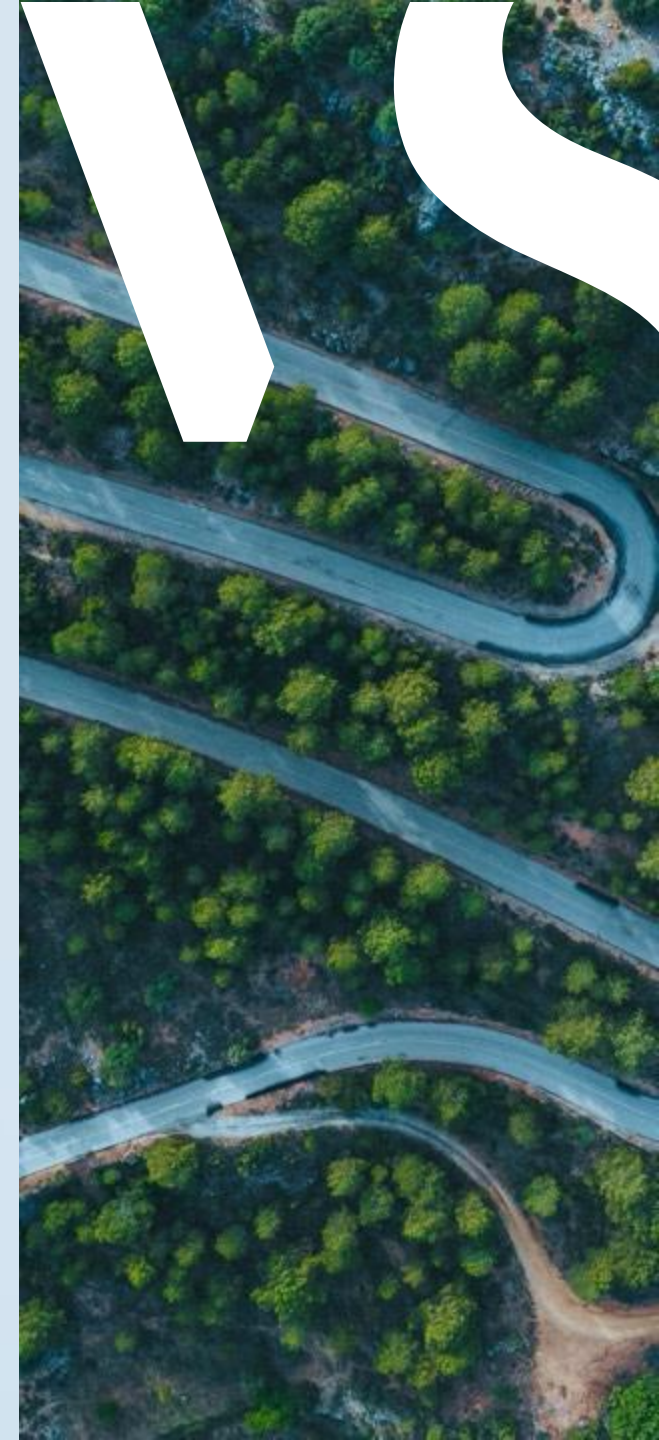




Accelerating a sustainable and resilient Energy Transition

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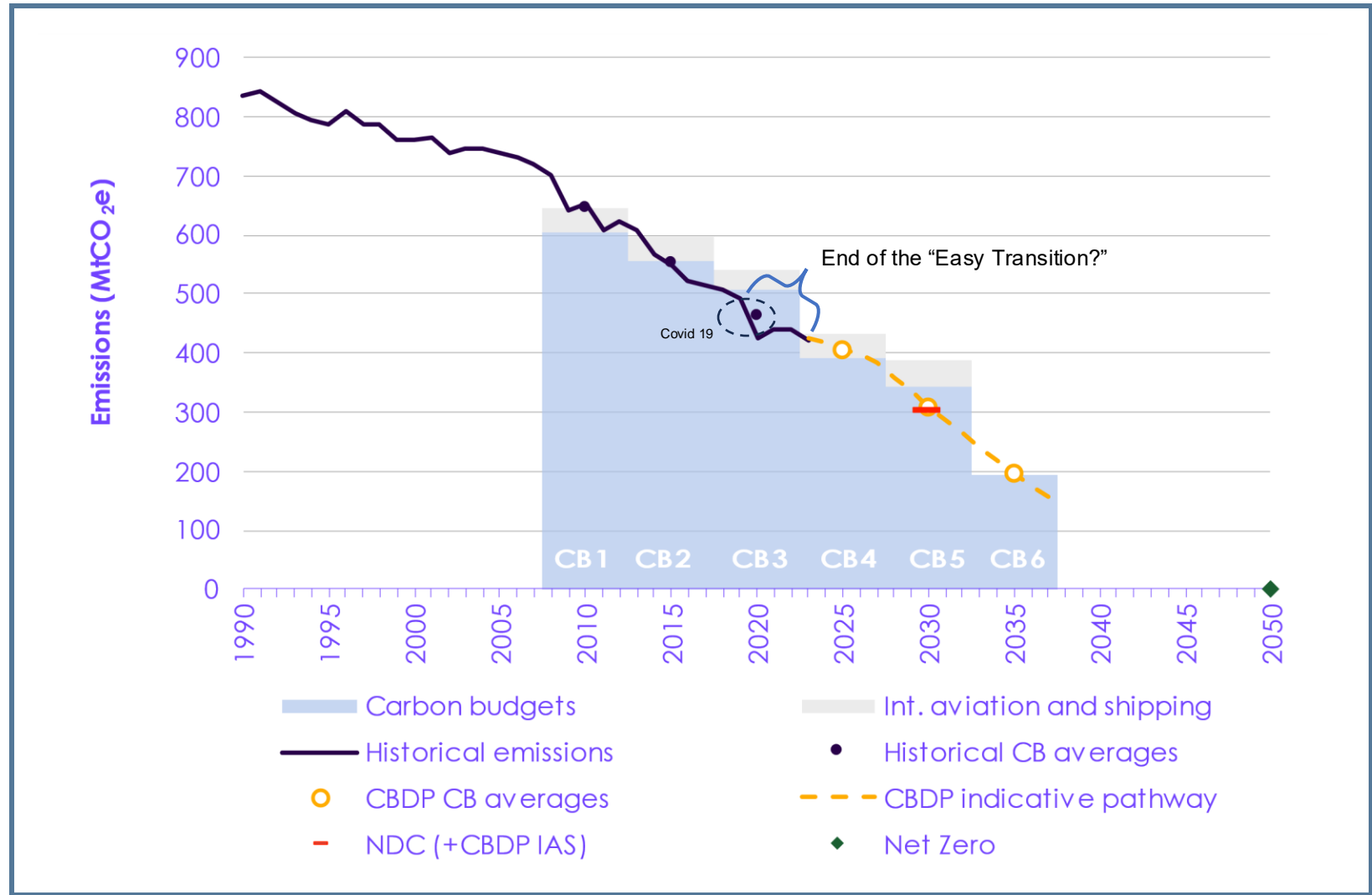
Key topics

- Where are we.
- The case for acceleration.
- Energy System Replumbing
- Acceleration options – a checklist
- Target Area for Acceleration
- Summary Thoughts

Track record and the case for acceleration

Key Question:

“As a consumer (business and private) how has our energy relationship changed (with the exception of price shocks) over last 5 years?”



The case for acceleration

High proportion of plans and policies yet to achieve credible status

Figure 2 Assessment of policies and plans



July 2024 Progress report to Parliament



At a time where:

- “easy wins” are perceived as already banked
- large gains have been the result of single shot improvements (reversible)
- progress across the majority of categories behind target
- Robustness of forward plans in question.

.....the case for acceleration has never been stronger.

What kind of acceleration is critical!

