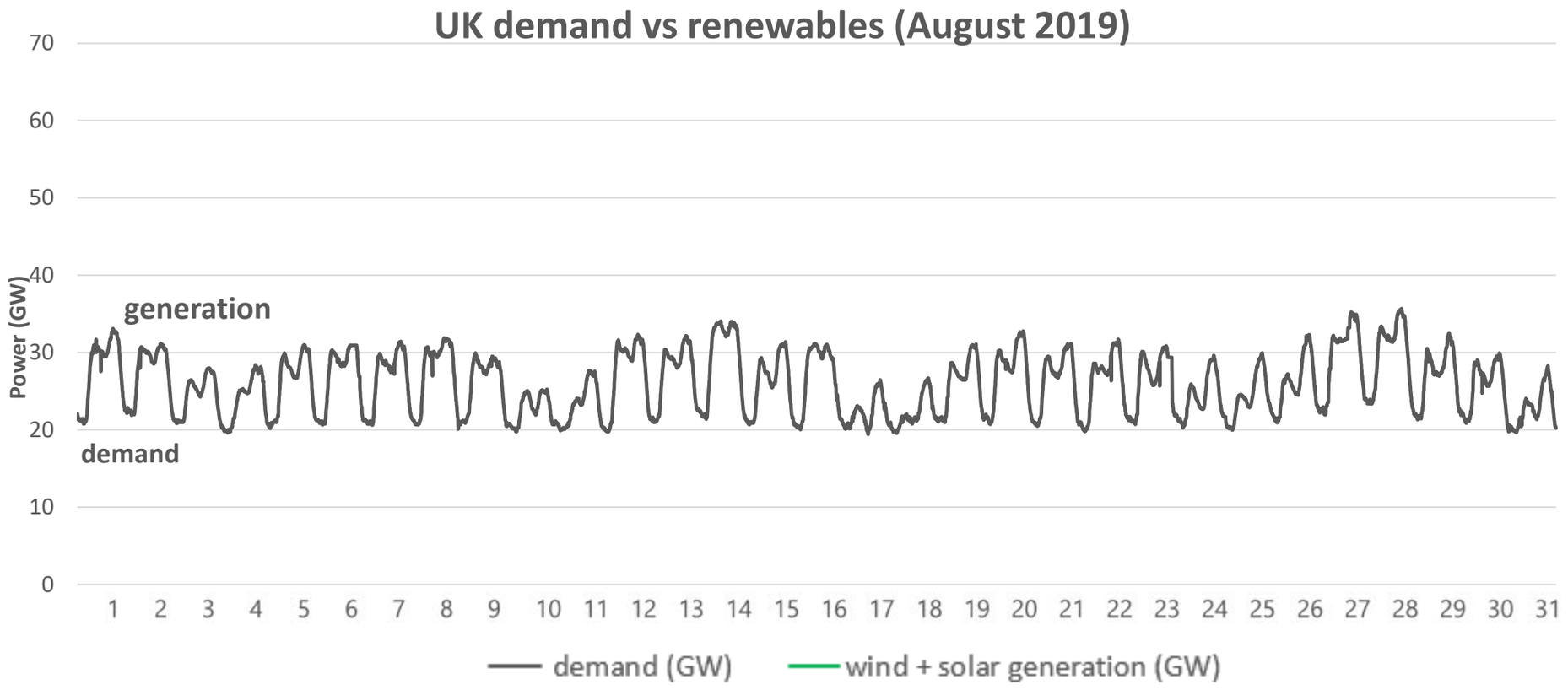
FlexiGrid

Mark Hamilton
Managing Director - FlexiGrid, SMS

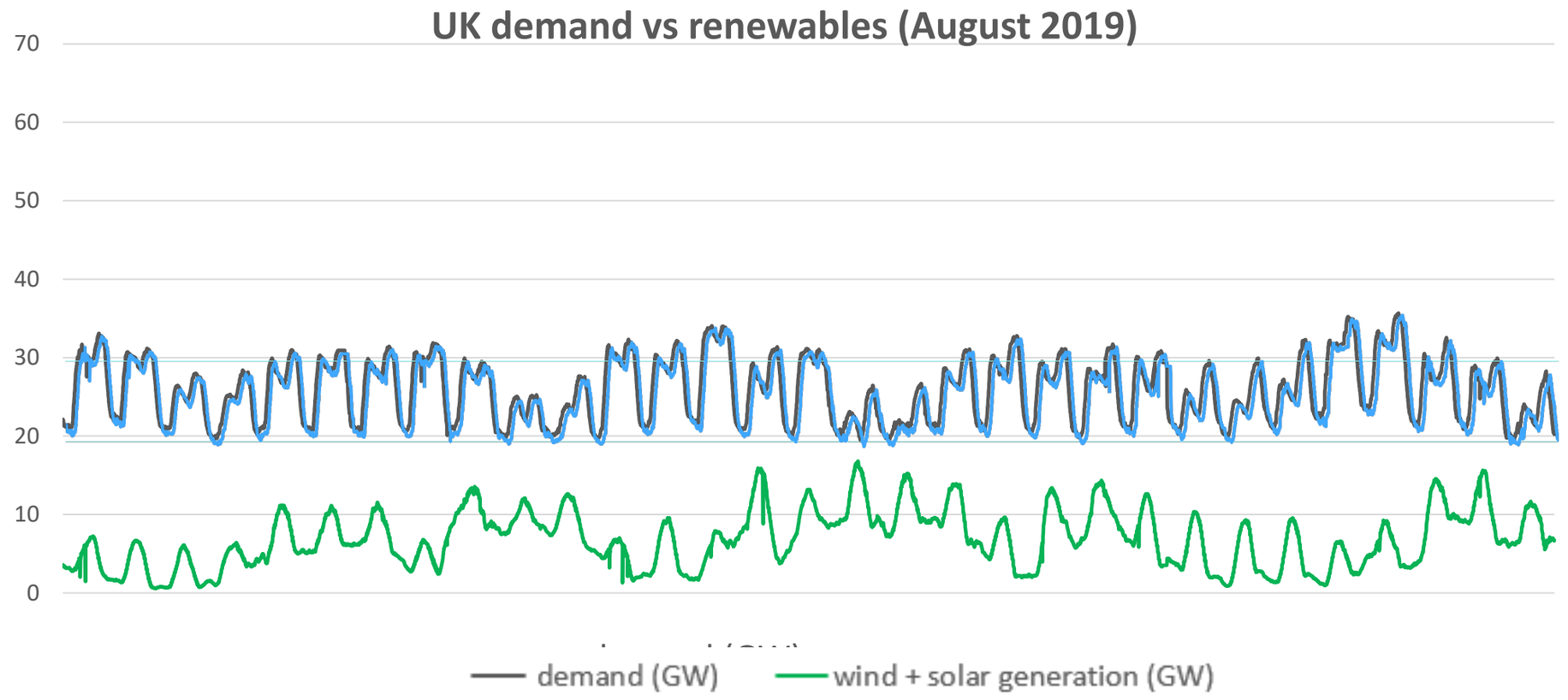
Changing Energy Landscape – the *old* way

