



Commission for Electricity Regulation

An Coimisiún um Rialáil Leictreachais

**Transmission Infrastructure Agreement  
Principles Paper**

**A CONSULTATION PAPER BY THE CER**

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# **Transmission Infrastructure Agreement Principles Paper**

## **Foreword**

The Minister for Public Enterprise has introduced a statutory separation of functions between the future owner and the future operator of the electricity transmission network, as set out in S.I. 445 of 2000. The S.I. provides for the creation of a new state owned company, EirGrid, to be charged with the function of Transmission System Operator (TSO). However, ESB will retain ownership of and the exclusive right to maintain and construct the transmission system. In order to facilitate EirGrid to discharge the functions of the TSO, the S.I. requires Eirgrid and ESB (acting as transmission system owner) to enter into a contract to be known as the Infrastructure Agreement (I.A.). The I.A. is subject to the approval of the CER.

The S.I. provides that where the I.A. is not made by the effective date (a date not later than 20<sup>th</sup> June 2001 or a later date if the Minister specifies such a date) the CER shall direct EirGrid and ESB to reach agreement so as to comply with industry requirements as duly specified by the Commission. To this end the Commission has prepared this paper which outlines the Commission's thinking on the principles to be enshrined in the I.A. The paper does not purport to represent the views of EirGrid or ESB.

The Commission's objective in publishing this paper is to provide an opportunity for customers, potential market participants, EirGrid, ESB and other interested parties to comment on what provisions should be in the Infrastructure Agreement. Submissions should be sent to [info@cer.ie](mailto:info@cer.ie) or the address below. The closing date for receipt of comments is the close of business on **Friday 22<sup>nd</sup> June 2001**.

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## **1 Introduction**

The Minister for Public Enterprise has introduced a statutory separation of functions between the future owner and the future operator of the electricity transmission network. This separation is set out in Statutory Instrument No. 445 of 2000 (“ the S.I.”) and is due to come into effect on a date to be specified by the Minister (“the effective date”). The effective date is to be no later than 20 June 2001 or a later date if the CER requests the setting of a later date, stating the reasons for this request, and the Minister agrees. The S.I. gives effect to those elements of Directive 96/92/EC on the internal market in electricity that were not provided for in the Electricity Regulation Act 1999.

The S.I. provides that a new state owned company, EirGrid, is to be established and charged with the function of Transmission System Operator (TSO) within the meaning of Directive 96/92/EC and as further elaborated on in the S.I. EirGrid is to be completely independent of ESB. EirGrid is to be granted an exclusive TSO licence by the CER. ESB will remain the exclusive owner of the transmission network, including all future additions to that network. ESB, in its capacity as Transmission System Owner (or Transmission Asset Owner - TAO), will be charged with maintaining and carrying out construction work on the network on behalf of the TSO and in accordance with the TSO’s Development Plan. With some exceptions, ESB will carry out these maintenance and construction functions on an exclusive basis.

The S.I. requires that ESB and EirGrid enter into an Infrastructure Agreement (I.A.) no later than the effective date and subject to the approval of the CER. In the event that the I.A. is not made by the effective date the CER shall, as soon as may be, direct EirGrid and ESB to reach agreement so as to comply with industry requirements as duly specified by the CER. The I.A. shall govern the relationship between the two parties. It will define the rights and obligations of the parties to enable them to discharge their statutory duties and responsibilities and to properly manage the liabilities and risks associated with those duties and responsibilities.

This paper is intended to set out the essential principles and contractual relationships which will be enshrined in the I.A. and which will determine the relationship between the parties. The CER has indicated to the ESB and EirGrid its thinking on these matters and this paper reflects the CER’s position and not those of the ESB or EirGrid. Where the CER has not finalised its proposals on certain issues, this has been clearly indicated.

## **2 Terminology**

### **2.1 Development Plan**

The Development Plan is the plan that the TSO will be required to prepare and revise pursuant to Regulation 8(6) of S.I. 445 of 2000.

### **2.2 Infrastructure Agreement (I.A.)**

The I.A. is a bi-lateral contractual agreement between ESB in its capacity as the transmission asset owner (TAO), and EirGrid, the Transmission System Operator (TSO). The I.A. forms the basis of the relationship between the two parties (“the parties”), namely the TSO and TAO. The purpose of the Infrastructure Agreement is to enable the TSO to discharge its functions under the S.I.

### **2.3 S.I. 445 of 2000<sup>1</sup>**

Statutory Instrument 445 of 2000 provides *inter alia* for the establishment of EirGrid, the Infrastructure Agreement, the transfer of assets from ESB to EirGrid and Transmission System Operator licence and Transmission System Owner licence for EirGrid and ESB (TAO) respectively.

### **2.4 Transmission Infrastructure Agreement Principles Paper**

The present paper which sets out the CER’s position on the principles to be enshrined in the Infrastructure Agreement.

### **2.5 Transmission System**

The transmission system is the part of the electrical network that transmits electricity in bulk from generating stations to substations and provides bulk supplies to the distribution system. In Ireland the transmission system operates at voltages of 110 kV, 220 kV, 275 kV and 400 kV. The S.I. makes provision for a specification in the I.A. of which assets of the transmission system owner shall constitute the transmission system (see Transmission definition in Section 23 below).

### **2.6 Transmission Asset Owner (TAO)**

ESB retains ownership of the transmission assets, and thus is the TAO.

### **2.7 Transmission System Operator (TSO)**

EirGrid, a new state owned company, which is entirely independent from ESB is the TSO, responsible for operating the transmission system.