Large scale infrastructure investment

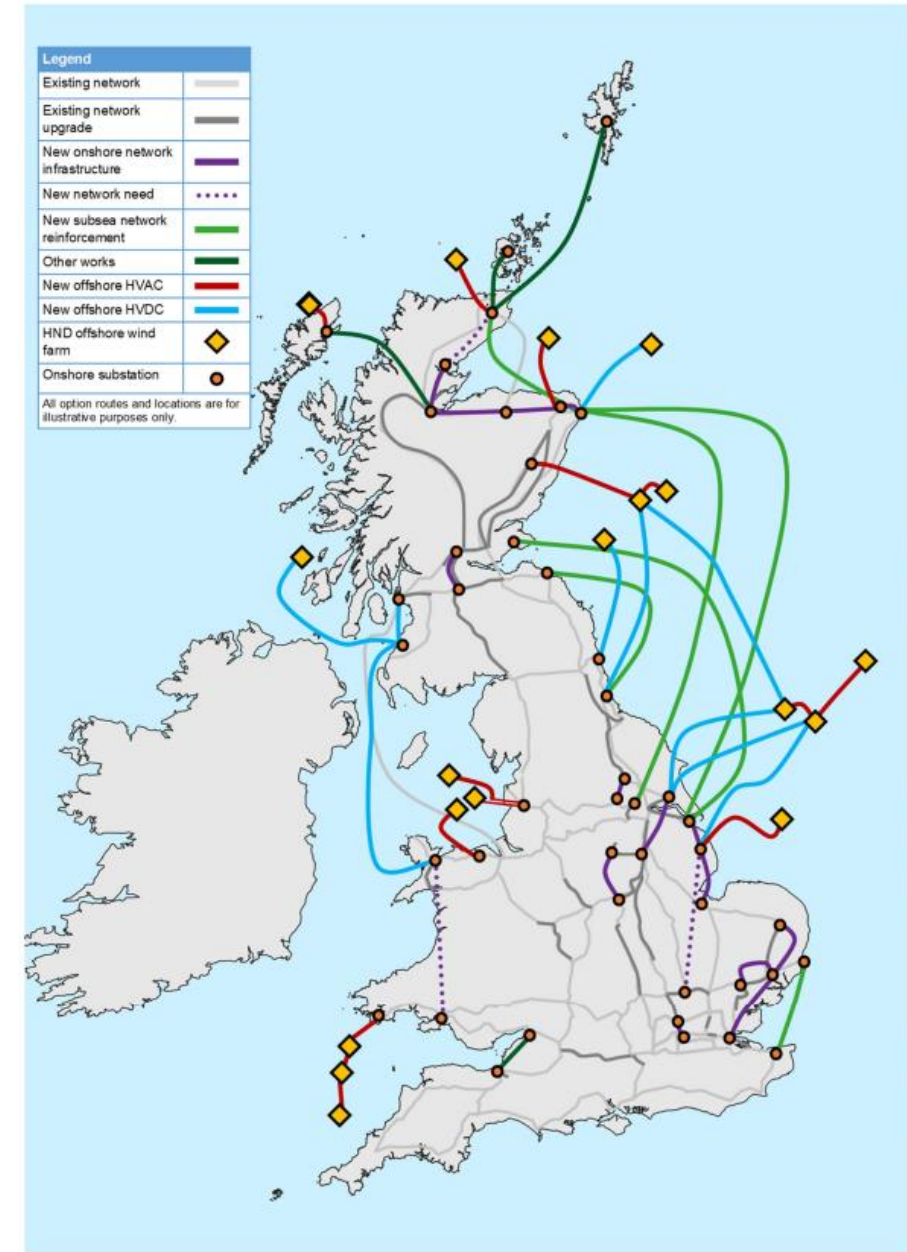
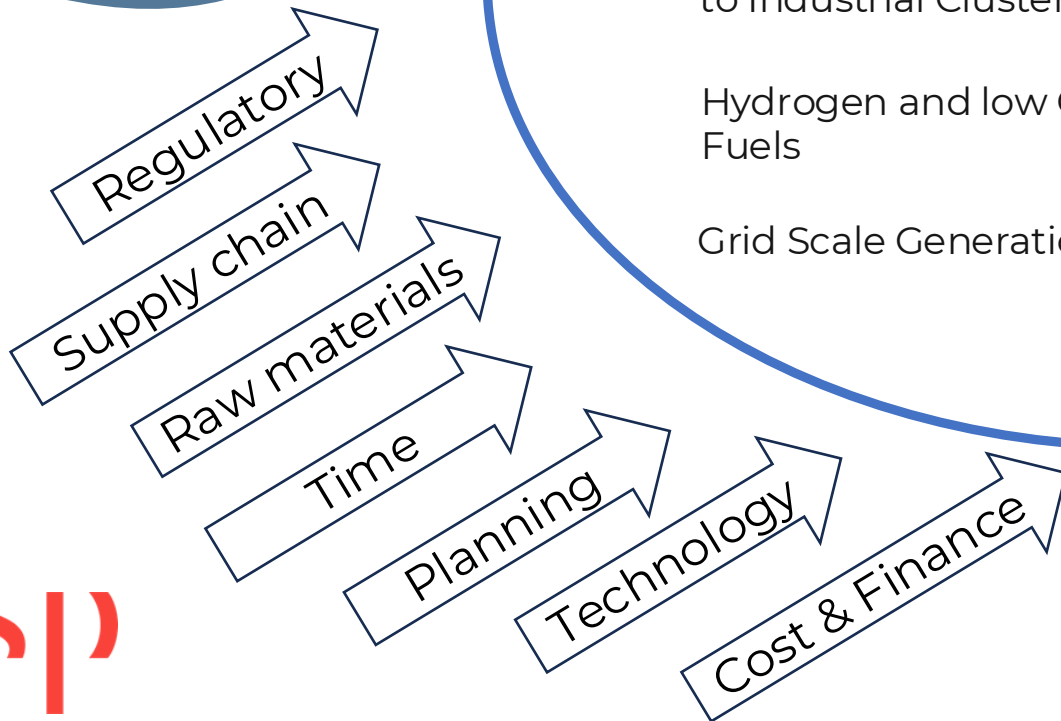
Wholesale Energy Re-plumbing

