Net Zero Market Reform

ESO's Net Zero Market Reform programme is exploring holistically the changes to current GB electricity market design that will be required to achieve net zero

Jan-21 | Nov-21 | May-22

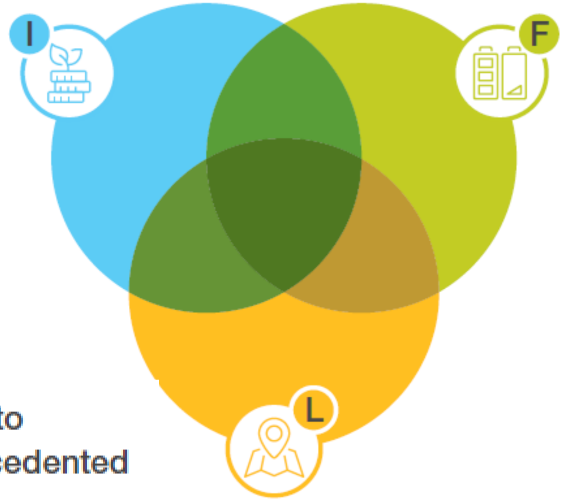
Phases 1-2
Scoping, Case for Change and Market Design Options Assessment Framework

Phase 3:
Operation: Detailed Assessment and Conclusions

Phase 4 onwards and into BP2 time horizon:
Planning in progress

Case for Change: The Key Challenges

There is a need to manage dramatic energy imbalances with **flexible and firm technologies** across both supply and demand



There is a need to **invest** at unprecedented scale and pace

There is a need to incentivise assets to **locate** and **dispatch** where they can minimise whole system costs

Market Design Options Assessment Framework: First Order Elements

Investment
1. Low Carbon Central Planning
2. Capacity Adequacy
3. Flexibility

Operation
4. Location
5. Dispatch

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Context

- Constraint costs are rising at a dramatic rate
- Balancing the network is becoming more challenging and requires increasing levels of inefficient redispatch
- Flexible assets are at times exacerbating constraints
- Current market design does not unlock the full potential of flexibility from both supply and demand

Approach

- Initial focus on Operation elements (location/dispatch)
- Assessment was qualitative based against criteria

Results

- Nodal pricing and central dispatch scored highest overall

Conclusions

- Status quo will not deliver net zero cost effectively
- The most efficient solution to this is real-time dynamic locational signals through nodal pricing combined with central dispatch (with self-commitment)
- Highest potential to deliver significant consumer benefits through greater competition and efficiencies (energy/reserves co-optimisation; optimised network/resource investment; efficient dispatch)

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1) Detailed assessment of nodal pricing and central dispatch design and implementation considerations, including impact on stakeholders

- Key market participant cohorts
- Consumers
- DNOs
- ESO Control centre

2) Assessment of other market design elements under a nodal pricing and central dispatch model

- Low carbon central planning
- Capacity adequacy
- Flexibility
- Low carbon support mechanism
- Settlement period duration
- Ancillary services market design

3) Support BEIS and Ofgem in their respective market reform work (REMA and locational pricing technical assessment)

Please visit our dedicated webpage or contact the team (market.strategy@nationalgrideso.com)