### 3 Legislative framework

#### 3.1 EU Directive

Directive 96/92/EC on the internal market in electricity (“the Directive”) provides for the opening up of electricity markets in Europe to competition in the areas of generation and supply. A key element of the liberalisation process is the requirement of each Member State to establish an independent TSO. The Directive recognises that in some Member States the TSO function has historically been carried out by the incumbent monopoly generator/supplier of electricity. The ESB in Ireland is a case in point. In such cases, the Directive does not go so far as to require that the incumbent “vertically integrated” electricity undertaking divest itself of ownership of the transmission network. Ownership of the network may remain with the incumbent but the TSO must have at least managerial independence from all other activities of the incumbent in discharging its statutory functions such as developing the network, offering access to third parties etc.

Among the key provisions in the Directive relating to the TSO function are the following:

- The TSO must be “*designated and entrusted with the operation, maintenance, and, if necessary, development of the system*”. [Recital (25)]
- The TSO “*must behave in an objective, transparent and non-discriminatory manner*”. [Recital (25)]
- Member States must “*designate...a system operator to be responsible for "operating, ensuring the maintenance of, and, if necessary, developing the transmission system.....in order to guarantee security of supply*” [Article 7(1)]
- In those Member States where ownership of the transmission system resides with an incumbent vertically integrated electricity undertaking the TSO must be independent “*at least in management terms*” from other activities not relating to the transmission system. [Article 7(6)]

#### 3.2 S.I. 445 of 2000<sup>2</sup>

The S.I. sets out the respective roles and functions of the TSO (EirGrid) and ESB, as asset owner, and provides for an Infrastructure Agreement to be entered into by the two parties.

##### 3.2.1 Functions of the TSO

The functions of the TSO are set out in Regulation 8(1)(a) as follows:

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<sup>1</sup> cited as European Communities (Internal Market in Electricity) Regulations, 2000

<sup>2</sup> <http://www.irg.gov.ie/tec/energy/4452000.htm>

The TSO shall have the following exclusive function:

*“(a) to operate and ensure the maintenance of and, if necessary, develop a safe, secure, reliable, economical and efficient electricity transmission system, and to explore and develop opportunities for interconnection of its system with other systems, in all cases with a view to ensuring that all reasonable demands for electricity are met and having due regard for the environment ”.*

Regulation 8 also requires the TSO to have the following exclusive functions:

- to ensure the availability of necessary ancillary services (Regulation 8(1)(b))
- to take into account the need to operate a co-ordinated distribution and transmission system (Regulation 8(1)(c))
- to operate a system of dispatch and use of interconnectors on objective, non-discriminatory, economical and technical criteria (Regulation 8(1)(d))
- to provide sufficient information to other interconnected system operators (Regulation 8(1)(f))
- to charge for connection to and use of the transmission system (Regulation 8(1)(h))
- to offer terms and enter into agreements for connection to and use of the transmission system (Regulation 8(1)(i))

Further key provisions in the S.I. address the issue of independence of the TSO and the requirement on the TSO to take into account minimizing costs.

### **3.2.2 Functions of the transmission system owner (or TAO)**

Regulation 19 requires ESB, as asset owner, to

*“maintain the transmission system and carry out construction work in accordance with the transmission system operator’s development plan, subject to the provisions of Regulation 18(3)”*

The SI also requires the asset owner (or “TAO”) to:

- implement any other works required under the Development Plan in accordance with the I.A. and carry out any other requirements applicable to it under the SI having due regard to the environment (Regulation 19(b))
- provide the TSO with the information it requires to discharge its functions (Regulation 19(c))
- indicate the measures to the TSO and the CER it proposes to take to implement the Development Plan in accordance with the Infrastructure Agreement (Regulation 19(d))

### **3.2.3 Scope and Purpose of the Infrastructure Agreement**

The purpose of the Infrastructure Agreement is to define the relationship between EirGrid (as TSO) and ESB (as TAO) consistent with the requirements of the S.I.

Regulation 18(1)(a) of the S.I. states that the Infrastructure Agreement is “*for the purpose of enabling the TSO to discharge its functions under these Regulations*”. The I.A. will need to set out the terms and conditions under which the TSO will have access to, and control of, ESB’s transmission assets to enable it to fulfil its statutory duties and obligations. In addition, the I.A. will need to specify the rights of the TAO, the necessary co-operation arrangements between the parties and how liability will be allocated between the parties. The CER may direct the parties to amend the agreement so as to reflect industry requirements.

The S.I. requires the I.A. to include the following (in such form as shall be approved by the CER):

- (i) a specification of which assets of the transmission system owner shall constitute the transmission system, including-
  - (I) the technical operating limits of such assets, and
  - (II) how this specification may change over time,
- (ii) provisions for maintenance and development of the transmission system,
- (iii) provisions regarding construction, connection to and use of the transmission system by third parties,
- (iv) arrangements for the transfer of information between the TSO and the TAO in relation to the Development Plan, its implementation and costs thereof,
- (v) provisions regarding rights and responsibilities for de-energisation and disconnection,
- (vi) the allocation of risk, for insurance or other purposes considered appropriate by the Commission, between the TSO and TAO,
- (vii) provisions regarding the term, termination and renewal of the Infrastructure Agreement,
- (viii) provisions regarding review of the I.A. and each party’s performance under that agreement

### **3.3 Application of the Directive and S.I. 445 to the I.A.**

Clearly there is a duty on the CER to interpret and implement the S.I. in a manner that is consistent with both the letter and the spirit of Directive 96/92/EC. The CER is proceeding on the basis of a functional interpretation of the Directive and the S.I. The I.A. should be drawn up and implemented so that the TSO will have independence in carrying out its statutory functions, and in particular in making

access and use of the transmission system available to third parties, subject only to the requirement that the TAO be the exclusive provider of construction and maintenance services and that the TSO/TAO relationship be economically and commercially viable for all parties involved – including the end customer.

