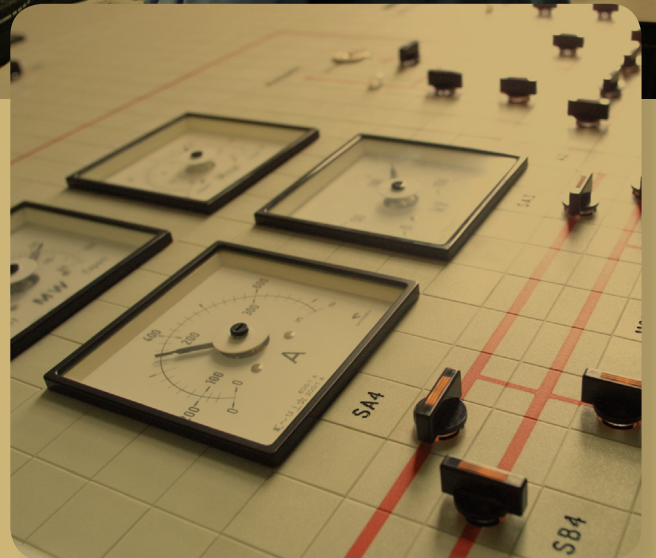




NATIONAL  
CONTROL  
CENTRE

# BECOMING OPERATIONAL

## GENERATOR CUSTOMER INFORMATION PACK





# BECOMING OPERATIONAL

## GENERATOR CUSTOMER INFORMATION PACK





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# Section 1. Introduction

## SECTION 1. Introduction

### 1.1. Introduction

The Becoming Operational Generator Customer Pack is intended to provide information to EirGrids' Generation Customers connecting to the Transmission System. Once a Customer has signed their Connection Agreement work begins by both parties to construct the necessary connection assets. The Customer interacts regularly with EirGrid, primarily at project level. It is only when the first energisation date approaches that focus begins to turn to post energisation obligations.

EirGrid has found in the past that Customers are not aware of their obligations as an operational Customer and this can lead to a variety of problems for both parties, particularly as some of these obligations require consideration early in the project development.

This pack provides a high level overview of the Customers' obligations so that they can plan for them from an early stage. In particular it is very important that in discussions with the manufacture of their generation unit(s), Customers understand their obligations to comply with the Grid Code and to agree plant designation with EirGrid upfront. This can avoid many difficulties as the project progresses.

From approximately 12 months prior to energisation, the Customer must give consideration to other obligations including providing trained operators, installing systems required for receiving dispatch instructions from NCC and having designated personnel who can give a Declaration of Fitness to EirGrid for new plant. Each of these requirements and more is explained within this document.

Fulfilling all of the obligations of an operational Customer requires planning and coordination with EirGrid. We hope that this document facilitates the transition from a construction project to an operational generator.

### 1.2. How To Use This Document

Whilst the document attempts to address the various topics chronologically as to when the Customer will need to consider them, this is not always possible. It should be noted that this document operates at a very high level and the Customer should discuss each topic in detail with EirGrid at the appropriate time. Should you have any queries on the document please refer to section 3.1 for the relevant contact information.

The remainder of this document is split into 2 sections:

- **Topics**

In this section each of the primary topics is presented to the Customer at a high level to provide some background information; an appreciation of the Customer's obligations; and information on where reference documentation can be found on the topic.

- **Supporting Information**

This section provides supporting information such as an explanation of the acronyms and abbreviations used in the document and contact information.

### 1.3. Feedback

We welcome your feedback on any aspect of the document by e-mail to [info@eirgrid.com](mailto:info@eirgrid.com).



## Section 2. Topics



## SECTION 2. Topics

### 2.1. The Grid Code

The Grid Code is a living document, available on the EirGrid website, and designed to cover all material technical aspects relating to the operation and use of the Transmission System and the use of plant connected to the Transmission System or to the Distribution System, as approved by the Commission for Energy Regulation (CER). In particular it sets out minimum technical standards with which Customers must comply in order to be allowed connect to the Transmission System, such as the requirements for reactive power, operating reserve, minimum load and active power control units.

#### **How is the Grid Code Managed?**

##### **Grid Code Review Panel (GCRP)**

The GCRP is a standing body constituted to review and discuss the Grid Code and its workings. The panel meets approximately once every quarter and is governed by its own constitution which defines the scope, membership, duties, and rules of conduct and operation.

EirGrid, the CER or any user of the Grid Code may submit a Grid Code amendment to the GCRP for consideration. The role of the GCRP is to consider and discuss the proposed modification before rejecting or recommending it for approval to the CER. The CER has the final authority to reject or approve a recommendation from the GCRP. The Grid Code is revised on the approval of a recommended modification by the CER. The Minutes of all GCRP meetings are recorded and published on the EirGrid website.

##### **Joint Grid Code Review Panel (JGCRP)**

The JGCRP is a standing body constituted to review and discuss the sections of the Grid Code that are under common governance between Ireland and Northern Ireland (currently SDC1 and SDC2). The panel comprises of members from the Ireland Grid Code Review Panel and the Northern Ireland Grid Code Review Panel.

The panel meets approximately once every quarter and it is governed by its own constitution which defines the scope, membership, duties, and rules of conduct and operation. The JGCRP may reject or recommend a modification proposal to the Regulatory Authorities, CER and Northern Ireland Authority for Utility Regulation (NIAUR), following consideration and discussion. The CER and NIAUR will make the final decision on any recommended modifications. Both respective Grid Codes are revised on the approval of a recommended modification. The minutes of all JGCRP meetings are recorded and published on the EirGrid website.

#### **Modifications to the Grid Code**

An application for a modification to the Grid Code can be made to EirGrid. The GCRP or JGCRP will discuss and consider all proposals for modification and will make a recommendation to the CER based on the outcome of the discussion. The following is a guideline to the modification process:

- A User may submit to EirGrid a modification application on a prescribed form available on the EirGrid website. The email address for the submission of modification proposals is [GridCode@eirgrid.com](mailto:GridCode@eirgrid.com);
- EirGrid or the applicant will present the modification for discussion and consideration to the GCRP or JGCRP;
- The GCRP or JGCRP will either reject or recommend the proposal for approval;
- The CER and/or NIAUR will consider all recommended modification proposals and will reject or approve the modification proposal.

On approval of a modification proposal the Grid Code is revised accordingly.

## **The Customer's obligations**

### **Know the Grid Code**

EirGrid requires the Customer to familiarise themselves with their obligations under the Grid Code and to ensure that all Grid Code obligations are communicated to the manufacturer of the generation unit to ensure that the unit complies with the Grid Code.

Should the Customer wish to apply for derogation from the requirements of the Grid Code they should do so as soon as the requirement is known per the process described below.

### **Derogations to the Grid Code**

Derogations from the Grid Code should be sought only if a Customer believes it is impractical to comply with the provisions of the Grid Code or if time is required to remedy a known non-compliance. The application is made to the CER via EirGrid. EirGrid will assess the application and submit a recommendation to the CER. However, the CER has the final decision on all derogation applications. The following is a guideline to the derogation process:

- A Customer may submit to EirGrid a derogation application on a prescribed form available on the EirGrid website. The email address for the submission of applications is [GridCode@eirgrid.com](mailto:GridCode@eirgrid.com). The derogation application form may also be copied to the CER for their information. The information must include all the details as prescribed on the form including the level to which the derogation is sought.
- EirGrid will carry out a full assessment of a validity of the derogation application and will keep the applicant informed of the expected outcome of EirGrid's assessment.
- EirGrid will submit the original derogation application and EirGrid's derogation assessment to the CER which includes a recommendation of whether a derogation should or should not be granted, the level to which the derogation should be granted and the basis and terms for their recommendation. This assessment is also sent to the applicant for their information.
- The CER will consider the grounds for the derogation, as set out in the application together with EirGrid's assessment of the application before making a final decision whether or not to grant the derogation request.

All approved derogation requests are published on the EirGrid website.

