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Offshore Transmission Network Review: Decision on asset classification for Holistic Network Design Follow Up Exercise

This letter sets out our process and decision on the classification of assets included in National Grid Electricity System Operator's (**NGESO**) Holistic Network Design Follow Up Exercise (**HNDFUE**), incorporated into the Beyond 2030[1] publication, into three categories:

- Onshore transmission (reinforcement)
- Radial offshore transmission
- Non-radial offshore transmission

This letter also provides an overview of the relevant regulatory framework underpinning the decisions made.

Should you have any questions regarding any of the matters raised in this decision, please contact Kirsty Earle at offshore.coordination@ofgem.gov.uk to discuss.

Yours sincerely

Stuart Borland
Deputy Director of Offshore Network Regulation

[1] Beyond 2030 | ESO (nationalgrideso.com)

Background

Offshore Transmission Network Review

The Offshore Transmission Network Review (**OTNR**)[2] was launched in July 2020 by the then Department for Business, Energy and Industrial Strategy with the objective of ensuring that transmission connections for offshore wind generation are delivered in the most appropriate way, considering the increased ambition for offshore wind to achieve net zero. The OTNR has now closed and the implementation phase is in progress.

Pathway to 2030

Pathway to 2030 (**PT2030**) was established as the medium-term workstream in the OTNR, covering largely the projects delivered through the Crown Estate (**TCE**) and Crown Estate Scotland (**CES**). One of the objectives of the PT2030 workstream was to ensure that all network infrastructure (both onshore and offshore) necessary to connect projects in scope, was designed in a coordinated manner with an optimal engineering solution considering the economic, environmental and community impacts.

Holistic Network Design

The Holistic Network Design (**HND**)[3] published in July 2022 set out a single, first-of-its-kind, integrated design for connecting 23GW of offshore wind. It was the first step towards a more centralised, strategic network planning and is estimated to lead to overall net consumer savings of approximately £5.5bn.

In May 2022 we published our minded-to decision and further consultation on Pathway to 2030.[4] In that consultation, we recognised that the HND would include both onshore and offshore transmission assets, the ownership of which being either Transmission Owners (**TOs**) or offshore transmission owners (**OFTOs**) respectively.

Projects included in the HND published by NGESO in July 2022 and were the subject of our Offshore Transmission Network Review: Decision on asset classification published in October 2022.[5]

[2] Offshore transmission network review - GOV.UK (www.gov.uk)
[3] A Holistic Network Design for Offshore Wind | National Grid ESO
[4] Minded-to Decision and further consultation on Pathway to 2030 | Ofgem
[5] Offshore Transmission Network Review: Decision on asset classification | Ofgem

Holistic Network Design Follow Up Exercise

The HNDFUE is incorporated into the National Grid ESO's Beyond 2030[6] publication and consists of those ScotWind leaseholders (20.7GW) which were not included in the HND in July 2022.[7] The HND and HNDFUE include the National Electricity Transmission System (**NETS**) reinforcements required both offshore and onshore to facilitate the new connections. The inclusion of offshore and onshore infrastructure requires a process of asset classification to determine the purpose for which an asset will be constructed.

We have followed the same process for asset classification with HNDFUE projects as we did with projects in the HND[8]. We consider that assets will fall within one of the following classifications:

- onshore transmission, where the asset is constructed for the purpose of reinforcement of the existing transmission system
- radial offshore transmission, where the asset is constructed for the purpose of transporting offshore-generated power from a single generating station
- non-radial offshore transmission, where the asset is constructed for the purpose of transporting offshore-generated power from more than one generating station

In addition to the HNDFUE, a further Detailed Network Design (**DND**) will be required for each of the onshore and offshore assets under consideration to provide the detailed engineering and routing designs. At this stage we are classifying circuits between sites set out in the HNDFUE. The HNDFUE is not intended to provide sufficient design and engineering details to allow cables connecting platforms within the same site to be classified. Developers and TOs will have the opportunity to be involved in coordination forums with the NGESO as the central facilitator and we expect developers to progress the DND for their own projects.

[6] Beyond 2030 | ESO (nationalgrideso.com)
[7] Please note the recommended designs for both INTOG and Celtic Sea will be published separately from the main HNDFUE, and as a result the associated asset classifications are outside the scope of this document and will be communicated separately when the designs are published.
[8] Offshore Transmission Network Review: Decision on asset classification | Ofgem

Asset Classifications

As set out above, the HNDFUE sets out the network infrastructure that the NGESO considers is optimal to deliver the offshore wind generation required to meet the government's targets. The assets included in the HNDFUE will be used for transmission activities which require a licence under current legislation. As sector regulator, and under the Act, Ofgem is responsible for granting licences to companies and ensuring that those companies comply with the requirements and conditions as set out within their licence.

In order for the appropriate licence to be granted in respect of the relevant activity, we have set out the criteria which we have used to classify each asset.

There are different delivery and ownership implications dependent on whether an asset is classified as carrying out onshore or offshore transmission. Additionally, the application of codes and standards, as well as connection contracts, may vary depending on the classification of assets. Assets can be classified as either onshore or offshore, but not both.

Once an asset included in the HNDFUE has been classified in accordance with the technical and legal criteria, this will not be reopened at a later date unless changes to the design of the HNDFUE are proposed and evaluated through the NGESO's Impact Assessment Process. Should any such changes subsequently be made, Ofgem would assess the outcome in accordance with the criteria set out in this letter and in the HND Asset Classification Decision[9] and provide a classification for such revised design at that time.

Onshore Assets

Onshore transmission is any transmission not falling within the definition of offshore transmission[10] and under the existing regime onshore transmission assets are owned by TOs. On 26 October 2023, the Energy Act 2023 received Royal Assent. This enacted the changes in primary legislation required to allow for the competitive tendering of onshore electricity transmission projects and the appointment and licensing of a Competitively Appointed Transmission Owner (**CATO**) to design, construct, own and operate assets on the electricity transmission network.

