

Shetland Whole System Solution

Developers Focused Webinar

27th June 2024



Scottish & Southern
Electricity Networks

TRANSMISSION

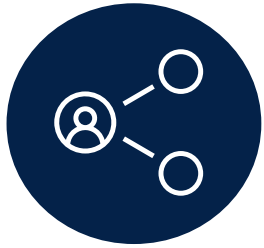
Welcome & Introduction to SSEN Transmission

Nicola Ross, Offshore Stakeholder Manager

Agenda

Welcome		9:30-9:45
Housekeeping :	Nicola Ross	9:30-9:35
Introduction :	Nicola Ross	9:35-9:45
Overview of SSEN Transmission and Progress to Date		9:45-10:30
Background: Shetland Whole System Solution	Bless Kuri	9:45-9:55
Going Forward: Shetland Whole System Solution	Nisrine Kebir, Aidan O'Brien	9:55-10:25
Next Steps		10:25-10:35
Summary and Next Steps	Alan Kelly	10:25-10:35
Facilitated Question & Answer		10:35-10:55
Q & A sheet – Project team	Alan Kelly	10:35-10:55
Close		10:55-11:00
Follow up	Nicola Ross	10:55-11:00

Handling feedback and information



Everybody in SSEN Transmission works hard to encourage and demonstrate transparency around our projects, proposals and plans. All information and content in today's presentation, provided by us, can be shared with others outside of this engagement.



However, feedback gathered during today's engagement will not be associated with you specifically. As one of our contributing stakeholders, we may publish your feedback in any reports or submissions we subsequently produce, but we will anonymise this.

Instead of quoting specific stakeholders, we will describe the origin of feedback using broad categories, such as "Customer" or "Landowner" as examples. We will also take care to avoid 'jigsaw identification'.

Thank you in advance for your honest feedback and constructive participation.

