

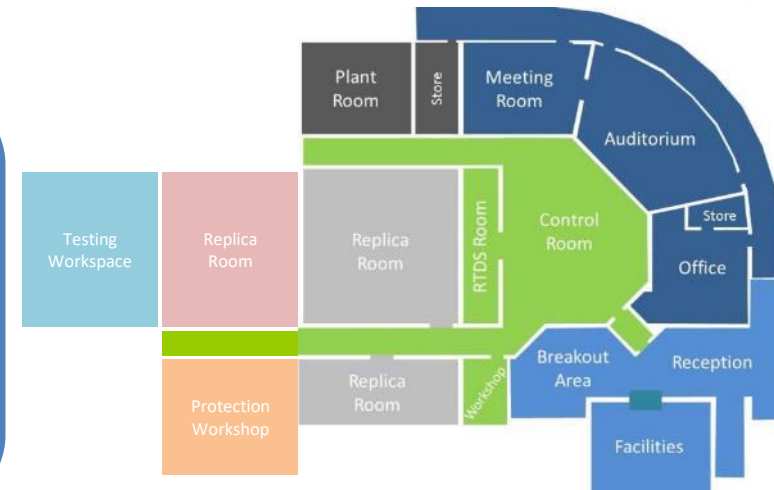
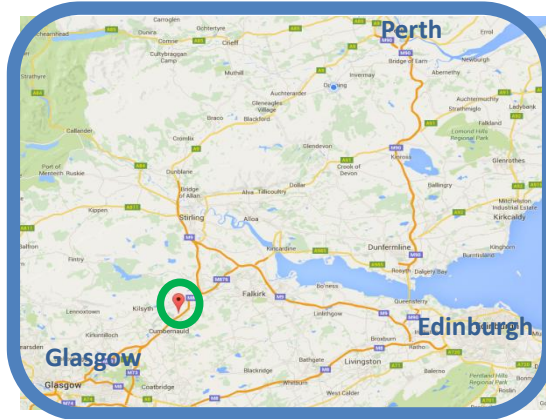
# The National HVDC Centre Operators' Forum 2023

Welcome and Overview

Ben Marshall, The National HVDC Centre

# HVDC Centre: welcome!

Located in the centre of Scotland...



...our state-of-the-art facility provides a bespoke simulation and training environment.

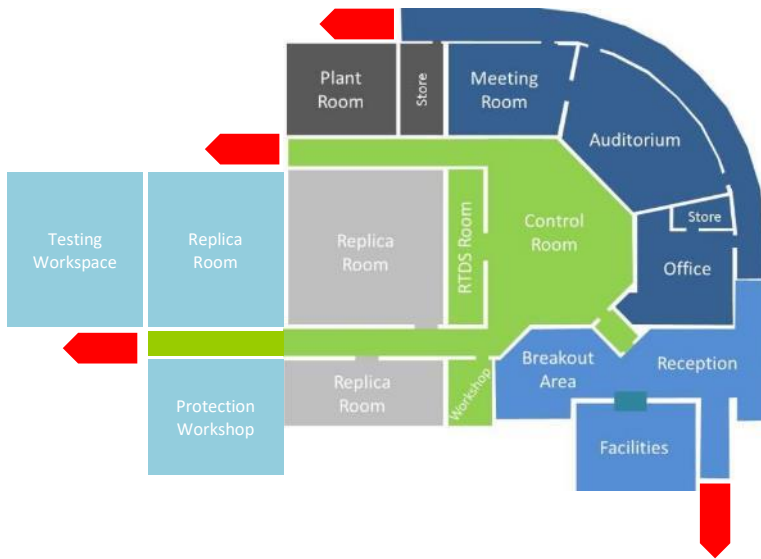


Control Room



Auditorium





## Fire Safety

- **Exits:** Familiarise yourself with the nearest exits.
- **Assembly Point:** The fire assembly point is on the pavement outside the main gate.
- **Call points, extinguishers & blanket.**



## First Aid

- There are first-aid kits, burns kits and a defibrillator on site.
- Fabian Moore & Ian Cowan are trained first-aiders, please contact them for assistance.