[9] Offshore Transmission Network Review: Decision on asset classification | Ofgem

[10] Whilst the Electricity Act 1989 defines "offshore transmission, it does not define "onshore transmission" (distinguishing "offshore transmission" from "transmission" which is defined in section 4(4) of the Electricity Act 1989). We have used the term "onshore transmission" in this paper for clarity.

Offshore Assets

Offshore transmission is defined in the Act[11], as transmission (by means of a "transmission system"[12] within an area of offshore waters of electricity generated by a generating station in such an area. "Transmission system" is defined with reference to "high voltage lines"[13] which include "relevant offshore lines"[14] which are assets constructed wholly or mainly for the purpose of transmitting electricity generated in offshore waters. Transmission licences for assets with this classification, are granted following a competitive tender process under the offshore electricity transmission licensing regime (**the OFTO regime**) in accordance with the Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2015.

To date, all operational offshore transmission assets have been radial assets (as set out below). However, under a coordinated design there are offshore transmission assets which do not meet the criteria of radial assets. In our HND Asset Classification Decision, we referred to this new classification as non-radial offshore transmission.

The classification of *radial offshore* or *non-radial offshore transmission* is important because it impacts how the assets are designed, built and operated. In March 2023 we issued our final decision on the delivery models for non-radial offshore transmission assets under the PT2030 workstream[15]. This publication confirmed developers will have the choice of either a very late competition generator-build model or a late competition OFTO-build model for delivery of non-radial offshore transmission assets. It additionally confirmed that the application of our Anticipatory Investment policy, would be extended to the construction of non-radial transmission assets within the scope of the PT2030 workstream.

The distinction between these assets was set out in the HND Asset Classification Decision[16] and is also presented below.

Radial offshore transmission

We consider a radial offshore solution to be a transmission system which fulfils both of the following criteria:

- Infrastructure is used for transmission in an area of offshore waters of electricity generated by **a single generating station** in such an area, and

[11] As defined in section 6F(8) of the Electricity Act 1989 (legislation.gov.uk)
[12] "transmission" and "transmission system" are defined in section 4(4) of the Electricity Act 1989 (legislation.gov.uk)
[13] As defined in section 64(1) of the Electricity Act 1989 (legislation.gov.uk)
[14] As defined in section 64(1A) of the Electricity Act 1989 (legislation.gov.uk)
[15] Decision on Pathway to 2030 | Ofgem
[16] Offshore Transmission Network Review: Decision on asset classification | Ofgem

- Infrastructure connecting a single offshore generating station **directly to a point on the transmission system owned by a transmission owner**. This point may be physically located onshore or offshore, and its designation as onshore or offshore will be determined by its **primary electrical function** (primary usage), as opposed to its location.

Non-radial offshore transmission

We consider a non-radial offshore solution to be a transmission system which fulfils both of the following criteria:

- Infrastructure used for transmission in an area of offshore waters of electricity generated by **two or more generating stations** in such an area, and
- Infrastructure connecting two or more offshore generating stations to a **point on the transmission system owned by a transmission owner**. This point may be physically located onshore or offshore, and its designation as onshore or offshore will be determined by its **primary electrical function** (primary usage), as opposed to its location.

Onshore Reinforcement

The initial stage of the classification process is the identification of assets which will fall within the category of onshore transmission. We consider onshore classifications under this process to be reinforcement of the onshore transmission network. This is because, in the HNDFUE, assets with an onshore classification will run electrically parallel to the existing transmission network, as they will transport power from onshore generating stations to another point on the transmission system. In order to ensure the maximum network reinforcement benefit is delivered, we consider it necessary to first ascertain potential reinforcement links before classifying other assets.

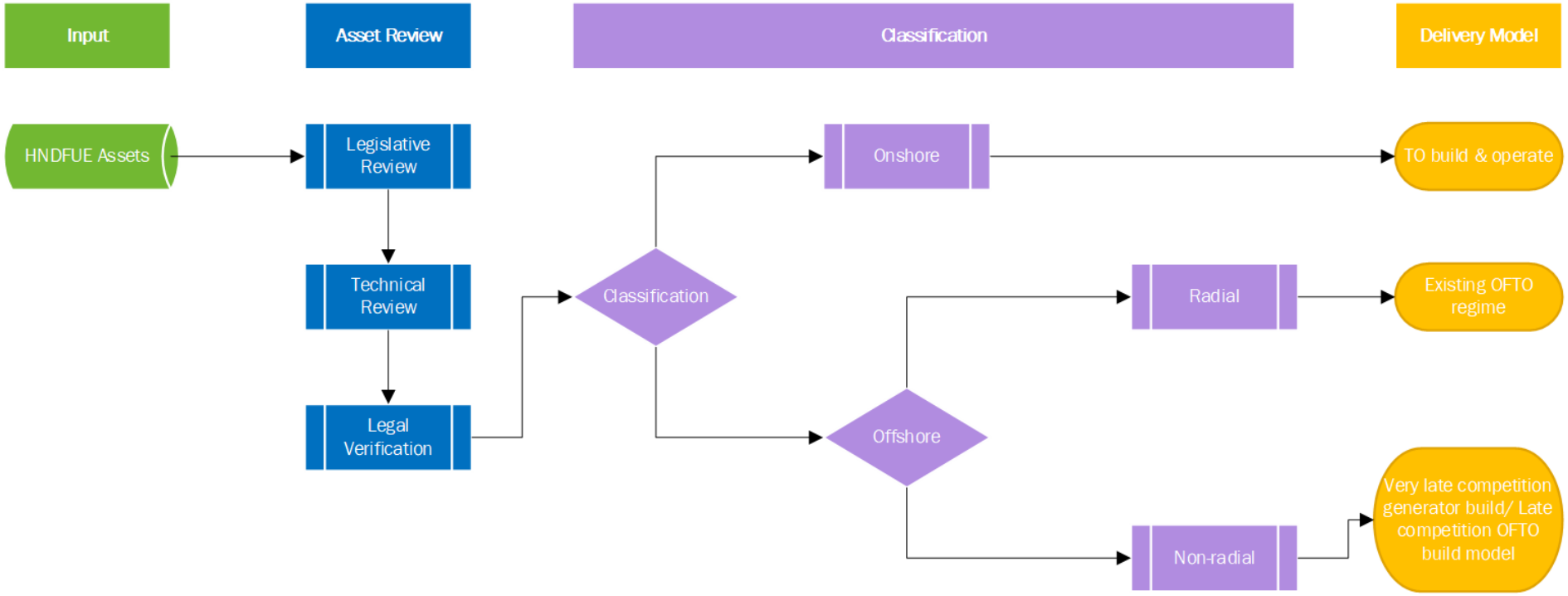
Where the primary usage of the asset is found to be onshore, this must constitute complete onshore reinforcement, i.e. ultimately form part of a wider link which connects two points on the onshore transmission network. The onshore reinforcement assets identified in the HNDFUE are similar to the onshore reinforcements identified in the HND. The value of this type of reinforcement link increases with the number of transmission boundaries crossed.

