Agenda

Introduction

Current pathfinders and updates

Pathfinders ongoing challenges

Future direction

Q&A
Current Pathfinders and updates
### Current Pathfinders

<table>
<thead>
<tr>
<th>Pathfinder</th>
<th>Requirement</th>
<th>Status</th>
<th>Forecast Annualised Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability Phase 1</td>
<td>Inertia, SCL and dynamic volts</td>
<td>Completed</td>
<td>£8.7m</td>
</tr>
<tr>
<td>Mersey</td>
<td>Voltage</td>
<td>Completed</td>
<td>£12.6m</td>
</tr>
<tr>
<td>Stability Phase 2</td>
<td>SCL, Inertia, dynamic volts (Scot)</td>
<td>Technical assessment in progress</td>
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<tr>
<td>Pennines</td>
<td>Voltage</td>
<td>Tender Stage (TO/DNO studies)</td>
<td></td>
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<tr>
<td>Constraint Management B6</td>
<td>B6 Thermal Constraints</td>
<td>Technical assessment in progress</td>
<td></td>
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<tr>
<td>Stability Phase 3</td>
<td>SCL, Inertia, dynamic volts (locations of SCL need)</td>
<td>In Development</td>
<td></td>
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## Current Pathfinders – Stability Pathfinder

### Phase 1
- Contracts were due to start between April 2020 and April 2021, but there are delays due to COVID

### Phase 2
- Participant feasibility study
- Feasibility assessment
- Connection review

### Phase 3
- Participant activity
- Feasibility assessment
- Commercial submission
- Commercial assessment
- ESO review
- ESO activity

### Key
- Participant activity
- ESO activity
- DNO & TO activity

### Timeline

<table>
<thead>
<tr>
<th>Mar 21</th>
<th>Q1 21/22</th>
<th>Q2 21/22</th>
<th>Q3 21/22</th>
<th>H1 - 22</th>
</tr>
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<tbody>
<tr>
<td>Stability Phase 1</td>
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<tr>
<td>Stability Phase 2</td>
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<tr>
<td>Stability Phase 3</td>
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### Remarks
- Publish pre-tender information
- Details of the Phase 3 timeline will be published with the pre-tender information

### Notes
- Assessment of participant feasibility studies and TO connections reviews are in progress
- In preparation stages
- Planning to publish pre-tender information in July/August 2021, triggering the pre-tender consultation stage
Current Pathfinders – Voltage Pathfinder

![Pathfinder Diagram]

- **Mersey Voltage**
  - Mar 21
  - Q1 21/22: Publish tender
  - Q2 21/22: Technical submission → Technical assessments → Commercial submission
  - Q3 21/22: Commercial assessment
  - H1 - 22: Contract award
  - Contracts start April 2022

- **Pennines Voltage**
  - Mar 21
  - Q1 21/22: Technical submission
  - Q2 21/22: Technical assessments
  - Q3 21/22: Commercial submission
  - H1 - 22: Commercial assessment
  - Contracts start April 2024

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**Key**
- ESO activity
- Participant activity
- DNO & TO activity

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**Phase 1 - B6**

- Currently at feasibility study stage, these are being undertaken by the Scottish TOs and we expect outputs in late June 21.
- The commercial assessment has been consulted. The contract terms are being re-opened for consultation, expected to end 25 June 21.
- This should enable us to launch the commercial tender in July 21, for service start in October 22 with contract award before October 21.
Pathfinders ongoing challenges
Ongoing challenges: connections

• Market includes already-connected and new solutions
• Time and cost to get connected is key to delivery of Pathfinder solutions
• Typically, previous Pathfinders have embedded TO Connection Feasibility Reviews into the stages of the tender process.
• Difficulties to date include:
  • Unforeseen time delays
  • Certainty over connection time and cost information
  • Changes to availability of sites post TO review
• ESO are working with TOs and OFGEM to explore alternatives ways of managing the interaction between the Pathfinder tenders and Connection process
  • More equitable for all participants
  • Support competition
Ongoing challenges: developing fair competition between regulated entities and different commercial 3rd party providers

- Challenge: how to accurately compare the cost of a regulated option vs various commercial solutions.
  - Different parties exposed to different market costs
    - Regulated entities: Fixed depreciation / fixed rate of return/ no network charges
    - Commercial parties – free to define investment recovery period/returns/ exposed to connection and network charges

- ESO is looking at approaches to improve equitability in this area

- Testing ideas with OFGEM
Ongoing challenges: asset class definition. Licenses, connections and charges

- Pathfinders are driving a new type of ‘pseudo transmission’ asset such as reactors and synchronous compensators.
- The framework is silent on the treatment of these type of assets, which creates uncertainty.
- This can impact the connection obligations and network charges that service providers are exposed too (FCL, TNUoS, BSUoS)
- This impacts both voltage and stability pathfinders (but not constraints):
  - For voltage a charging change has been approved that levels the playing field for TNUoS.
  - For stability, synchronous compensators will be treated as non-embedded customers (i.e. demand) for connection offers.
- We acknowledge this is an issue and are working with BEIS and Ofgem to explore solutions.
Ongoing challenges: connections assessment contracts

• Pathfinders require a lot of collaboration.
• ESO needs to understand the connections feasibility of the solution in the pathfinder. This can be done through a contractual arrangement.
• The overall pathfinder delivery plan can be affected by the feasibility assessment based on:
  • volume of interest seen in the RFI/EOI phase
  • diversity of options submitted in the EOI
  • complexity of the solution
  • number of teams required to liaise across organisations to feed into the solution
• Please note; the outcome from the connections review/assessment in the pathfinder is not a connection offer and is only to facilitate the tender process. So successful participants will still need to apply for a connection.
Future direction
Beyond progressing strategic issues, what are ESO looking at for future Pathfinders?

• Commercial structure & capital cost information

• One stage tender processes

• Enhancing TO and DNO relationships

• Future projects

ESO invite market feedback on the above to help develop these concepts
Any questions?