

# Integrated Transmission Planning and Regulation (ITPR) project: final conclusions

## Glossary – Supporting Document

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### Overview:

This document sits alongside our final conclusions on the Integrated Transmission Planning and Regulation (ITPR) project.

This provides glossary definitions for terms used in our final conclusions and supporting documents.

## Glossary

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### A

#### Affiliate

In relation to an electricity transmission licensee, means any holding company of the licensee, any subsidiary of the licensee, or any subsidiary of a holding company of the licensee.

#### Associate

In relation to an electricity transmission licensee, means an affiliate or related undertaking of the licensee, the ultimate controller of the licensee, a participating owner of the licensee or a common control company.

#### The Authority

Means the Gas and Electricity Markets Authority (GEMA), established by section 1(1) of the Utilities Act 2000. The Authority governs Ofgem.

### B

#### Bilateral connection agreement (BCA)

An agreement between the SO and a connecting party. The BCA states how the generator will comply with the grid code, CUSC, and BSC. It also defines the arrangement for connection to the NETS, and details the provisions for balancing services.

### C

#### Cap and floor

See *Developer-led cap and floor regime*.

#### Connection and use of system code (CUSC)

This is the contractual framework for connection to, and use of, the national electricity transmission system. The methodologies used to derive the charges that NGET levies for connection to and use of the national electricity transmission system are also set out in the CUSC.

#### Connection infrastructure options note (CION)

The output from the process initiated by NGET to carry out assessment of different connection options. Development is continued by the developer once the connection offer has been signed.

#### Contracts for difference (CfDs)

A CfD is a private law contract between a low carbon electricity generator and the Low Carbon Contracts Company (LCCC), a government-owned company. A generator party to a CfD is paid the difference between the 'strike price' – a price for electricity reflecting the cost of investing in a particular low carbon technology – and the 'reference price' – a measure of the average market price for electricity in the GB market.

### Coordinated network (design)

In the context of the ITPR project, coordinated networks arise when interactions between two or more proposed transmission investments (including connections) mean that a common network solution could be more cost effective than developing the assets separately.

## D

### Demand side response (DSR)

DSR is when consumers adjust the amount of energy they use at particular times in response to a signal.

### Developer

See *interconnector developer* and *offshore developer*.

### Developer-led cap and floor regime

A regulatory regime for interconnection under which developers identify opportunities for additional interconnection. If they go on to develop, construct and operate an interconnector, they receive revenues which are bounded by a cap (maximum return) and floor (minimum return). If their revenues exceed the cap then the surplus is returned to consumers. Conversely, if their revenue falls below the floor then consumers top up developers' revenue to the level of the floor.

### Developer-led wider network benefit investment (WNBI)

Offshore transmission investment to provide wider network benefit, led by offshore developers (whether under a generator or OFTO build approach). The investment is identified by the SO and included for the offshore developer to undertake as part of its BCA.

### Distribution network operator (DNO)

An entity that operates an onshore electricity distribution network, which includes all parts of the network from 230V up to and including 132kV in England and Wales. In Scotland, DNOs operate all parts of the network up to but not including 132kV as 132kV is considered to be transmission rather than distribution.

## E

### Electricity Act

The Electricity Act 1989 as amended from time to time.

### Electricity Market Reform (EMR)

EMR is a government policy to incentivise investment in electricity from low carbon sources, to improve the security of GB's electricity supply, and to improve affordability for consumers. This policy was implemented through the Energy Act 2013.

### Electricity ten year statement (ETYS)

A document produced periodically by NGET as the SO in order to provide industry participants and other interested parties with information about the transmission system, such as its potential future development and the opportunities this presents.

**European Network of Transmission System Operators for Electricity (ENTSO-E)**  
ENTSO-E represents 41 electricity transmission system operators (TSOs) from 34 countries across Europe. ENTSO-E promotes closer cooperation across Europe's TSOs to support the implementation of EU energy policy and achieve Europe's energy & climate policy objectives.

#### **Exemption route**

An existing option for interconnector developers whereby they can apply for exemptions from certain requirements of European legislation.

### **F**

#### **Future energy scenarios (FES)**

A set of scenarios, modelled by NGET and produced annually, describing the changes in electricity generation and demand that could potentially materialise in the future. There are currently four scenarios that extend out to 2035 and 2050.

### **G**

#### **Gas and Electricity Markets Authority (GEMA)**

See *The Authority*

#### **Gateway assessment process**

This is a process by which we assess the rationale for developer-led WNBI being taken forward by an offshore developer. The process will be mandatory and the SO will lead on submitting a needs case (where required) for the WNBI to us. The gateway assessment will take a form agreed with Ofgem, following notification by the SO of WNBI being included in a connection agreement. It may include no gateways, or one or more gateways.

#### **Generator build**

A model for the development of offshore transmission assets under which a generator-developer designs and constructs the transmission assets. An OFTO, appointed by a competitive tender exercise, operates, maintains and decommissions the transmission assets.