Therefore, should we reach an **onshore** classification, we will seek to ensure that this link provides the maximum reinforcement benefit in line with results from the asset classification process. We outline our decisions on onshore reinforcement assets within **Annex 1.**

Asset Classification Process

The following flowchart in **Figure 1** details the assessment process for reaching asset classifications. The asset classification process is made up of three distinct stages, which allows us to arrive at one of the three classifications as outlined in legislation and policy definitions: onshore, radial offshore, and non-radial offshore. More detail is provided on the function of each stage of the asset review: legislative review, technical review, and legal verification.

Figure 1 – Asset Classification Process Flowchart



Legislative Review

The first stage of the process is to consider the nature of the asset in question in accordance with the provisions of the Act. The Act defines transmission and offshore transmission as a sub-set of the activity of transmission.

Offshore transmission involves relevant offshore lines which are high voltage electric lines constructed wholly or mainly for the purpose of conveying electricity generated offshore.[17] On this basis we consider that assets can be classified as either onshore or offshore depending on if the relevant asset's activity is either wholly or mainly onshore or offshore. The primary usage of an asset as either offshore (radial or non-radial) or onshore will be determined following technical analysis.

Technical Review

The purpose of the technical review is to establish the primary usage of assets included within the HNDFUE, under one of the three designated classifications: onshore transmission reinforcement, radial offshore transmission, and non-radial offshore transmission.

In order to determine the primary usage of an asset, we consider the following characteristics of each asset in question:

- *Power flows*: these are used to establish where power is generated, and to where it is transmitted across the network.
- *Capacity utilisation*: in this context, capacity utilisation refers to the usage of the rated capacity (in MW) of cabling, or the maximum power which can be transmitted at one time. This forms the baseline for examining the proportion of power flowing to and from assets and is crucial when examining multiple assets on the network. Further, we examine the extent to which assets make use of surrounding infrastructure, as this illustrates how the assets will be used.
- *Security and Quality of Supply Standard (SQSS)*[18]: we examine this with particular regard for compliance with reference to the limits to loss of power infeed risks i.e. the risk of losing connected generation and the mechanisms in place to avoid losses. This strengthens the rationale for classification of assets under the HND, as the SQSS sets out requirements for network stability.

[17] As set out above
[18] SQSS Code Documents | National Grid ESO

Legal Verification

At this stage of the asset review process, we confirm our results from the technical review. We assign a final classification on this basis so that Ofgem can determine the appropriate licence and delivery model for the activity being carried out.

If the asset in question is **not** *wholly or mainly* constructed for conveying power generated offshore to any other place, we arrive at the *onshore reinforcement* classification. In the first instance, we use power flows and capacity to determine this. However, when power flow and capacity data are inconclusive, we then consider the subsequent parts of the link with the *highest* correlation to onshore (transmission) flows to continue the reinforcement link.

Otherwise, if the asset **is** *wholly or mainly* constructed for transmission of electricity generated offshore a classification of *offshore* transmission is decided, which has two sub-classifications. We then examine whether an asset is used for one or more than one purpose, which leads us to a sub-classification of:

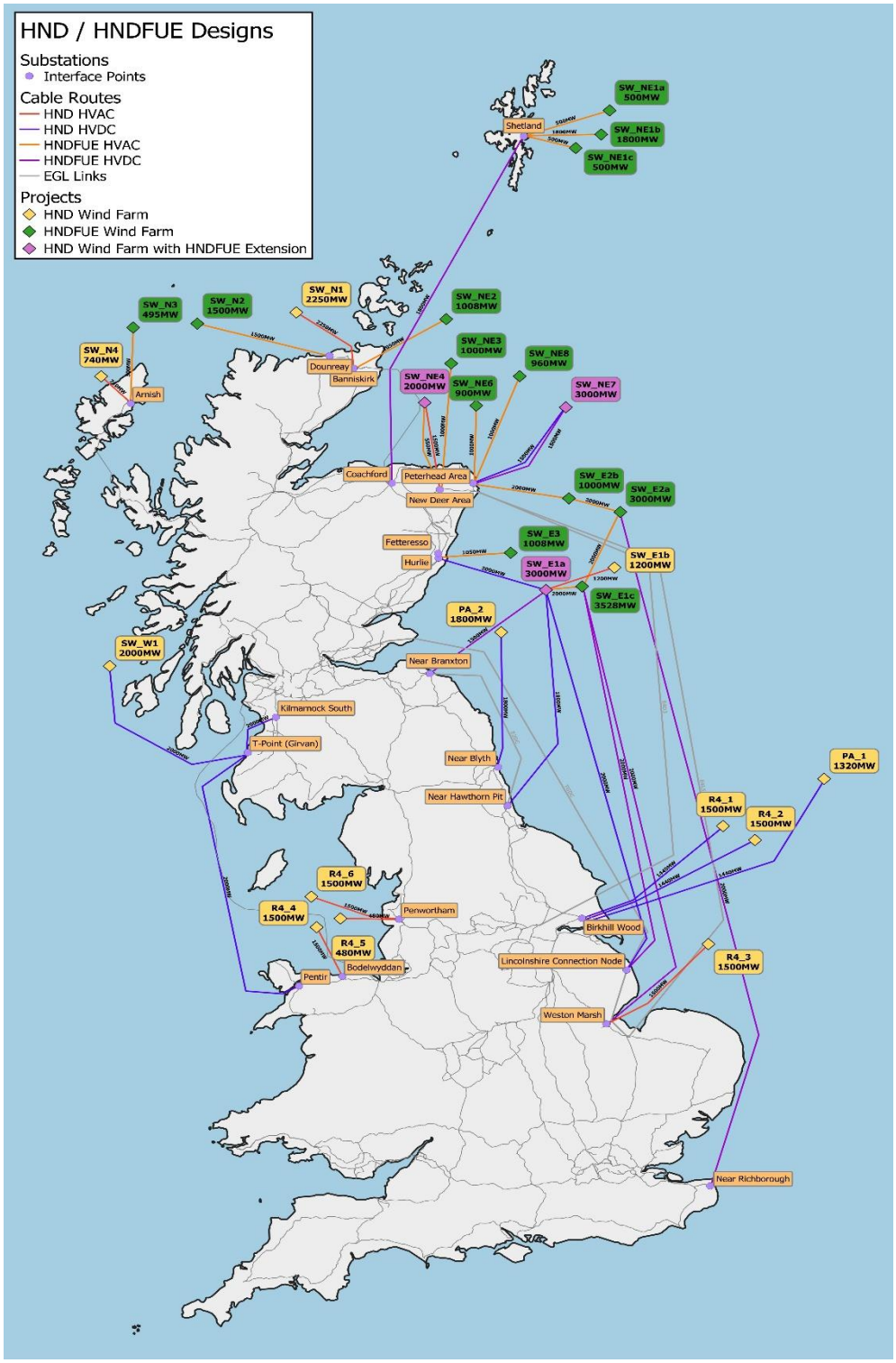
- *Radial offshore*, where an asset is constructed for the purpose of conveying power generated offshore by one generating station
- *Non-radial offshore,* where an asset is constructed for the purpose of conveying power generated offshore by more than one generating station

Upon classifying into one of the three classifications, this will determine the type of transmission licence which will be required. It is important to note that the classification process will not result in a licence and parties will still be expected to undergo the usual application process. However, once a licence is granted, the type of licence will **not be subject to change in future**.

HNDFUE Asset Classification

Figure 2 below sets out National Grid ESO's HNDFUE, for proposed assets necessary for delivering 20.7GW of successful ScotWind offshore wind capacity post 2030. We make use of this diagram to illustrate the classification decisions and provide us with information on the structure and detail of connections. The following classifications are supported with detailed information provided by NGESO.

Figure 2 – NGESO HNDFUE



We have applied the classification process (as shown in **Figure 1**) to the HNDFUE (as shown in **Figure 2**). The process has identified transmission assets which are onshore, radial offshore and non-radial offshore. We set out classifications in **Table 1** below and give further detail on the process as applied to each asset within the following annexes. **Annex 1** sets out onshore reinforcement classification and **Annex 2** sets out offshore asset classification.

NGESO's Comprehensive List of Onshore and Offshore Networks includes two circuits which are not included in **Table 1**. These circuits are offshore network cables connecting platforms within the E2a and E1c sites. As these circuits link platforms within the same windfarm site, we are not including them in our asset classification decision at this stage. Ofgem expect the DND to provide the information necessary for classification and intend on providing classifications when required.

Table 1 – Classification of transmission assets

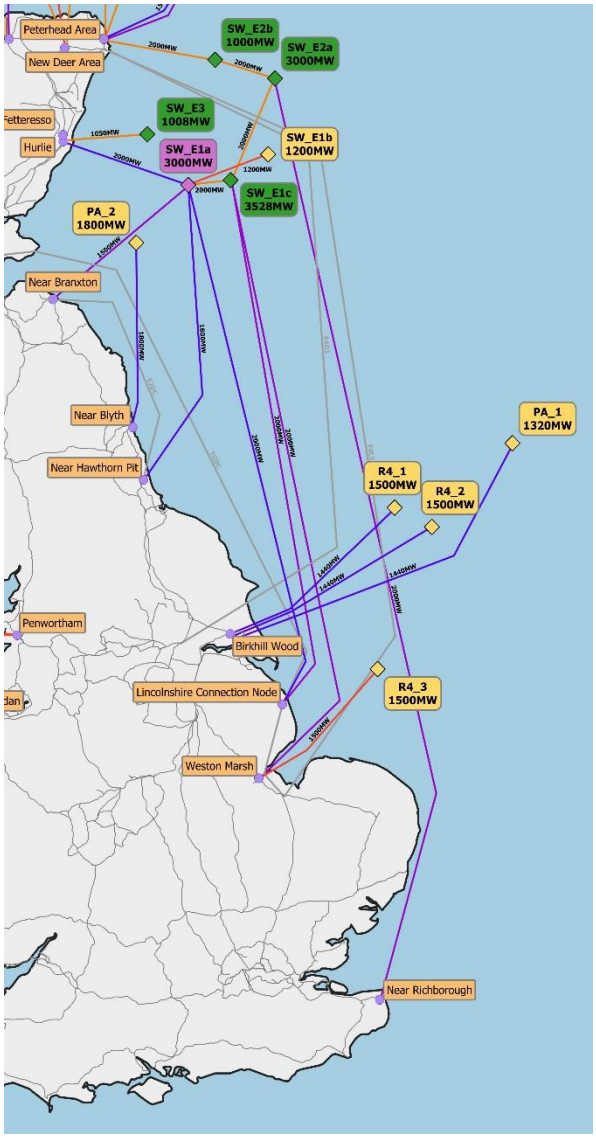
Circuit	Classification
Peterhead to E2b	Onshore
E2b to E2a	Onshore
E2a to Richborough	Onshore
Shetland to Coachford	Onshore
E2a to E1c	Non-radial Offshore
E1c to Lincolnshire Connection Node (LCN)	Non-radial Offshore
E1c to Weston Marsh	Non-radial Offshore
E1c to E1a	Non-radial Offshore
E1a to Branxton	Non-radial Offshore
E3 to Hurlie	Radial Offshore
N2 to Dounreay	Radial Offshore
N3 to Arnish	Radial Offshore
NE1a to Shetland	Radial Offshore
NE1b to Shetland	Radial Offshore
NE1c to Shetland	Radial Offshore
NE2 to Banniskirk	Radial Offshore
NE3 to New Deer	Radial Offshore
NE4 to New Deer	Radial Offshore
NE6 to Peterhead	Radial Offshore
NE7 to Peterhead	Radial Offshore
NE8 to Peterhead	Radial Offshore