Changing Energy Landscape – the *new* way

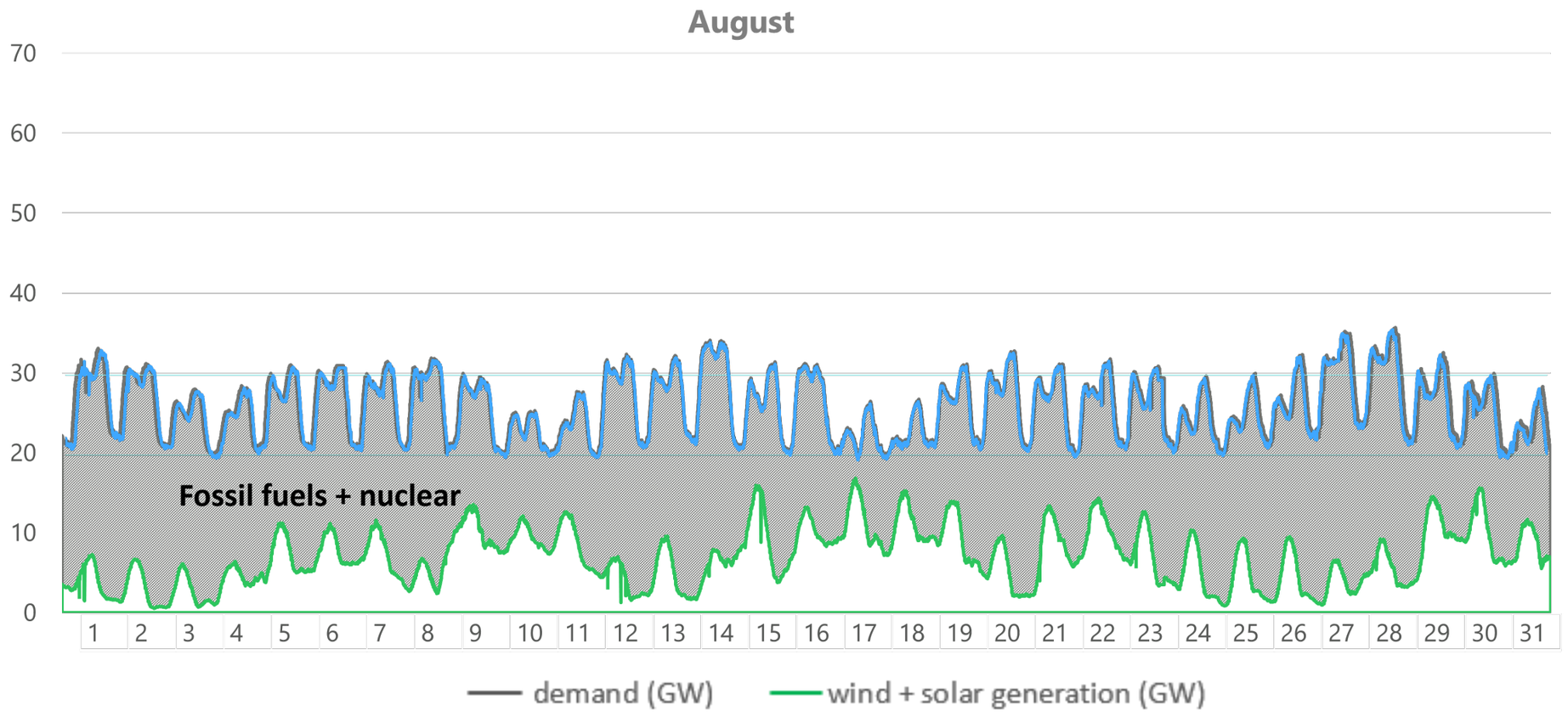
UK Renewables vs Demand – Today



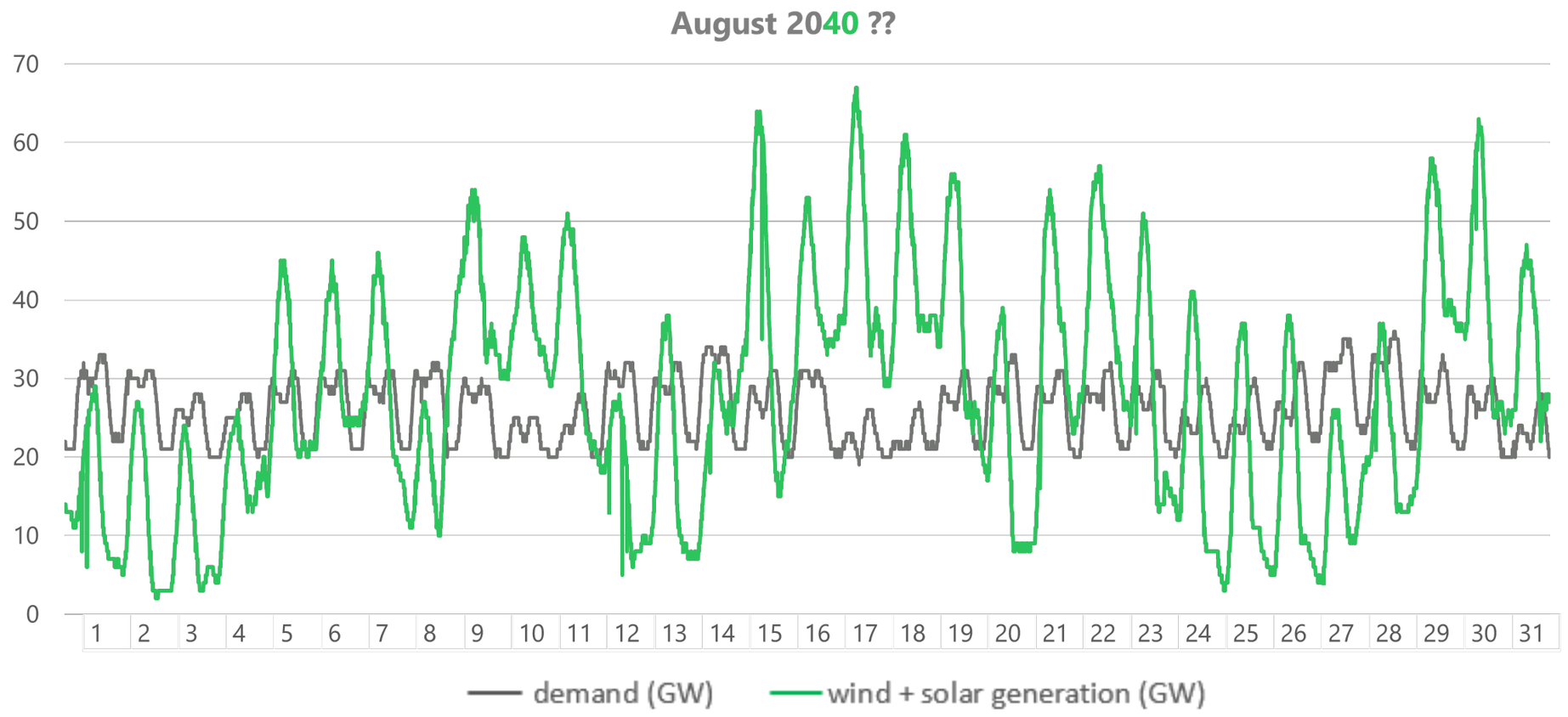
UK Renewables vs Demand – Today



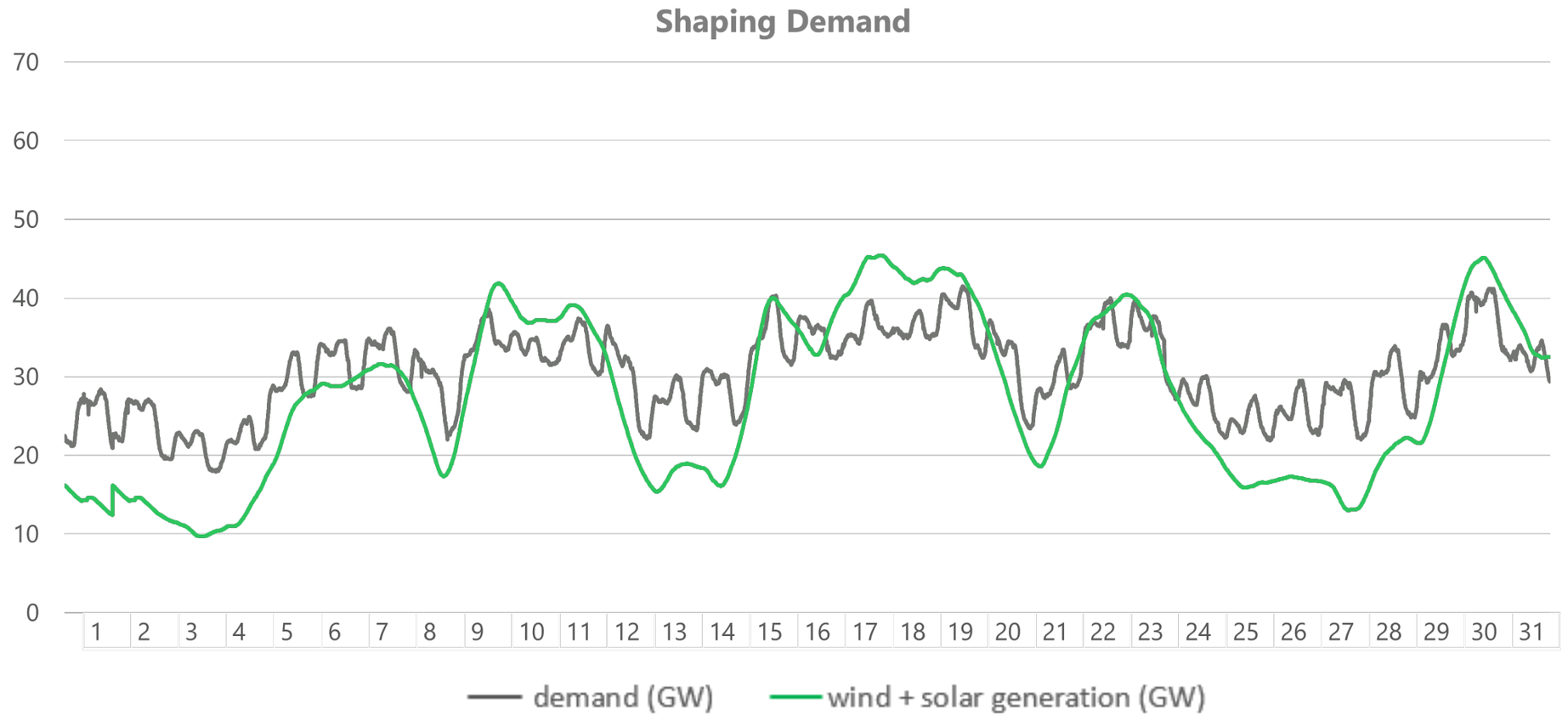
UK Renewables vs Demand – Today



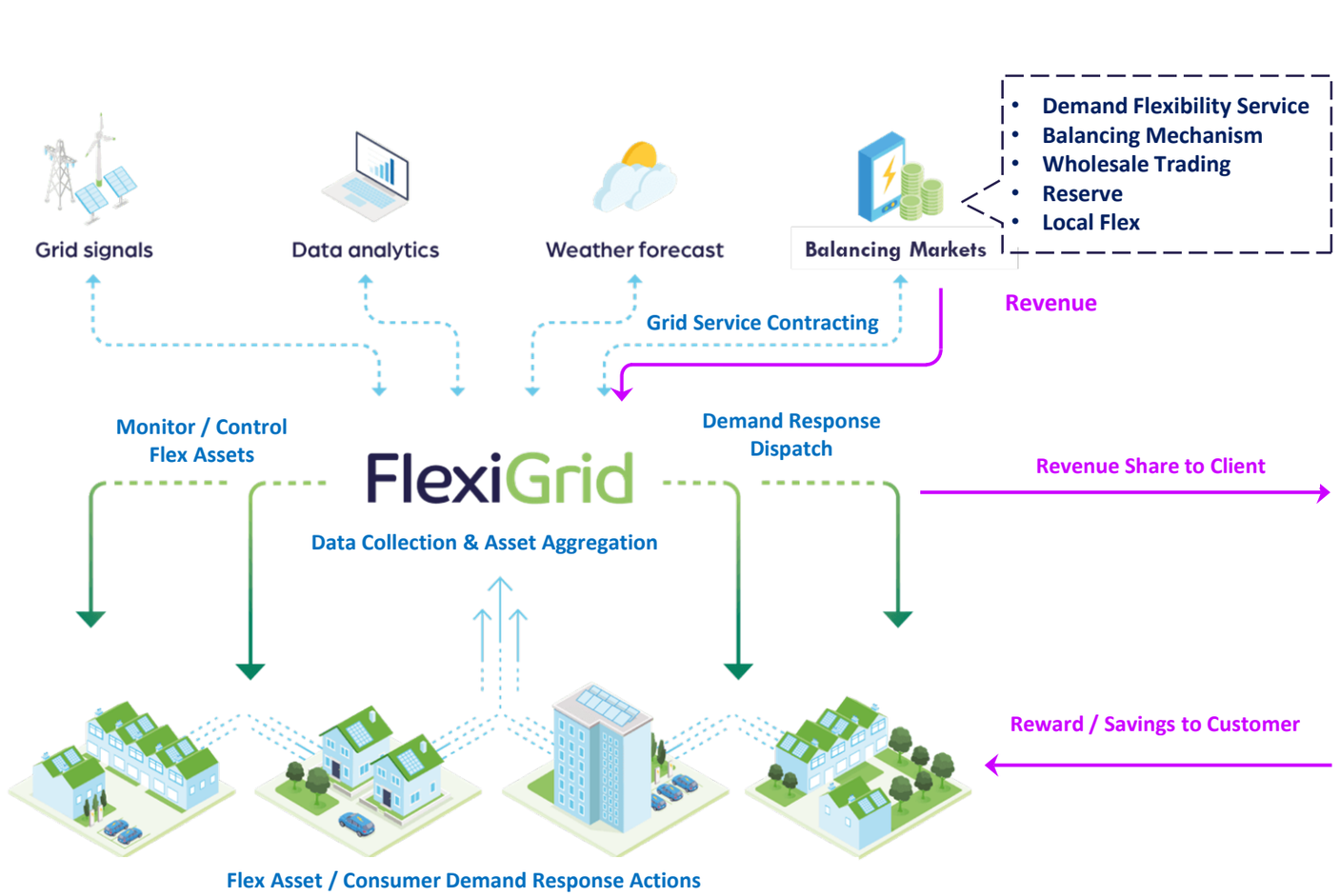
UK Renewables vs Demand – Future?