To illustrate the point: Third parties seeking access to or use of the transmission system have certain statutory rights enshrined in EU and domestic law. The corollary obligation to accommodate these rights lies with the TSO alone. EirGrid, as TSO, cannot derogate from this obligation. The customer's contractual relationship for access to or use of the transmission system must be with EirGrid alone. To the extent that the TSO may incur a liability to a customer for failing to uphold that customer's statutory rights and that failure is due to the actions or inactions of ESB as TAO in discharging its functions under the I.A. then it is legitimate that the TSO be fully indemnified against this liability by the TAO under the terms of the I.A.

#### **4 CER Criteria for Infrastructure Agreement**

The CER has specified that the Infrastructure Agreement should be based on the following criteria;

- Compatibility with legislation, recognising that legislation leaves some policy discretion in interpretation and implementation
- Consistency between Infrastructure Agreement, Use of System tariff regime, Licences and Codes
- Clear demarcation of responsibilities
- Efficiency through cost minimisation – no duplication
- The needs of customers are met and the interests of connecting parties are protected
- Customer contracts shall be with EirGrid only
- Infrastructure Agreement to form the basis for an enduring stable relationship between TAO and TSO
- Transparency – Public consultation on Memorandum of Understanding and/or Infrastructure Agreement itself before CER final approval

#### **5 Relationship with Grid Customers**

##### **5.1 Transmission Connection Agreements and TUoS Agreements**

There are many types of users connected to the transmission system including generators, directly connected customers, the distribution system and interconnected systems. The S.I. assigns to the TSO the exclusive function of offering terms and entering into agreements for connection to and use of the use the transmission system. The connection process will be managed by the TSO who will issue offers for connection.

## **5.2 Contestability and Shallow Connections<sup>3</sup>**

Under the principle of contestability of shallow connections either or both the connecting party and the TSO may arrange to have the shallow connection constructed. This includes a right to request the TAO to construct the shallow connection.

### **5.3 Application for Connection**

- All enquiries by intending generators, including embedded generators (i.e. those seeking connection to the distribution system) shall be directed in the first case to TSO. The TSO will forward to the Distribution System Operator (DSO) all applications lower than a specified MVA level. This is proposed to be 5MVA.
- End-user customers may not know to which system (distribution or transmission) they will be connected. In order to avoid duplication or confusion all end-user customer applications for connection shall be directed in the first case to DSO. The DSO will be required to forward to the TSO all applications above a specified MVA level. This is proposed to be 4MVA. Applications forwarded to the TSO will also include those applications that end up being connected to the distribution system but whose capacity requirements are such as to impact on the transmission system.

## **6 Development and Construction Activities**

### **6.1 The Development and Construction Process**

The development and construction process consists of eight stages. These are summarised below and are set out in more detail in Appendix 1.

1. Conduct planning/feasibility studies
2. Develop indicative programme for project stages
3. Advance to planning permission
4. Preliminary work for procurement
5. Prepare project detailed design and specifications
6. Construct project
7. Project review
8. Issue declaration of fitness, commission and hand-over

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<sup>3</sup>The term “shallow connection” refers to the line or underground cable connecting the premises of the applicant with the transmission system network. For a more detailed discussion on the definition of shallow connections see <http://www.cer.ie/ceresb200011.pdf> and also <http://www.cer.ie/ceresb200014.doc>.

## 7 Maintenance Activities

### 7.1 The Maintenance Process

The maintenance process consists of nine stages. These are summarised below and set out in more detail in Appendix 1.

1. Revise and set maintenance policies and standards
2. Determine maintenance requirements
3. Draw up maintenance plan/programme
4. Procure materials etc.
5. Carry out maintenance
6. Deal with discovered work
7. Fault maintenance
8. Manage programme
9. Check work, issue declaration of fitness, commission and hand-over

## 8 Allocation of Responsibilities

### 8.1 Development and Construction

#### 8.1.1 General Principles

Appendix 1 allocates development and construction activities between TSO and TAO. The summary table below illustrates the general allocation of responsibilities between the parties across 8 different stages.

<b>Stage</b>	<b>Party Responsible</b>
1. Conduct Planning/Feasibility Studies	TSO
2. Develop indicative programme for project stages	TSO
3. Advance to planning permission	TSO
4. Preliminary Work for Procurement	TSO/TAO
5. Prepare project Detailed Design and Specification	TAO
6. Construct project	TAO
7. Project Review	TAO
8. Issue Declaration of Fitness, Commission and Hand-over	TAO/TSO

The I.A. shall require the TAO to carry out construction work in accordance with the TSO's Development Plan, using its own resources and outsourcing to contractors. The I.A. shall further require the TAO implement any other works required under the Development Plan and any other requirement applicable to it under the S.I. (Regulation 19(b)). The I.A. shall be based on TSO producing the overall plan for system development taking into account load related and non-load

related requirements, including new connections. TSO will produce outline designs and costs for individual projects and this will necessarily involve taking schemes through to the stage where planning consents are obtained. In carrying out the activities in Stages 1-3 (as detailed in Appendix 1), the TSO shall consult with the TAO and have regard to the TAO's views.

