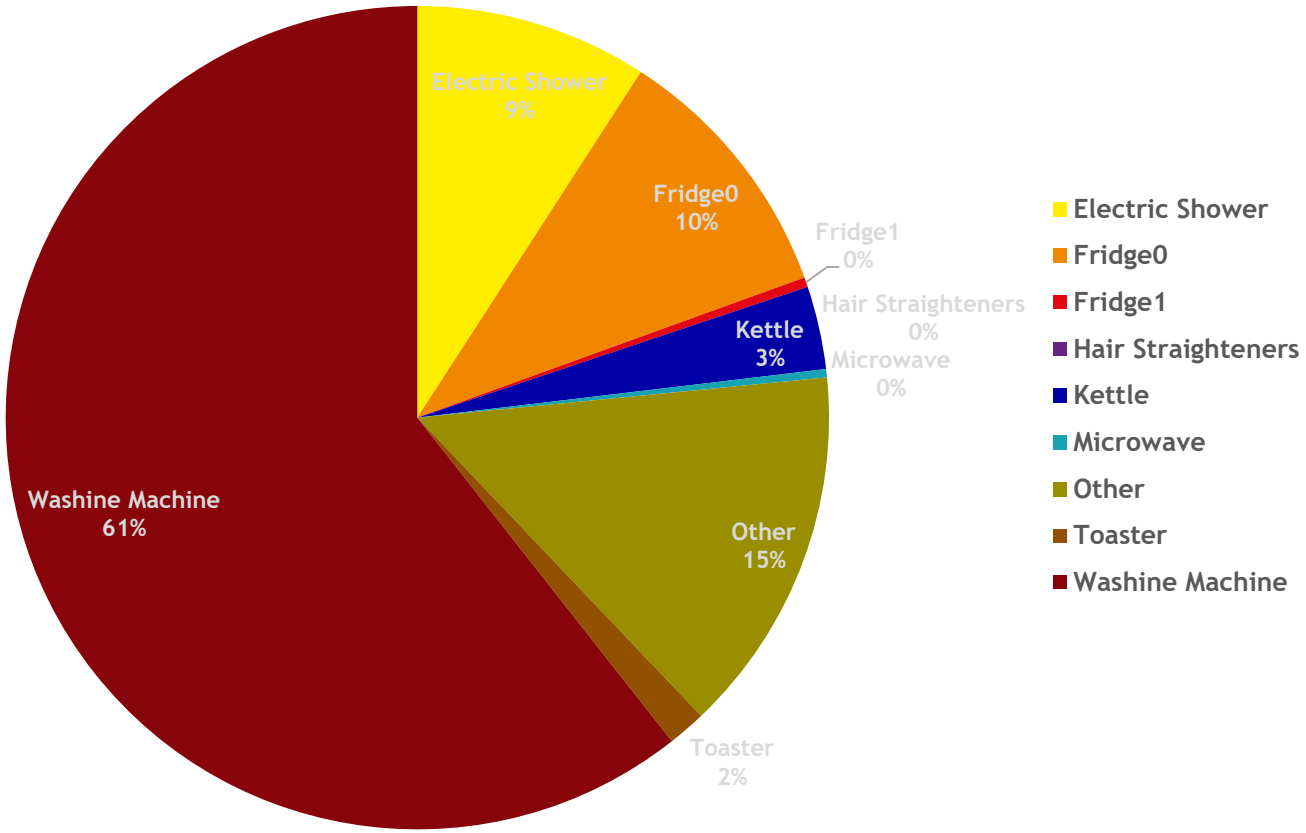
7% Flexible Load Potential Identified

Shift washing machine load into off peak

Shift all other load with one half hour from peak to off peak

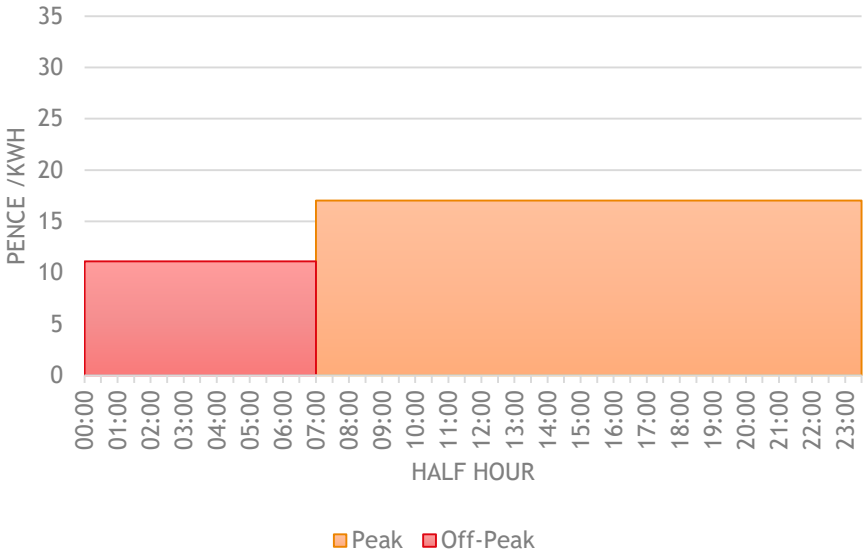


£4.20 potential yearly saving per HH

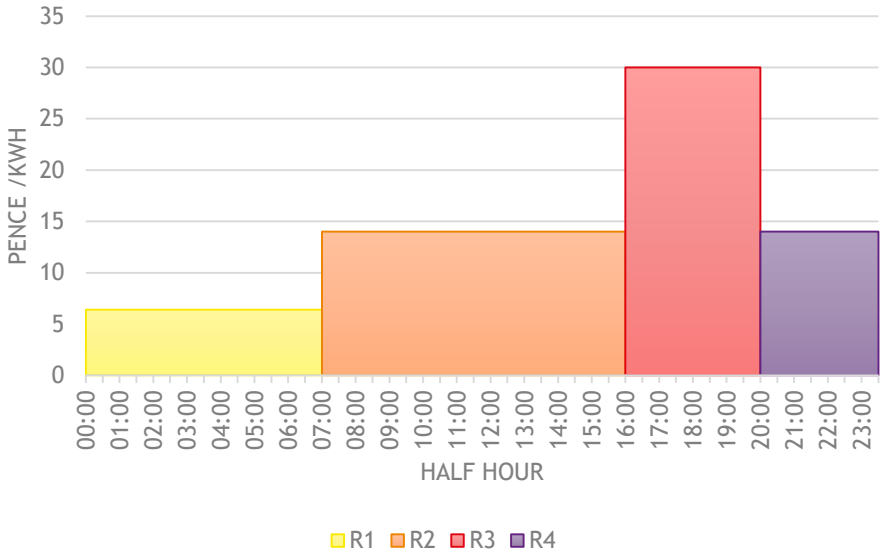


Optimised Tariff Opportunity

2 Rate Tariff



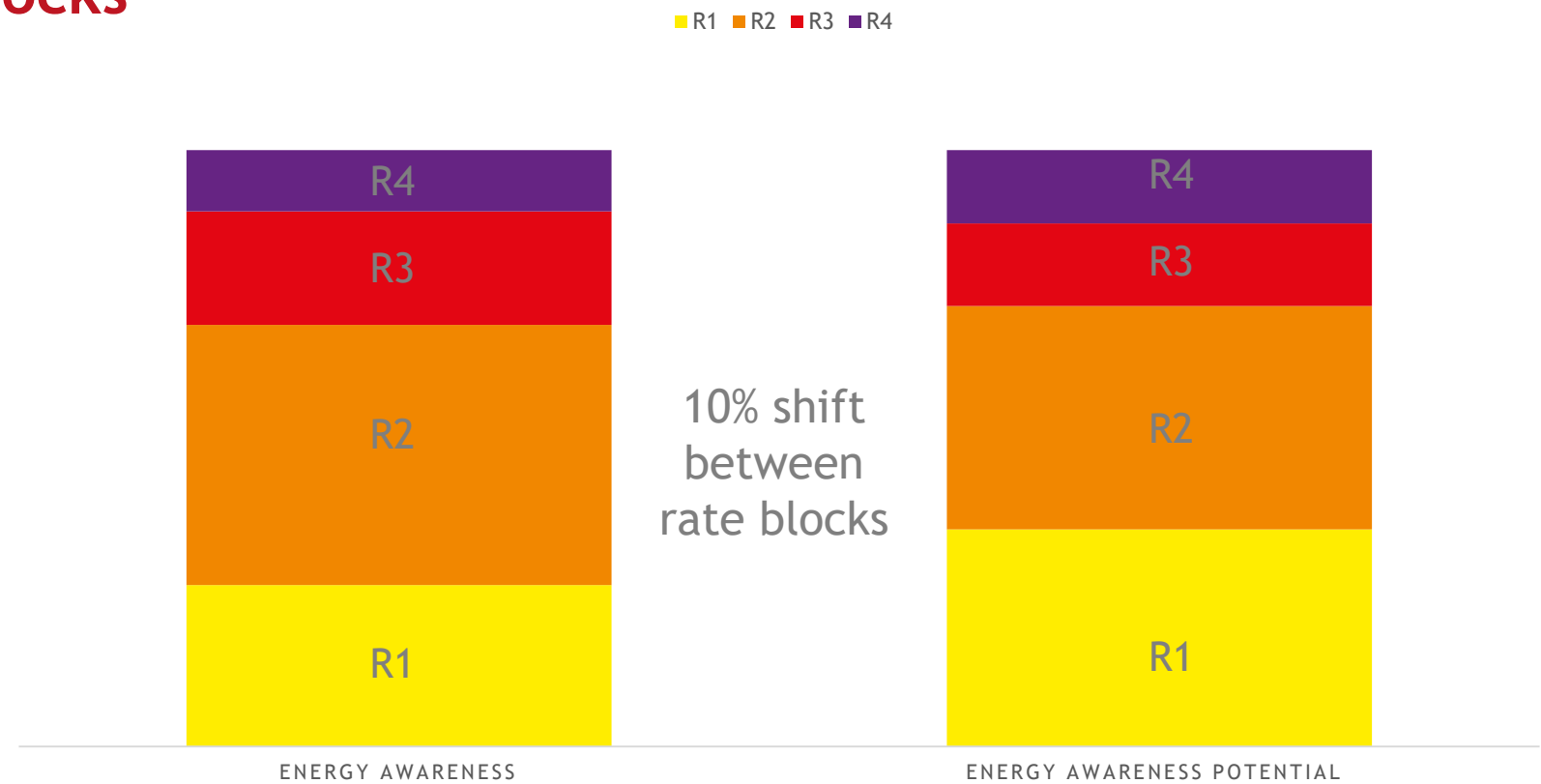