### **H**

#### **High voltage direct current (HVDC)**

A high voltage, direct current (HVDC) electric power transmission system uses direct current for the bulk transmission of electrical power, in contrast with the more common alternating current (AC) systems.

### **I**

#### **Industry codes**

The industry codes underpin the electricity wholesale and retail markets and define the terms under which industry participants can access the electricity networks including the connection and use of system code (CUSC), the balancing and settlement code (BSC), the grid code, the System Operator: transmission owner

code (STC), the distribution connection and use of system agreement (DCUSA) and the distribution code.

#### Initial project assessment (IPA)

Our first assessment of the needs case for interconnector projects applying under the cap and floor regime, ie assessing whether a project is likely to be in consumers' interests based on the projected costs and benefits. This will act as a gateway to our final project assessment.

#### Integrated (network)

In the context of the ITPR project, this term is used to describe the principle of considering a whole system view in planning and delivering the transmission system. This includes recognising the interactions between different asset developers and the networks onshore, offshore and cross-border. Economic and efficient integration can bring benefits to consumers.

#### Interconnector

Physical links which allow for the transfer of electricity across borders.

#### Interconnector developer

A party that identifies the need for new interconnector capacity and builds, owns and operates the interconnector assets.

## M

#### Major reinforcement or major transmission reinforcement

In this document means a project that will deliver a significant increase in boundary capability or capacity elsewhere in the electricity transmission system.

#### Multiple purpose project (MPP)

A project that features some combination of onshore transmission, offshore transmission or interconnection. For example, a project that combines connection of offshore generation with interconnection to a different market, or a project that uses oversizing of a generation connection offshore to accommodate network reinforcements to relieve constraints in the onshore network.

## N

#### National electricity transmission system (NETS)

The system consisting (wholly or mainly) of high voltage electric lines owned or operated by transmission licensees within GB, in the territorial sea adjacent to GB and in any renewable energy zone and used for the transmission of electricity from one generating station to a sub-station or to another generating station or between sub-stations or to or from any interconnector and includes any electrical plant or meters owned or operated by any transmission licensee within Great Britain, in the territorial sea adjacent to GB and in any renewable energy zone in connection with the transmission of electricity.

#### National Grid Electricity Transmission plc (NGET)

The electricity transmission licensee that owns and maintains the onshore electricity transmission assets in England and Wales. NGET is also the system operator for GB.

It is a subsidiary company of National Grid plc, a wider group of companies which also includes, among other things, interests in interconnection and bidding for offshore transmission investments.

#### Needs case

For the purposes of this document, refers to the economic case for investment, considering whether it would be economic and efficient in the context of the electricity transmission network as a whole, and in consumers' interests. The requirements for a needs case submission, and the detail of its assessment, may vary across different types of investment.

#### Network access policy (NAP)

This is a policy which the onshore TOs are required to have and operate consistently with. It is a commitment about the way they will share plans affecting their network and communicate effectively with the SO, building on the terms within the STC. This policy includes actions the TO will take to coordinate planned network outage arrangements with the SO and other TOs; manage unplanned outages; and communicate with the SO regarding interactions between the TO's NAP and the SO's balancing services activity. The policy is a document that we expect to be updated based on experience during the RIIO-T1 control period.

#### Network development policy (NDP)

As part of the RIIO-T1 price control, NGET is required to develop a network development policy (NDP) setting out how it will determine the scope and timing of wider network reinforcement works. NGET is required to apply its NDP to determine which network reinforcements offer value for money for existing and future consumers, and to take these forward.

#### Network options assessment (NOA)

A new process that the SO will be required to undertake as part of its new system planning role. The SO will undertake a comparative assessment of all options for major network reinforcement. It will provide information to industry and its assessment of individual options to TOs and Ofgem as necessary, and also publish a report (the NOA report) on its assessment of all options at least annually.

#### NGET's associated competitive businesses

These refer to the competitive businesses within National Grid (group). This includes interconnector development and operation, offshore transmission development and operation, and carbon capture and storage, as well as any future competitive onshore transmission bidding interest.

#### Non developer-led wider network benefit investment (WNBI)

Offshore transmission investment to provide wider network benefit that is not identified as being for a specific offshore developer to undertake as part of its bilateral connection agreement (BCA).

#### Non-GB connection

Transmission links connecting generators outside GB directly to the GB electricity transmission system.

## O

### Offshore developer

The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2013 define a 'developer' as 'any person within section 6D(2)(a) of the 1989 Act or within a developer group'. Section 6D(2)(a) of the Electricity Act 1989 defines such person as 'the person who made the connection request for the purposes of which the tender exercise has been, is being or is to be, held'. In practice, such person is also the entity responsible for the construction of the generation assets and, under generator build, the transmission assets.

### Offshore tender round 1 (TR1)

The first competitive tender round for the grant of offshore transmission licences. We commenced the first tender round on 22 July 2009.