## Safety Rules

- Reverse Park
- Sign-In & Out
- Assess Risks
- Report All Incidents/Hazards
- Accept Challenges

# HVDC Centre: The Team

A team of HVDC experts; providing experience across academia, system operator, power systems consultancy, transmission innovation and HVDC manufacturers.



**Simon Marshall**  
Centre Manager



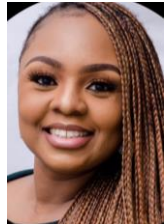
**Ben Marshall**  
HVDC Technology Manager



**Colin Foote**  
Senior Simulation Engineer



**Ben Gomersall**  
Senior Simulation Engineer



**Isioma Okoh**  
Commercial Manager



**Asif Khan**  
Simulation Engineer



**Dong Chen**  
Senior Simulation Engineer



**Fabian Moore**  
Simulation Engineer



**Shangen Tian**  
Simulation Engineer



**Linda Rowan**  
Technical Project Officer



**Ruiqi Li**  
Simulation Engineer



**Adam Scott**  
Simulation Engineer



**Nikhil Sharma**  
Simulation Engineer



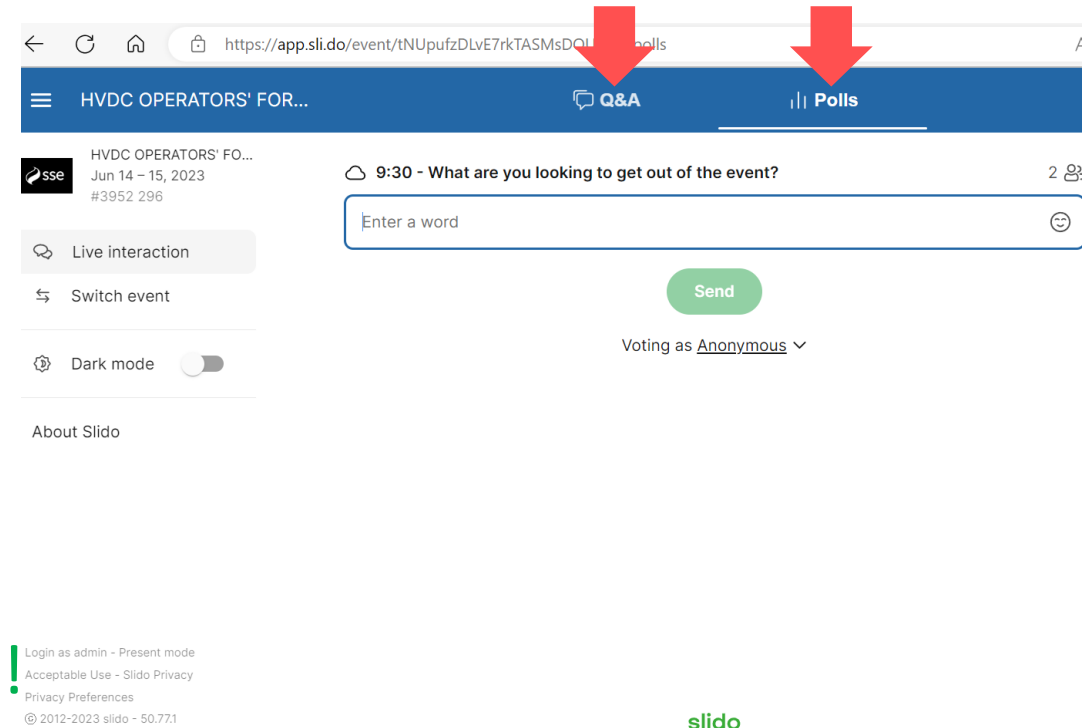
**Suresh Kumar**  
Simulation Engineer



**Wasim Ahmad**  
Simulation Engineer

# Format of the sessions to come

- There's a lot of us! { phones to silent pls }
- It's a busy agenda! { presenters pls keep to time! }
- It's an interactive forum { but we need to be organised, given the numbers! }
  - Enter [Slido.com](https://www.slido.com) ; Passcode #3952 296
  - **Ask questions at any time!**
  - **Up-vote questions at any time**
  - Each presentation will have a poll- **pls respond!**
  - Q&A at the end of each session
  - **Slido** first, then questions direct to floor.
- Grab us in breaks / lunch to discuss topics further.
  - **great networking opportunities; do use them!**