The I.A. shall allocate responsibility for delivery and project management of capital projects to TAO and this shall include detailed design. This will allow and require TAO to develop a procurement and construction strategy for the total programme, adopting turnkey, supply and erect and own labour construction as appropriate. TAO will also co-ordinate distribution and transmission work in 110 kV substations<sup>4</sup>.

The TSO's legitimate interests in the detailed design stage and construction process will be accommodated in the I.A. and modelled on a "client's engineer" approach (where the client is the TSO). This "owner's engineer" approach (where the term "owner" is replaced by the term "client") is a well-trying and tested method of ensuring that the design and execution of a project is fit for purpose and meets the client's needs.

The TAO will construct projects to ensure delivery of TSO's Development Plan (Stage 6). However, the TSO will have responsibility for obtaining wayleaves on behalf of the TAO.

Liability for delays or default may have consequences for system security and for contractual arrangements for new connections, including liabilities for constraint costs associated with guaranteed access. The I.A. will clarify TSO's and TAO's responsibilities in this regard, including back to back arrangements where required. A project agreement for each project will specify responsibilities and liabilities more precisely.

The Development Plan process will need to specify co-ordination and information requirements so that TAO is able to develop its implementation plans to ensure consistency with the TSO's Development Plan.

Stages 7 and 8 are iterative processes with the TAO having primary responsibility for undertaking the activities but the TSO will be the final determinant on whether a Declaration of Fitness can be accepted and whether a new asset can be commissioned and accepted onto the transmission system.

### **8.1.2 Stage 1 - Conduct Planning and Feasibility Studies**

- Planning and feasibility studies shall be responsibility of the TSO

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<sup>4</sup> TAO owns and is responsible for development of 110 kV transformer capacity and all 110kV system in Dublin.

- TAO will be required to make cost projections available to the TSO for network planning and modelling purposes

The main steps in this process (which is highly iterative) are:

- the identification of system reinforcement requirements
- the identification of indicative options and selection of one or more options
- progression of an indicative option towards planning permission

### **8.1.3 Stage 2 - Develop Indicative Programme for project Stages**

- Developing indicative programmes for project stages will be a TSO activity

Power system studies usually provide a number of potential solutions to a particular requirement, such as a 220kV development, a 100kV development or other solutions. Identification of the optimum or preferred solution will involve considerations such as the long-term development of the network, long-term economic evaluation of the alternatives, practical considerations regarding access and environmental considerations.

### **8.1.4 Stage 3 - Advance to Planning Permission**

- Advancing to and obtaining planning permission will be a TSO activity

All major developments require planning permission. Because of the time involved in this process it is essential that the option put forward for planning permission is robust and that as many social and environmental issues as possible are resolved. Obtaining planning permission will be a TSO activity since the securing of planning permission is an integral part of the overall planning process and is integral to the specification of transmission development. All activities in the process towards planning permission are at the feasibility stage. The main components in the planning permission process are:

- Route and site selection
- Identification of high-level environmental requirements
- Landowner relationships
- Handling ongoing publicity
- Preparation of Environmental Impact Statement (EIS) and use of mitigation measures

### **8.1.5 Stage 4 - Preliminary Work**

Responsibility for the preliminary work stage (Stage 4) will be split between the TAO and TSO, the cross-over point being the high level programme which will involve the TAO carrying out construction work in accordance with the Development Plan.

#### **8.1.5.1 Outline Design, Outline Costs – TSO role**

- TSO will provide an outline design and costs for each project (in a format specified in the I.A.) which will be in sufficient detail for the TAO to develop detailed designs and go out to tender for equipment and installation as required

#### **8.1.5.2 High Level Programme - TAO and TSO roles**

- The I.A. will provide for the TSO's Development Plan and the TAO's implementation of same to be developed to an agreed timetable and procedure, with agreed responsibilities and hand over arrangements

During the planning permission process, preliminary work must be carried out to ensure that once planning permission is granted the necessary materials, contractors (if necessary) and the TAO can be put in place without delay to ensure that the project is completed to target. This is vital to ensure the ongoing reliability of the system and/or the timely connection of third parties. TSO will need to ensure that preliminary works are carried out by TAO and this shall be part of the hand-over arrangements. To this end, a high level programme will determine target dates for material procurement etc. to meet the ultimate required target date for the project as originally identified.

The TSO's Development Plan will identify projects that are in the development stage and TAO will have to show how it intends to implement the projects including preliminary ordering of materials and equipment. The TAO's implementation measures/proposals will include the following elements:

- Resourcing plans (which should be driven by standard lead times)
- Timing of individual projects and their delivery date
- Plans for the delivery of detailed route plans, site acquisition, detailed design, procurement of materials and contractor services

The I.A. will require the TSO and the TAO to enter into a project agreement for each development project, which will provide the basis for;

- Provision of information on the works to be carried out
- The programme for the works
- Provisions for valuation and verification of the works costs
- Provisions to address variations of the works
- Provisions for ensuring the works meet TSO requirements and standards
- Provisions for Step-In rights

#### **8.1.5.3 Contract Strategy, Procurement – TAO and TSO roles**

- TAO will have the overall responsibility for delivering projects and will have the prime function of developing a procurement and contract strategy

- All contracts will specify (by way of a project agreement) the role of the TSO’s “client’s engineer” and the “step in” rights of the TSO
- TAO shall have primary responsibility for the procurement of contractors
- Technical design and equipment standards shall be by the TSO
- TSO shall have the right to intervene in proposed contracts with suppliers of materials in exceptional circumstances where it can be shown, to the satisfaction of the CER in the event of a dispute, that intervention is warranted

Procurement relates to both materials and service contractors. TAO will need freedom to develop a portfolio of turnkey, design and build, supply and erect and own labour projects to make best use of resources and to manage the total programme. This will give the TAO the best opportunity to meet its implementation plans and to respond to any incentives on capital investment set by the CER. Because the TSO is ultimately responsible under the S.I. for the safe, secure and reliable operation of the system, the I.A. shall make provision for procedures outlining the role of the TSO “client’s engineer” to ensure that the requirements of the TSO are met.