4 Rate Tariff



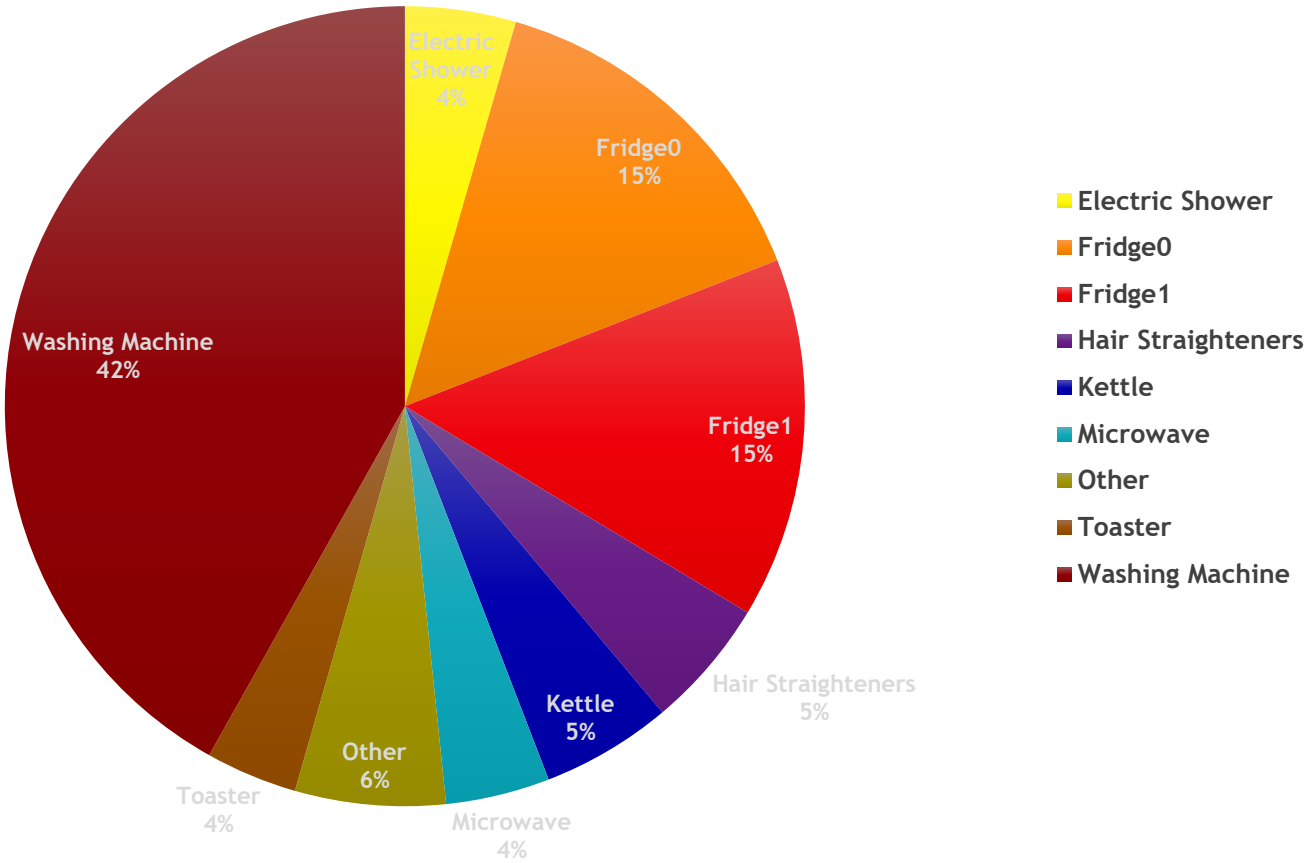
10% Flexible Load Potential Identified

Shift washing machine load into R1

Shift all other load with half hour between optimal rate blocks



£11.60 potential yearly saving per HH



Reflection

Conclusions

Conclusions

Possible Today

- E7
- Smart Meter
- DNO transition to DSO

Static ToU (2 Rate)

- Flexible Load 7%
- Saving £4.20

Optimised Static ToU (4 Rate)

- Flexible Load 10%
- Saving £11.60

UK Flexible Load potential using average of the range in study

- **3,600 GWh** (1)

UK households potential savings

- **£100 million**

Possible Tomorrow

- HH settlement

Dynamic ToU

- Potential opportunity even bigger

(1) Ofgem TDCV 3,100kWh for P1 customer, 13 million households on optimised static ToU tariff (half of UK households)

Thank you