Overview

Bless Kuri, Head of System Planning & Investment

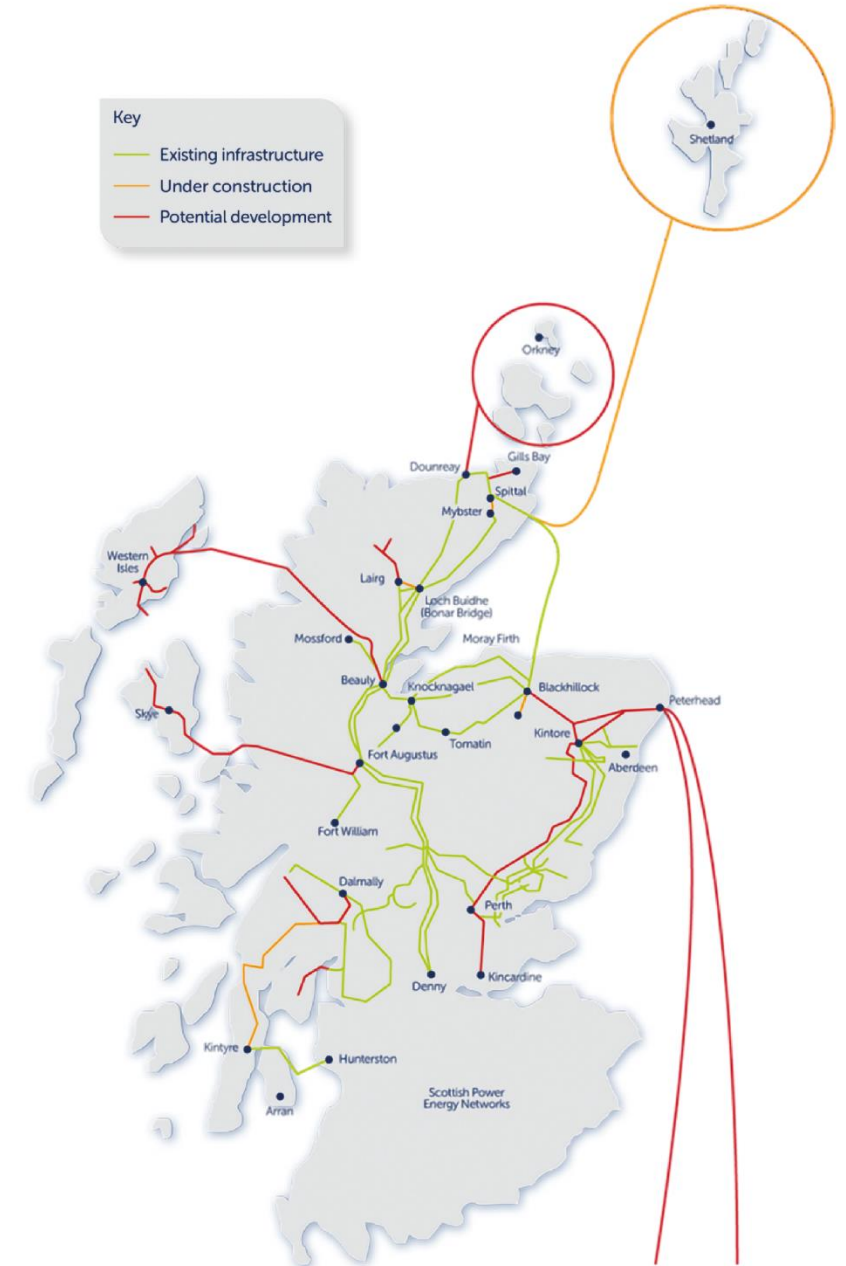
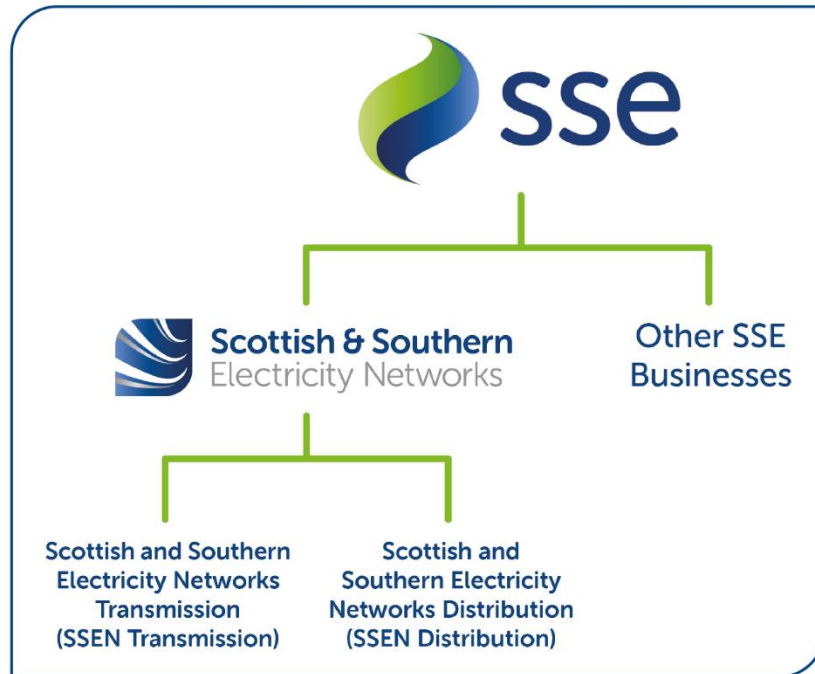
SSEN Transmission

We are SSEN Transmission, the trading name for Scottish Hydro Electric Transmission.