In order to be in a position to determine the adequacy of manufacturers, the manufacturing process, quality assurance and delivery, and overall system performance standards, the I.A. shall give the TSO a right to intervene in exceptional circumstances in the procurement of major items of equipment for transmission construction and refurbishment and to make variations to proposed contracts where necessary.

The right to intervene in individual cases being proposed for TSO should only arise in exceptional circumstances and where the TSO can show that the general protection it will have through setting standards, approving contractors etc. is not sufficient to protect its position. With regard to minor materials, tools, transport, equipment etc. for both maintenance and construction work, the IA will provide for the TSO to set the requirements necessary to ensure compliance with such requirements. TAO and TSO shall have obligations under their respective licences for the economic purchasing of assets, services and materials<sup>5</sup>.

**Please comment on the allocation of responsibilities for procurement and the “client’s engineer” approach as outlined above.**

#### **8.1.6 Stage 5 - Prepare Project Detailed Design and Specifications**

- TAO shall be responsible for detailed design subject to certain TSO reserve powers

Detailed design is a preliminary stage to procurement but is often also an iterative process whereby detailed designs are provided by contractors and suppliers as part

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<sup>5</sup>To view TSO and TAO respective draft licence see <http://www.cer.ie/cer0162.pdf> and <http://www.cer.ie/cer0163.pdf>

of the offer. Designs are then subject to agreement or modification during post-tender negotiations. For this reason detailed design is in part inseparable from implementation and shall be the responsibility of the TAO.

However, TSO will be the design authority and will establish and maintain generic standards and designs as are required. In addition to generic standards TSO will have the opportunity to input any specific technical requirements through the outline design for each project. Any options provided by the TAO and/or contractors and any variations from the standards indicated in the outline design during the course of the project will only be implemented following consultation and agreement with the TSO.

**Please comment on how responsibility for detailed design should be allocated.**

### **8.1.7 Stage 6 - Construct Projects/Project Review**

The I.A. will provide that:

- TAO and TSO will enter a project agreement for each development project
- TAO shall carry out construction work in accordance with the Development Plan and implement any other works required under the Development Plan
- TAO will have the full responsibility for delivery of projects to time and cost and will project manage the project (in accordance with the project agreement provisions) from handover to completion
- TAO will be responsible for detailed design and establishing a project and procurement strategy
- TSO will act as the TAO's agent in obtaining wayleaves
- TAO will undertake all reasonable measures to meet the requirements of the TSO

Projects will be passed from TSO to TAO for implementation to a procedure identified in the I.A. and supported by a project agreement that will specify the outline design, works to be carried out, the project implementation programme and the respective responsibilities and liabilities of the parties.

TAO will project manage the delivery of the project in accordance with the contract and report on the progress of the contract to TSO. The TSO's "client engineer" will carry out activities outlined in the project agreement as regards ensuring that the TSO's requirements are met. The "client's engineer" will also be involved as required in contract variations which impact on TSO's interests. The I.A. will provide that the TAO shall carry out construction work in accordance with the Development Plan and implement any other works required under the TSO's Development Plan. The TAO shall undertake the works to meet the requirements of the TSO, including securing variations to contracts and work in accordance with TSO requirements. TSO will obtain wayleaves on behalf of the TAO.

### 8.1.8 Stage 7 - Project Review

- TAO will have primary responsibility for project review
- TSO may require project variations which will be accommodated in accordance with the terms of individual project agreements
- TAO may request project variations from the TSO if it considers these necessary
- TSO will approve any variations in the scope of projects and issue interim certification
- The role of the TSO's "client's engineer" will be as specified in the project agreement

### 8.1.9 Stage 8 - Declaration of Fitness, Commissioning and Hand-Over

- TSO will determine whether a Declaration of Fitness can be accepted and whether a new asset can be commissioned

TAO will have primary responsibility for submitting a Declaration of Fitness, commissioning and hand-over but the TSO will be the final determinant on whether a Declaration of Fitness can be accepted and whether the new asset can be commissioned and accepted onto the transmission system. New equipment will be commissioned in accordance with TSO's procedures for Declaration of Fitness, pre-commissioning, commissioning and hand over procedures.

## 8.2 Allocation of Responsibilities - Maintenance

### 8.2.1 General principles

This section allocates roles and responsibilities to the TSO and the TAO for various aspects of the maintenance process described below. It explains how the proposed allocation is necessary to allow the TSO to deliver on its obligations under the S.I. Appendix 1 allocates maintenance activities between TSO and TAO. The summary table below illustrates the general division of roles between the parties.

