

Energy Efficiency and Flexibility

May 2020



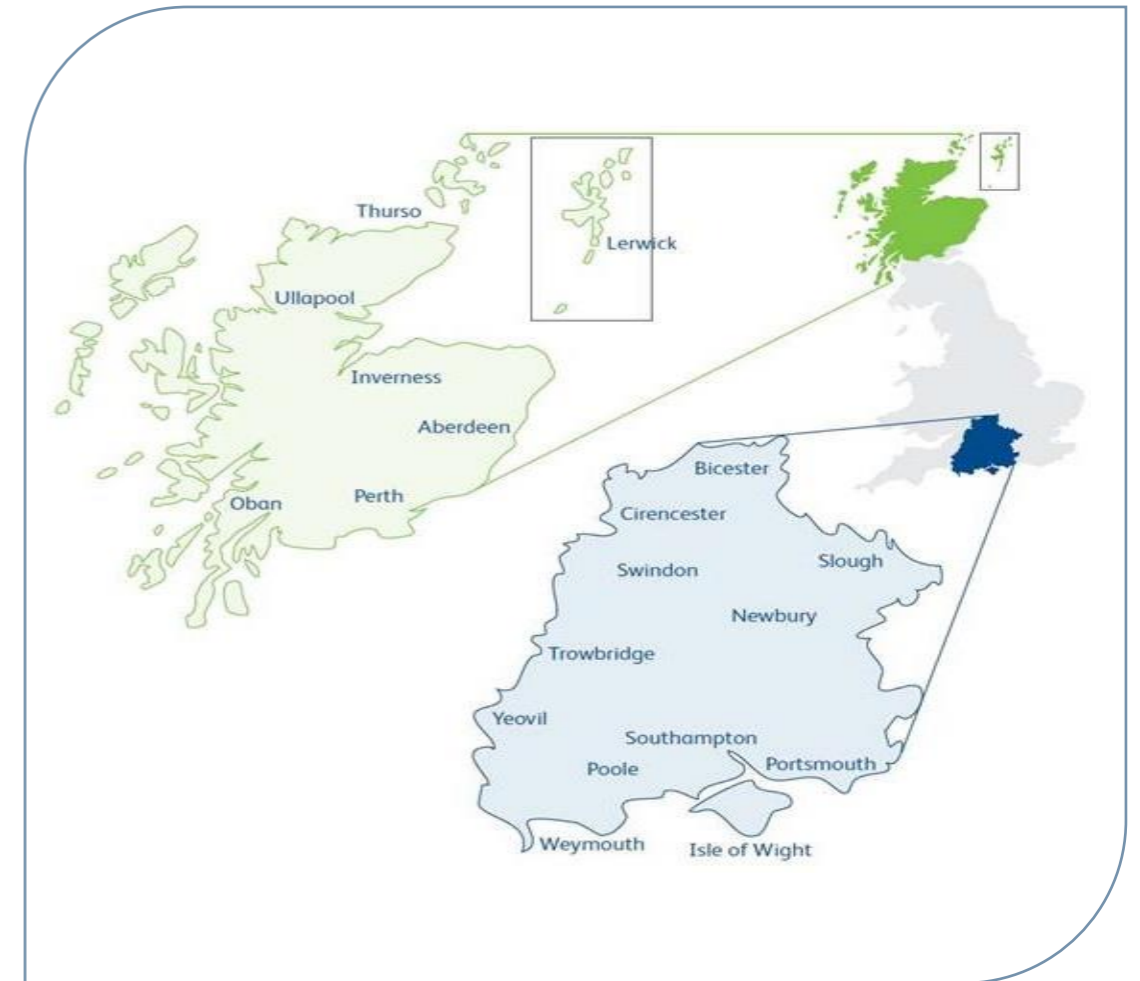
Charlie Edwards- Flexibility Markets Manager