Accelerated Strategic Transmission Investment ASTI / Great Grid Upgrade Programme

Engineered Removals CCUS tied to Industrial Clusters

Hydrogen and low Carbon Fuels

Grid Scale Generation (on & offshore)



NGESO Full HND including major onshore and offshore recommendations





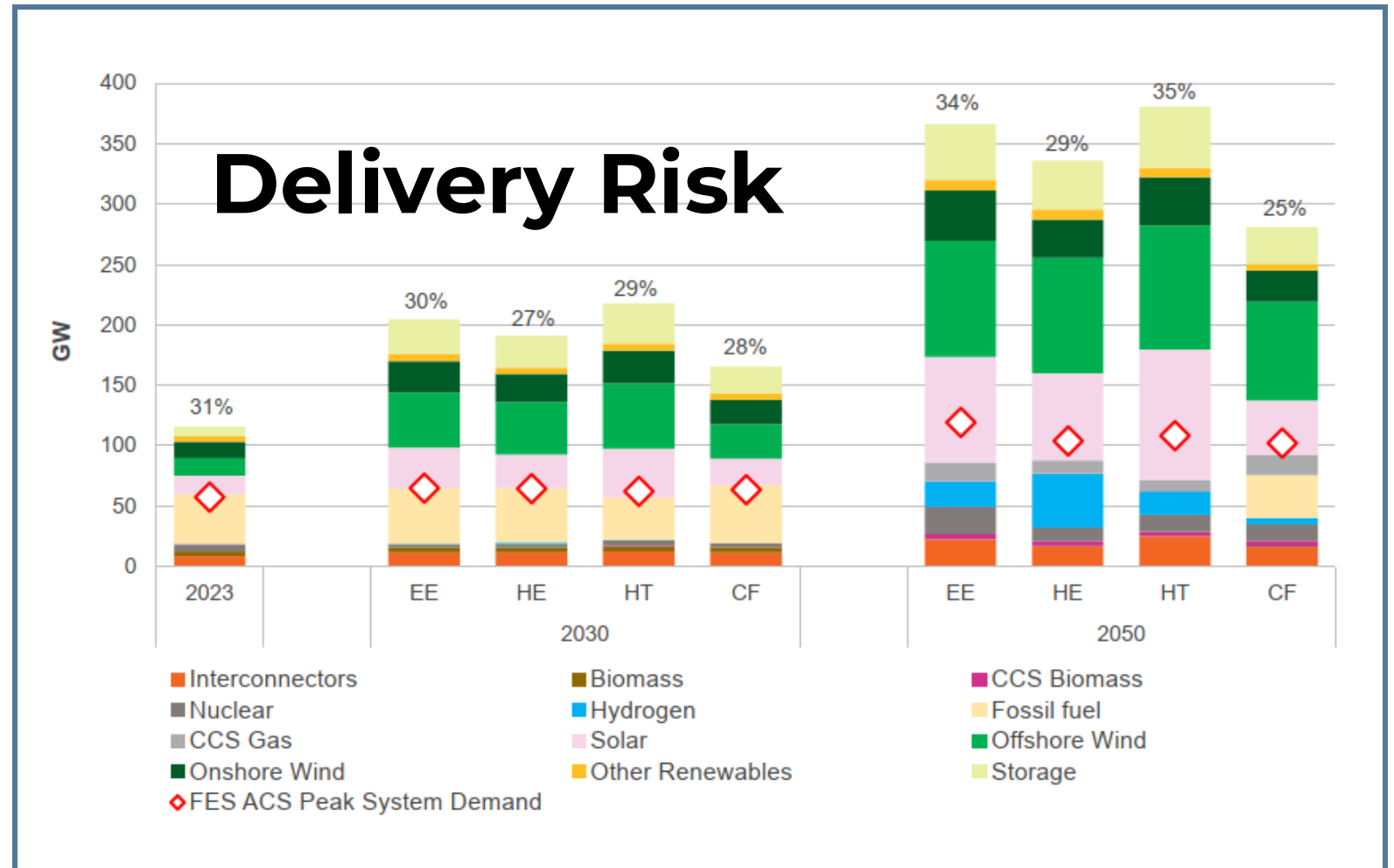
Acceleration Options check-list

- Available now
- Established supply chain
- Strong / Mass appeal
- Meaningful positive impact
- Cost effective / affordable
- Limited or no regulatory hurdles
- Finance friendly

Any available options can provide resilience and de-risk delivery against carbon budget

Servicing the Demand