### **Reference Documentation**

The following reference documentation can be found on the EirGrid website at the following URL  
<http://www.eirgrid.com/operations/gridcode/>

- Grid Code
- Derogation Application Form
- Register of Approved Derogations
- Modification Application Form
- Minutes of the GCRP and JGCRP

## 2.2. Grid Code Compliance Testing

All Customers connecting to the Transmission System must undergo Grid Code Compliance Testing. The aim of this testing is to demonstrate compliance with the relevant sections of the Grid Code, in as far as is possible to do so. These tests may take a number of different forms including:

- Documentation submission;
- Declarations of Fitness (see section 2.9);
- Studies and simulations; and
- Physical tests.

It is important to note that the responsibility for Grid Code Compliance (GCC) and its subsequent demonstration lies with the connecting Customer.

### **How will information on Grid Code Compliance testing be provided to the customer?**

Following execution of a Connection Agreement, EirGrid will arrange a meeting between the Customer and a member of the Commissioning and Testing (C&T) Team. However in all cases the Customer should seek a meeting in order to be fully aware of the requirements in advance of signing contracts with their suppliers.

The purpose of this meeting is to provide the Customer with a detailed overview of the full testing process. Items to be discussed will include:

- The role of EirGrid and the Customer throughout the testing process;
- The relevant Grid Code Clauses and their practical application;
- The different phases of testing;
- General testing requirements;
- Format and structure of test procedures and reports;
- Provision of test data;
- Timelines for the submission of “off-load” tests;
- Timelines for the scheduling of “on-load” tests;
- In the case of dual fuel generation units, identification of tests which must be carried out on both fuels;
- Testing charges;
- Identification of areas of non-compliance and the subsequent derogation process; and
- Issuing of the Operational Certificate (see section 2.3), following the completion of the Grid Code Compliance Tests.

During this meeting, EirGrid will provide the Customer with a series of documents including:

- The latest version of the Grid Code;
- A detailed list of the relevant Grid Code Compliance Tests;
- Guidelines for the development of test procedures and test reports; and
- Information on how to submit test requests.

Following this initial meeting, a series of subsequent meetings will be arranged between the Customer and the C&T team. The duration and frequency of these meetings will depend on the timeline for the connection of the Generation unit but initially will be approximately on a monthly basis.

### **The Customer's obligations**

The Customer should familiarise themselves with their requirements under the Grid Code and ensure they have met with EirGrid to discuss these as noted above, prior to engaging a generator manufacturer.

EirGrid requires timely provision of the test procedures and test reports for the plant. It is essential that the Customer allows adequate time within their project schedule for the completion of the Grid Code Tests. Consideration must be given by the Customer to the time required for them, or their suppliers, to gather the necessary data, develop the required test procedures, carry out the analysis of test data and prepare the necessary test reports.

In addition, if the Customer feels that any of the proposed tests are not suitable to be carried out on their generation unit, they must highlight this concern to EirGrid as early as possible. The Customer will be requested to propose an alternative test, which EirGrid will review. If the proposed alternative test meets the Grid Code Compliance requirements, it can be used in place of the original Grid Code Compliance Test.

Completion of the Grid Code Compliance Testing in a timely and orderly manner is vital, as delays can ultimately delay the overall connection of the generation unit. If a Customer has any concerns about the Grid Code Compliance Tests, they should contact EirGrid as soon as possible.

### **Reference Documentation**

Further information on compliance and testing can be found on the EirGrid website at the link below:

<http://www.eirgrid.com/operations/gridcode/complianceandtesting/>

Information on Secondary Fuelling testing and compensation can be found at the link below:

<http://www.eirgrid.com/operations/gridcode/secondaryfuelcompensationtesting/>



### 2.3. Operational Certification of Generation units

An Operational Certificate is a document issued by EirGrid to the Customer when they have demonstrated that they have met Grid Code requirements. The Operational Certificate is an important document, influencing the ability of a unit to change its classification in the Single Electricity Market (SEM) and accrue the benefit of any firm access quantity assigned to the generation unit.

#### **What information does an Operational Certificate contain?**

Operational Certificates have the same format and structure for conventional units and wind farms. The Operational Certificate itself lists the relevant sections of the Grid Code with which the generation unit has demonstrated compliance, as well as any granted or pending derogations.

Where derogations have been applied for by the Customer but are not yet decided upon by the CER at the time the Operational Certificate is issued, then the Operational Certificate will state that the Customer will be bound by the decision of the CER in relation to all derogations.

#### **When will the Operational Certificate issue?**

Operational Certificates are issued by EirGrid, following the completion of Grid Code Compliance Testing by a Generation Unit.

To schedule Grid Code Compliance Testing of a wind farm there is a requirement for 75% of the site MEC to be exporting. Thus a wind farm can take a significant period to complete its Grid Code Compliance Testing and receive an Operational Certificate.

#### **How can an Operational Certificate influence the market status of a unit?**

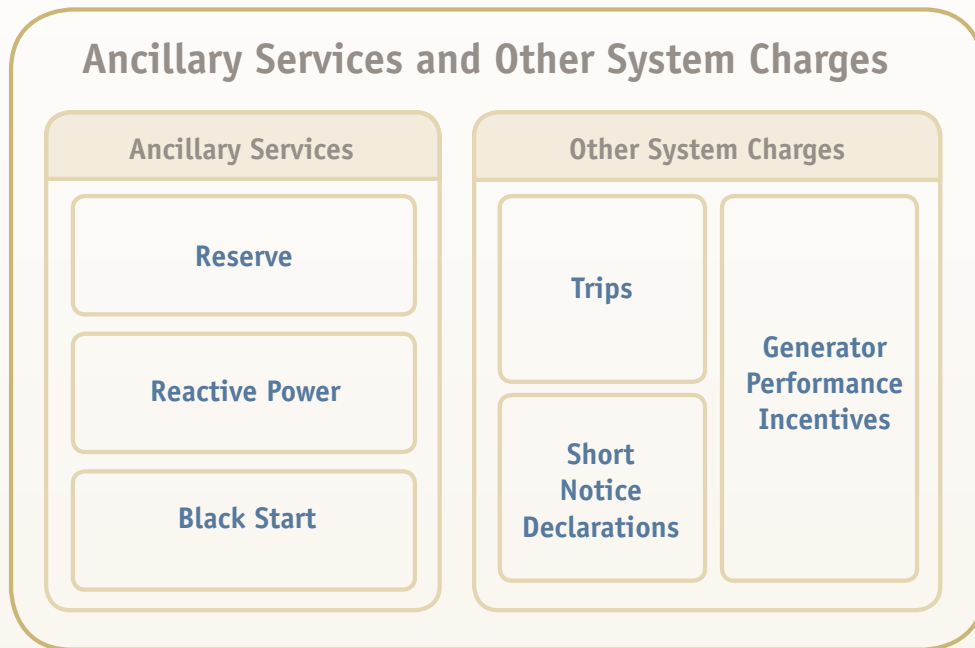
This Operational Certificate allows a conventional unit to switch class in the SEM from Market Under Test to Predictable Price Maker or Predictable Price Taker.

In the SEM a wind farm enters as an autonomous unit and is allowed to switch class to Variable Price Taker once controllability has been proven.



## 2.4. Ancillary Services and Other System Charges

EirGrid contracts with Customers for the provision of Ancillary Services which are paid at regulated rates. In addition to this there are a number of Other System Charges which are levied on Customers following certain actions as in Figure 1 below.



**Figure 1** : Arrangement of Ancillary Services and Other System Charges

### What are Ancillary Services?

The Customer should be aware that there are a number of Ancillary Services which they may be eligible to provide to EirGrid on a contractual basis. The Customer is obliged to provide many of these services under the terms of the Grid Code and will be remunerated in line with regulated rates. It is not permissible for a Customer to opt out of their Grid Code obligations. These services, known as harmonised ancillary services (harmonised between Ireland and Northern Ireland), are Operating Reserve, Reactive Power and Black Start.