UK Renewables vs Demand – Future – with flexibility



FlexiGrid Overview – Delivering Value from Flexibility



Energy Suppliers	OEMs / B2C
good energy	solaredge
Shell ENERGY	passiv
ecotricity	TESLA
SO ENERGY	SAMSUNG
100 GREEN	loop
sse Energy Solutions	CHAMELEON TECHNOLOGY
OUTFOX THE MARKET ENERGY	metis

Demand Flexibility Service – in numbers

13 clients… **40%** of DFS Providers use **FlexiGrid**

10 events to date

90,000 customers onboarded

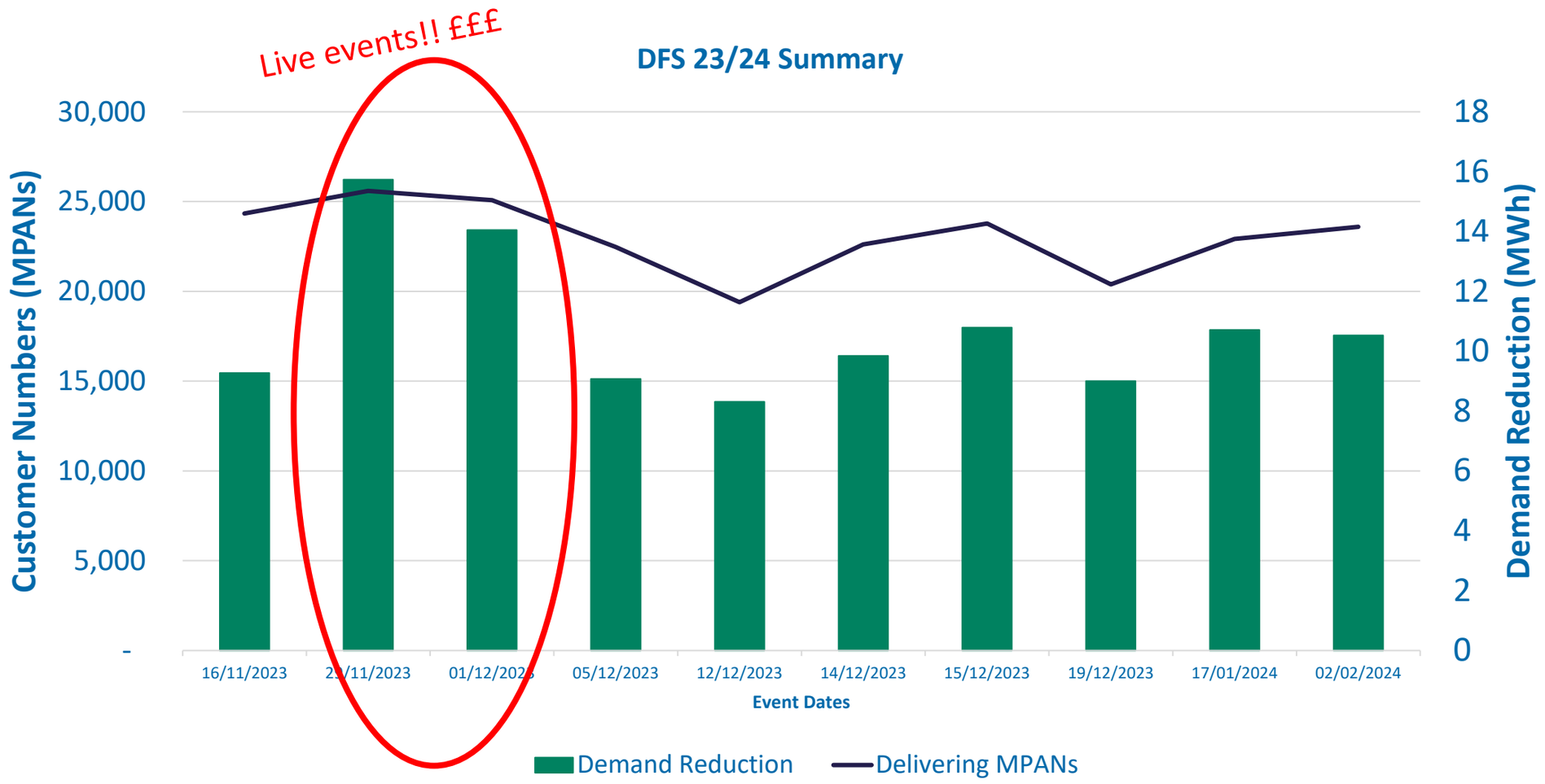
107 MWh demand reduction delivered

2.7 kWh average demand reduction per battery customer

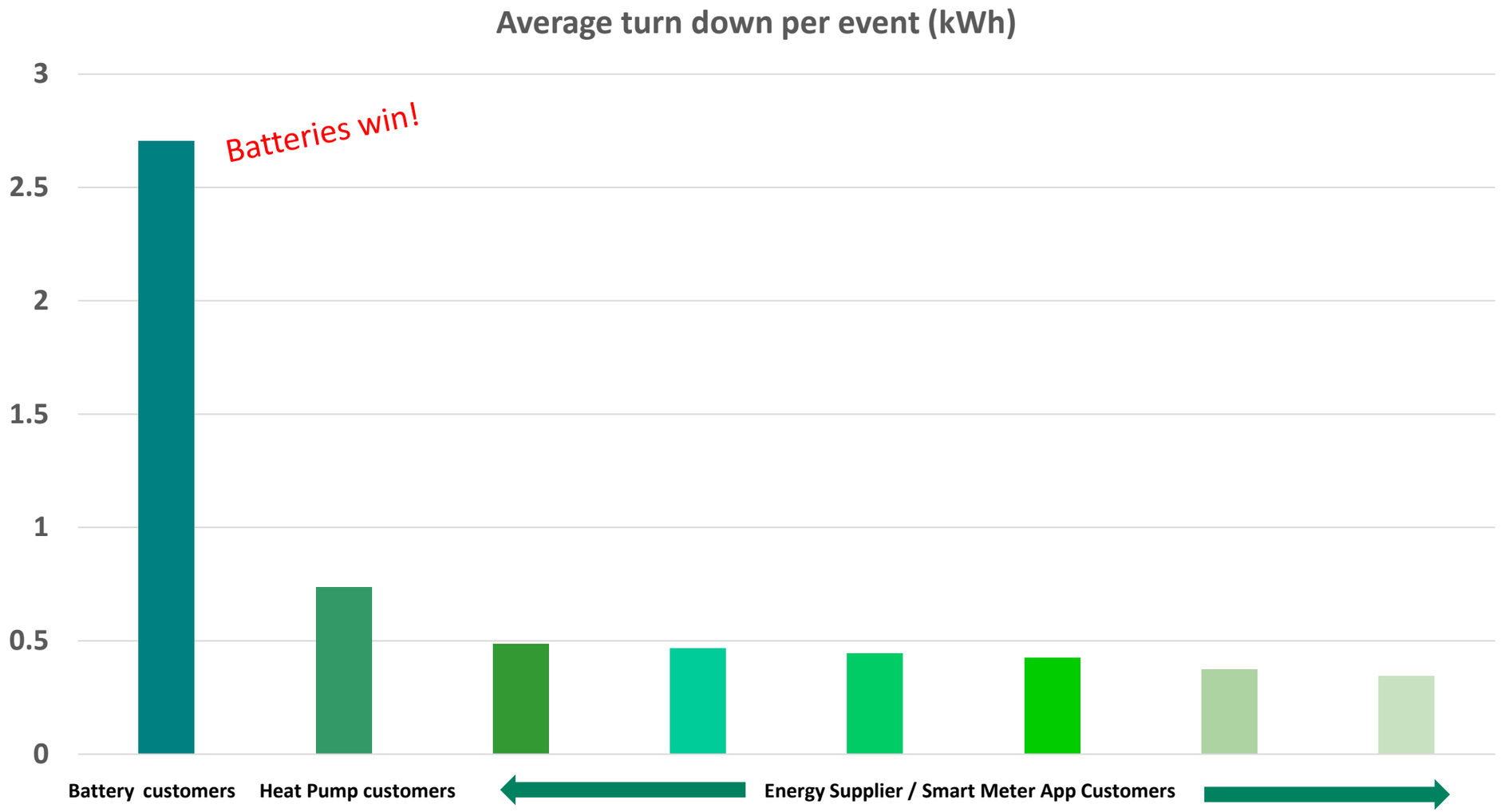
0.466 kWh average demand reduction per customer per event

£1.36 average value per customer per event

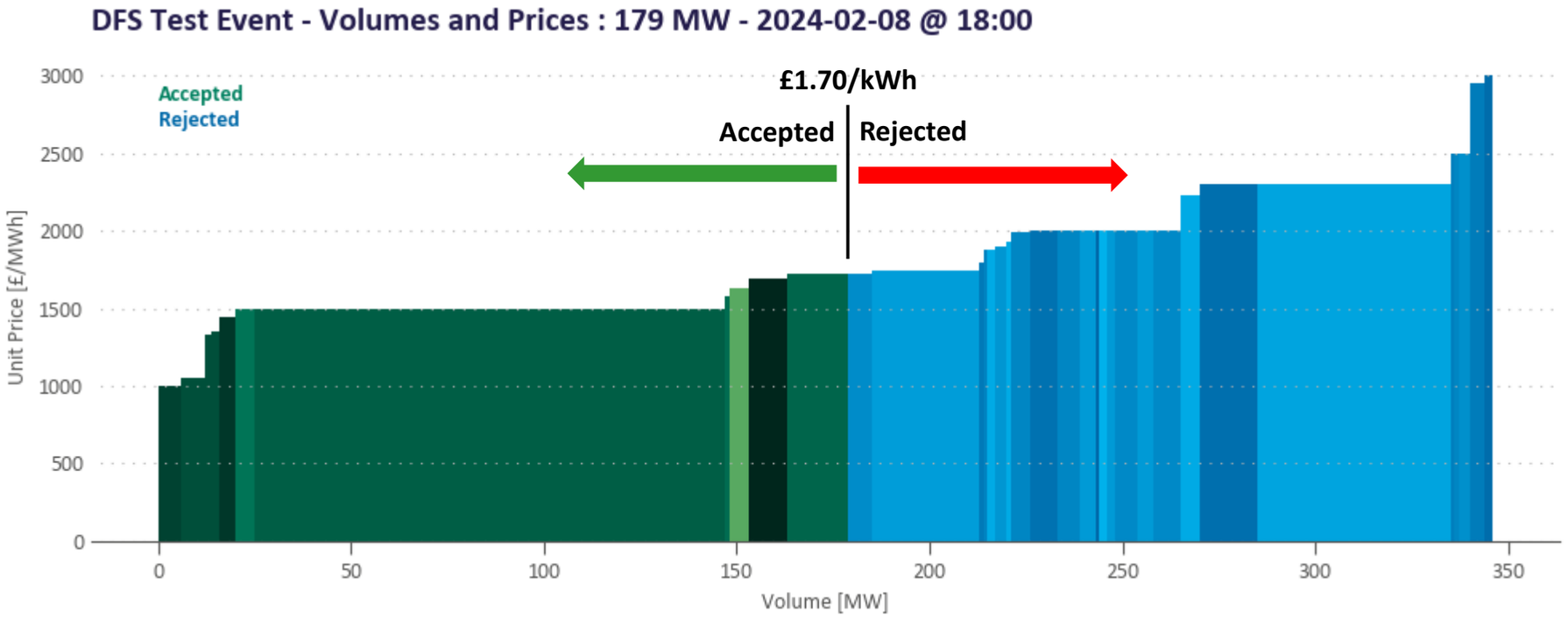
Demand Flexibility Service – event stats