slido

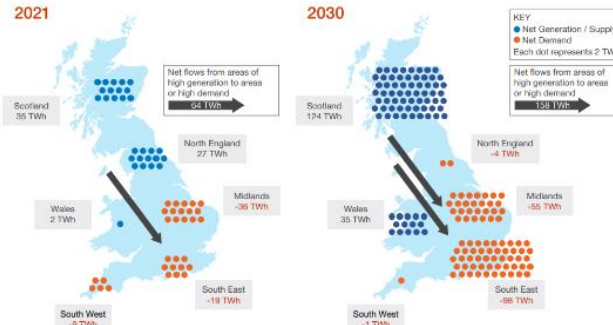
## We need HVDC to meet our 2030 (and 2050) commitments:

### 1) To connect offshore Wind Farms

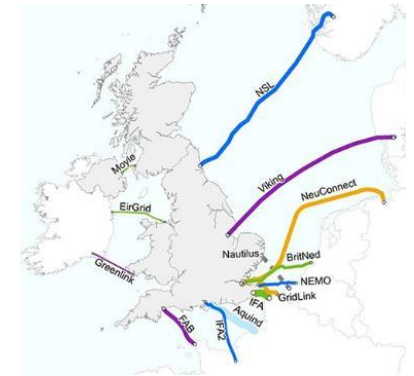
(AC cannot be used for long cables; over ~90 miles)