### Operating Reserve

EirGrid requires the following categories of reserve:

- Primary Operating Reserve (POR);
- Secondary Operating Reserve (SOR);
- Tertiary Operating Reserve 1 (TOR1);
- Tertiary Operating Reserve 2 (TOR2);
- Replacement Reserve (Synchronised); and,
- Replacement Reserve (Desynchronised).

These reserve categories are characterised principally by different required response times and duration of response and are defined in the Grid Codes. Payments are made for each trading period on the basis of the contracted reserve capability, or a lower level if declared by the Customer. The payment is also adjusted by a scaling factor if the declared capability is lower than the contracted value. The scaling is designed to encourage the declared values to be close to the contracted values, so that on a longer term basis EirGrid can gauge the level of reserves available.

There is an approved rate of payment for each category of reserve which is consulted on annually by EirGrid and SONI, is approved by the Regulatory Authorities and is published in the Harmonised Ancillary Services Statement of Payments and Charges. If Operating Reserve is called upon/utilised by EirGrid, then, subsequently, EirGrid makes an assessment of whether the expected level of reserve was delivered. The delivery of POR, SOR and TOR1 categories of reserve are assessed in the light of the response of the contracted unit to a frequency event (i.e. a fall in the system frequency to 49.5Hz or below). If it is determined that there is a shortfall, then, for certain categories of reserve, the Customer must pay a charge. It is important to note that the charge for any category of reserve for a month is capped at the payments received for that category for a month i.e. a net monthly charge to the Customer cannot result, however the result may be that the Customer receives no payments for a given reserve category.

### **Reactive Power**

EirGrid requires the provision of reactive power, both leading and lagging, and may contract the Customer to provide this. To be eligible for a payment in a trading period, a generation unit must be synchronised. Reactive power payments are based on the declared reactive power capability (i.e. range) of a generation unit. Payments are doubled for a unit which has an Automatic Voltage Regulator (AVR) in operation. There is an approved rate of payment for each category of reactive power which is consulted on annually by EirGrid and System Operator Northern Ireland (SONI), is approved by the Regulatory Authorities and is published in the Harmonised Ancillary Services Statement of Payments and Charges. EirGrid will monitor and review the provision of reactive power and will discuss any concerns about delivery with the Customer. No charges are currently levied for non-delivery of this Ancillary Service.

### **Black Start**

The basis of the service is the ability of a site to export at a defined power level to the transmission network without needing to initially import from the transmission network. The service definition may also require, for example, that a minimum number of units on the site be available. EirGrid requires adequate black start capability to provide assurance that system restoration plans can be executed. If EirGrid determines that a need exists for new black start capability, then this will be procured through a competitive tendering process or, if necessary, by direct negotiation with Customers. The execution of new black start provisions within Ancillary Services Agreements is subject to prior approval by the Regulatory Authorities. The black start service to be provided is negotiated individually with each Customer, reflecting the technical characteristics of the site and its generation units. Payment for the Black Start service is calculated from the agreed cost of providing the service, with an uplift to provide an agreed rate of return. EirGrid will test the provision of the Black Start service, monitor the test, and will classify the results as either "Pass", "Partial Failure", or "Outright Failure". Grid Code 10.5.7.3 states that the TSO shall not require the Black Start test to be carried out more than once in each calendar year unless a re-test is required due to a failed first test. The Customer will incur charges if either a Partial Failure or an Outright Failure occurs. No payments will be due for any period of enforced unavailability.

### **What are Other System Charges?**

Once operational the Customer will be subject to ongoing performance monitoring by EirGrid. Where a Customer, through their action or inaction, imposes costs on EirGrid these must subsequently be recovered from all users. This is achieved through the application of what are collectively known as Other System Charges. The harmonised Other System Charges (OSC) arrangements came into effect on an All-Island basis from 1 February 2010 and include a series of charges which are intended to encourage behaviour which is beneficial to the operation of the transmission network and consequently, to all users of the network.

### **Short Notice Declaration Charges (SND)**

An SND charge may be incurred by a Customer if they do not give the required notice to EirGrid of certain types of reductions in MW availability. The charge reflects the period of notice given, the size of reduction and the reason. A list of Reason Codes is available on the EirGrid website. In general, Reason Codes associated with scheduled decreases in MW availabilities or non-generator reasons for decreases in MW availabilities are not chargeable. The charge will be incurred for declarations within 8 hours of the reduction. Declarations of reductions below a certain threshold and within a defined timeframe do not incur a

charge. The SND constants and rates are consulted on annually by EirGrid and SONI, are approved by the Regulatory Authorities and are published on the EirGrid website in the Statement of Payments and Charges for Ancillary Services Providers.

### **Trip Charges**

A Customer incurs a Trip Charge when the output from a unit rapidly and unexpectedly reduces. The size of the charge will reflect the speed and the size of the reduction in output. Incidents are categorised as a Direct Trip, a Fast Wind Down or a Slow Wind Down. The Trip Charge constants and rates are consulted on annually by EirGrid and SONI, are approved by the Regulatory Authorities and are published in the Statement of Payments and Charges. Generation units are encouraged to slow their rate of MW loss when safe to do so in order to minimise the impact on system frequency. A Customer may incur both a Trip Charge and an SND charge for a single incident.

### **Generator Performance Incentives (GPIs)**

The Grid Codes specify minimum standards of capability and performance that generation units must meet. Under the harmonised arrangements financial incentives are applied to certain standards to encourage compliance.

The incentives are either availability based or event based. The availability based charges are applied to incentivise performance at or above the minimum Grid Code requirements (or derogated value where relevant) for the following:

- Operating Reserve (POR, SOR, TOR1, TOR2);
- Reactive Power (MDLG, MDLD);
- Minimum Generation (MNMW);
- Minimum On Time (MUT);
- Maximum Starts (New MXST); and
- Governor Droop (New GVDP).

Charges are calculated for each Trading Period where the associated unit is available.

Event based charges are applied to incentivise performance at or above minimum Grid Code requirements (or derogated value where relevant) for the following.

- Loading / Deloading (SYNC, DESY); and,
- Late/Early Synchronisation (SYNC).

Customers are encouraged to declare levels that (at a minimum) meet their Grid Code obligations. Customers are also encouraged to meet the instructed synchronisation times, loading rates and deloading rates, the latter two also being based on the Grid Code requirements.

Charges are calculated individually, for each non-compliance, using charge rates for each standard. The design of the GPIs and rates are consulted on annually by EirGrid and SONI, are approved by the Regulatory Authorities and are published in the Statement of Payments and Charges for Ancillary Services Providers.

### **How does a customer become eligible for Ancillary Services and Other System Charges?**

A Harmonised Ancillary Services Agreement will issue to the Customer once they have received an Operational Certificate from EirGrid (for more information on the Operational Certificate see Section 2.2, Grid Code Compliance Testing). EirGrid will be in constant discussions with the Customer during the testing and commissioning phase in relation to Ancillary Services. EirGrid will work closely with the Customer to ensure that the Harmonised Ancillary Services Agreement is executed as close to the date the Operational Certificate is issued. Ideally these two dates will align.



EirGrid will propose service values to the Customer based on the values determined during the testing and commissioning phase. These values may be capped at the minimum Grid Code required values unless EirGrid feels additional levels of services would be beneficial to the system. Once the Customer has signed and returned the agreement EirGrid will execute the Harmonised Ancillary Services Agreement.

Generation units are eligible for Other System Charges once they become commercially operational in the Single Electricity Market.

### **The Customer's Obligations**

EirGrid requires that the Customer has an Operational Certificate (see section 2.3) before a Harmonised Ancillary Services Agreement can be executed and that all of the requirements outlined in the Agreement are satisfied.

As part of the Grid Code Testing the Registered Capacity of the units will be used to calculate the GPI requirements. EirGrid will enter these into EDIL. It is the responsibility of the Customer to ensure that the relevant parameters are properly declared in EDIL prior to the date they become commercially operational.