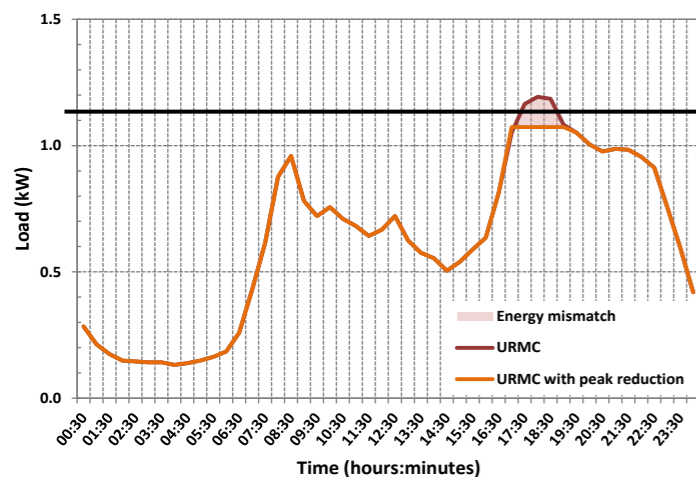
Scottish & Southern
Electricity Networks

Who are SSEN

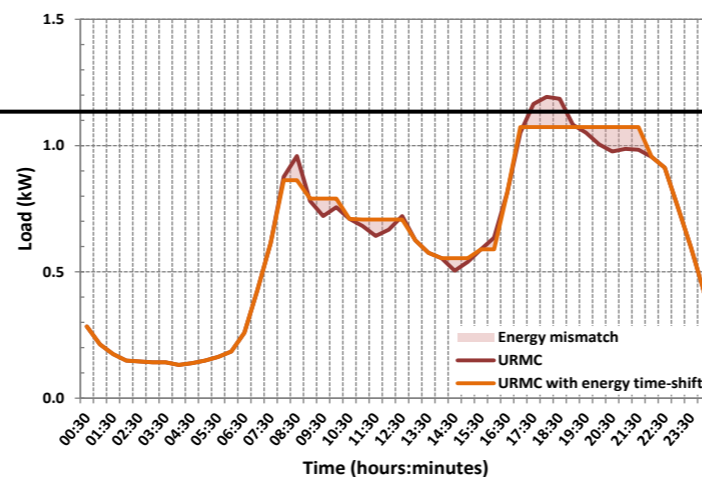
- Scottish and Southern Electricity Networks owns:
 - two electricity distribution networks
 - one electricity transmission network
 - +100,000 substations
 - +130,000 km of overhead lines and underground cables
 - +100 submarine cable links
- We serve 3.5 million customers across one third of the UK's landmass.



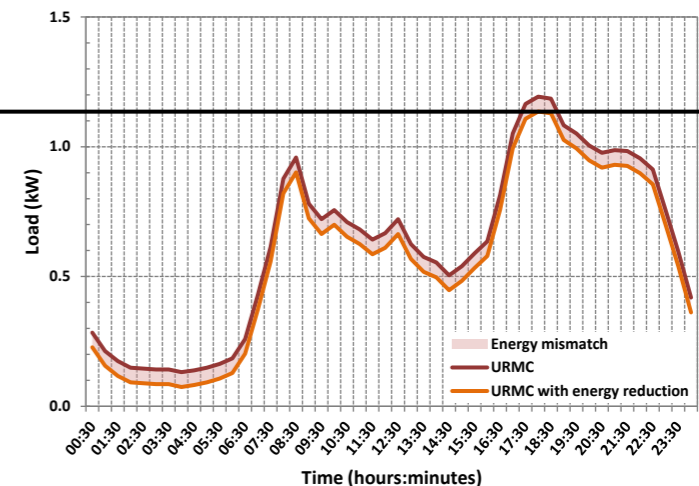
The Issue



(a) Peak reduction



(b) Electricity time-shifting



(c) Electricity reduction

SAVE Project



<https://save-project.co.uk/>



WE NEED
TO MAKE IT
VERY EASY FOR
OUR
CUSTOMERS

TRIAL DESIGN



Opt-out approach
(in-person visits
door-to-door)



Installed by
project staff



Up to 10 bulbs
per household
available



Free of
charge

HOUSEHOLD UPTAKE

76%

AVERAGE
NUMBER OF
BULBS
REPLACED

7

AVERAGE
ANNUAL
SAVING PER
HOUSEHOLD:

90
kWh

ANNUAL EFFECT SIZE ACROSS VARIOUS METRICS



Household



£15.82

► Cost of national LED rollout £1 billion max



SAVE project



37 tonnes
CO₂



SSEN customers



28,000
cars

► New nuclear plant £5 billion



UK households



1 nuclear
power station

VULNERABLE CUSTOMERS

TREATMENT EFFECT

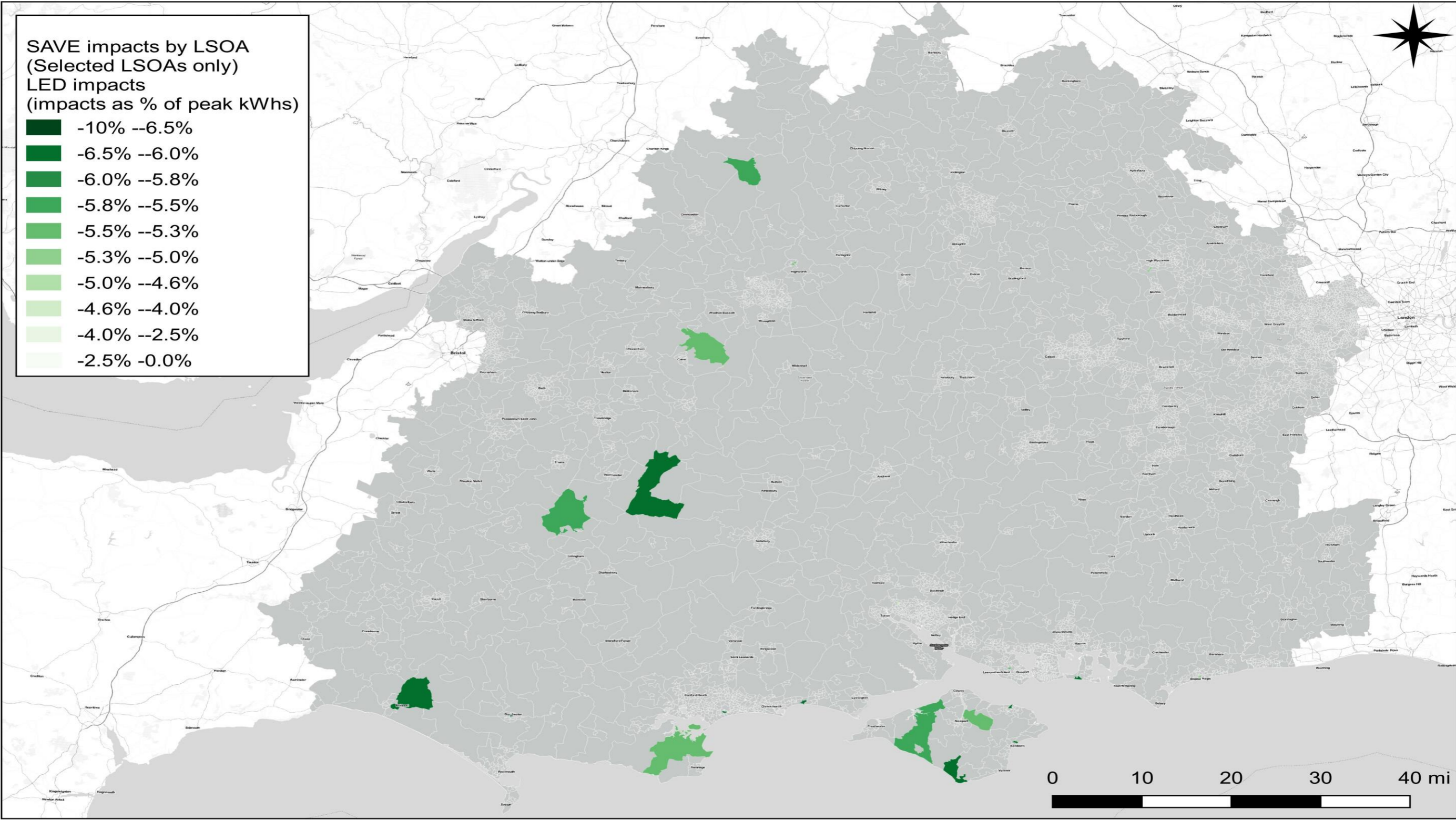
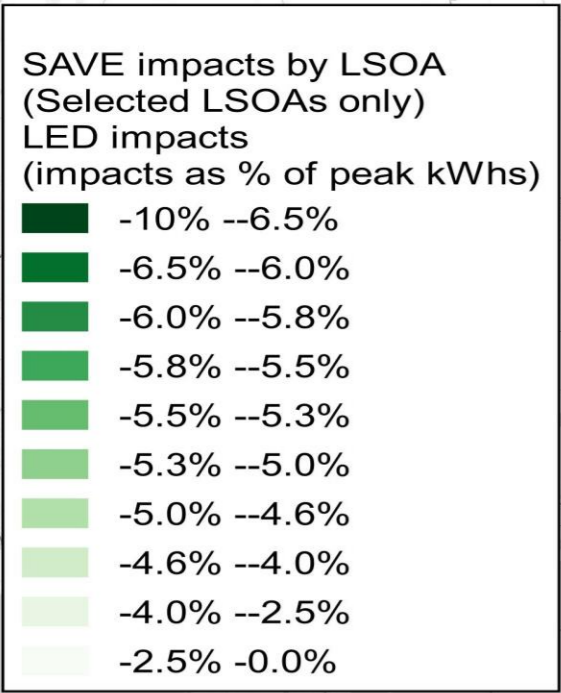