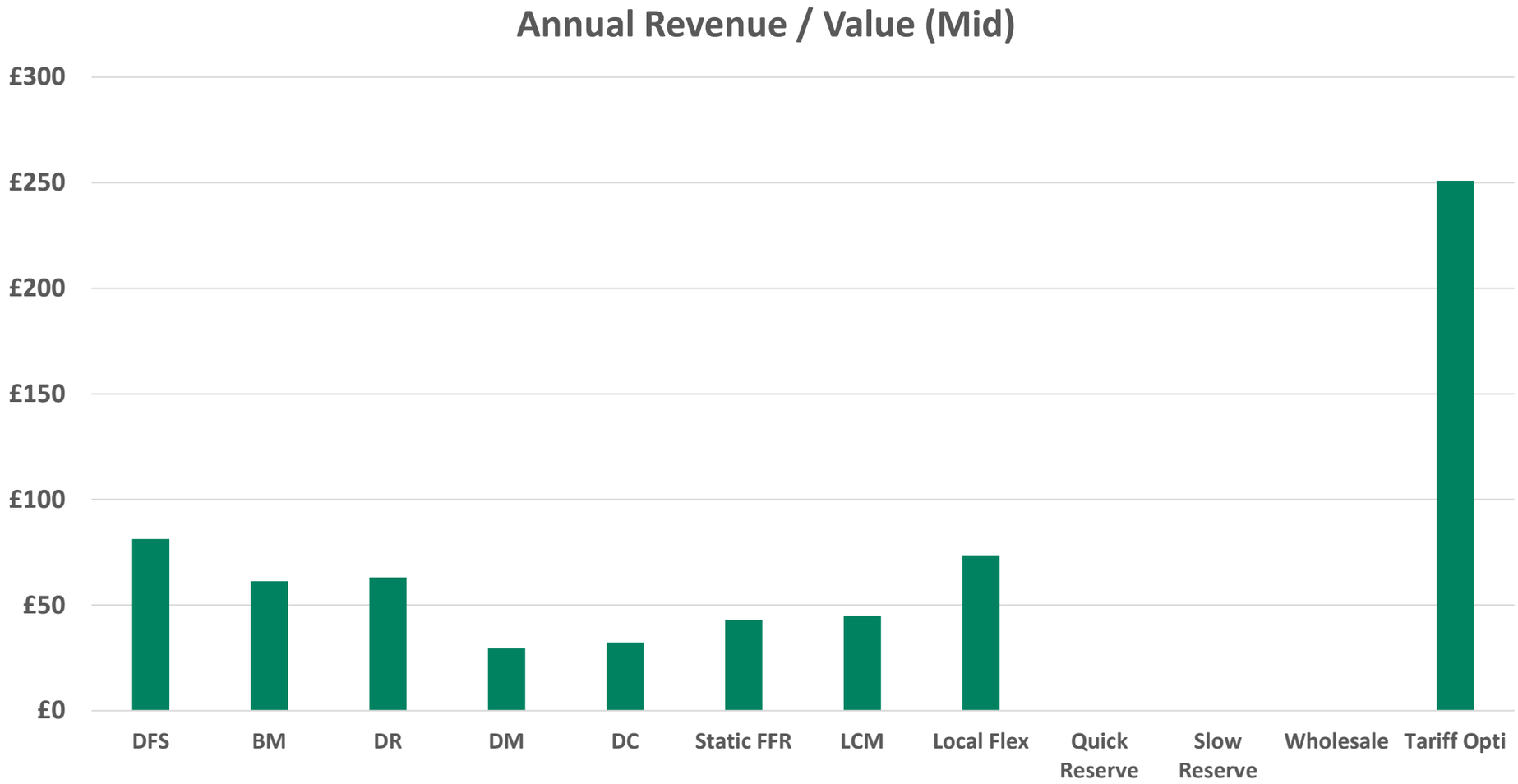
Demand Flexibility Service – ESAs vs humans



Demand Flexibility Service – Competitive Pricing



Demand Flexibility Service – Competitive Pricing



Steve Buckley

TrustPower/Loop

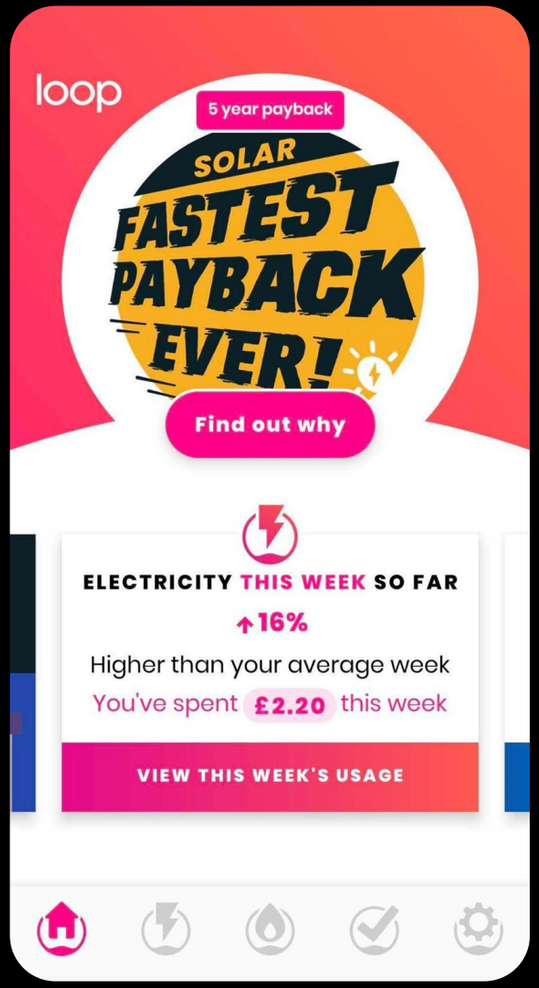
From Smart Meter data to Low Carbon Homes

February 2024

Why Loop?

- Over 30% of UK carbon emissions are from homes and domestic travel
- How do we drive emissions down?
- **We need to empower households**

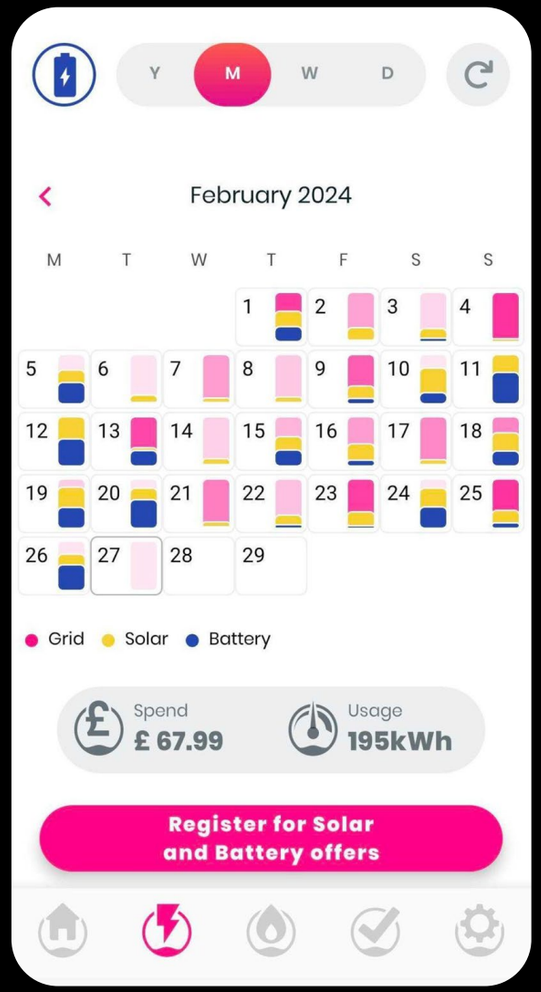
low carbon
powering tomorrow



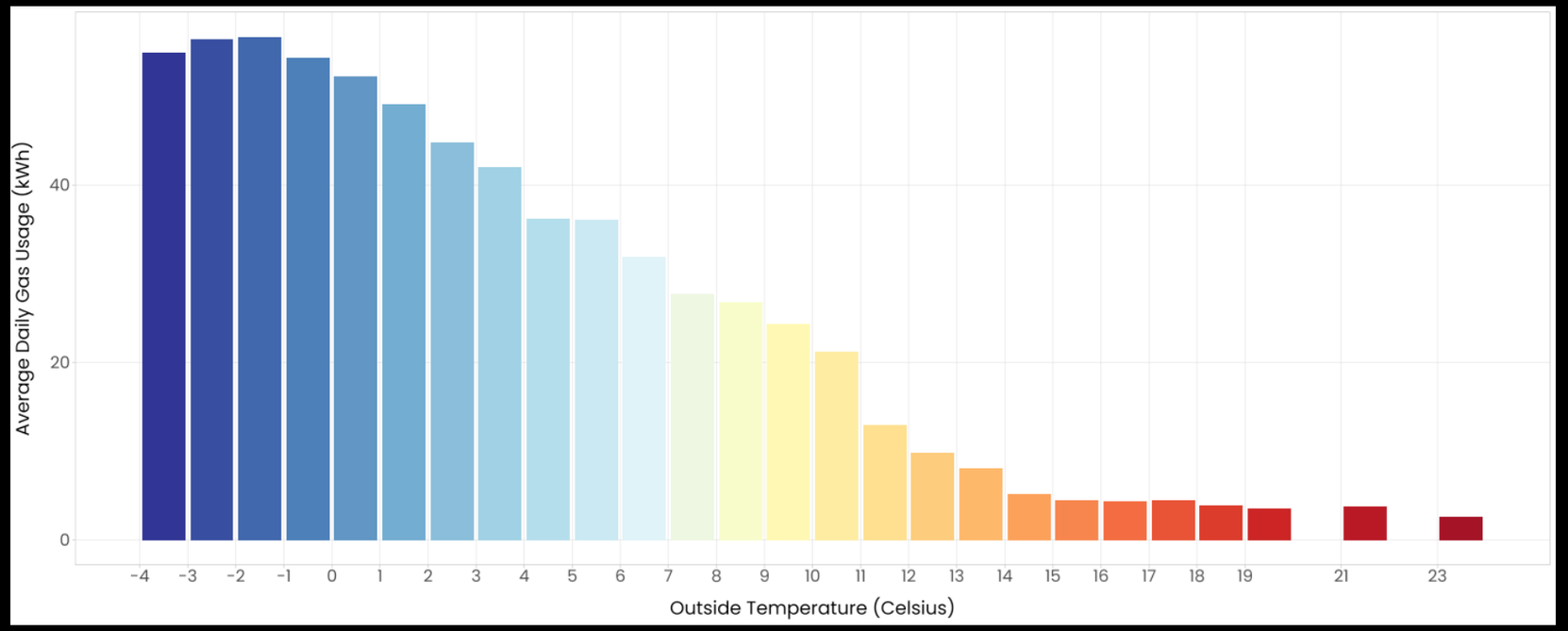
Why Smart Meter data?