If a Generation unit does not meet any Grid Code requirement which falls under the umbrella of GPIs then the Customer should ensure that the derogation application is received by EirGrid in a timely manner. If this derogation is approved by the Regulatory Authority then the unit will not incur the relevant GPI. If there is any delay in receiving the derogation application the generation unit may incur charges and these may not be retrospectively reimbursed.

### **Reference Documentation**

The following reference documentation related to Ancillary Services can be found on the EirGrid website at the following URL: <http://www.eirgrid.com/operations/ancillaryservices/asothersystemcharges/>

- Harmonised Ancillary Services Agreement;
- Harmonised Ancillary Services Statement of Payments and Charges;
- FAQs for Harmonised AS;
- HAS Reactive Power for Wind Farms;
- AS Agreement and Reactive Power Clarification Note; and
- AS and OSC Example Calculator.

The following reference documentation related to Other System Charges can be found on the EirGrid website or through the following URL:

<http://www.eirgrid.com/operations/ancillaryservices/asothersystemcharges/>

- Other System Charges Methodology Statement; and
- AS and OSC Example Calculator.

The list of Reason Codes for tripping incidents can be found on the EirGrid website at the following URL:

<http://www.eirgrid.com/media/FAQs%20for%20Harmonised%20OSC.xlsx>

## 2.5. Plant Designation

Customers should be aware that naming of both switchgear and generation units must be agreed with EirGrid. This is done to ensure consistent naming and nomenclature of all plant on the Transmission System and is particularly important for the avoidance of confusion when operating High Voltage (HV) equipment. EirGrid encourages Customers to agree plant designation early in the project to avoid costly re-issuing of drawings and changes to signalling and control systems later in the project.

### What is the typical plant designation naming convention?

The TSO's standard practice currently requires that, unless otherwise agreed with the TSO, the standard designations, as noted in Figure 2 below, and illustrated in the sample single line diagrams, Figures 3 and 4, apply:

Name of item	Nomenclature
<b>Generation units (thermal )</b>	U1, U2 etc*
<b>Generation units (hydro &amp; wind farms)</b>	G1, G2 etc
<b>Generator transformers</b>	at 400kV; T4001,T4002 at 220kV; T2001,T2002 at 110kV; T101,T102
<b>Power Station transformers</b>	at 400kV; ST4001, ST4002 etc at 220kV; ST2001,ST2002 etc at 110kV; ST101,ST102 etc
<b>Unit transformers</b>	UT1, UT2 etc
<b>Circuit Breakers</b>	at 400kV; CB at 220kV; CB at 110kV; CB
<b>Busbar Disconnects</b>	at 400kV; DA,DB etc at 220kV; DA,DB etc at 110kV; DA,DB etc
<b>Earth Disconnects</b>	at 400kV; DE at 220kV; DE at 110kV; DE

**Figure 2 :** Nomenclature for Transmission Connected plant/equipment

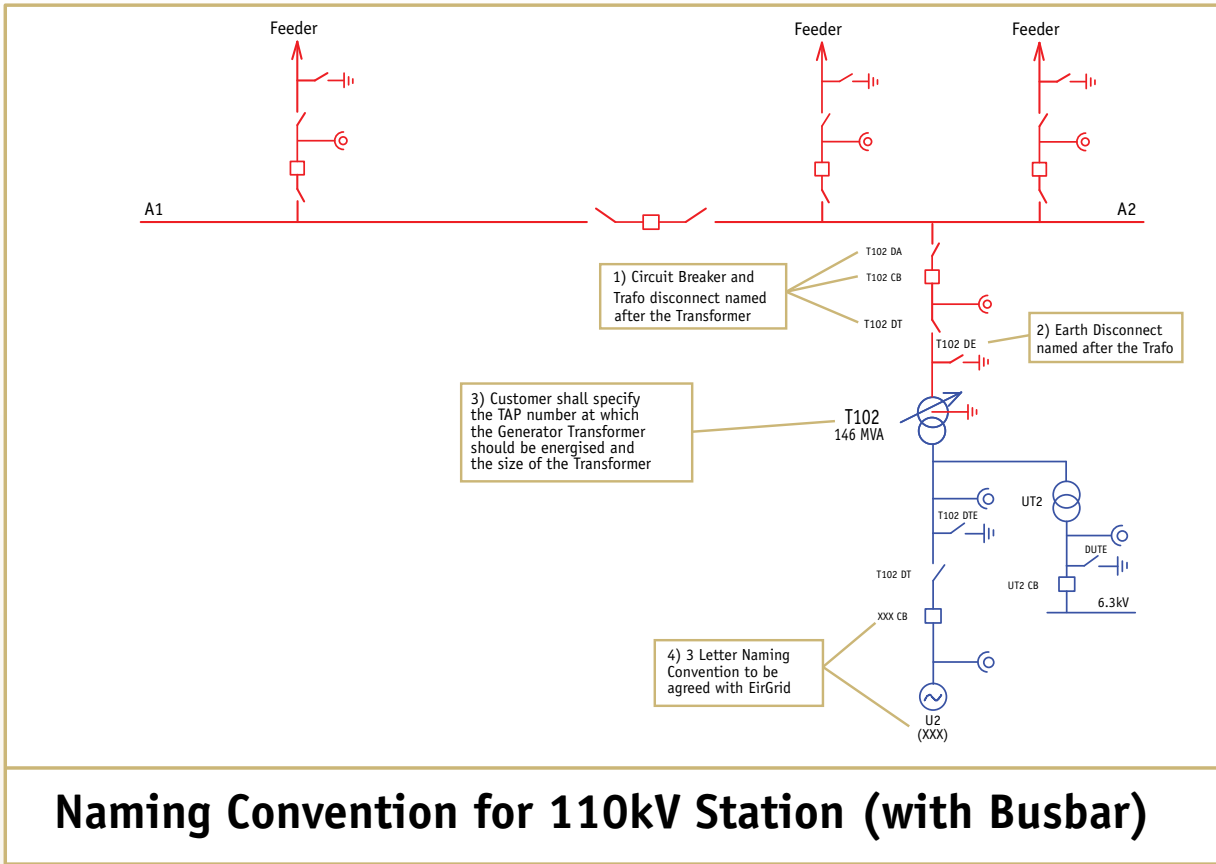
\*Generator Unit names will be determined by EirGrid using the naming convention above. No two units on the Transmission System can have the same name. Unit names are usually three characters. For example, at Poolbeg Power Station the now retired unit 1 was called PB1. These names are used in single line diagrams, in the Electronic Dispatch Instruction Logging system (EDIL, see Section 2.11) and other EirGrid systems and databases. Upon request by the Customer, EirGrid will issue a specific designation for the generator unit using a three character naming convention.