### 2) To improve network transmission capability to get electricity from where it is generated, to where it is consumed

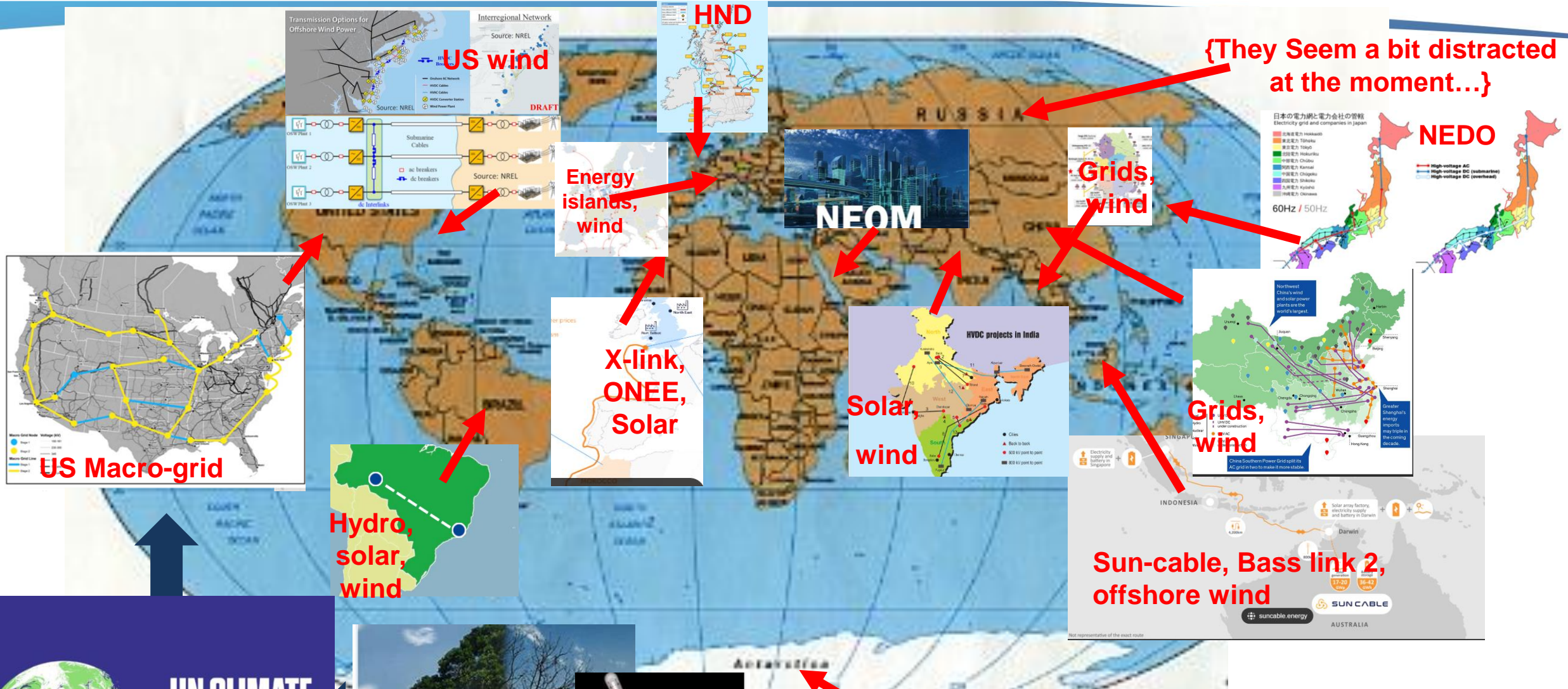


### 3) To interconnect to the asynchronous networks of different Transmission System Operator areas together..



We are not the only ones - these are worldwide problems!!

# The Global problem, and a Global HVDC response



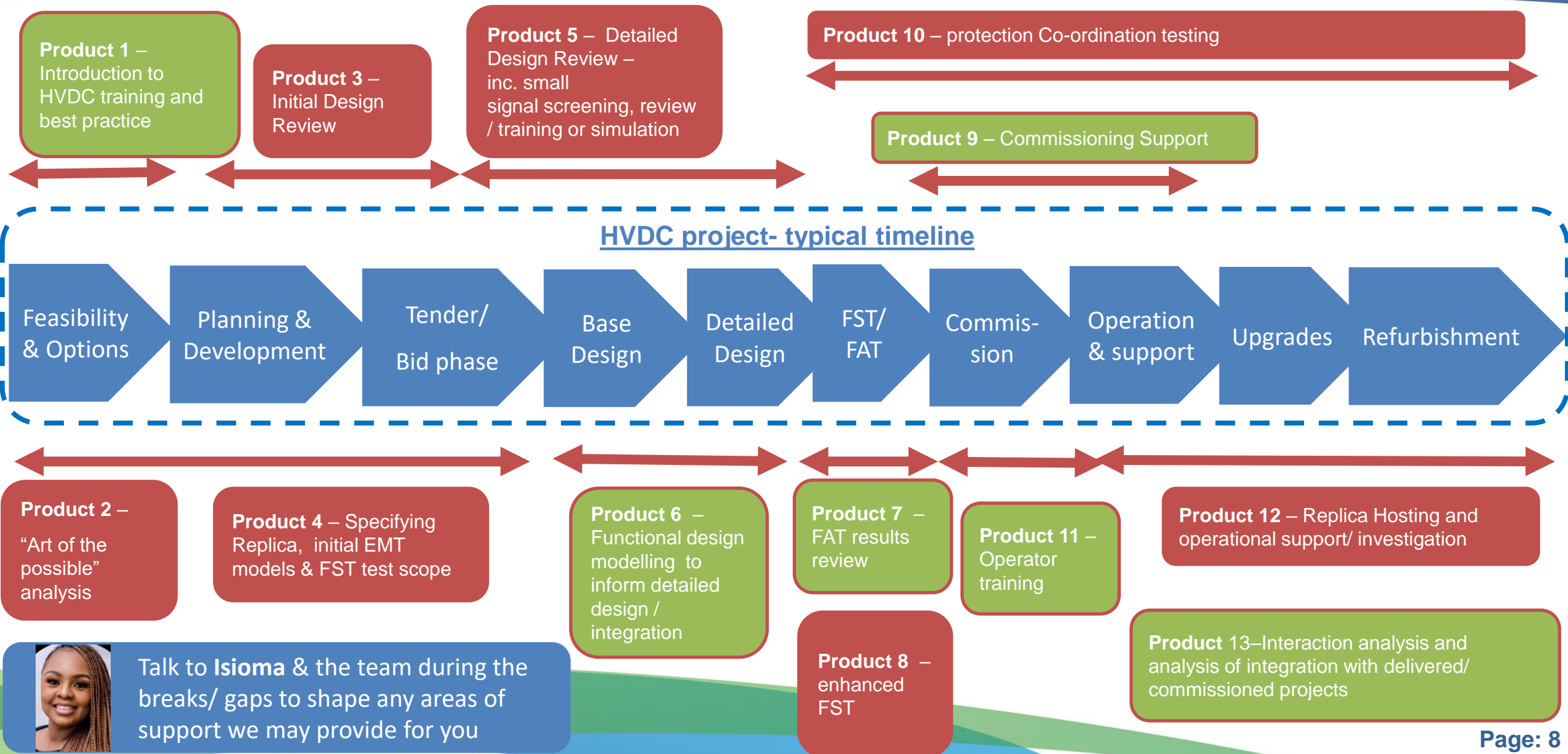
{They Seem a bit distracted at the moment...}