- Circa 220-260 GW installed capacity to be added by 2050, circa 80-90GW by 2030.
- Peak moves from circa 50% to only 35% of installed capacity
- Depending on scenarios Peak / Off Peak Delta grows in some cases to >50GW
- Generational amounts of T&D infrastructure planned to move power to where it is needed to service the demand



Installed generation capacity, peak demand and percentage of distribution-connected capacity (ESO)

The Proposition:

Target Decentralised Energy



Not every dwelling is suitable for solar, but each one has a grid connection for BESS



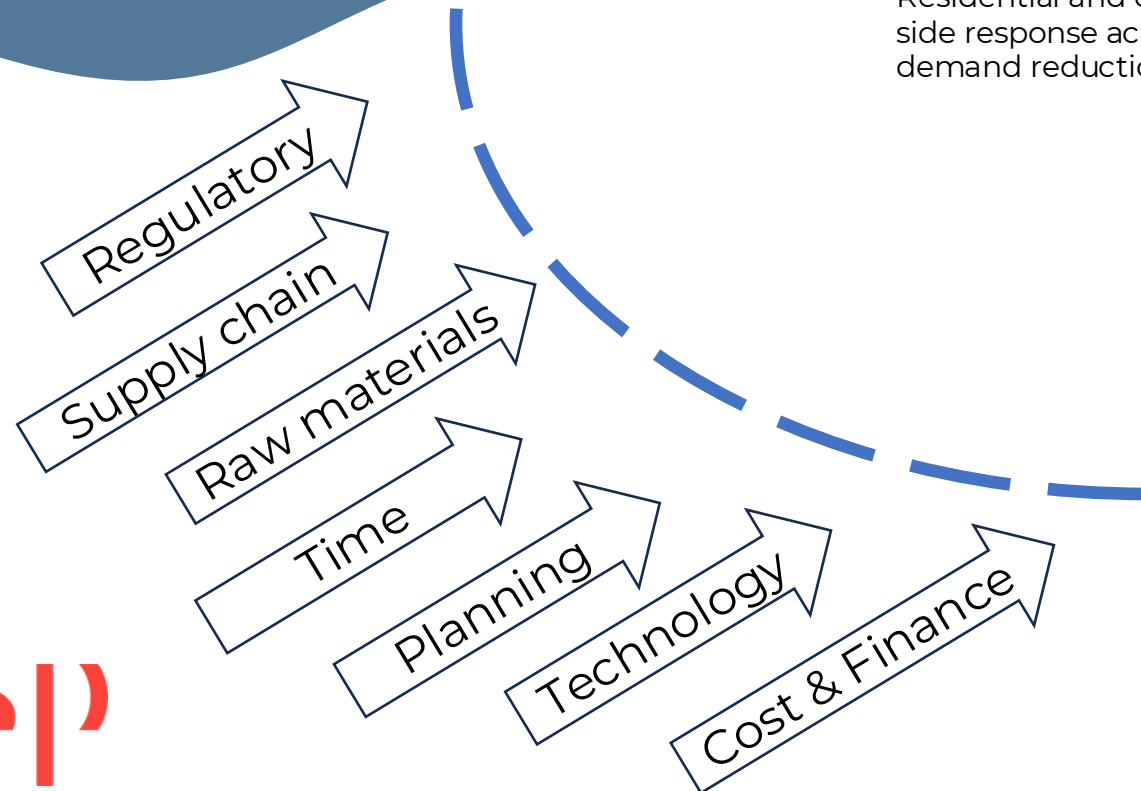
Heat Pumps, plus Heating water is a major demand constant, winter and summer