### Offshore transmission

As defined in section 6C of the Electricity Act 1989 means the transmission within an area of offshore waters of electricity generated by a generating station in such an area, where offshore waters means:

- (a) waters in or adjacent to Great Britain which are between the mean low water mark and the seaward limits of the territorial sea;
- (b) waters within an area designated under section 1(7) of the Continental Shelf Act 1964.

### Offshore transmission licence (OFTO licence)

A transmission licence authorising anything that forms part of a transmission system to be used for purposes connected with offshore transmission.

### Offshore transmission owner (OFTO)

The holder of an offshore transmission licence.

### OFTO build

A model for the development of offshore assets. Under the OFTO build option, the generator obtains the connection offer and undertakes high level design and preliminary works. An OFTO, selected via competitive tender, is then responsible for constructing, operating, maintaining and decommissioning the transmission assets.

### Onshore transmission assets

Where we refer to 'onshore' transmission assets in this document, we mean those that under current arrangements would be developed by National Grid Electricity Transmission, Scottish Power Transmission, and Scottish Hydro Electric Transmission. Some 'onshore' assets go beyond the landmass and are in the waters around GB, such as the Kintyre-Hunterston and Caithness-Moray projects.

### Onshore TO

In this document the term is used to describe the three incumbent onshore transmission companies: NGET, SP Transmission and SHE Transmission. Note we use the term in this document only to describe the transmission ownership function. NGET also has a system operator function although both of these functions are governed by one transmission licence.

## **P**

### **Participating interest**

Has the meaning given in Section 421A of the Financial Services and Markets Act 2000.

### **Power quality**

Power quality means ensuring a number of technical characteristics (such as harmonics and unbalanced power) are within acceptable limits to support the operation of the network.

### **Price arbitrage and price signals**

Electricity price differences between countries offer the opportunity to profit from the purchase and immediate re-sale of electricity if the markets are interconnected. Such price arbitrage provides price signals that can give a good indication of what interconnector investment is likely to have benefits.

## **R**

### **Related undertaking**

In relation to an electricity transmission licensee, means any undertaking in which the licensee has a participating interest.

### **Revenue = Incentives + Innovation + Outputs (RIIO)**

The price control framework applied to onshore transmission and distribution of gas and electricity. It resulted from our RPI-X@20 review. Further information on the RIIO framework can be found on our website: <https://www.ofgem.gov.uk/network-regulation-%E2%80%93-riio-model>.

### **RIIO-transmission price control review 1 (RIIO-T1)**

The first onshore electricity transmission price control under the RIIO framework, which applies from 1 April 2013 to 31 March 2021. In early 2013 we completed the first price control reviews to use the RIIO framework: RIIO-T1 (gas and electricity transmission).

### **RIIO-transmission price control review 2 (RIIO-T2)**

We use this term to refer to the electricity transmission price control which will come into effect following RIIO-T1.

## **S**

### **Scottish Hydro Electric Transmission Ltd (SHE Transmission)**

The electricity transmission licensee that owns and operates the onshore electricity transmission assets in northern Scotland.

### **Scottish Power Transmission plc (SP Transmission)**

The electricity transmission licensee that owns and operates the onshore electricity transmission assets in central and southern Scotland.



### Stranding

Where transmission assets become either not used or under-used as compared with initial expectations.

### Strategic wider works (SWW)

An uncertainty mechanism put in place under RIIO-T1 to allow onshore transmission owners to bring forward large investment projects during the price control period. SWW projects must meet requirements set out in the licence, but in general terms they are designed to reinforce or extend the NETS in order to enable the efficient and economic development of the transmission system.

### System needs

Where additional investment (or other action) in the transmission system is needed to enable the continued secure and efficient operation and coordinated development of the system. The identification of system needs involves forecasting future circuit capacity and power flows on the network under a range of different generation scenarios.

### System operability framework (SOF)

The SOF has been developed by NGET to study in-depth, year-round impact of its FES on system operability. The framework includes assessing existing network performance, identifying the root causes of incidents and constraints observed on the system in recent years, and highlighting potential new changes in system dynamics in future years based on system studies.

### System Operator (SO)

The entity charged with operating the high voltage electricity transmission system in GB, currently NGET.

### System Operator: transmission owner code (STC)

The industry code that defines the relationship between the System Operator and transmission owners setting out the roles, responsibilities, obligations and rights of these parties.

## T

### Transmission charging

Transmission charges recover the cost of installing and maintaining the transmission system in GB and offshore. These charges are levied by the SO. Transmission customers pay a charge based on which geographical zone they are in, whether they are generation or supply and the size of that generation or supply.

### Transmission owner (TO)

In this document, TO is an umbrella term that captures all holders of a transmission licence. This includes onshore TOs and competitively appointed TOs including OFTOs. It does not include holders of interconnection licences.

## **U**

### [User commitment](#)

User commitment places liabilities on users in order to financially secure the cost of investment works required to connect them to the network, or ensure otherwise avoidable costs are not incurred.

## **W**

### [Wider network benefit investment \(WNBI\)](#)

Investment in offshore transmission that has wider network benefits, by serving to mitigate the need for separate reinforcements of the onshore or offshore transmission network.