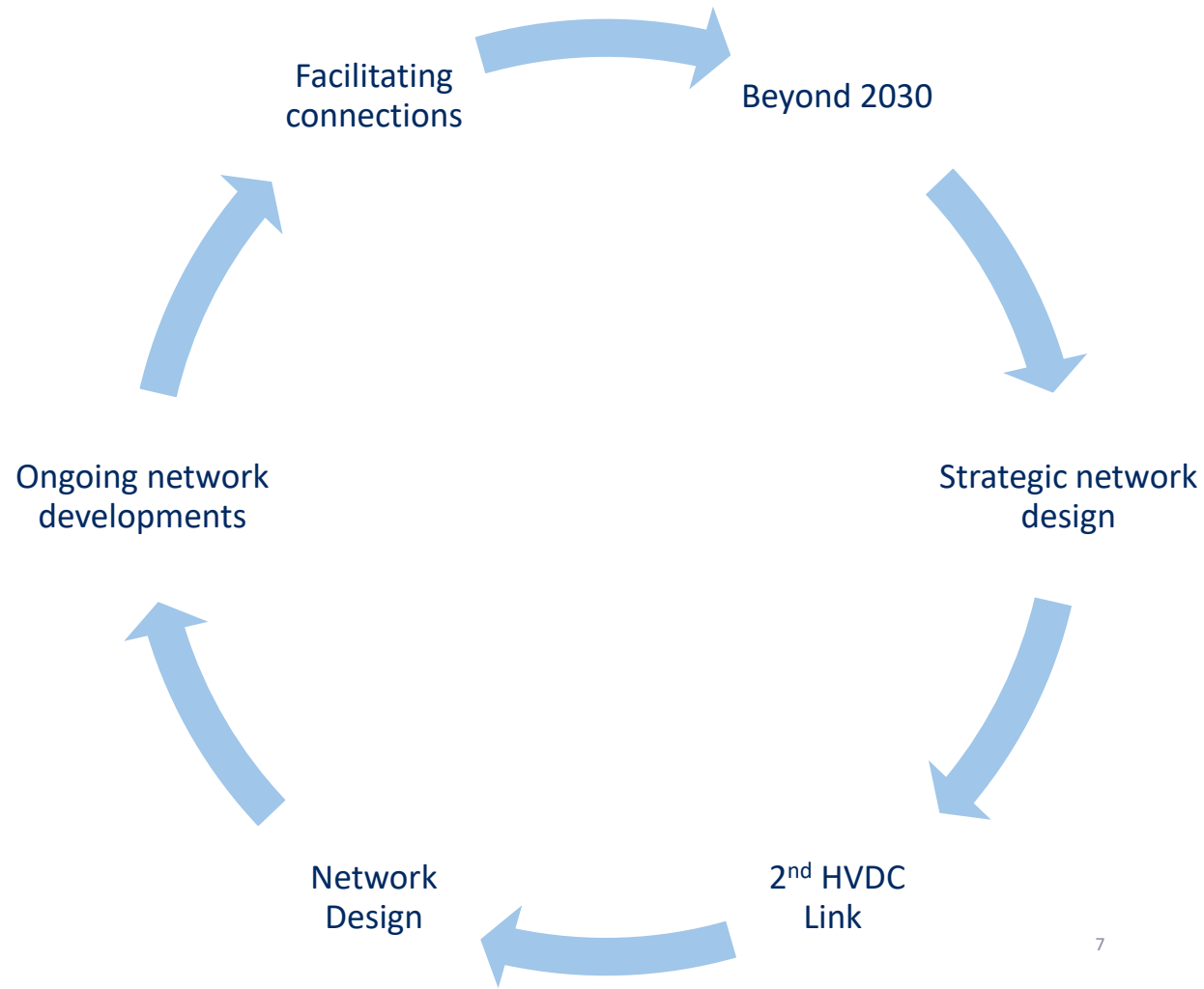
Following a minority stake sale which completed in November 2022, we are now owned 75% by SSE plc and 25% by Ontario Teachers' Pension Plan Board.



We are responsible for the electricity transmission network in the north of Scotland, maintaining and investing in the high voltage 132kV, 220kV, 275kV and 400kV electricity transmission network.