Annex 1. Onshore Reinforcement Classification

The HNDFUE has a number of onshore reinforcement classifications. Through the asset classification process, we have determined that this link constitutes:

a. **Peterhead to E2b**
b. **E2b to E2a**
c. **E2a to Richborough**

Assets

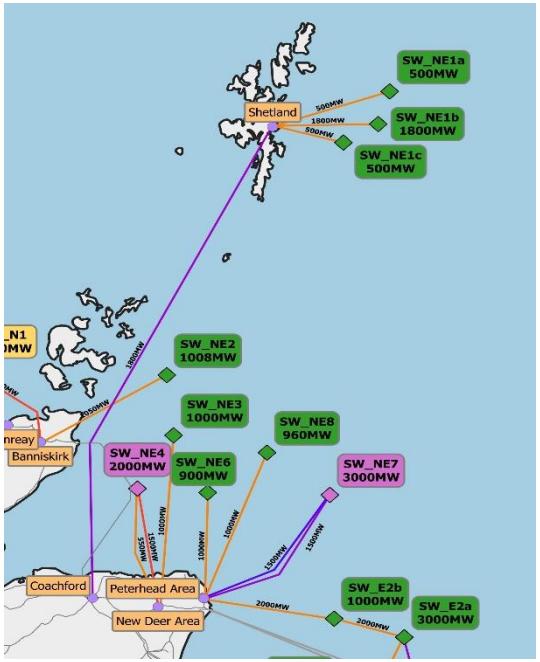


Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
Peterhead to E2b	Infrastructure is used for transmission in offshore waters, of electricity generated onshore. Used for conveying electricity generated onshore through transmission system.	Mostly unidirectional (bidirectional possible) flow from Peterhead to offshore substation	2,000MW HVAC cable connecting to offshore substation	Neither wholly nor mainly used to convey electricity generated offshore, therefore onshore. This is the first point of connection for onshore reinforcement in this cluster.	Onshore (reinforcement)
E2b to E2a	Infrastructure is used for transmission in offshore waters, of electricity generated onshore. Used for conveying electricity generated onshore through transmission system.	Unidirectional flow from E2b substation to E2a substation	2,000MW onshore HVAC cable (most), 1,000MW OWF and substation using 2000MW HVAC cable	Neither wholly nor mainly used to convey electricity generated offshore, therefore onshore. Continuing reinforcement from Peterhead.	Onshore (reinforcement)
E2a to Richborough	Infrastructure is used for transmission in offshore waters of power generated onshore. Used to convey this power to transmission system.	Predominantly unidirectional flow from E2a substation to Richborough onshore substation. Some flow from E2a to E1c.	1000MW OWF, 3000MW OWF and onshore reinforcement using 2,000MW HVDC cable	Neither wholly nor mainly used to convey electricity generated offshore*. Completes reinforcement from SW_E2a.	Onshore (reinforcement)

* While the power flow data here shows some correlation in favour of amalgamated offshore generation, of the two links (E2a – E1c; E2a - Richborough) considered to complete the reinforcement link, E2a - Richborough shows the highest correlation to onshore power flow. Therefore, we consider this link to complete the reinforcement south from Peterhead. This is consistent with the approach to onshore reinforcement we published in our October 2022 decision.

The complete reinforcement link connects the furthest north to furthest south points, crossing the highest number of transmission boundaries on the east coast.

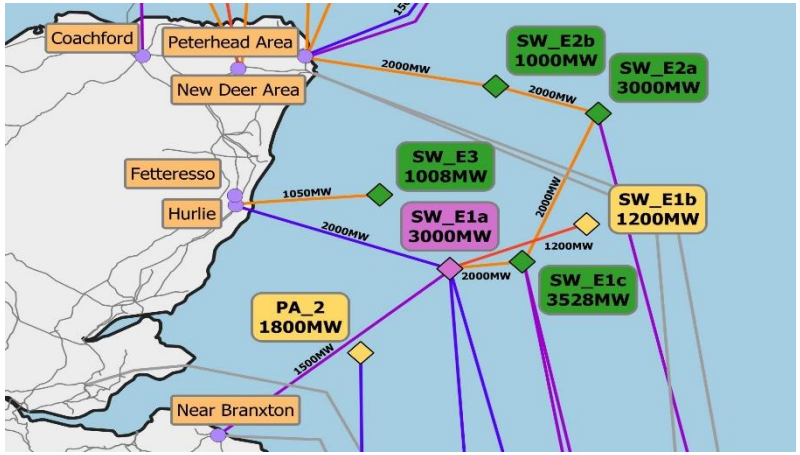
d. Shetland to Coachford

Assets


Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
Shetland to Coachford	Infrastructure is used for transmission in offshore waters of power generated onshore. Used to convey this power to transmission system (redundancy).	Unidirectional flow from Shetland onshore substation to Coachford onshore substation.	Onshore substation connecting to onshore substation using 1,800MW HVDC cable	Wholly used to convey power from an onshore substation to another onshore substation. Onshore reinforcement link from Shetland to Coachford on mainland	Onshore (reinforcement)

