



ELECTRIC
NATION

YOUR
ELECTRIC
VEHICLE
YOUR
SMART
CHARGE

COLLABORATION PARTNERS

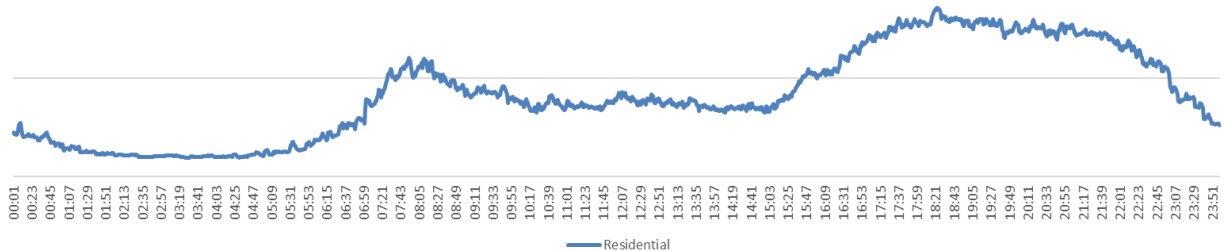


WESTERN POWER
DISTRIBUTION
Serving the Midlands, South West and Wales



Household Electricity Demand over a day

Electricity distribution cables sized at ~2 kW /house



The problem with EVs

Charging power 3.5 kW or 7 kW

3.5 → 7 times average
household demand

For hours at a time...

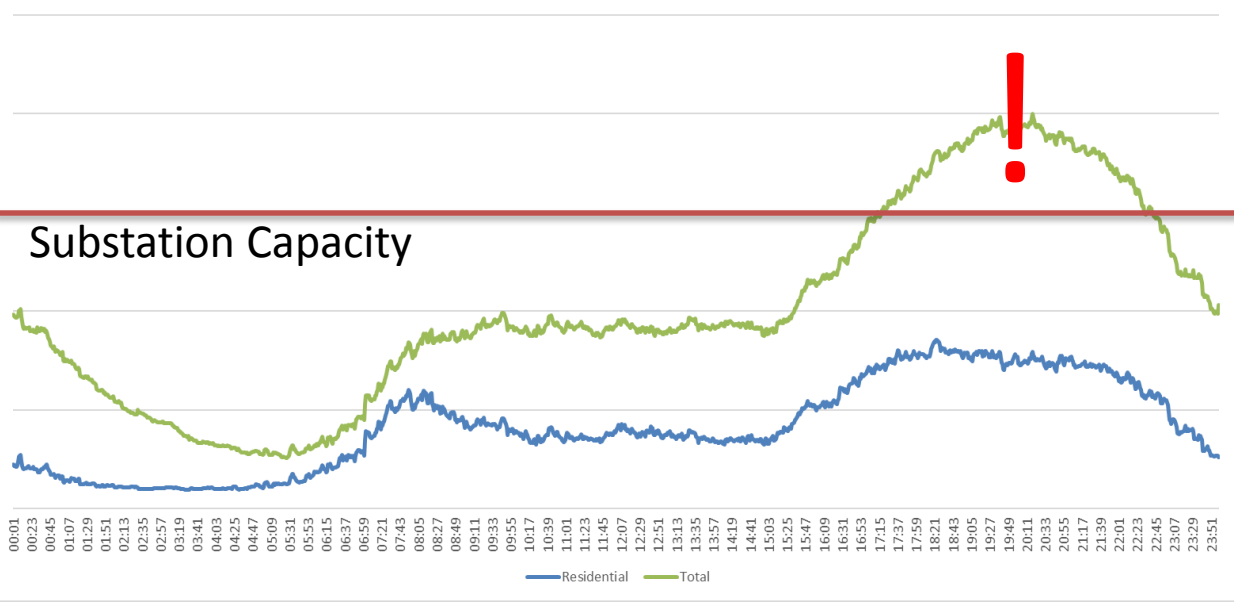
Accepted average demand
becomes outdated



EV charging added on to household demand



Substation Capacity





Traditional Solution

Replace distribution cables

My Electric Avenue models suggest
30+% need replacement by 2040-50

Digging up roads, gardens, drives, etc

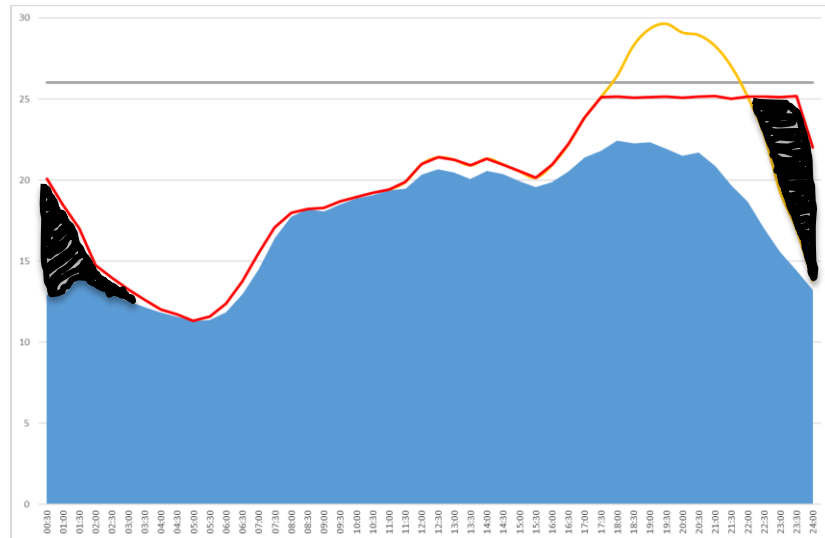
Cost to customers at least £2.2 billion

Disruption the biggest cost to
everyone



Electric Nation trialing solutions EV Charging Demand Management

New demand
profile protects
feeder and shifts
EV charging to
later in night



ELECTRIC NATION: TRIALLING SOLUTIONS

1. Expand current understanding of the demand impact of EV charging at home on electricity distribution networks
 - Diverse range of plug-in electric vehicles
 - Charge rates up to 7kW
 - Range of battery sizes from 20kWh to 80kWh+
2. Improve understanding of how vehicle usage affects charging behaviour.
3. Evaluate the reliability and acceptability to customers of EV demand management
 - For charging and vehicle to grid operations



JOIN THE ELECTRIC NATION COMMUNITY IF ...

- You are buying or leasing a new EV
- You live in South West England, South Wales, West or East Midlands
- You have off-street parking
- Home broadband



PARTICIPANTS MUST BE WILLING TO...

- Engage in the trial for up to two years
- Have their plug in vehicle charging managed
 - Reduced rate or paused for short periods at peak electricity demand periods
- Participate in the project's customer research
 - Interviews and on-line questionnaires



BENEFITS OF TAKING PART...

- Free smart charger worth around £700
- You will become part of the Electric Nation community
 - Participate in future proofing the electricity network for mass EV uptake
- In future:
 - Cheaper off-peak electricity charges
 - Revenue stream if demand side response technique effective





ELECTRIC
NATION

YOUR
ELECTRIC
VEHICLE
YOUR
SMART
CHARGE

WWW.ELECTRICNATION.ORG.UK

ELECTRICNATION@DRIVE-ELECTRIC.CO.UK

[@ELECTRICNATION_](#)