<b>Stage</b>	<b>Party Responsible</b>
1. Set and Revise Maintenance Policy and Standards	TSO
2. Determine Maintenance Requirements	TSO
3. Draw Up Maintenance Plan/Programme	TSO
4. Procure Materials	TAO/TSO
5. Carry Out maintenance	TAO
6. Deal with Discovered Work	TSO
7. Fault Maintenance	TAO
8. Manage Programme	TAO
9. Check Work, Issue Declaration of Fitness, Commission and Hand-over the completion of maintenance tasks.	TAO/TSO

In the following sections each of these broad headings is discussed in more detail.

The I.A. shall require the TAO to carry out the maintenance tasks required by the TSO, using its own resources and outsourcing to contractors.

The I.A. shall require that inspection and maintenance policies be applied including standards, action levels, and response times for remedial work and repairs. TSO policies and procedures will define the maintenance regime and standards and action levels and timescales for remedial and repair work. TSO will have full information of maintenance work in hand and may prioritise work within the programme to meet system needs. The I.A. shall specify escalation procedures to expedite the process and penalties where targets are not met.

### **8.2.2 Stage 1 - Set and Revise Maintenance Policies and Standards**

- TSO shall specify maintenance policies and standards
- TSO shall consult with the TAO and have regard to the views of the TAO

The maintenance policy must ensure that transmission plant operates safely and is not a hazard to members of the public and operational and maintenance staff.

The application of the maintenance policy must reflect maintenance prioritisation criteria in so far as possible. In general, priority is based on safety, security and economic efficiency. There are interactions between security and economic efficiency. In evaluating the security of the network, the amount of risk and the impact must be evaluated by the TSO. This must be weighed against the cost of removing the risk or the cost of minimising the risk by other means such as operational practice. Only the system operator is in a position to judge this balance between risk and cost.

Where the TAO is concerned that the maintenance policies and standards should be reviewed by the TSO, it may request the CER to require that such a review be undertaken by the TSO.

### **8.2.3 Stage 2 - Determine Maintenance Requirements**

The TSO is responsible for operating and ensuring the maintenance of a safe, secure, reliable, economical and efficient transmission system. The I.A. will provide that;

- The TSO shall be responsible for monitoring and patrolling of the network and carrying out condition assessments of the system
- The TSO shall have sole responsibility for specifying maintenance requirements
- The TSO may delegate specified tasks of monitoring, patrolling and condition assessment to the TAO where it is economic and efficient to do so

- The TAO shall define its work practices and procedures in a manner which will implement TSO's maintenance policy and standards, and will be subject to the approval of the TSO
- The TSO may delegate the specification of routine maintenance requirements to the TAO where it considers appropriate
- TAO shall provide the TSO with any required information
- The TAO shall be obliged to report to the TSO any information relating to the condition of the assets obtained during the discharge of its functions
- The maintenance tasks will be generated in two ways:
  - Maintenance tasks based on the TSO analysis of the condition of the assets
  - Periodic maintenance tasks by the TAO based on the requirements of the TSO's maintenance policies and standards
- The TAO shall be responsible for determining maintenance tasks relating to the non-electrical fabric of the assets and which will not affect the operation of the system.

In some cases it will be more practical and economic for TAO to carry out inspection and condition monitoring work, especially where this can be carried out in conjunction with other TAO functions. There are also considerations on the availability of appropriate skills such as climbing skills, and economics of travelling distances to carry out inspections. Where inspection or condition monitoring is allocated by the TSO to the TAO, the costs shall be covered in revenue allowed by CER, rather than in side contracts.

**Please comment on which party should carry out patrolling, inspection and condition monitoring.**

Maintenance work will need to be measured to ensure that TSO is not over or under maintaining in relation to its policies.

TAO also has an interest in maintaining the non-electrical fabric of its assets such as buildings, substation sites, non-operational sites, including painting and weed control. Such work may require specialist skills such as civil engineering. In these cases TAO may initiate inspections and carry out maintenance work independently where it is not outage constrained, and does not impact on the critical functions of the TSO. Standards in this case will be specified by TAO taking into account any requirements of the TSO relating to its functions.

Condition information from routine inspections and special condition monitoring exercises feed into the Development Plan and informs decisions by TSO regarding refurbishment or replacement of assets. The Development Plan is the responsibility of TSO, including replacement and refurbishment requirements. The I.A. shall make provision for TAO to have put forward asset replacement proposals but the

TSO shall have final say in this regard through the Development Plan. The TAO's asset refurbishment and replacement proposals shall be in accordance with TSO's maintenance standards and policies and TSO's asset performance and availability standards.

**Please comment on how responsibility for asset refurbishment and replacement should be allocated.**

#### **8.2.4 Stage 3 - Draw Up Maintenance Plan/Programme**

- Following patrols and inspections the TSO will draw up a list of maintenance tasks to be carried out to the required standards and target dates
- Only under delegation from the TSO shall the TAO draw up a list of maintenance tasks. Where this delegation occurs, the TAO will submit a proposed plan to the TSO for approval of the maintenance tasks to be carried out (based on the standards and policies set by the TSO)
- TSO will prioritise and schedule the maintenance tasks generated in Stage 2 and shall be responsible for the outage programme
- TSO shall provide a framework for outages in the long and medium term taking into account known construction and maintenance outages
- TAO will submit outage requests for construction and maintenance as a co-ordinated work programme
- TSO shall consult with and have regard to the views of the TAO
- TAO may propose asset replacement and refurbishment strategies and plans along with the maintenance tasks but TSO shall make the final decision

In operational timescales the TSO shall prioritise and reschedule actual maintenance work to take account of actual operational requirements and system security risks. Most maintenance tasks require outages or changes to the transmission system. In order to operate the system securely, safely and reliably, transmission outages and their associated maintenance tasks must be specified by the TSO.