Overview- Whole System Solution



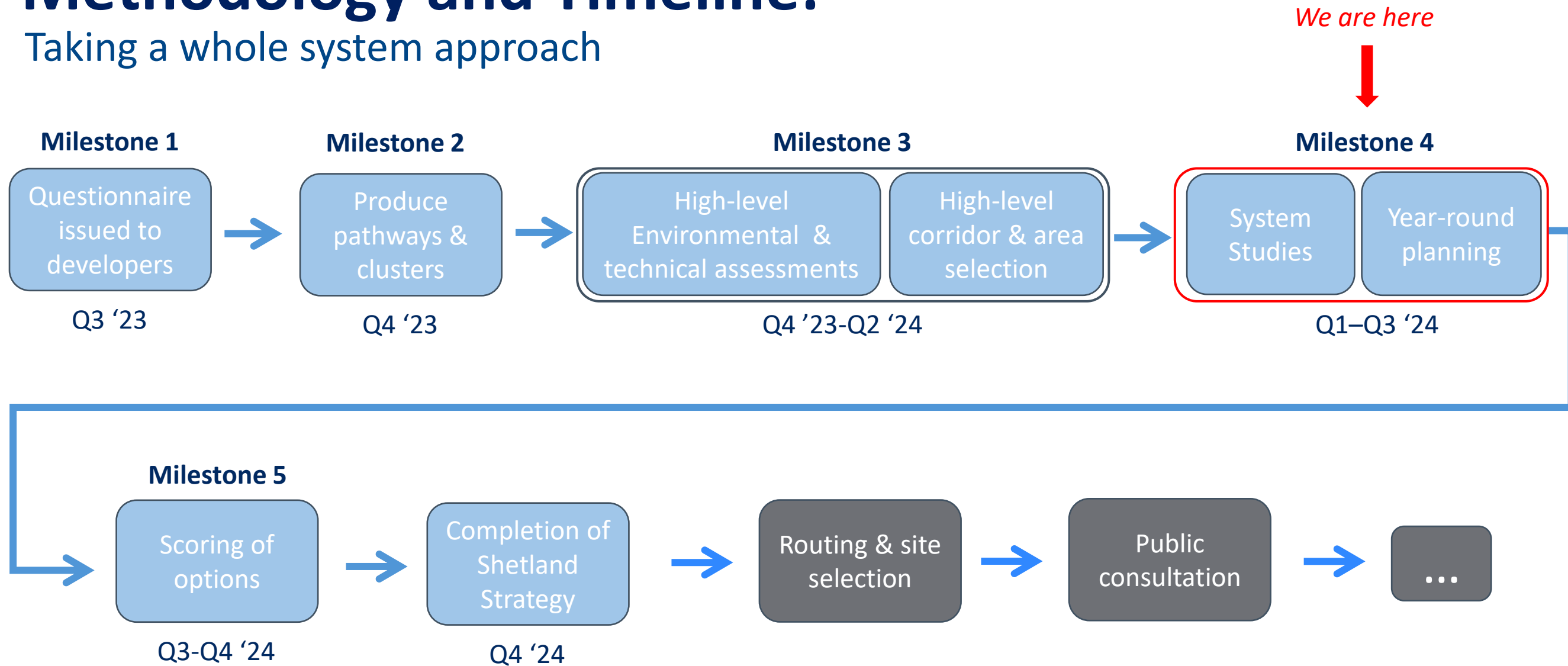
Shetland Whole System Solution

Nisrine Kebir, Shetland