Annex 2. Offshore Asset Classification

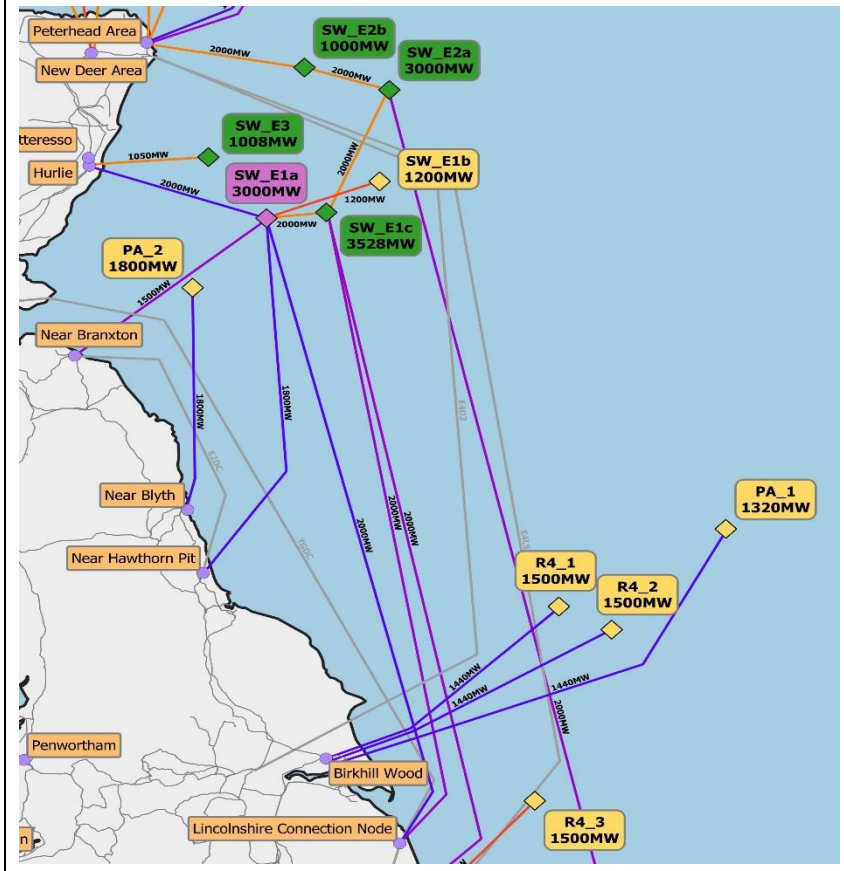
a. E2a to E1c

Asset


Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
E2a to E1c	Infrastructure is used for transmission in offshore waters, of electricity generated by more than one generating station. Used for conveying electricity generated by offshore wind farms (**OWFs**) to transmission system.	Predominantly from E2a to E1c. Some flow expected from E2b.	3000MW OWF and substation using 2000MW HVAC cable	Mainly, but not wholly, used to convey power generated offshore at E2a OWF to E1c substation. Power also coming from onshore reinforcement link.	Non-radial Offshore

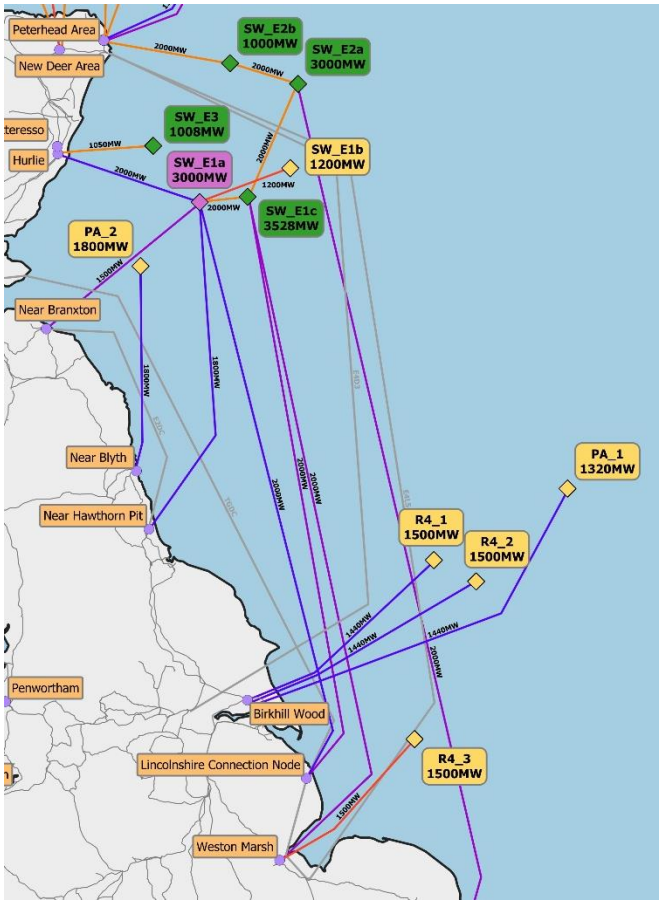
b. E1c to Lincolnshire Connection Node (LCN)