The TSO will determine the maintenance tasks to be performed on the transmission system to ensure the maintenance of the system, except in those defined circumstances where TAO has been delegated the authority to specify certain work by the TSO.

TSO will provide a framework of outages for the long and medium term, taking into account required construction and maintenance outages. TAO will have more detailed knowledge of precise requirements and will submit outage requests for construction and maintenance work as a co-ordinated programme. TAO will have an obligation to report where target dates may not be met. TSO will have to be kept up to date on all maintenance tasks and monitor progress. The TSO may also change how tasks are performed by requiring live line work, use of mobile bays, short notice availability of plant etc.

TAO will be required to develop a co-ordinated construction and maintenance programme, bearing in mind efficient use of resources and contractual commitments and therefore will have an input to the outage process.

TSO will not be in a position to schedule each task in detail, as this would involve scheduling TAO resources. Maintenance tasks can largely be scheduled by setting action levels and target dates, with escalation procedures where target dates are not likely to be met (i.e. work not scheduled in the appropriate period). TSO shall retain the right to bring forward or defer target dates by agreed procedures.

Remedial maintenance work requiring an outage will also be passed to TAO together with an indication of outage possibilities. Outages will be confirmed or alternatives requested by TAO and TSO shall make the final decision on outages and priorities for completion of work.

Non-outage work will be passed to TAO together with target dates based on TSO policies. TAO will carry out work on specified non-electrical assets independently, keeping TSO informed of the forward programme and progress.

#### **8.2.5 Stage 4 - Procure Materials, Maintenance Stocks**

- TSO shall specify the requirements for strategic spares and stocks
- TAO will procure and maintain stocks of equipment for normal repairs and maintenance activities
- Materials shall be purchased to TSO standards to the same procurement arrangements specified for Development and Construction activities

#### **8.2.6 Stage 5 - Carry Out Maintenance**

- The TAO is obliged to carry out the maintenance programme each year as specified by the TSO
- TAO will perform maintenance work and be responsible for work specifications and working methods
- TAO maintenance practices will be approved by TSO in so far as they impact on the system
- TAO shall liaise closely with TSO through formal reporting and interface arrangements to be specified in the I.A.

#### **8.2.7 Stage 6 - Deal with Discovered Work**

- TSO will decide what remedial or non-urgent repair work is required
- TAO shall execute the discovered maintenance work

Except where TAO has authority as indicated in Section 8.2.3 of this document, TSO will decide what remedial or non-urgent repair work is required following

inspections and condition monitoring or other information in accordance with TSO policies and action levels, standards and timescales for remedial work and repairs.

Where TAO has the delegated authority to decide work discovered during maintenance or following inspection, TAO will be required to keep the TSO informed of the work identified, target dates for completion and progress. TSO may revise target dates in line with agreed procedures to meet system requirements.

Where, in performing maintenance, possible additional requirements are identified by the TAO while carrying out the maintenance then the TSO must be informed as soon as possible. This allows the outage to be re-evaluated and modified, e.g., outages may be extended to complete additional work or outages may be deferred to a later time when all requirements can be completed.

### **8.2.8 Stage 7 - Fault Maintenance**

- The I.A. shall provide for standard procedures to be developed and agreed between the TAO and TSO
- TSO shall have the final decision on what maintenance is required and carried out due to a fault on the system
- TAO shall implement standard procedures
- The TAO shall provide routine stand-by and emergency cover at transmission locations

Section 22.2 below provides for arrangements for stand-by and emergency cover at transmission locations including response times. The I.A. will include a standard procedure for dealing with faults including reporting faults and investigation of fault cause so that the TSO may decide what action is required. For certain defined work TAO may have the delegated responsibility for deciding the work required. Similar arrangements shall apply to urgent repairs (which mainly result from fault maintenance but can also be initiated from inspections where equipment is in imminent danger of fault).

### **8.2.9 Stage 8 - Manage Programme**

- TAO shall have primary responsibility for managing the maintenance programme
- TAO shall liaise closely with TSO through formal reporting and interface arrangements specified in the I.A.

This is an iterative process involving both TAO and TSO. TAO shall be responsible for managing the maintenance subject to transmission system considerations. Both TAO and TSO will be involved in confirming the next period, advising changes and issuing revisions to the maintenance programme. This shall be done in accordance with formal reporting and interface arrangements to be specified in the I.A.

### **8.2.10 Stage 9 - Check work, Issue Declaration of Fitness, Commission and Hand-over**

- TSO will carry out scope completion and quality audits on selected works
- TAO will be responsible for pre-commission tests carried out to a TSO procedure
- TAO will submit a declaration of fitness
- TSO will determine declaration of fitness
- TSO will be responsible for the safe return of assets to service where applicable

New equipment will be commissioned onto the system in accordance with TSO's procedures for declaration of fitness, pre-commissioning, commissioning and hand-over. The TAO shall notify the TSO when all tasks are complete and the TSO shall issue a Declaration of Fitness if it is of the opinion that all work has been carried out satisfactorily and the maintained assets are safe to be energised.

To adequately ensure the maintenance of the transmission system the TSO will carry out scope completion and quality audits. Checks will be made that work scheduled is being carried out to the required standard. The TAO must co-operate in facilitating audits on work to be carried out by permitting the TSO free access to staff and sites. Detailed, accurate records on work progress must be provided to the TSO to agreed timescales.