Would I save money with solar and a home battery?

- People love solar. But they need it to make financial sense.
- With smart meter data we can show whether it does
- Next challenge:
  Can it be competitively financed?

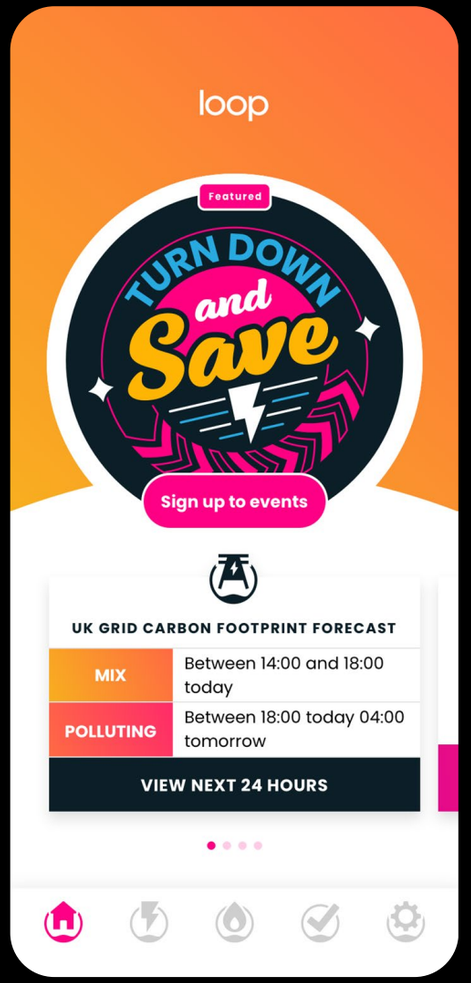


How insulated is my house?

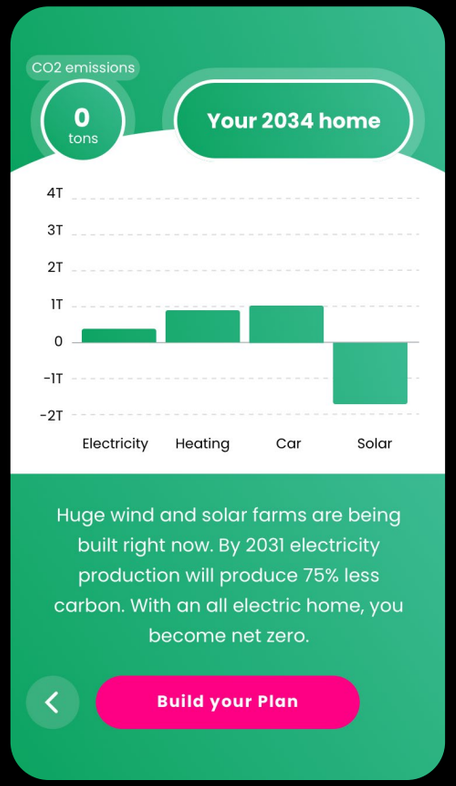


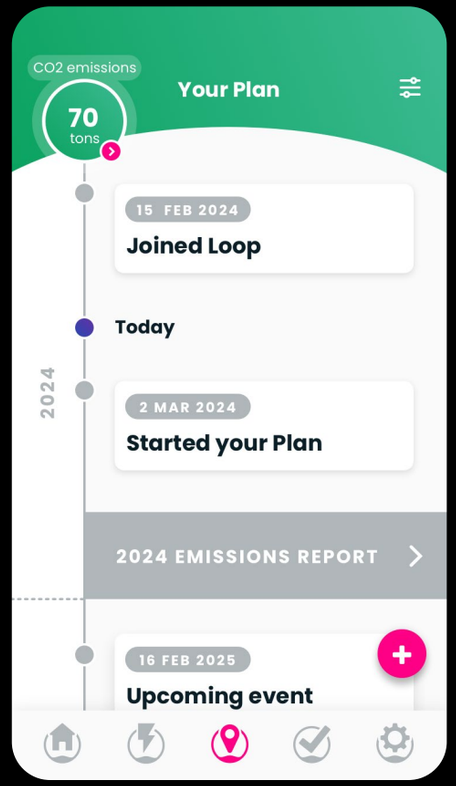
Turn Down and Save

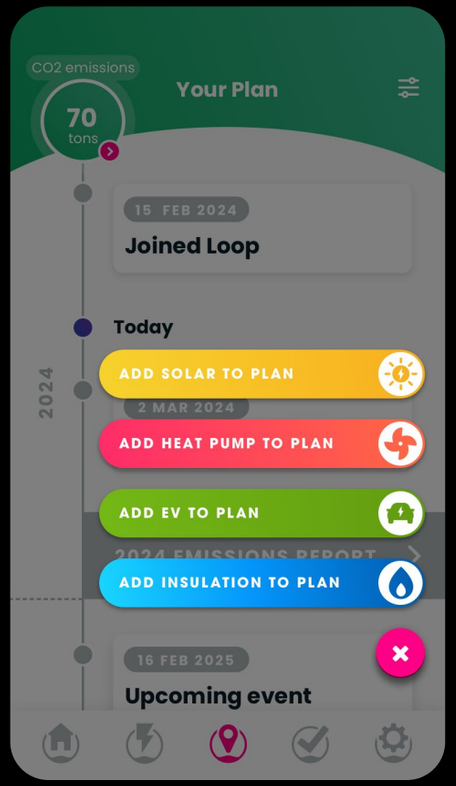
- Loop customers are paid by National Grid ESO to use less energy at peak
- Launched **Autumn 2022** with the Flexigrid team at SMS - **ahead of almost all suppliers**
- Enabling customers see the impact of their actions on the wider grid

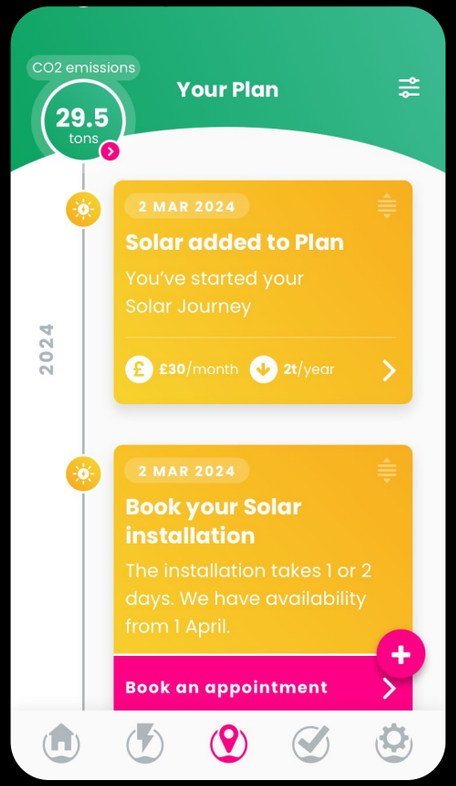


THE FUTURE


CO2 emissions
0
tons
Your 2034 home
4T
3T
2T
1T
0
-1T
-2T
Electricity
Heating
Car
Solar
Huge wind and solar farms are being built right now. By 2031 electricity production will produce 75% less carbon. With an all electric home, you become net zero.
Build your Plan


CO2 emissions
70
tons
Your Plan
2024
15 FEB 2024
Joined Loop
Today
2 MAR 2024
Started your Plan
2024 EMISSIONS REPORT
16 FEB 2025
Upcoming event


CO2 emissions
70
tons
Your Plan
2024
15 FEB 2024
Joined Loop
Today
ADD SOLAR TO PLAN
2 MAR 2024
ADD HEAT PUMP TO PLAN
ADD EV TO PLAN
ADD INSULATION TO PLAN
16 FEB 2025
Upcoming event


CO2 emissions
29.5
tons
Your Plan
2024
2 MAR 2024
Solar added to Plan
You've started your Solar Journey
£30/month
2t/year
2 MAR 2024
Book your Solar installation
The installation takes 1 or 2 days. We have availability from 1 April.
Book an appointment

Alternative Energy Markets

Elinor Winrow
Energy Sustainability Product Manager, SMS

Funded by UK Government

Phase 1

At the end of 2022 there were 31.3 million smart and advanced meters installed
The energy data collected from these meters is currently used by consumers to understand their energy consumption
Energy Companies don't currently utilise this data to inform tariff options/pricing strategies

Creation of ISEE Model and application of Tariffs

- Phase 1 funding awarded
- My Utility Genius created a modelling and simulation approach.
- 6 Tariffs created

Collection of HH data and creation of archetypes

- Survey sent to Hugo customers 500 customers
- Received 200 responses
- Created 5 archetypes based on the survey responses

