Some lessons from the UK

Closing the gaps – the future of policy and business

Look ahead – you may need to change course!

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Full Ahead
I see no hazards…

❖ The energy system is in transition
❖ We need it ‘smart’ and ‘renewable’
❖ Roadmaps, work plans & innovation
❖ Oh – and some funding please

- The transition is driven by the three Ds: Decarbonisation, Decentralisation and Digitalisation
- Or is it five Ds? Adding Democratisation and Disruptive technologies
- There is a remarkable shift from centralisation and “The Economy of Scale”, to de-centralisation and the “Economy of Flexibility”
- This change is now being seen to be far more complex than simply the technology and commercial offerings… it challenges policy-makers and regulators
Will the captain please report to the bridge…

❖ The GB energy transition requires 35 new power system functions to be implemented
❖ Unlike the past, these have Whole-System impacts that span ownership boundaries
❖ However, GB has neither the mechanisms nor the accountabilities to implement these

- The 35 functions enable new requirements such as data sharing, smart EV charging, community energy, and network flexibility.
- For details see the GB Future Power System Architecture programme
- Open data systems for energy, incorporating robust cyber security, will be key enablers for change but they don’t exist today
- The core problem: the ownership & governance segmentation created at privatisation by “unbundling” no longer aligns with critical system functionality.
Iceberg on the starboard bow?

- GB’s change processes were designed in 1990 at privatisation and were suited to an era of incremental development.
- They can only move at glacial pace.
- They are totally unsuited to new Whole-System issues and new grid edge parties.

- GB electricity sector change processes centre around 8 ‘Code Panels’ & some 30 administrative organisations.
- The Panels have tightly constrained remits, no forward-looking roles, and no knowledge retention capabilities.
- They are dominated by the incumbents and are impenetrable to entrepreneurs and new parties at the grid edge.
- Tinkering with Panel interfaces or membership is not the answer. The root problem is that no party has Whole-System oversight for ensuring coordinated outcomes across boundaries.
One example of the hazards

Consider, just 2% of cars in GB are electric in the early 2020s, and have 7kW smart-chargers that respond to market prices.

The market moves from a high to a low price period.

Nationwide, EV chargers will turn on simultaneously, creating a step in demand of some 4GW.

This is about four-times the GB System Operator’s current safe limit – a serious threat to security.

Potential solutions:

1) Do nothing, take a chance that it won't happen and risk a widespread black out, or

2) The System Operator buys significantly more fast response, an expensive service, and increases this as the EV fleet expands, or

3) Develop technology/market solutions such as randomised delays, price banding, or frequency-sensitive charger controls. These need not be costly options but they require coordination and on-going monitoring across multiple parties: EV and charging point manufacturers, T & D network companies, the national system operator, and App developers.

4) Noting the many parties, the key question is: So, whose job is this? (Answer, for GB: It’s no one’s…)
In GB, Ofgem’s RIIO2 reset could lock us into outdated frameworks into the late 2020s.

There is an urgent need for cross-boundary coordination and agile change processes & governance.

FPSA’s work offers pointers for governance change, drawing lessons from other sectors.

Policy makers can also be at risk to inertia of thinking and government departments may struggle to ‘cross internal boundaries’ as sectors link up.

Every day takes us further down the wrong path, making it harder and more costly to establish the open systems and new markets that will benefit customers & wider society.

GB risks failing to deliver its energy policy, bankrupting grid edge entrepreneurs, adding costs, and frustrating customers.

Network companies may hesitate to accelerate change for reasons of self-interest and their Licence constraints.

Policy makers – time for your engagement?
**Signals to the Engine Room**

- "Whole-System" impacts are a demanding feature of new energy functionality.

- **Ask:** who is accountable for critical new functions that cross boundaries?

- It’s not sufficient to rely on “Task Groups” and “Co-operation” at boundaries.

- **Hazard:** change processes need to be agile, span silos and include grid edge parties.

- **Eyes Open:** Dead Slow may suit the self-interests of some parties.

- **The reality check:** Are you seeing authentic progress or is it simply window-dressing?

**To Take Away**

GB experience highlights some important considerations for effective delivery of the energy transition.
Submerged barriers to progress may be closer than you think!

Technical
Commercial
Regulatory

Governance
National policy
Societal

Thank you for your attention