### The Customer's obligations

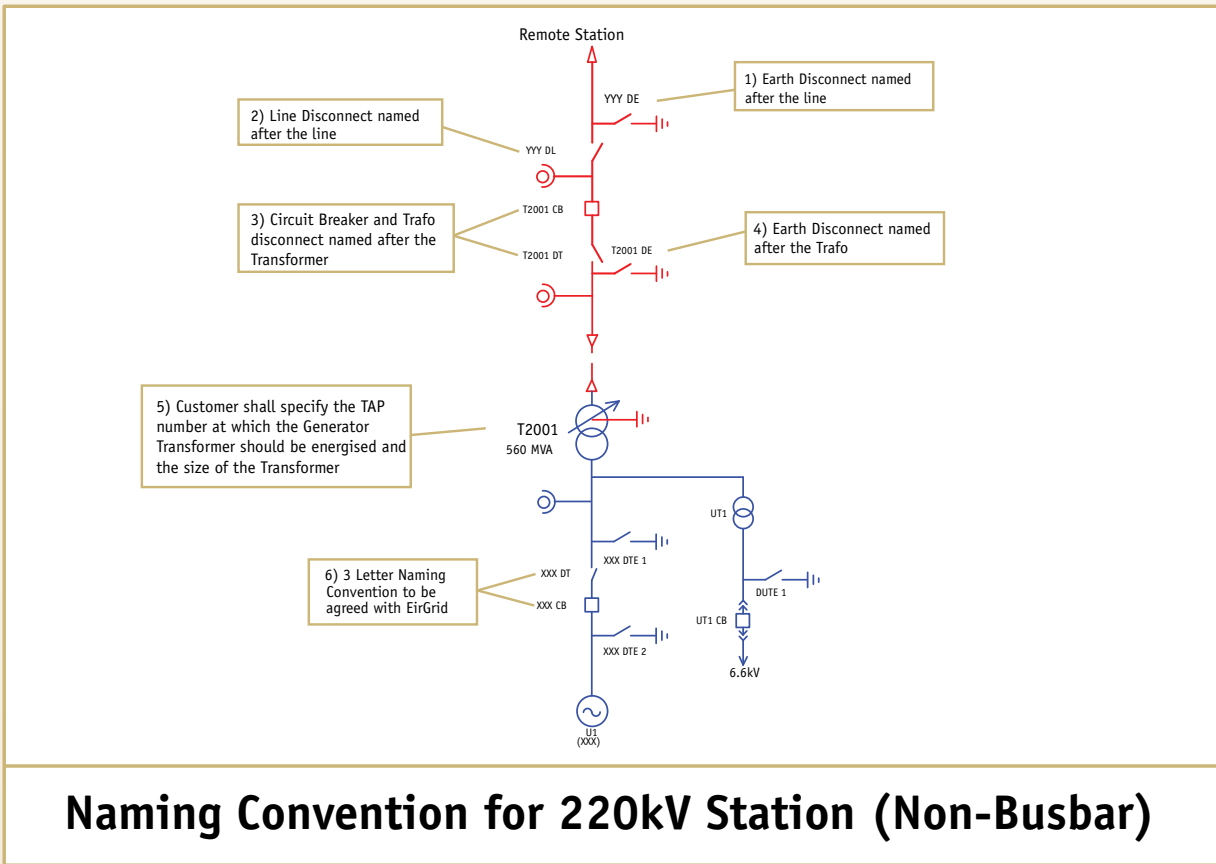
A detailed single line diagram which includes the labelling of all plant/equipment connected to the Transmission System must be prepared by the Customer and submitted to EirGrid for approval. It must also represent the true order of all plant.

### Reference Documentation

See Figures 2, 3 and 4



**Figure 3 :** Sample SLD demonstrating the naming convention for 110kV station



**Figure 4 :** Sample SLD demonstrating the naming convention for 220kV station

## 2.6. Operating Instruction

The Operating Instruction (OI) describes the necessary procedures to de-energise/energise and isolate HV plant at the operational boundary, between the Customer and the Transmission System. It must be agreed and signed by both/all parties and must take account of the ESB Safety Rules 2006. The OI will be drafted by EirGrid and must be signed by all parties before first energisation takes place.

### What will issue to the Customer and when?

EirGrid will issue a draft OI to the Customer for review, 4 weeks before the Energisation date. Normally EirGrid and representatives from both ESB Networks and the Customer's operational staff will meet on site to step through the document. This will enable the Customer to review the OI and add comments prior to signing.

### The Customer's obligations

Prior to EirGrid writing the OI the Customer must submit a detailed single line diagram including:

- All protection relays;
- Where locks can be applied to secure apparatus, i.e. at switching points;
- Earthing points; and
- Ownership boundaries.

The Customer must review the OI, provide comment and sign prior to energisation.

### Reference Documentation

None Available





## 2.7. Notification and Approval of Operators

All Customers must have competent operators who can perform switching of all plant and equipment under their operational control. ESB Networks, on behalf of EirGrid, carries out all switching of plant and equipment under the operational control of EirGrid. In order to carry out switching at the operational boundary, Customer operators must have a suitable level of competency and must be trained by ESB in the ESB Telemessing procedures.

### List of Operators

EirGrid will request (at least 3 months in advance of energisation), that the Customer provide a list of operators who are authorised and deemed competent by the Customer to perform switching, including a Statement of Competence for each Operator. Furthermore, the Customer must confirm to EirGrid that these operators have been trained in Telemessing procedures by ESB.

EirGrid will maintain the list of Customer operators. It is the Customer's responsibility to ensure that the list of operators for their site is up to date by notifying EirGrid of any changes by e-mail to [info@eirgrid.com](mailto:info@eirgrid.com). The standard template for submission can be requested from [info@eirgrid.com](mailto:info@eirgrid.com).

Failure to keep this list updated may result in delays in plant being connected or re-connected to the Transmission System.

### Operator Training

If the Customer's Operators have not been trained by ESB in Telemessing (A Telemess is a form used by operators when communicating with each other in relation to the preparation/restoration of plant.), EirGrid will on request from the Customer, notify ESB of the Customer's training requirements and contact details. ESB will then liaise directly with the Customer to arrange the necessary training. A fee will apply and will be paid directly to ESB by the Customer. Please note that operators must undertake Telemess refresher training every 3 years or as requested by ESB.

All Customers should be aware that ESB requires at least two months notice for operator training. Once they have received the necessary training and paid in full, they will receive a certificate which they must have in their possession at all times. It is the Customer's responsibility to ensure that the operators have received the necessary training.

### The Customer's Obligations

Before energisation takes place EirGrid requires a Statement of Competence for each operator. The statement will contain the following information:

- The names and contact details of each operator;
- A declaration by the Customer that these operators are deemed competent by the Customer to perform switching; and
- A copy of the ESB "Certificate of Training in Telemessing" for each operator.

It is the customer's obligation to ensure that EirGrid is made aware of any changes to this information.

ESB may request that an on-site assessment takes place where ESB will meet with the operators and go through the basics of switching. This assessment in no way absolves the Customer from its responsibility to ensure that the operator is competent. If ESB requires an on-site assessment EirGrid will notify the Customer of this requirement and ESB and the Customer will liaise directly to arrange a suitable time. ESB will advise EirGrid once the on-site assessment has been completed.

It is not possible for any switching to take place pre or post first energisation unless the Customer's operator has been notified to EirGrid and fulfils the requirements set out above. Telemess training cannot be arranged at short notice so Customers must ensure that they keep the list of operators up to date at all times in order that emergency and planned switching can be undertaken when required without delay.

### Reference Documentation

The standard form for submission of this information is available on request from the Customer Relations team by e-mail to [info@eirgrid.com](mailto:info@eirgrid.com).

## 2.8. Energisation Instruction

An Energisation Instruction (EI) is a detailed step by step switching procedure for making switchgear/equipment “live” safely using proven protection. This allows for the energisation of new plant in a controlled and safe manner while providing protection to any existing plant and safety to personnel. This may necessitate an outage of some or all of any existing plant/equipment potentially including the station busbar.

### **When is an EI required and what does it contain?**

An EI is required for:

- Any switchgear/equipment which is being energised for the first time;
- Any new station re-conductoring (not including busbar droppers);
- Energising existing switchgear/equipment which has been de-energised (disconnected from the Transmission System) for a substantial period of time; and
- Energising existing switchgear/equipment which may have been compromised during maintenance or fault repair.

EirGrid will be responsible for issuing EIs when the energisation path falls under the relevant system operator i.e. the TSO or DSO. An EI will be issued by EirGrid to the Customer as appropriate two weeks in advance of the proposed energisation date.

Detailed in the EI are:

- A list of Declarations of Fitness (DOFs - see section 2.9) that must be provided;
- The entity that should provide the DOFs; and
- A set of switching instructions designed to energise the plant incrementally and minimise the impact of a fault on the Transmission System.

### **The Customer’s obligations**

The Customer must submit a detailed single line diagram showing all new switchgear/equipment 2 months in advance of energisation. This is required by EirGrid in advance of preparing the EI.

### **Reference Documentation**

None Available.

## 2.9. Declaration of Fitness

A Declaration of Fitness (DOF) is a statement of fact by a commissioning entity certifying that equipment and plant is fit for connection to the Transmission System and subsequent energisation. The DOF is provided to EirGrid's National Control Centre (NCC) verbally and subsequently submitted in writing.