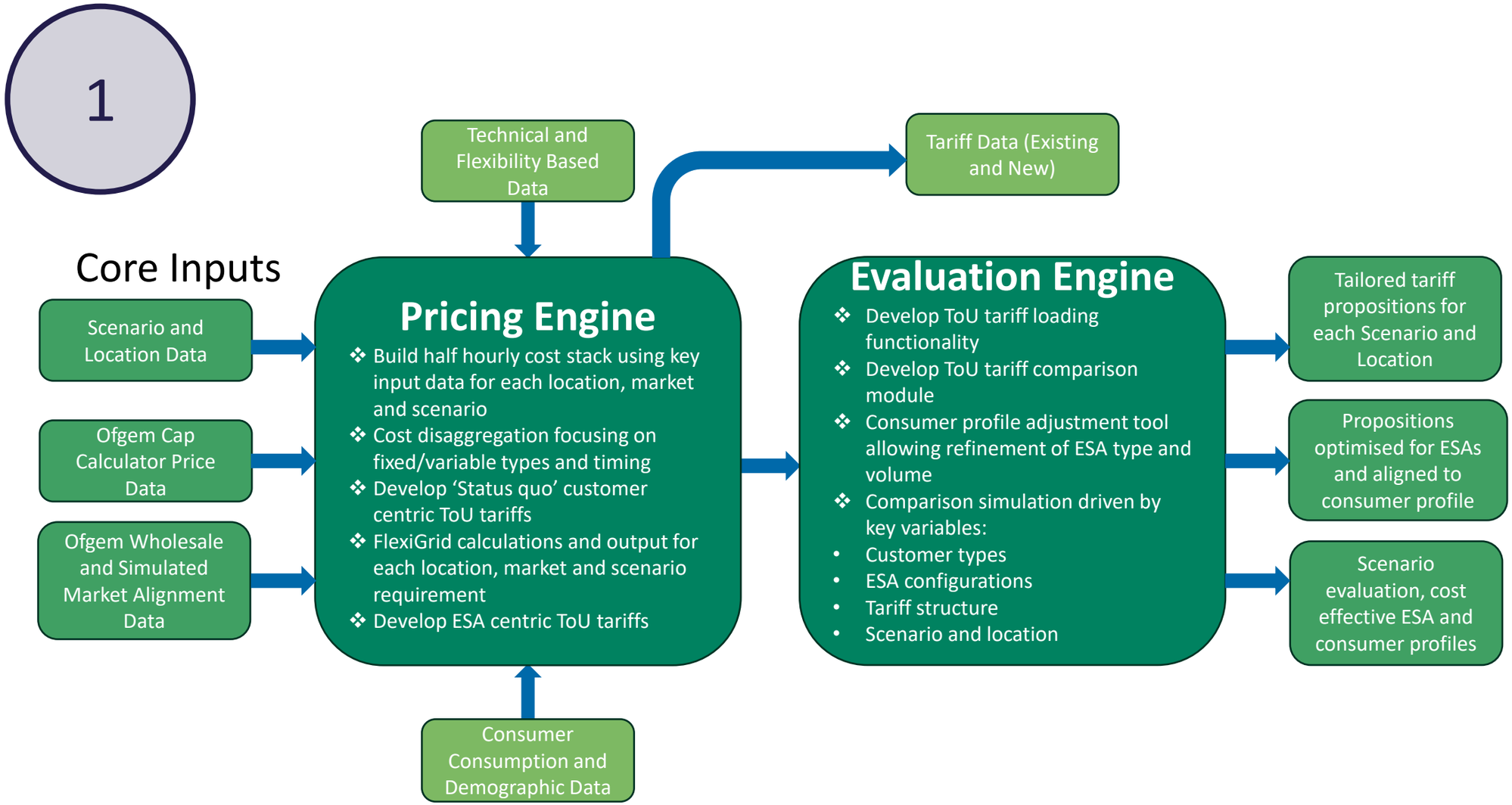
Implementation of Model

- Using the Hugo customer data, the ISEE model ran each scenario, against each tariff while understanding the affect that ESA's have on the energy consumption and most appropriate tariff

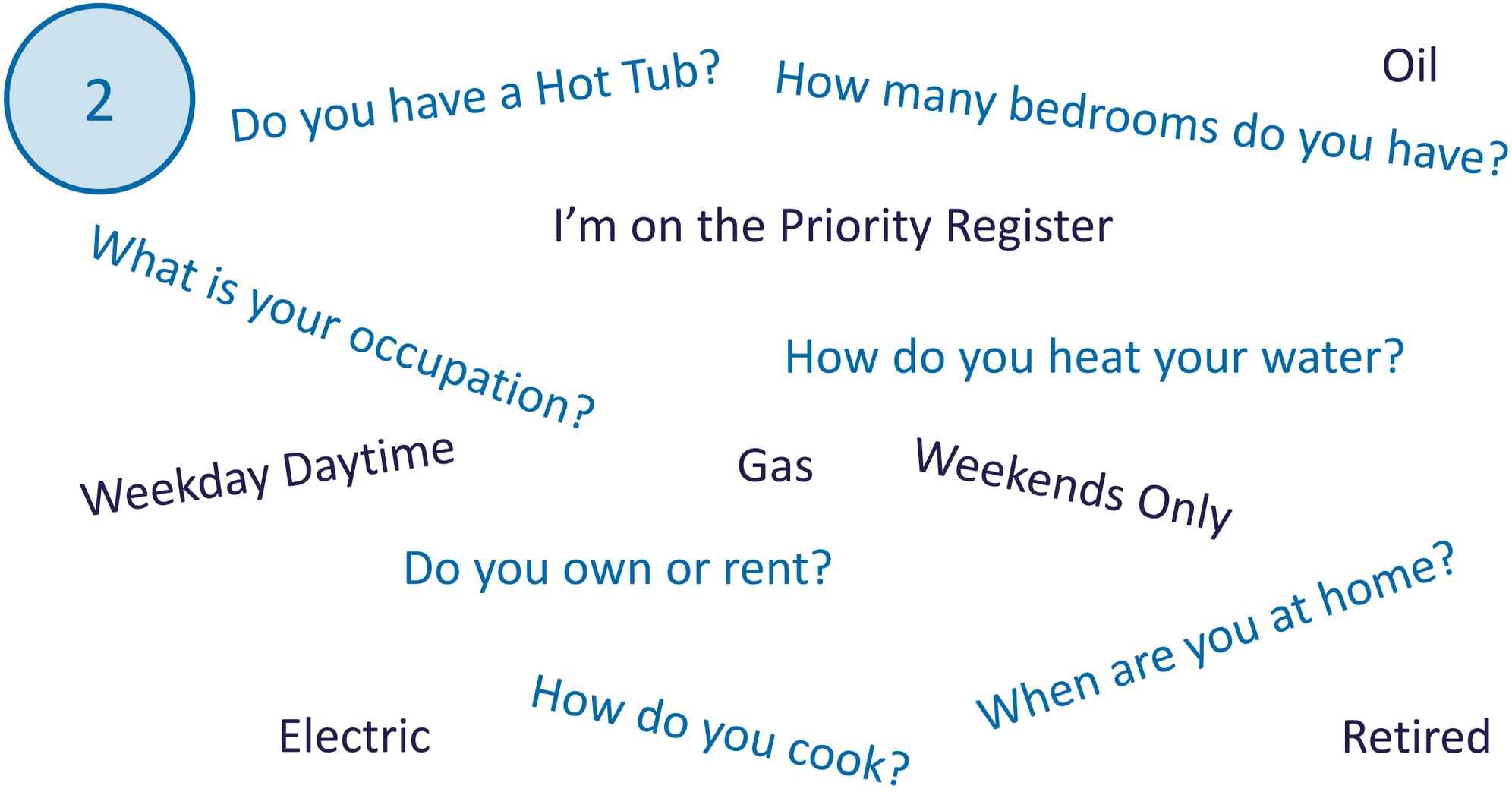
Result's Evaluation and Phase 2 planning

- Evaluation of model results to determine most efficient tariff
- Initial plan for phase 2 project using Phase 1 outcomes.

Creation of ISEE Model and application of tariffs



Collection of HH data and creation of archetypes



Implementation of Model

3

Price Point	Annual Three rate	Seasonal Eight Rate	Seasonal Six rate	Seasonal Weekend	Single Rate	Total
Low price sensitivity	18	33		15	24	90
Higher price sensitivity	33	18	1	20	20	92
Total	**51**	**51**	**1**	**35**	**44**	**182**

Price Point	Annual Three rate	Std E7 Rate	Total
Low price sensitivity	72	18	90
Higher price sensitivity	70	20	90
Total	**142**	**38**	**180**

Price Point	Seasonal Weekend	Std E7 Rate	Total
Low price sensitivity	74	16	90
Higher price sensitivity	55	35	90
Total	**129**	**51**	**180**

Price Point	Seasonal Weekend	Std E7 Rate	Total
Low price sensitivity	74	16	90
Higher price sensitivity	55	35	90
Total	**129**	**51**	**180**

Price Point	Seasonal Six rate	Seasonal Weekend	Std E7 Rate	Total
Low price sensitivity	20	29	41	90
Higher price sensitivity		21	69	90
Total	**20**	**50**	**110**	**180**

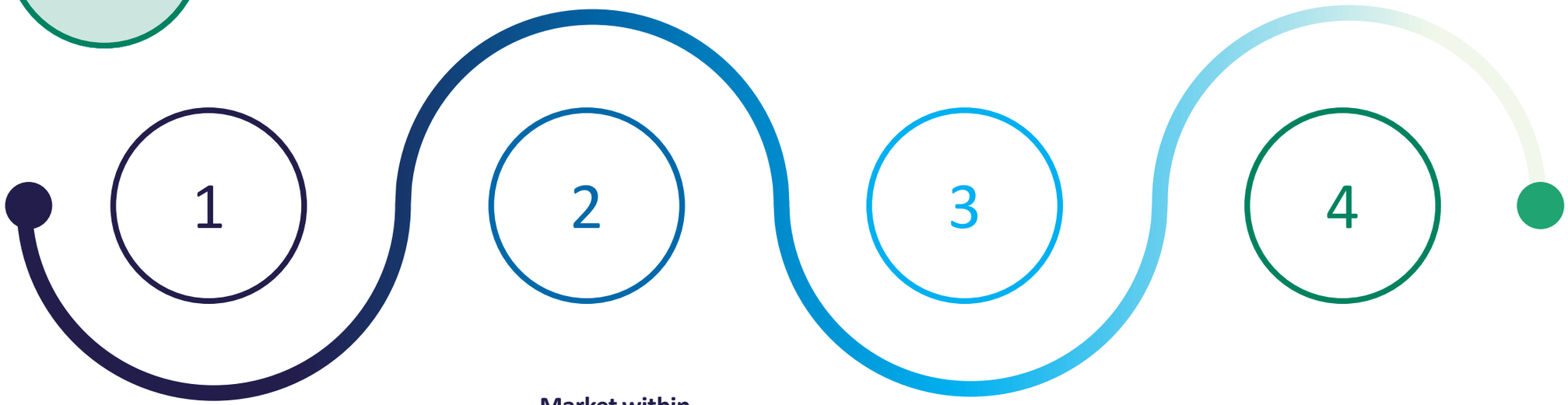
Price Point	Seasonal Six rate	Std E7 Rate	Total
Low price sensitivity	80	10	90
Higher price sensitivity	38	52	90
Total	**118**	**62**	**180**

Result’s Evaluation and Phase 2 planning

4

Tariffs alone aren’t enough to change customer behaviour

Main proposition to bring a local authority (Oxfordshire County Council) into the consortium to issue an energy insights app that will engage consumers and help them understand their energy consumption.