Asset



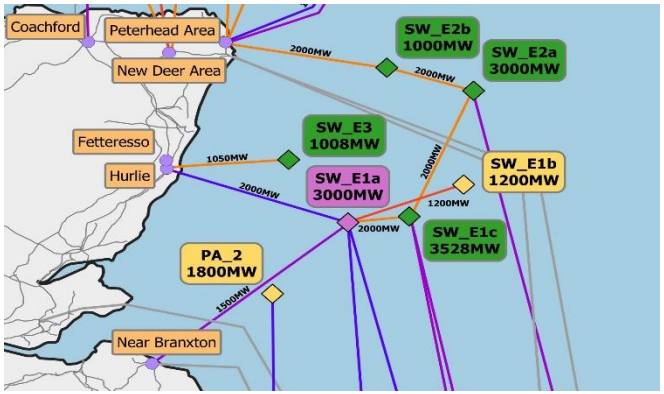
Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
E1c to Lincolnshire Connection Node (**LCN**)	Infrastructure is used for transmission in offshore waters, of electricity generated by more than one generating station. Used for conveying electricity generated by OWFs to transmission system.	Unidirectional flow from E1c substation to onshore substation. Some flow expected from E2a and E2b. Some potential flow expected to E1a substation.	3528MW OWF and substation using 2000MW HVDC cable	Mainly, but not wholly, used to convey power generated offshore at E1c OWF to LCN onshore substation. Power also coming from onshore reinforcement link.	Non-radial Offshore

c. E1c to Weston Marsh

Asset


Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
E1c to Weston Marsh	Infrastructure is used for transmission in offshore waters, of electricity generated by more than one generating station. Used for conveying electricity generated by OWFs to transmission system.	Unidirectional flow from E1c substation to onshore substation. Some flow expected from E2a and E2b. Some potential flow expected to E1a.	3528MW OWF and substation using 2000MW HVDC cable	Mainly, but not wholly, used to convey power generated offshore at E1c OWF to Weston Marsh onshore substation. Power also coming from onshore reinforcement link.	Non-radial Offshore

d. E1c to E1a

Asset


Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
E1c to E1a	Infrastructure is used for transmission in offshore waters, of electricity generated by more than one generating station. Used for conveying electricity generated by OWFs to transmission system.	Bidirectional flow with the majority flowing from E1a to E1c.	3528MW OWF, 1500MW OWF and substation using 2000MW HVAC cable	Mainly, but not wholly, used to convey power generated offshore at E1c OWF to E1a OWF substation. Power also coming from onshore reinforcement link.	Non-radial Offshore

e. E1a to Branxton

Asset

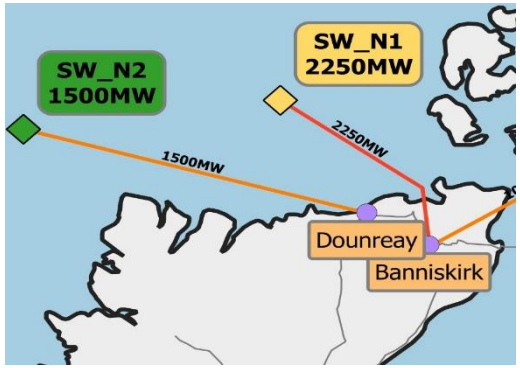

Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
E1a to Branxton	Infrastructure is used for transmission in offshore waters, of electricity generated by more than one generating station. Used for conveying electricity generated by OWFs to transmission system.	Bidirectional flow between both the E1a offshore substation and Branxton onshore substation.	1,500MW OWF and substation using 1,500MW HVDC cable	Mainly, but not wholly, used to convey power generated offshore at E1a OWF to onshore substation. Power also coming from onshore reinforcement link.	Non-radial Offshore

f. E3 to Hurlie

Asset

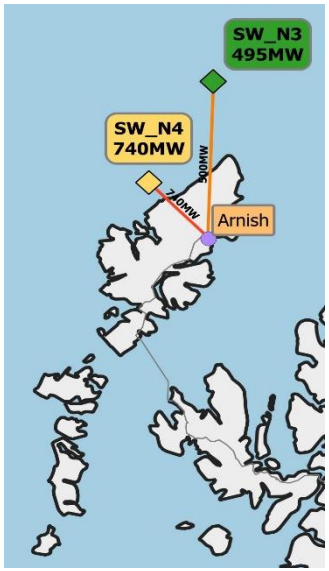

Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
E3 to Hurlie	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from E3 substation to onshore substation	1,008MW OWF and substation using 1,050MW HVAC cable	Wholly used to convey power generated offshore at E3 OWF to onshore substation	Radial Offshore

g. N2 to Dounreay

Asset


Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
N2 to Dounreay	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from N2 substation to onshore substation	1,500MW OWF and substation using 1,500MW HVAC cable	Wholly used to convey power generated offshore at N2 OWF to onshore substation	Radial Offshore

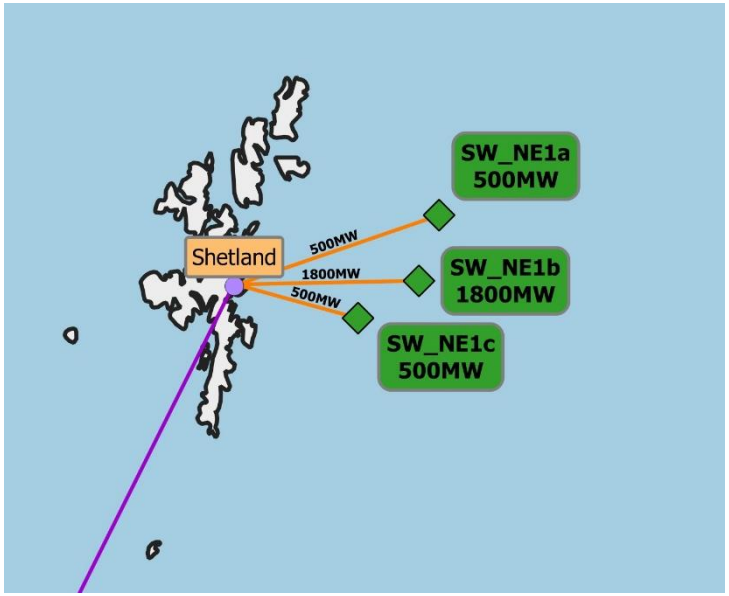
h. N3 to Arnish

Asset


Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
N3 to Arnish	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from N3 substation to onshore substation	495MW OWF and substation using 500MW HVAC cable	Wholly used to convey power generated offshore at N3 OWF to onshore substation	Radial Offshore