### When is a DOF required?

A DOF is required when:

- Transmission plant is connected to the Transmission System for the first time;
- Transmission plant is disconnected from the system and subsequently modified before reconnection; and
- An item of plant has been disconnected from the system as a result of the operation of a protection relay(s), i.e. under fault conditions.

Depending on the item of plant, the DOF will be required at particular leadtimes either at or in advance of energisation. For newly connecting plant an Energisation Instruction (see section 2.8) will issue and will include the DOF requirements.

When existing plant is being switched out a Voluntary Outage (VO – see section 2.15) will be issued by EirGrid. The work being carried out on the plant should be detailed in a Voluntary Outage Request Form and submitted to EirGrid for review. If the work involves significant interference or modification to primary plant EirGrid may request that a DOF be provided before the plant is returned to service. This requirement will be noted on the VO document.

When a fault occurs on the system, time permitting, EirGrid will issue a Forced Outage (FO) document. This document, which is very similar to a VO document, will list any DOFs that are required before the plant is returned to service. In some circumstances EirGrid may deem that the work carried out on existing plant is so significant that an Energisation Instruction (see section 2.8) will be required. EirGrid will notify the Customer of this requirement and will issue the Energisation Instruction following liaison with the Customer.

### What is provided in a DOF?

The DOF is usually provided over the telephone to the National Control Centre (contact details available on request). The person providing the DOF must state the following:

- Their name;
- The item of plant for which they are providing a DOF;
- A brief description of the work that has taken place; and
- Any reference document that applies (e.g. documents issued by EirGrid such as an EI, VO or FO).

NCC will confirm that the name of the person providing the DOF is on the list of approved personnel. They will then issue the provider with a DOF reference number. This number should be noted on the DOF and the DOF should be submitted in writing to EirGrid after switching has been completed.

Company Name:	Widget Manufacturing Incorporated
Person Proving DOF	John Smith
Item of plant	SAMPLE 110kV Station Transformer T102
Description of the work that has taken place	The transformer trip was initiated by a high temperature relay however the relay was found to be faulty. The relay has been replaced and the transformer is fit for service
Reference document	F.O. 02-33
DOF Reference Number (Provided by NCC)	102034
Signed:	John Smith

**Figure 5 :** Sample details for DOF submission

The DOF must be submitted to NCC over the phone and then sent in by Fax.

### **New and modified plant**

All declarations shall be made by a suitably qualified Commissioning Engineer as determined by the Customer. The Customer is required to ensure that persons deemed suitably qualified are in possession of sufficient knowledge, experience and qualification to commission plant and equipment under test. The commissioning engineer shall be independent and not materially involved in the design, procurement or installation process of plant subject to declarations of fitness.

### **Plant disconnected from the system by protection relays**

All declarations shall be made by a suitably qualified person prior to switch in, as determined by the Customer. The asset owner (Either ESB Networks in the case of Transmission equipment of the Customer for their equipment) is required to ensure that persons deemed suitably qualified are in possession of sufficient knowledge, experience and qualification to assess the condition of the plant and equipment, to interpret protection relay alarms and interpret the likely cause of the tripping. The person should also be in possession of sufficient knowledge, experience and qualification to assess that any remedial work taken to address the fault has been carried out to a standard that makes that plant fit for connection to the Transmission System and subsequent energisation.

### **The Customer's obligations**

The name, position and contact details of any person authorised to provide a DOF must be provided to EirGrid Customer Relations at [info@eirgrid.com](mailto:info@eirgrid.com) at least 7 days in advance of any DOFs being provided. The standard form for submission of this information is available on request from Customer Relations at [info@eirgrid.com](mailto:info@eirgrid.com).

EirGrid's policies prevent the NCC from accepting a DOF from a person who has not been previously notified as being competent to provide a DOF. EirGrid shall not be held accountable for any delays in switching in plant arising from failure of the Customer to keep the list of approved DOF providers current.

The Customer must also submit a general description of the plant that requires the DOF. For example, protection relays, control equipment, lines/cables including terminations, transformers, station High Voltage switchgear such as circuit breakers, instrument transformers, and disconnects.

Whilst the final decision on DOF requirements remains with EirGrid, the Customer's operator or commissioner shall advise if work being performed requires provision of a DOF to NCC, and what the DOF is for.

### **Reference Documentation**

The DOF template can be found in Section 3.3.

## 2.10. Scheduling

Once the Customer's generation unit is connected to the power system it is subject to scheduling and dispatch by EirGrid. The process of scheduling units is carried out by the Power System Control (PSC) section of Operations. PSC consists of:

- The National Control Centre (NCC), which manages real time control of the Transmission System and dispatch of generation to meet demand; and
- The PSC back office which supports the NCC and manages from real time to approximately 1 week ahead.

Scheduling is a process whereby EirGrid prepares an indicative schedule of the output likely to be required from each unit. Customers can use this information for planning their resources however the information is only indicative. The Customer should only synchronise, desynchronise or change the output of its generation unit on receipt of a Dispatch Instruction from the NCC.

### **Scheduling Tools: Reserve Constrained Unit Commitment**

Reserve Constrained Unit Commitment (RCUC) is the application used by EirGrid and SONI to create an all-island dispatch schedule. The dispatch schedule is the tool used to guide the real-time dispatch process. It happens in two timeframes:

- **Day Ahead**
  - Published at 16:00 D-1 and later at 01:00 D (although it is rare that this will differ from the 16:00 run).
  - This is a best estimate of the running of every generation unit on the system for every Trading Period from 06:00 D to 12:00 D+1
- **In-Day**
  - Published every 4 hours from 00:00.
  - This is a best estimate of the running of every generation unit on the system for every Trading Period from current time to 12:00 D+1. This schedule will be run at least twice in the morning and as required with changing system conditions.

The schedules are created using the best available current system information, and forecasts of system wind and demand, and are subject to change.

RCUC uses the commercial and technical offer data submitted by all generation units through the market systems. It then adds in the various constraints that the System Operators need to model the power system and ensure the security criteria are met, such as:

- Reserve; and
- Limitations on the power which can flow between EirGrid and SONI due to thermal limits.

There are many other constraints. For more information on Transmission Constraint Groups (TCGs) or the Scheduling Process see reference documentation.

For more information on the scheduling process, see "Reference Documentation".

### **How are schedules issued by EirGrid?**

- RCUC Day Ahead and In-Day schedules as detailed above from the market publication websites.
- Gas nominations: An email to all gas generation units several times during the day, indicating latest predicted running to facilitate gas purchasing.

### **The Customer's obligations**

The Customer must register its unit through the Single Electricity Market (SEM) and EirGrid will coordinate Commissioning and Ancillary Services testing (Section 2.4) and finalise contracted values.

Gas generation units are required to specifically request to receive gas nominations from EirGrid and provide the recipient's contact details.

### **Reference Documentation**

Further details on the Scheduling Process can be found in the Operations section of the EirGrid website or through the following URL:

<http://www.eirgrid.com/operations/nationalcontrolcentre/>

Details relating to the Transmission Constraint Groups can be found under "General Publications" on the EirGrid website or through the following URL:

<http://www.eirgrid.com/aboutus/publications/>



## 2.11. Dispatch

The process of dispatching units is executed by operators in EirGrid's National Control Centre. Dispatch instructions may be issued by phone, SCADA or electronically. For wind units NCC issues commands via SCADA directly to the units' Active Power Control Unit. For non-wind units NCC normally issues instructions via a system known as EDIL - Electronic Dispatch Instruction Logger.

The primary use of EDIL is for communicating and recording dispatch instructions. EDIL is also used to record the availability of each unit in terms of both MW availability and the availability of Ancillary Services and other technical data. At any time the NCC may issue dispatch instructions verbally therefore all Customers must provide contact details of competent operators who can give effect to the dispatch instructions. Please note that the Grid Code sets out the requirements and obligations for staffing Customers' facilities.

### **EDIL**

The Electronic Dispatch Instruction Logger (EDIL) is a web-based application and the means of formal communication of dispatch instructions, generation unit availability and Ancillary Services information between the NCC and all generation units.