Create an Oxfordshire Energy Insights App

- Working with MUG and Eliq, we will develop an Oxfordshire Energy Insights App to engage the local community and help consumers reduce their energy consumption (expected to be approx. 7%)

Market within Oxfordshire and create trial groups

- Market to the residents of Oxfordshire County.
- Once we have residents signed up, we will create our 4 trial groups

Model future tariffs and offer ESA retro-fits

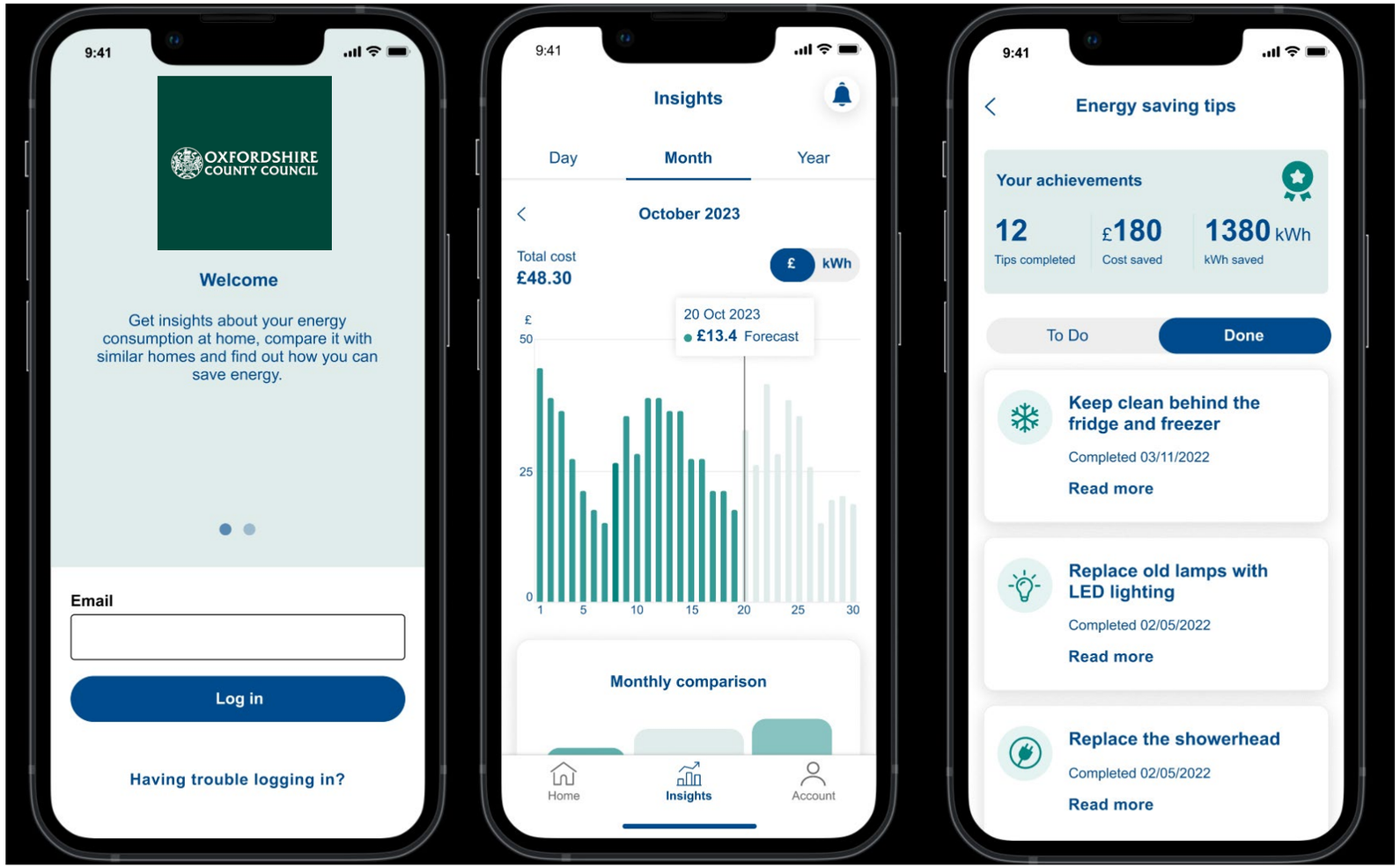
- The savings of the trail groups will be monitored.
- Energy as a Service will be offered to selected trail residents

Evaluate Results of the trial

- Evaluation of trail results to determine most efficient tariff.
- Understand the implication of ESAs on the tariffs and consumers energy usage.
- Future planning to ensure that the most appropriate tariffs are created for consumers

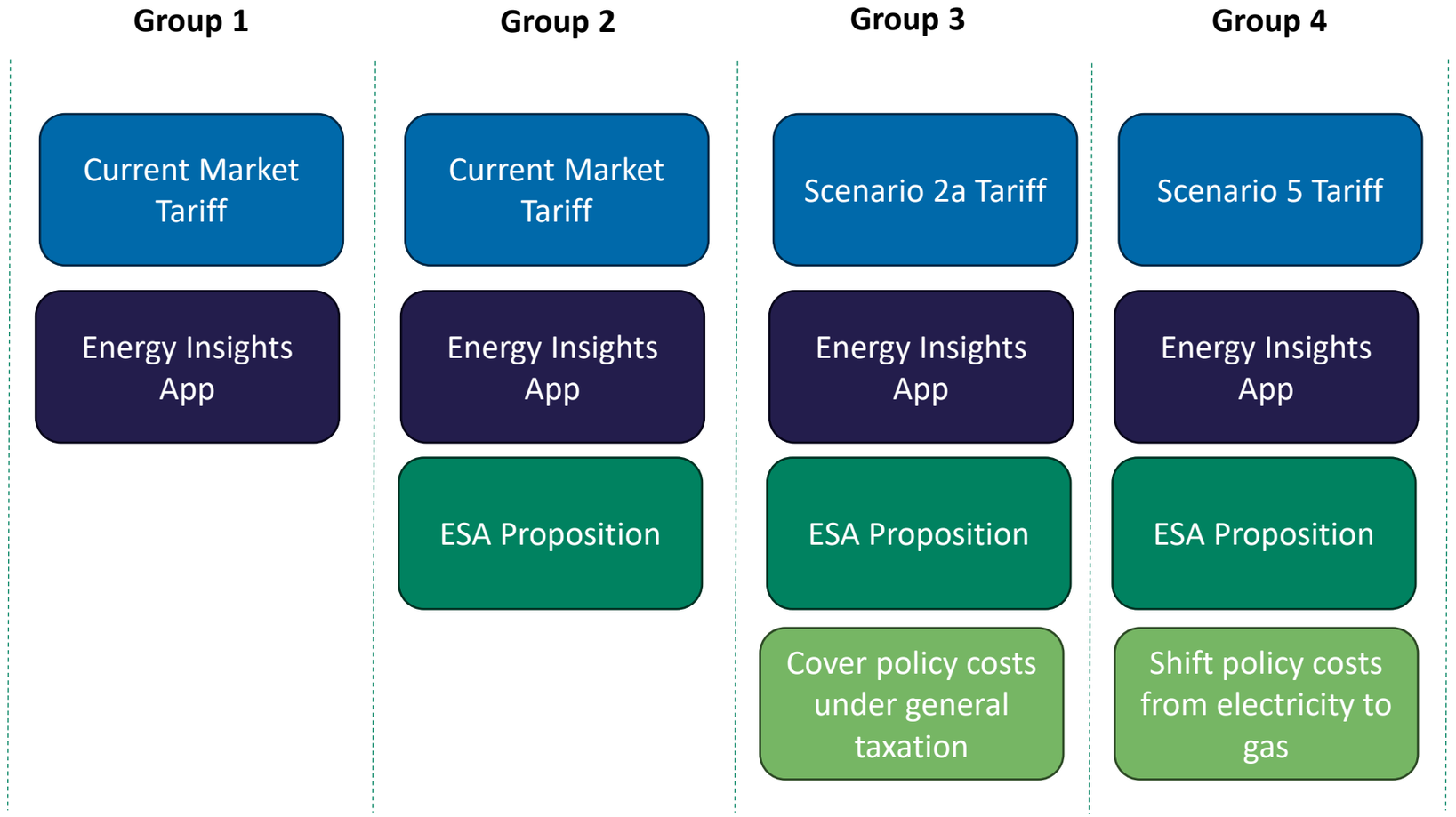
Create an Oxfordshire Energy Insights App

1



Market within Oxfordshire and create trial groups

2



Model future tariffs and offer ESA retro-fits and Evaluate Trial Results

3

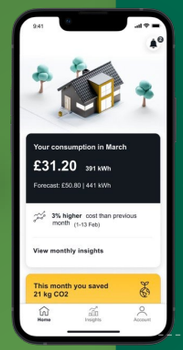
4

Open Energy Data

Tom Woolley
Driving the Energy Transition


Energy is changing from Blockbuster
to Netflix
And it's driving the Energy Transition

Journey Step

	Education & Awareness	Energy Transition Options	Taking Action	Affordability & Optionality	Enduring Engagement & Value
How	**Energy Insights using Smart Meter Data and House/ Building Profile.**	**Using Smart Meter Data, and home profile, we use Machine Learning and AI to drive "quick-wins" & retrofit recommendations**	**Acting on recommendations. Exploring the financial options further.**	**Simple options for customers. Green Home Finance, Energy as a Service, Subscription Models, Outright Purchase**	**Enduring provider for Customer Energy Manager (CEM), optimisation, asset management, energy tariff, maintenance and support.**
Impact	£ kWh  • *High Digital Engagement.* • *Education - Actionable Insights.* • *Education - Home efficiency, usage and carbon footprint.* • *Drives Behavioural Change and reduce Energy by ~8%.* Insights	• *Shop front for data drive. recommendations. From DIY upwards.* • *Simple, realistic & clear retrofit recommendations.* • *Full cost to run the home optimisation.* • *Education - Home efficiency & usage.*	• *Professional Final Mile Engagement with customer at heart.* • *Safe pair of hands, high quality and reliable national workforce.* • *Energy Supplier agnostic - customer savings in a competitive market priority.*	• *Access to flexibility services and revenues for additional value.* • *Customer choice - clear, simple options for financing/funding the solution.* • *Full energy transition support for the customer.*	• *Flexibility & Optimisation to maximise savings and additional revenue.* • *Enduring Support, Maintenance and Replacement.* • *Always refreshing options for best Flexibility Services and Energy Tariffs.* • *Value re-play. Showing before and after impact.*
Benefits	Data gathered supports in calculating financed emissions across residential & SME building stock. Digitally engaged customers, getting value over and above expected = Sticky and High Value customer relationships	*Data against EPC rating, retrofit measures, property type, income* bracket, etc. giving fantastic insight into customer behaviour.	*Data against EPC rating, retrofit measures, property type, income* bracket, etc. giving fantastic insight into customer behaviour.	Reliable, high-quality partner for Installation. Energy Savings & Tariff options delivered with Ofgem Confidence Code	*Lifetime engagement creates a unique and valuable customer relationship* *"Live" view of financed emissions before and after across portfolio* *Data and Success feedback to proposition stage, supporting customer growth*

Tracie Callaghan

Natwest

Exploring Energy Data

Tracie Callaghan –Innovation Lead, Climate Data

February

2024

Energy data

So why does a bank care about this?