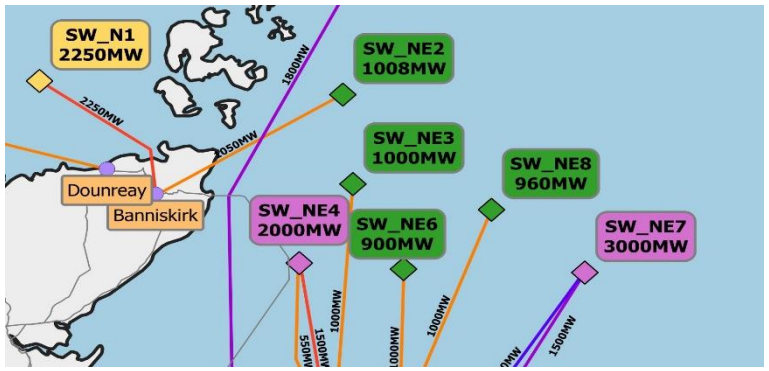
i. **NE1a to Shetland**
j. **NE1b to Shetland**
k. **NE1c to Shetland**

Assets



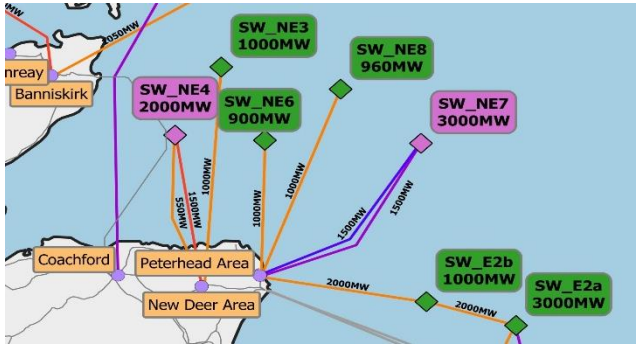
Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
NE1a to Shetland	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from NE1a substation to onshore substation	500MW OWF and substation using 500MW HVAC cable	Wholly used to convey power generated offshore at NE1a OWF to onshore substation	Radial Offshore
NE1b to Shetland	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from NE1b substation to onshore substation	1,800MW OWF and substation using 1,800MW HVAC cable	Wholly used to convey power generated offshore at NE1b OWF to onshore substation	Radial Offshore
NE1c to Shetland	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from NE1c substation to offshore substation	500MW OWF and substation using 500MW HVAC cable	Wholly used to convey power generated offshore at NE1c OWF to onshore substation	Radial Offshore

I. NE2 to Banniskirk

Asset


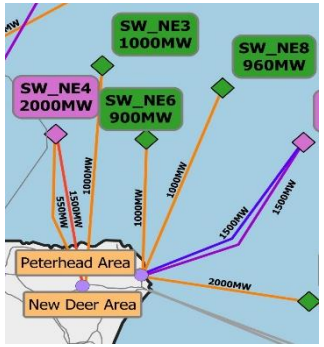
Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
NE2 to Banniskirk	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from NE2 substation to onshore substation	1,050MW OWF and substation using 1,050MW HVAC cable	Wholly used to convey power generated offshore at NE2 OWF to onshore substation	Radial Offshore

m. NE3 to New Deer

Asset


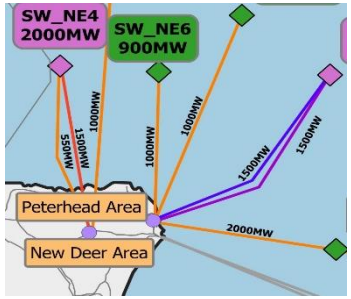
Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
NE3 to New Deer	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from NE3 substation to onshore substation	1,000MW OWF and substation using 1,000MW HVAC cable	Wholly used to convey power generated offshore at NE3 OWF to onshore substation	Radial Offshore

n. NE4 to New Deer

Asset


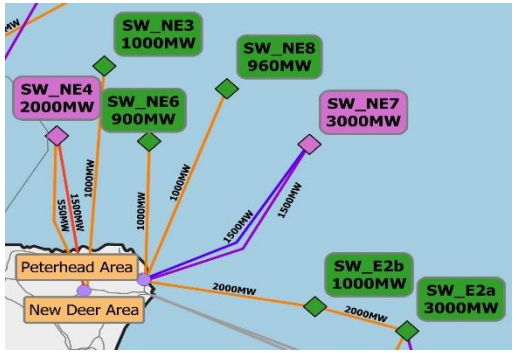
Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
NE4 to New Deer	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from NE4 substation to onshore substation	500MW OWF and substation using 550MW HVAC cable	Wholly used to convey power generated offshore at NE4 OWF to onshore substation	Radial Offshore

o. NE6 to Peterhead

Asset


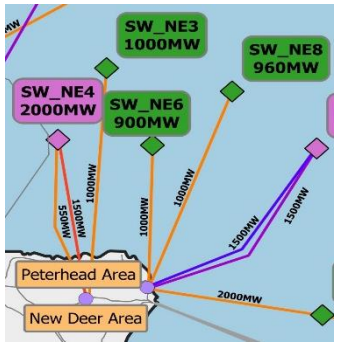
Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
NE6 to Peterhead	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from NE6 substation to onshore substation	900MW OWF and substation using 1,000MW HVAC cable	Wholly used to convey power generated offshore at NE6 OWF to onshore substation	Radial Offshore

p. NE7 to Peterhead

Asset


Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
NE7 to Peterhead	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from NE7 substation to onshore substation	1,500MW OWF and substation using 1,500MW HVDC cable	Wholly used to convey power generated offshore at NE7 OWF to onshore substation	Radial Offshore

q. NE8 to Peterhead

Asset


Circuit	Legislative Review	Technical Review: Power Flow	Technical Review: Capacity Utilisation	Legal Verification	Classification
NE8 to Peterhead	Infrastructure is used for transmission in offshore waters, of electricity generated by a single generating station. Used for conveying electricity generated by OWF to transmission system.	Unidirectional flow from NE8 substation to onshore substation	960MW OWF and substation using 1,000MW HVAC cable	Wholly used to convey power generated offshore at NE8 OWF to onshore substation	Radial Offshore