### **EDIL initial set-up**

EDIL is a relatively straightforward system to install, requiring an internet connection and an EDIL certificate. EirGrid will provide certificates and advice for the initial set-up. There is a system requirement specification and a detailed manual for the station side EDIL user, which EirGrid will provide to the Customer in advance of the training. There is an additional application which enables a klaxon or similar device to sound when an EDIL instruction is received, which can be provided if required. EirGrid will also offer basic training of operators in the use of EDIL.

This training should be undertaken approximately 1 month prior to energisation and should be requested by the Customer. If more detailed training is required, the vendors of the EDIL application, will provide this for a fee.

### **The Customer's obligations**

The Customer should contact [info@eirgrid.com](mailto:info@eirgrid.com) to initiate EDIL registration at least 4 weeks before planned first synchronisation so that it can be put into the system and tested. EirGrid Operational Services and Performance team and EirGrid EDIL IT team will coordinate this with the Customer. As part of the registration process, the Customer should provide EDIL IT with the name of one contact through which all requests for user set-up must come (for security purposes).

### **Reference Documentation**

Further details on the Dispatch Process can be found in the Operations section of the EirGrid website or through the following URL: <http://www.eirgrid.com/operations/nationalcontrolcentre/>



## 2.12. Transmission System: Emergency Procedures

At any time the Transmission System can enter an emergency state where the system is not operating within normal standards. Normally speaking emergency states relate to periods where load is not being served or there is a heightened risk of load not being served. From the perspective of a Customer it is important that they are aware of the tools used for communicating a system emergency and their obligations on receipt of such a communication. EirGrid uses an alert system. The alert system is a communication tool whereby a generation unit will receive specific signals from the NCC indicating that the system has entered into an emergency state. There are three different categories of Alert in increasing order of seriousness these are Amber, Red and Blue Alerts.

### Amber, Red and Blue Alert Commands

Amber, Red and Blue Alerts are electronic commands issued by the NCC to the Customer's control facility. The signal, when activated, must generate an audible alarm at the generation control facility which is only silenced upon the acknowledgement of the signal by the action of the Customer's operator.

### Alert Procedures

Each station must have a documented procedure outlining actions to be taken during an Amber, Red and Blue Alert. In summary, during an Amber and Red Alert the Customer must ensure that no maintenance is being carried out and all work on or near an available generation unit is ceased. Any work which may increase the risk of a unit tripping or may delay a unit in starting up if requested by NCC must also cease. A Blue Alert is used when most or all of the Transmission System has blacked out. The procedure for a Blue Alert is significantly more detailed than that for an Amber or Red Alert. The Power System Operational Planning team at EirGrid can provide a template for the Customer to use when drafting its Blue Alert procedures.

### The Customer's obligations

#### Amber, Red, and Blue Alert specification:

The Customer's control system must be wired to receive these alerts in accordance with the signal list as provided in EirGrid's Functional Specification . The Functional Specification is issued by the EirGrid Project Manager to a Customer following execution of a Connection Agreement and receipt of a final station single line diagram from the Customer. It includes the 'Alert system control specification for generation units connected to the Transmission System'. This document contains a list of control signals, indications and interface requirements and a sequence of operation for the alert system.

#### Blue Alert Procedures:

The Power System Operational Planning team at EirGrid will issue the latest version of the Power System Restoration Plan to the Customer and a template for the Blue Alert Procedure on request.

The Customer shall develop and train staff on internal procedures detailing their response to the different alert levels. The Customer must submit its Blue Alert procedure to [psop@eirgrid.com](mailto:psop@eirgrid.com) for approval no less than 4 weeks before first synchronisation.

### Reference Documentation

Power System Restoration Plan – available on request to [info@eirgrid.com](mailto:info@eirgrid.com).

Blue Alert Procedure template – available on request to [info@eirgrid.com](mailto:info@eirgrid.com).

## 2.13. Generation Outage Planning and Coordination

All Customers must participate in outage planning in accordance with the Grid Code requirements. Generation outage planning is carried out by Power System Operational Planning (PSOP) in EirGrid on a year rolling basis. Outage planning covers annual outage plans and ad hoc short term maintenance outages.

### How is the Generation outage plan communicated?

EirGrid can, on request by e-mail to PSOP@eirgrid.com, provide to each Customer indicative/ provisional Generation Outage Plans for that generation unit for years 1, 2 & 3. In practice, each Customer would be provided with a Generation Outage Plan for each generation unit in its portfolio for each applicable year. The Customer can expect the provisional and indicative information relative to the current year in March of that year.

Annual All-Island Generation Outage Plans (including EirGrid and SONI Generator Outages) are published on the Single Electricity Market Operator (SEMO) website in the "General Publications" section (Maintenance and Outages category) and updated on a quarterly basis or as necessary. Each month, a two-monthly All-Island Outage Plan is also published in the General Publications (category: Maintenance and Outages) section of the SEMO website.

### The Customer's obligations

By March of Year 0 (i.e. the current year), the Customer must:

- Confirm the major outage plan(s) to EirGrid for Year 1;
- Submit the provisional outage plan(s) to EirGrid for Year 2; and
- Submit the provisional outage plan(s) to EirGrid for Year 3.

Requests for additional outages or changes, deferral, or cancellation of agreed outages must be submitted to EirGrid on the relevant templates for consideration.

### Reference Documentation

Further details on the Annual Generation Outage Planning including the templates can be found on the EirGrid website at the following link:

<http://www.eirgrid.com/operations/outageinformation/generationoutages/>

The All Island Generation Outage plan can be found on the SEMO website at:

<http://www.sem-o.com/Publications/Pages/GeneralPublications.aspx>

## 2.14. Transmission Outage Planning And Coordination

The PSOP section within EirGrid, in consultation with the Transmission Asset Owner (TAO), develops and manages the annual programme of transmission outages. The programme, which runs from late March to late October each year, is developed in a manner consistent with requirements to operate the system in a safe, secure and economic manner. The purpose of the programme is to facilitate the following:

- Routine maintenance of transmission assets;
- Corrective maintenance of transmission assets;
- Connection of new plant to the system;
- Decommissioning of plant from the system;
- Plant refurbishment / upgrading / modification; and
- Power system restoration tests.

For thermal generation units this will be co-ordinated through the Generation Outage Planning team (See section 2.13). The Transmission Outage Programme includes the coordination of both Wind Farm and Demand Customer outages.

### How is the Transmission Outage Plan co-ordinated/communicated?

EirGrid Customer Relations will issue a notification in Q3 of Year 0 requesting information on the Customer's planned outages for transmission equipment at the operational boundary or, in the case of Wind Farms, for any outages planned for the full Wind Farm in the following outage year (Year 1). The information supplied by the Customer will then be considered as part of the preparation of the Transmission Outage Programme. Once the programme is finalised the detail of the outages affecting each Customer will be communicated directly to each Customer.

### The Customer's obligations

The Customer should submit their initial outage feedback to the Customer Relations team at EirGrid in Q3 of Year 0. This should include:

- Planned outages of their own connections point(s) during Year 1;
- Whether there are specific constraints on outages of their connection point(s); and
- Whether there are specific requests in relation to when they should or should not be left tail-fed.

The Customer should be aware of their obligations for outages as below:

- For Customer driven outages, the Customer should submit a Voluntary Outage Request to [powersystemcontrol@eirgrid.com](mailto:powersystemcontrol@eirgrid.com) 7 days in advance of the outage;
- For outages requiring operation of Customer's equipment, operators should be provided by the Customer in accordance with section 2.7 and 2.15 of this document; and
- It should be noted that, at a minimum, an operational test must be carried out on every operable item of plant on the system every year. This means that every operable item of plant on the system, including a Customer's point of connection, must be taken out of service for at least one day in any given year.