Transmission Strategy Lead

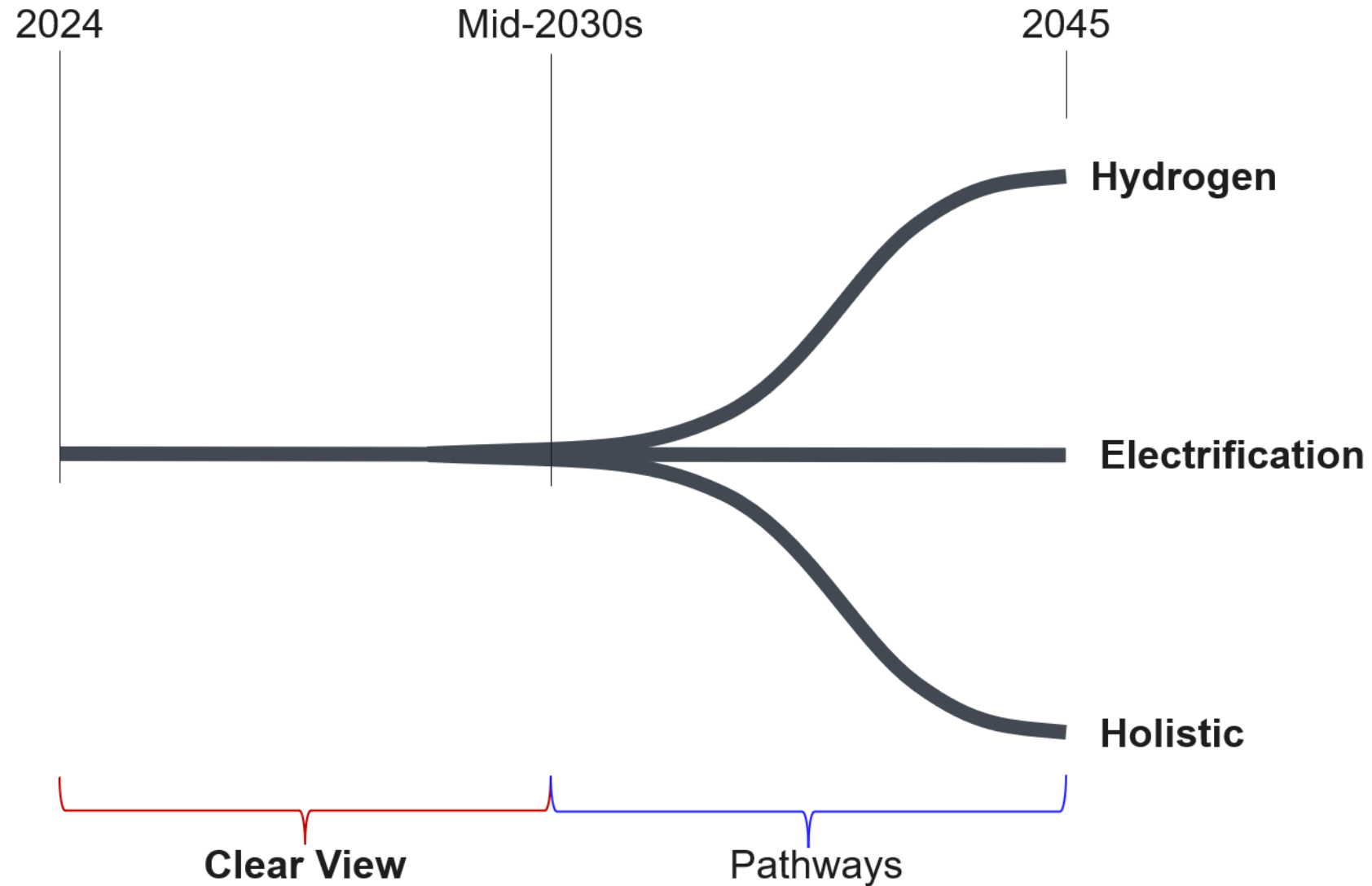
Aidan O'Brien, Development Project Manager

Methodology and Timeline:

Taking a whole system approach



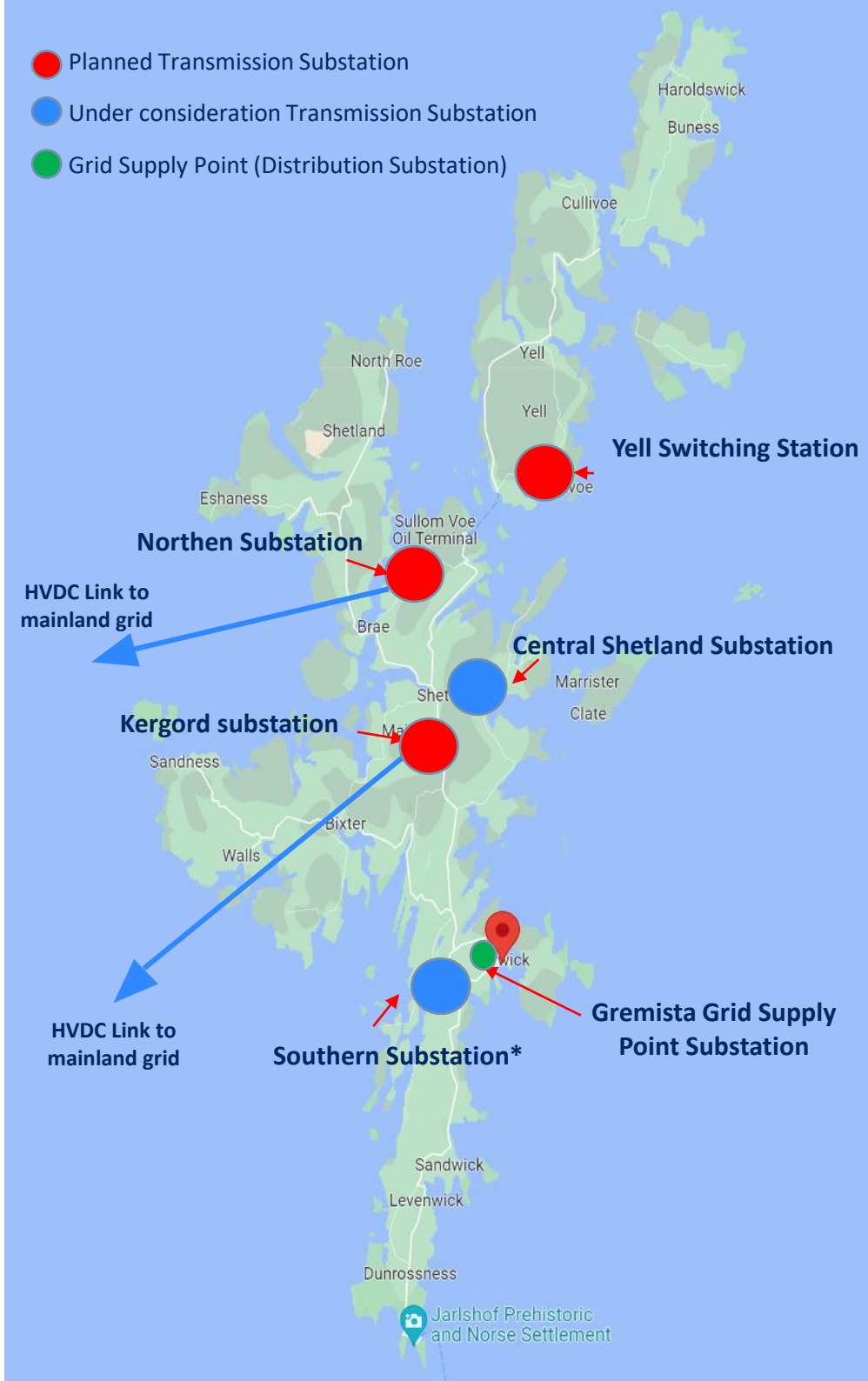
Shetland: Pathways



Substations and Voltage Levels

Transmission Asset	Voltage Level under consideration
Yell Switching Station	220kV/132kV
Northern Substation	400kV/275kV and 220kV/132kV
Central Shetland Substation	220kV/132kV
Kergord Substation	132kV
Southern Substation*	132kV potentially 220kV
HVDC Link 1	132kV (AC) (600MW)
HVDC Link 2	400kV/275kV (AC) (1800MW)

*High Electrification and High Hydrogen pathways



Phase 1

Under Construction



Substation: Kergord 132kV Substation
Construction Completion: 2024
Delivery Team Scope/Connection Scope:

- i) Construction of Kergord 132kV Double Busbar & HVDC Converter Station/Link
- ii) Due to be commissioned in 2024 including the 600MW HVDC link to mainland Scotland.

Substation: Gremista 132/33kV GSP
Construction Completion: 2025
Delivery Team Scope/Connection Scope:

- i) Construction of the Gremista GSP and two single trident circuits connecting to Kergord 132kV Substation
- ii) Currently under construction, commissioning expected 2025.



Substation: Northern Substation Hub

Construction Completion: TBC

Delivery Team Scope/Connection Scope:

- i. Construction of a Northern Substation Hub in the industrialised region of Shetland.
- ii. Enables forecasted generation and demand connections to connect to the transmission network
- iii. Connection down to Kergord 132kV, Yell Substation and the second HVDC Converter Station
- iv. The Hub and HVDC equipment will be constructed and energised in phases



Substation: Yell 132kV Substation

Construction Completion: TBC

Delivery Team Scope/Connection Scope:

i) Construction of Yell 132kV Switching Station. Consists of a 132kV DBB, allowing space for future reactive compensation and 132/33kV GT.

ii) Two Windfarms contracted at Yell 132kV.

iii) Location and routing of Yell is subject to site and route optioneering.