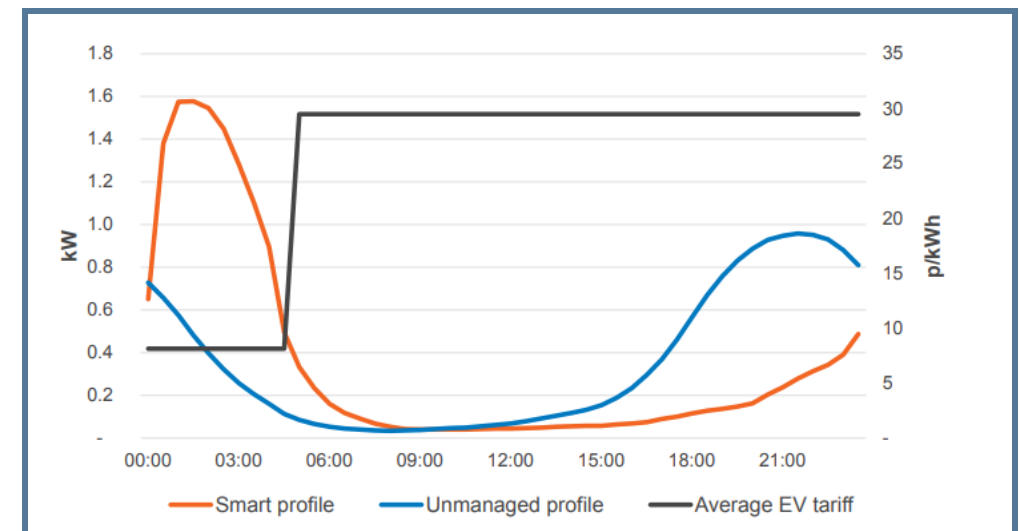
Residential and commercial demand side response achieves 10GW peak demand reduction by 2050



Smart charging and V2G reduce peak demand by 49GW by 2050



Average demand on the network from unmanaged and smart charging profiles



Benefits

- Scalable Delivery
- Targets alternative supply chain
- Buys time as we chase the late curve
- Helps de-risks the grid scale plans
- Potential to reduce overall infrastructure requirements
- Potential for tangible consumer benefits
- Drives the conversation down with opportunities for tangible positive feedback loops





Summary

The major infrastructure (generation, storage & distribution) remains vital – **we must** accelerate delivery and hold nerve in delivering the reform required for this.

Opportunities to accelerate outside these massive CAPEX projects through targeting improvements in **energy intensity** and more effective **demand management**

The above requires **real behavioural change** for the whole of UK Plc.

Vital that we maintain a clear / unambiguous **narrative** & consistent effective communication particularly around energy use touch points for consumers.

The private sector must continue to play an increasingly key role in **embedding decarbonisation** into design, advice and behaviours.

The state could leverage action on its own asset base to send **clear market signals**, stimulate sector growth and help build supply chain expertise.

Our UK skills strategies needs to directly target this sector space. The opportunities for more tangible **community based** jobs and solutions is huge.

As always, collaboration will be key in accelerating and clearer “**Technology share principles**” could be explored with partners

Innovation comes with successes & dead ends - important to recognise and not be afraid to back a few horses – portfolio risk....

Successful outcome not only buys us time, but also facilitates much more tangible **conversation and ownership** of the actions and outcomes associated with decarbonisation efforts – potential for a virtuous circle.