

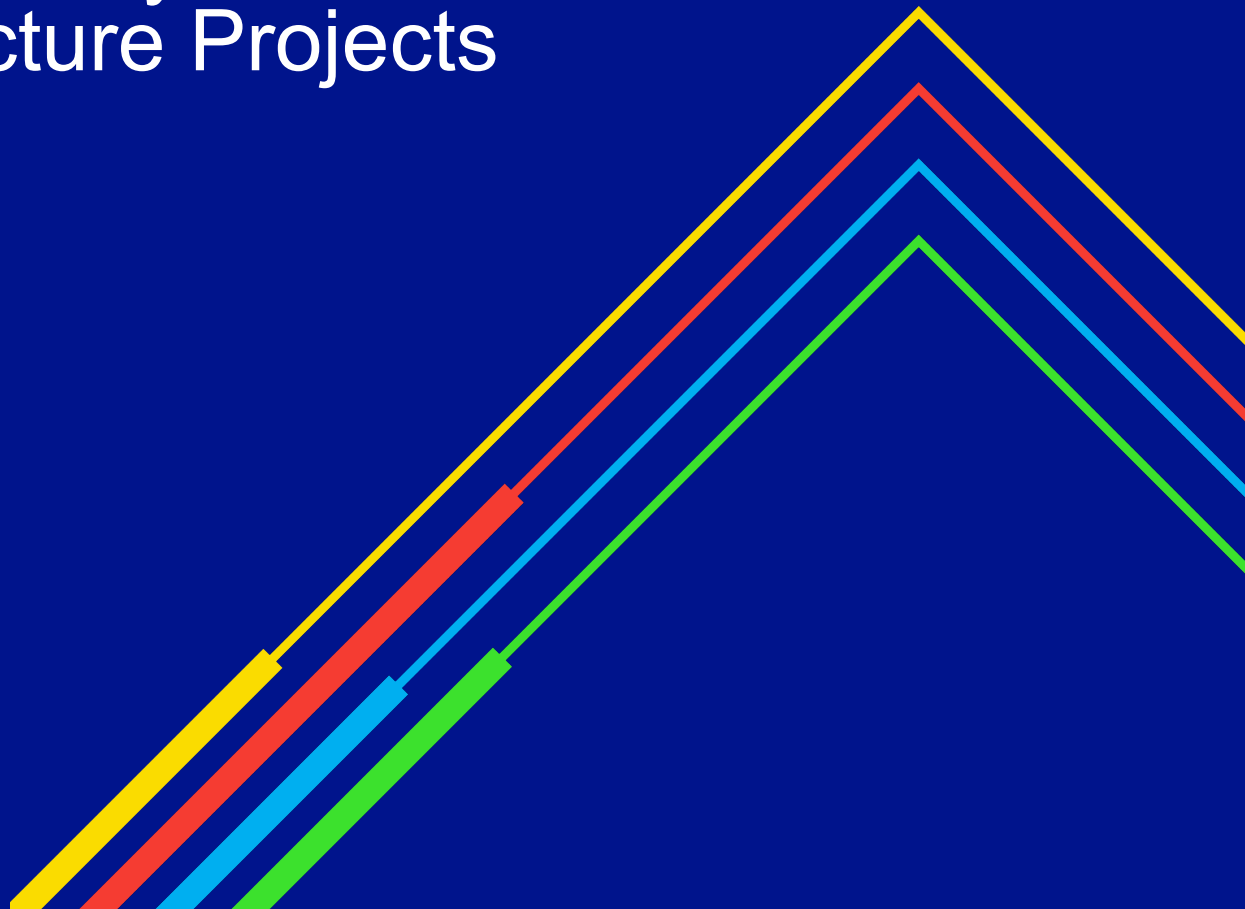
Developing Major Electricity Transmission Infrastructure Projects

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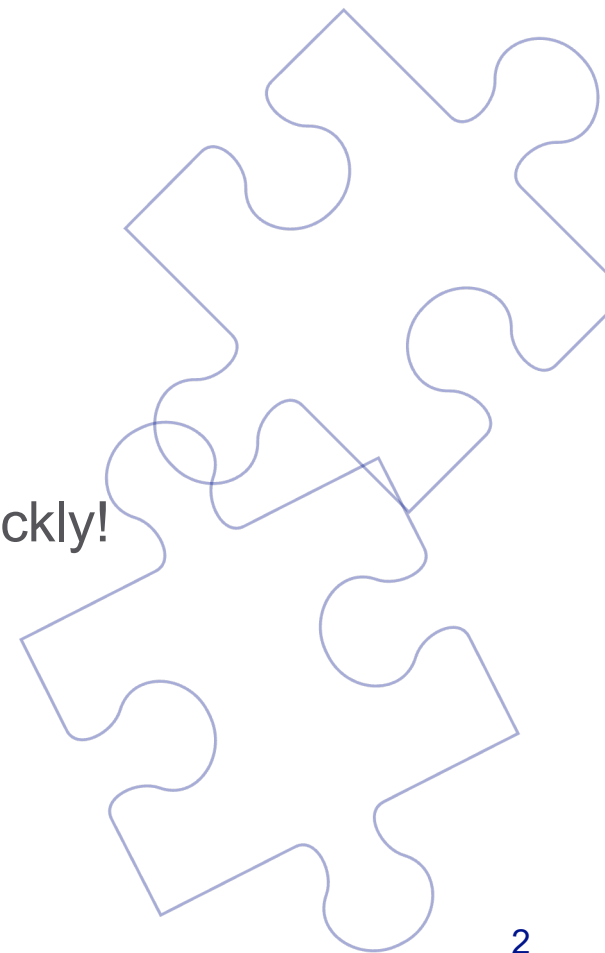


Developing a transmission project is a bit like doing a jigsaw puzzle...

Although...

- The picture on the front of the box is unclear!
- Some of the pieces seem to be changing shape!
- It's urgent and important that we get this puzzle finished quickly!
- Putting the pieces together is a bit harder than you think!

...Luckily, we really love puzzles



Even if you don't have complete certainty up-front a robust development process will...



...understand interactions better



...provide clarity for stakeholders and communities



...reduce scope change



... mean you do it once and do it properly



...minimise time in the construction



...better utilise limited resources

However, there are challenges that the industry must address to deliver the scale of the task at hand



How to **connect** customers to the grid efficiently, fairly, and timely

How to gain the **planning** permissions and consents we need to build



How to stimulate the **supply chain** we need to deliver in the context of global shortages

How to build our own **workforce** and capabilities needed to deliver



As well as the sheer scale of the Great Grid Upgrade, we also new challenges...

- ✓ New Technology – multiple HVDC convertors interacting all over the network, power flow control devices, synchronous compensators...
- ✓ What about aging assets, future capacity requirements?
- ✓ What is next to get us to 2050? Ultra High Voltage, onshore DC, North Sea Super Grids?
- ✓ Network access – how can we connect/commission so much new infrastructure onto a highly meshed and renewable system?
- ✓ Are the standards of today suitable for the future? Grid Code/SQSS

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