Connection point of Yell is to be confirmed

iv) Voltage of Yell is subject to change.



Substation: Central Shetland Substation
Construction Completion: TBC
Delivery Team Scope/Connection Scope:

- i. Construction of Central Shetland Substation. Exact scope to be defined. Potentially a Double Busbar and SGTs or just SGTs. Requirement for this substation to be confirmed.
- ii. Phase 1 circuits from Scatsta – Kergord could be turned into this substation, allowing a voltage transition.
- iii. Potential connection point for an offshore scheme
- iv. Location / Routing is subject to optioneering

Phase 2

Indicative Corridors/Site Locations



Substation: HVDC Converter Station
Construction Completion: TBC
Delivery Team Scope/Connection Scope:

- i. Construction of 2GW HVDC Converter Station within the Northern region.
- ii. All SSEN Assets will be in one compound or a small cluster of substations.
- iii. Routing and site location subject to optioneering

Option 1

Phase 2

Indicative Corridors/Site Locations



Substation: Southern Substation

Construction Completion: TBC

Delivery Team Scope/Connection Scope:

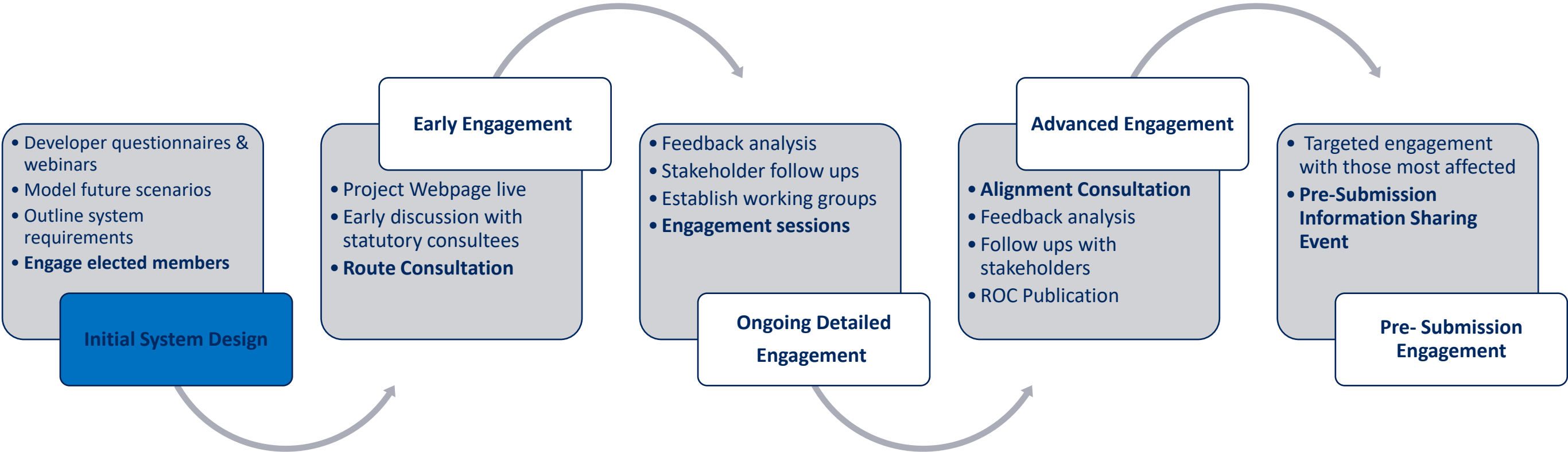
- i. Construction of Southern Substation
- ii. Gremista – Kergord Circuits will be turned into the Southern Substation
- iii. Circuit constructed connecting Southern Substation to Kergord (Total 3 circuits)

Next Steps

Alan Kelly - Lead Project Manager

Consultation Process

Our approach



Our continuous engagement process

Q&A

Alan Kelly - Lead Project Manager

Follow Up:



The slide pack will be available on www.ssen-transmission.co.uk in the next few days

If you have any further questions, you can contact us at Transmission.Stakeholder.Engagement@sse.com



Or contact the National Grid ESO directly for ESO related questions
box.customerservice@nationalgrideso.com
box.OffshoreCoord@nationalgridESO.com

Thank You



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