- Existing emissions models -based on Energy Performance Certificate (EPC) ratings
- EPCis a blunt tool, not designed for this purpose
- PCAF weighted data quality scores of 3.7 for residential, 4.6 for commercial real estate
- Even at 100% coverage (unrealistic), the best score achievable would be a PCAF 3
- Actual energy consumption figuresareneeded for higher data quality scores

This affects our ability to calculate financed emissions but more importantly our ability to support our customers anddrive positive change

Table 5-15. General description of the data quality score table for mortgages

(score 1 = highest data quality; score 5 = lowest data quality)

Data Quality	Options to estimate the financed emissions		When to use each option
Score 1	**Option 1: Actual building emissions**	**1a**	Primary data on **actual building energy consumption** (i.e., metered data) is available. Emissions are calculated using actual building energy consumption and **supplier-specific emission factors**[193] specific to the respective energy source.
Score 2		**1b**	Primary data on **actual building energy consumption** (i.e., metered data) is available. Emissions are calculated using actual building energy consumption and **average emission factors** specific to the respective energy source.
Score 3	**Option 2: Estimated building emissions based on floor area**	**2a**	**Estimated building energy consumption per floor area based on official building energy labels AND the floor area** are available. Emissions are calculated using estimated building energy consumption and **average emission factors** specific to the respective energy source.
Score 4		**2b**	**Estimated building energy consumption per floor area based on building type and location-specific statistical data AND the floor area** are available. Emissions are calculated using estimated building energy consumption and **average emission factors** specific to the respective energy source.
Score 5	**Option 3: Estimated building emissions based on number of buildings**	**3**	**Estimated building energy consumption per building based on building type and location-specific statistical data AND the number of buildings** are available. Emissions are calculated using estimated building energy consumption and **average emission factors** specific to the respective energy source.

(* see page 98: https://carbonaccountingfinancials.com/files/downloads/PCAF-Global-GHG-Standard.pdf)

Learnings

Journey so far

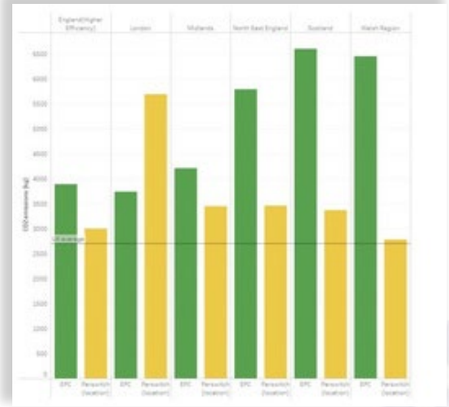
Data driven exploration PoCs:

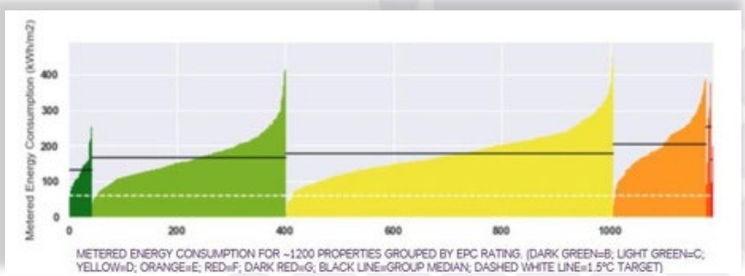
- Perse-aggregated energy data insights
- CarbonLaces-smart meter data, decarbonisation
- Eliq -synthetic energy data, emissions reporting

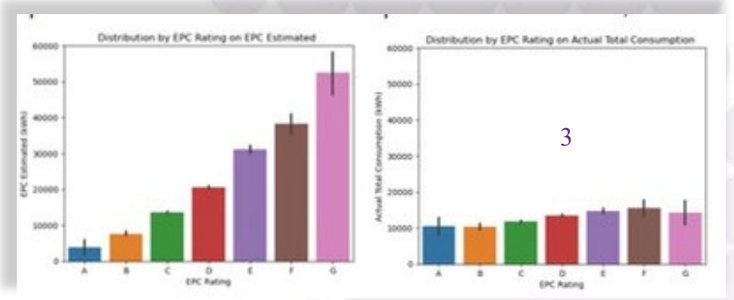
N3rgy PoVs–energy data

Further work:

- Chameleon -GHFA pilot Greener
- Homes Attitude Tracker Sustainable Homes & Buildings
- Coalition –British Gas, Worcester Bosch, Citizens Advice







The future

So, what's next?

Commercial:

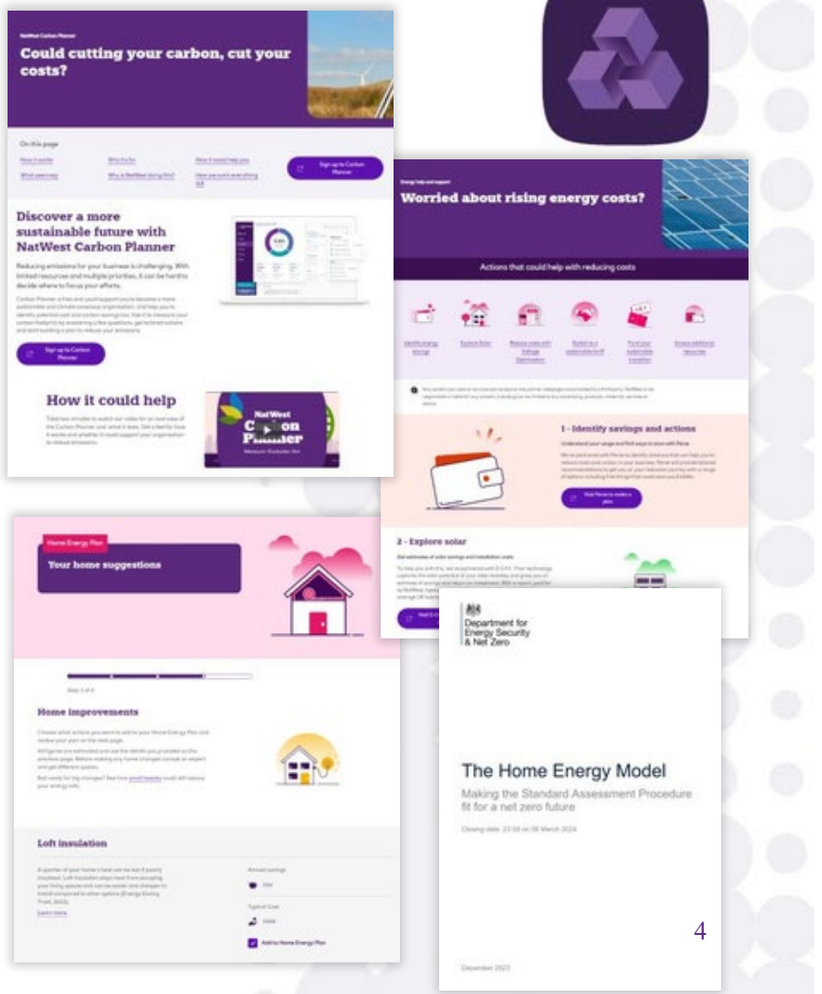
- Carbon Planner – SME carbon footprinting, supply chain
- EnergyHelpandSupportHub – Perse energy insights, D-CAT solar potential

Retail

- Home Energy Plan – insights and recommendations, grant eligibility, marketplace of installers

Policy:

- Home Energy Model – Gov.UK replacement for SAP methodology

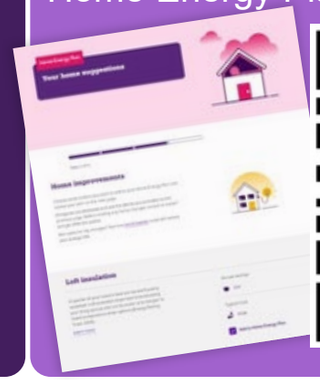


Resources

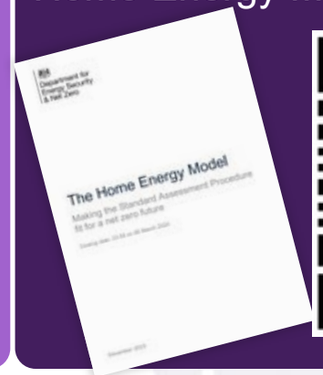
Scan the QR codes to find out more

Greener Homes Attitude Tracker

Home Energy Plan

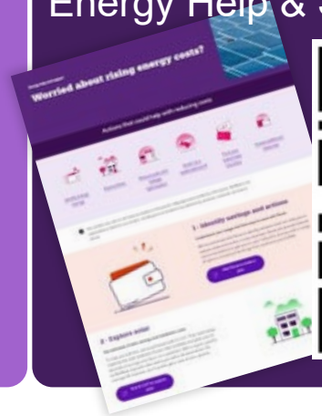


Home Energy Model –GOV.UK

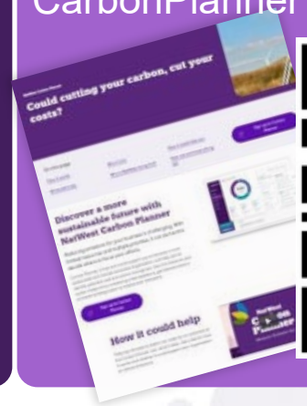


Sustainable Buildings Coalition

Energy Help & Support Hub



CarbonPlanner



What’s Next

Tom Woolley

More R&D

Flex | Assets | Employer-Employee

National Coverage for ESA installation

Non-Energy Supplier Brands growth in Energy related services

Focus on driving change for co-ordinated installs

Enabling other industries to help with SMIP

Thinking outside the box for the final 3rd of Smart Roll Out

SMDA Alternative for Industry

Enabling more innovators with Energy Data

Thank you!

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