50%

GREATER FOR VULNERABLE
CUSTOMERS THAN FOR THE
AVERAGE CUSTOMER

CONCLUSION: if deployed in adequate quantities, and offered free and installed, LED bulbs can effectively reduce peak network load, save customers money on bills and reduce carbon emissions.





Flex Markets

DRAYTON-MILTON-FULSCOT

33/11kV Reinforcement
Investment cost £2,480k
CMZ Value/Cost £256,760

COXMOOR WOOD

132/33kV Reinforcement
Investment cost £3,300k
CMZ Value/Cost £348,790



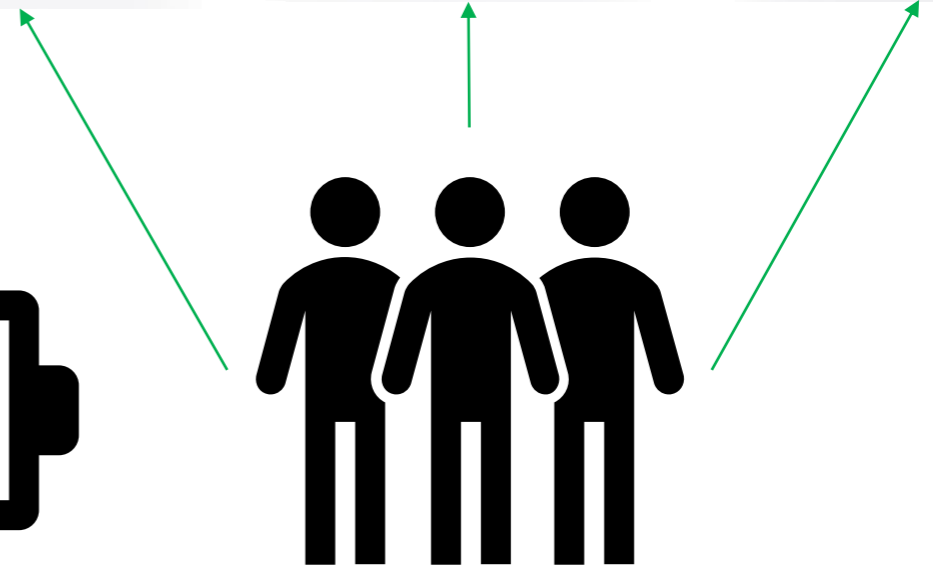
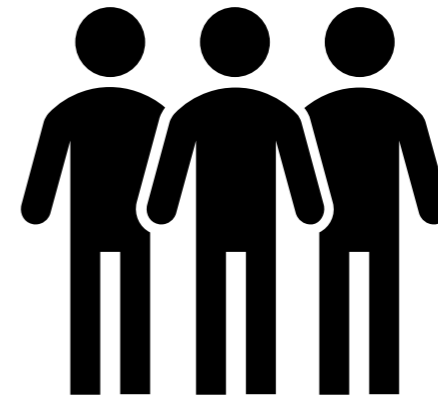
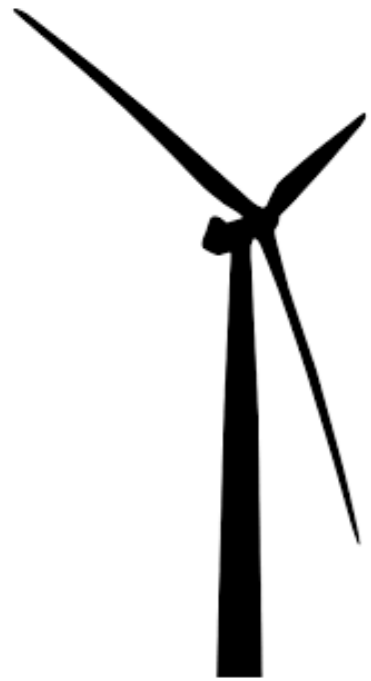
ZONES REVIEWED