UN CLIMATE CHANGE CONFERENCE UK 2021



Future geo thermal/ solar?  
Do penguins need power?





# 2023 Operators forum; “learning from doing”

## Event Theme: “How to use HVDC to unlock Net-Zero”



### Morning Session

- 9:00 Teas, Coffees, Cakes and Registration
- 9:30 Welcome and Overview of the Event  
*Event Chair - Ben Marshall, The National HVDC Centre*
- 9:45 Setting the National Ambition  
*Thomas Hughes, Department for Energy Security & Net Zero*

### Session 1 How to Design HVDC for Net-Zero

- 10:00 Session Introduction and Context  
*Ben Gomersall, The National HVDC Centre*
- 10:15 Practicalities of Implementing the HND Designs  
*Graham Stein, National Grid ESO*
- 10:45 How the TOs are Developing and Delivering HVDC Future Network Solutions  
*Bless Kuri, SSEN Transmission*
- 11:15 Coffee Break
- 11:30 Developer Insights on Projects in HVDC Delivery  
*Daniel Yates, The Carbon Trust*
- 12:00 KEPCO’s HVDC Utilisation and Operation Plan for Net-zero  
*JiYoung Song and HyunKeun Ku, KEPCO*
- 12:30 Panel Q&A Session (with prior presenters)
- 12:45 LUNCH & NETWORKING



### Afternoon Session

- Session 2 How to Provide Enhanced Network Support
- 14:00 Session Introduction and Context  
*Colin Foote, The National HVDC Centre*
- 14:15 Network Challenges as we Progress to Net Zero  
*Shurooque Baloch, National Grid ESO*
- 14:45 How TOs are Preparing for a Low SCR Network  
*Keith Harmer, SSEN Transmission*
- 15:15 How Moyle is Delivering Enhanced Network Support  
*Sam Gibson, Mutual Energy*
- 15:45 Coffee Break
- 16:00 How to Improve Restoration Capability in a Converter Dominated Network  
*Eric Leavy, SP Energy Networks*
- 16:30 Recent Results in Providing Enhanced Network Support Through HVDC  
*Razvan Pabat-Stroe, EPRI International*
- 17:00 Panel Q&A Session (with prior presenters)
- 17:15 Close

Gala Dinner  
14<sup>th</sup> June 2023  
Westerwood Hotel  
Club Room  
Starting at 18:30

Setting the objectives, the timeframes, and the challenges



Working out what to do, and how to do it

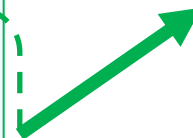


Learning how to get the most out of the technology!



From those delivering new services and capabilities

Learning from “fellow travellers”



# Keynote speech

## Setting the National Challenge

Thomas Hughes,  
Department of Energy Security and Net Zero,  
UK Government.