### Reference Documentation

Further details on the Transmission Outage Programme, including the publication of the programme can be found in the Operations section of the EirGrid website or through the following URL:

<http://www.eirgrid.com/operations/outageinformation/transmissionoutages/>

## 2.15. Outage Requests and Provision of Switching Resources

The process for outage planning and coordination is detailed in sections 2.13 and 2.14. However in order for an outage to be effected by the NCC a formal Voluntary Outage Request must be submitted 7 working days in advance of the outage. For Transmission Asset Owner (TAO) sought outages this will be managed by the TAO. However for Customer driven outages there is a formal process, detailed below, by which the Customer must request the outage.

### **How are the details of the outage captured and communicated?**

For scheduled outages a voluntary outage notification will issue from EirGrid to the Customer 3 business days in advance of the outage noting the key points of contact for both sides, details of the outage and a description of the work to be undertaken.

### **The Customer's obligations**

#### **Voluntary Outage Requests**

If the Customer seeks an outage of their point of connection to the Transmission System the process is as follows:

- The Customer must fill in all relevant portions of the 'Outage Request Form' available on request from powersystemcontrol@eirgrid.com.
- The Customer must email the completed 'Outage Request Form' to powersystemcontrol@eirgrid.com. The request must be submitted to EirGrid **at least 7 working days** before the proposed start date of the outage.
- Power System Control in EirGrid must assess the feasibility of the requested outage in terms of the impact on power system security and in terms of network switching operator availability.
- If the outage is deemed to be feasible Power System Control must arrange for network switching operators to be made available by the TAO so that the outage can proceed on the days specified. Power System Control must then issue a Voluntary Outage Notice to the Customer and to all other relevant parties.
- If the outage is deemed infeasible, Power System Control must communicate this fact to the Customer and to all other relevant parties in advance of the requested start date for the proposed outage.

#### **Forced Outages**

In the event of a forced outage the Customer should make contact with the NCC to inform them of the reason for the Forced Outage, which should be followed up by e-mail to powersystemcontrol@eirgrid.com. Power System Control will then issue a formal Forced Outage Notification to all parties concerned.

#### **Provision of Switching Resources**

Once an outage is arranged it is expected that the Customer will provide the necessary switching resources to carry out any switching required on the Customer side of the interface. These switching resources should be nominated in accordance with section 2.7 of this document.



## 2.16. Transmission Use of System Charges

Transmission Use of System charges (TUoS) are charged for the provision of access to the All Island transmission networks to transfer energy for trade within the market. Customers may incur these charges when importing from the system for their consumption (Demand TUoS), or when exporting to the system (Generation TUoS), or may be subject to charges for both importing and exporting when generation and demand exist on a single site.

### How are the TUoS charges constructed?

#### TUoS charges are comprised of two elements:

- Network Charges: charged for the use of the Transmission System infrastructure in the Republic of Ireland for the transportation of electricity.
- System Services Charges: charged for the operation and security of the Transmission System.

#### TUoS charges are grouped into three tariff categories:

- Demand Transmission Service (DTS)
- Generation Transmission Service (GTS)
- Autoproducer Transmission Service (ATS)

TUoS charges are approved by the Commission for Energy Regulation and published on EirGrid's website in the 'Statement of Charges' document on an annual basis.

### How are TUoS bills issued?

#### TUoS Billing

TUoS invoices are issued by EirGrid 25 business days following the end of the month being billed. Currently both a hardcopy and softcopy (e-mail) invoice are issued to customers.

The monthly invoice can include three elements:

- **Initial billing**
  - This represents charges for the bill month.
- **Re-billing**
  - Re-billing can occur where an account should have been included in a previous month's initial billing but was not billed. Re-billing is also used where material differences in TUoS billing are identified and resolved on a case by case basis.
- **Resettlement**
  - Resettlement is carried out on all initial bills on a "Month plus 13 months" (M+13) basis. This is a scheduled recalculation for a given TUoS Month using the latest data available for that month. For example the May 2010 initial bill would be resettled for inclusion in the June 2011 invoice.

Billing for a given month is complete following the M+13 resettlement process – i.e. there is no further re-billing or resettlement following the M+13 resettlement.

## **The Customer's obligations**

### **TUoS Agreement**

The Customer will enter into a TUoS Agreement with EirGrid. For Transmission Connected Generator Customers these terms are included as part of the Transmission Connection Agreement and sets out the terms and conditions upon which EirGrid and the Customer have agreed to the use of the Transmission System and includes agreement by the Customer to pay TUoS charges.

### **TUoS Charges**

TUoS charges are due to be paid by the Customer to EirGrid 35 business days following the end of the month being billed – i.e. 10 business days following invoice issue date.

### **Reference documentation**

Further information, including the annual Statement of Charges, is available on the EirGrid website at <http://www.eirgrid.com/customers/transmissionuseofsystemcharges/>





# Section 3. Supporting Information

## SECTION 3. Supporting Information

### 3.1. Contacting EirGrid

If you have any questions relating to the content of this publication you should direct it to the EirGrid Customer Relations team at the contact details below:

- Email: [info@eirgrid.com](mailto:info@eirgrid.com)
- Telephone: (01) 702 6642

For specific queries related to projects under construction you should direct the query directly to the relevant EirGrid Project Manager for your project.

Contact details for specific sections are as follows:

Document Section	Relevant E-mail address
Grid Code	<a href="mailto:gridcode@eirgrid.com">gridcode@eirgrid.com</a>
Ancillary Services Other System Charges	<a href="mailto:as@eirgrid.com">as@eirgrid.com</a>
Settlement and Timelines	<a href="mailto:asqueries@eirgrid.com">asqueries@eirgrid.com</a>
Plant Designation Operating Instructions Energisation Instructions Declarations of Fitness	<a href="mailto:psop@eirgrid.com">psop@eirgrid.com</a>
Generation Outage Planning Electronic Dispatch Instruction Logger (EDIL)	<a href="mailto:psop@eirgrid.com">psop@eirgrid.com</a> <a href="mailto:itsupport@eirgrid.com">itsupport@eirgrid.com</a>

### 3.2. Abbreviations And Acronyms

Abbreviation	Explanation
AS	Ancillary Services
AVR	Automatic Voltage Regulation
CDGU	Centrally Dispatched Generating Units
C&T	Commissioning and Testing team (EirGrid)
CER	Commission for Energy Regulation
DOF	Declaration of Fitness
EI	Energisation Instruction
FO	Forced Outage
GC	Grid Code
GCC	Grid Code Compliance
GCRP	Grid Code Review Panel
GPI	Generator Performance Incentives
HAS	Harmonised Ancillary Services
Hz	Hertz
JGCRP	Joint Grid Code Review Panel
NCC	National Control Centre
NIAUR	Northern Ireland Authority for Utility Regulation
OI	Operating Instruction
OSC	Other System Charges
POR	Primary Operating Reserve
SDC1	Scheduling and Dispatch Code No.1
SDC2	Scheduling and Dispatch Code No.2
SEMO	Single Electricity Market Operator
SLD	Single Line Diagram
SND	Short Notice Declaration
SONI	System Operator Northern Ireland
SOR	Secondary Operating Reserve
TOR1	Tertiary Operating Reserve 1
TOR2	Tertiary Operating Reserve 2
VO	Voluntary Outage



### 3.3. Declaration of Fitness for Service

To EirGrid (N.C.C.): \_\_\_\_\_

Description of Plant (As Given to N.C.C.): \_\_\_\_\_

(Note also any Operational Restrictions and/or Special Requirements for Service)

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The above Equipment has been inspected and tested and is fit for connection to the EirGrid \_\_\_\_\_kV System

The relevant requirements of S.I. 299/2007 have been complied with.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_ Telephone No: \_\_\_\_\_

Name of N.C.C. Person Receiving D.O.F. and D.O.F. No.

Name: \_\_\_\_\_ N.C.C. D.O.F. No. \_\_\_\_\_

Is D.O.F. Entered into Station Log? Yes [ ] No [ ] (Tick as Appropriate)

Station Name: \_\_\_\_\_

# NOTES

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# NOTES

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**EirGrid plc**

The Oval, 160 Shelbourne Road, Ballsbridge, Dublin 4  
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