In 2018 SSEN has reviewed a further 14 schemes for potential CMZ application;

- 11 SHEPD schemes, value £14.5m
- 3 SEPD connection driven schemes, value £8.2m

However within the current parameters none resulted in commercial values sufficient to progress to tender.

Flexibility to now

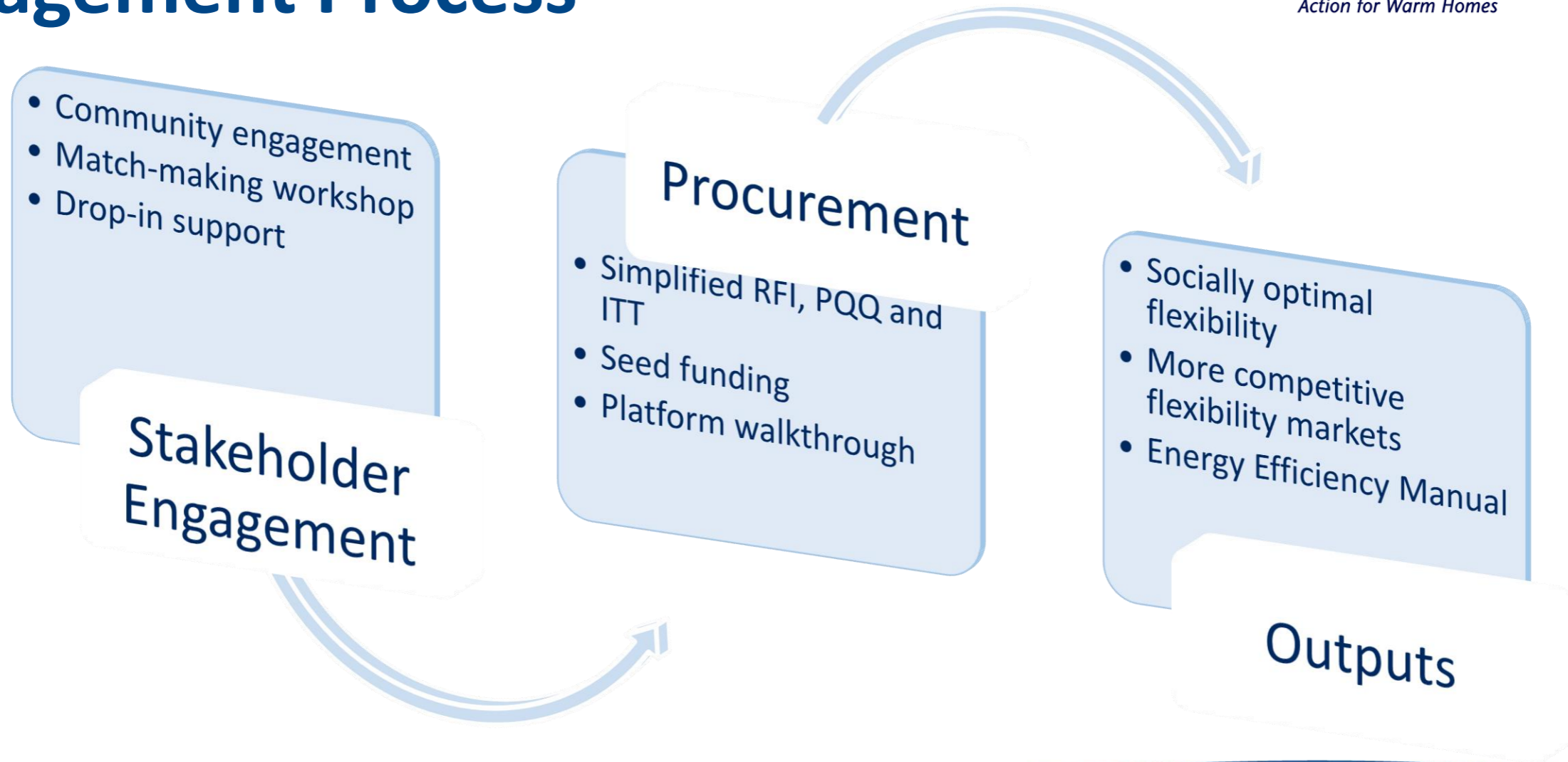


Engagement Process



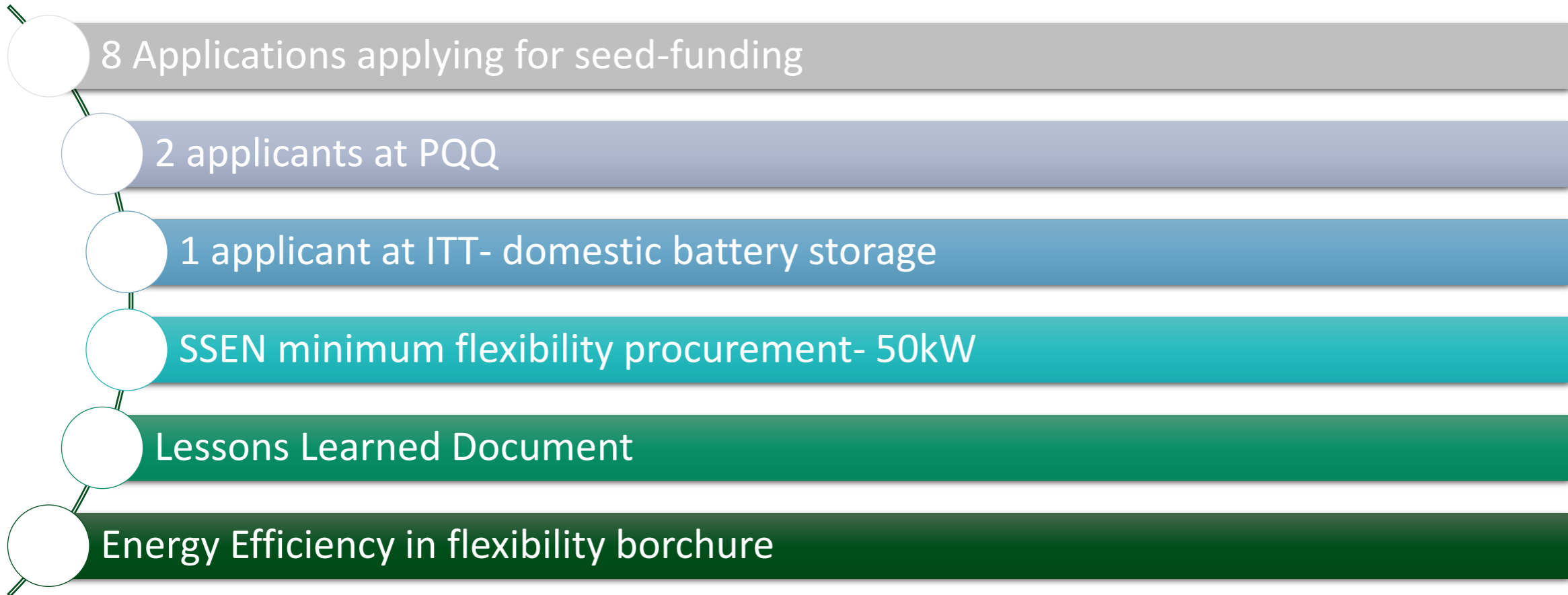
Action for Warm Homes

NAVIGANT



Scottish & Southern
Electricity Networks

Project Outputs



<https://www.ssen.co.uk/community/>



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Electricity Networks