## **9 Procedures for Discharging Responsibilities**

### **9.1 Development and Construction Procedures**

#### **9.1.1 Development Plan and Implementation Plan Procedures**

Under the S.I. the TSO has the responsibility for network development and producing a five year Development Plan that is subject to at least an annual review to CER requirements. The TSO is required to go to public consultation process before submitting the Development Plan to the CER for approval. The CER may direct the TSO with respect to matters to be specified in the Development Plan and in respect of the review and revision of it.

TAO has to indicate to CER and the TSO the measures it will take to implement the Development Plan and has the function of carrying out construction work in accordance with the Development Plan. The I.A. will require the TAO to consult with the TSO and accommodate the concerns of the TSO when finalising the implementation of the Development Plan.

The I.A. shall specify procedures to co-ordinate the TSO's Development Plan and the TAO's measures for implementing the plan. TSO will be required to demonstrate need, outline scheme design, cost and timing for each project in the Development Plan. TAO will be required to make cost projections available to the

TSO for network planning and modelling purposes. TSO will be required to consult with and take account of TAO's inputs to each project. The I.A. will provide for such consultation to take place. TSO will need to indicate the status of each project in the plan and to demonstrate that timing is feasible, bearing in mind TSO's own progress on outline design and planning consents and opportunities for outages for construction work. The plan also needs to take account of normal specified lead times associated with procurement and construction.

The above arrangements will facilitate TAO in its function of indicating measures it intends to take to implement the Development Plan. This shall include a programme of work for each project within an agreed timescale which reflects the TSO target dates and outage opportunities and shall also take account of the specified lead times for detailed design and tendering and for supply of equipment, construction and commissioning

The I.A. shall make provision for the TAO and TSO to agree a programme where times are shorter than the specified lead times where opportunities are identified to shorten timescales.

### **9.1.2 Project Agreement Procedures**

A project agreement (as described in Section 8.1.5.2) will be required for each construction project. The I.A. shall require the project agreement to specify information on the works to be carried out to standards approved by the TSO, a project implementation programme as well as outlining the respective responsibilities and liabilities of the parties.

### **9.1.3 Procedures for New connections**

- Provision of terms for new connections will be a function of TSO.

As far as contestable work is concerned, the prospective user has the option to use TAO or other contractors to construct the shallow connection assets. Non-contestable work on deep reinforcements shall be subject to the same procedures as identified for other capital projects, including the requirement for a project agreement. The project agreement will allocate risk for delays and default, linked to any damages agreed and liabilities associated with guaranteed access. The liabilities will be based on the defined responsibilities for development and construction and the risk will be allocated in accordance with lead times associated with the project. The project agreement will allocate risk of default on the part of the prospective user and arrangements for releasing bonds.

## **9.2 Maintenance Procedures**

### **9.2.1 Inspection, Condition Monitoring and Maintenance Policies and Standards**

The I.A. shall provide for the development of maintenance policies and standards by the TSO. Maintenance policies and standards are required to specify the requirements for all plant items and shall include:

- Frequency or other criteria for inspection and/or condition monitoring of equipment
- Actions and target times for remedy of defects found during maintenance
- Work to be delegated to TAO, including follow up maintenance work

### **9.2.2 Maintenance Work Planning Procedures**

The I.A. shall specify a maintenance work planning process to correspond with construction work planning and outage planning process. TAO shall have independence of action for delegated and non-outage work provided it is within target.

These procedures shall include arrangements for scheduling maintenance tasks and providing information on tasks, target times, programmed dates, progress monitoring, escalation procedures and provisions for the TSO to alter targets from the standard. Procedures shall cover TAO and TSO specified work.

TSO will be required to produce a proposed outage plan incorporating as many of the maintenance requirements as it considers being feasible. This proposed outage plan will be the subject of discussion with TAO and with other interested parties as appropriate. TSO will retain the right to accept or reject any modification of the plan. The TSO's finalised transmission outage plan, together with the non-outage maintenance requirements, will be issued to TAO as the outage programme for the year. This programme will be subject to change throughout the year through an iterative outage planning process.

The I.A. will require TAO to use an agreed management system to record work carried out.

Where additional work arises, TAO will immediately notify TSO. TSO will decide on the amount and target dates of additional work to be carried out.

### **9.2.3 Maintenance Work Specifications**

- TSO will provide technical requirements for maintenance work
- TAO will provide work specifications (i.e. work procedures and method statements) and be responsible for working methods. TAO's maintenance practices will be approved by the TSO in so far as they impact on the system

- TAO may bring forward asset replacement and refurbishment proposals for TSO's consideration and decision

The I.A. will specify the time of year when the TSO will be required to have determined maintenance requirements, both cyclical and condition based for each element of the transmission network for the following year. In addition, non-outage dependent maintenance requirements will be determined. These requirements will be forwarded to TAO in summary form but with sufficient detail to allow TAO to estimate resource and hence budget requirements.

### **9.3 Operation Procedures**

Section 22 below specifies operation procedures that are required to support construction and maintenance work.

- Outage planning procedures
- System commissioning procedures
- System operation procedures
- Safety procedures

## **10 Allocation of Risk**

The allocation of functions in the S.I. and activities in the I.A. shall define liabilities and risks. Regulation 18(4)(d)(vi) requires the IA to include provisions in relation to allocation of risk "*for insurance or other purposes...*". The CER believes that risk should be allocated according to the activities carried out by the parties. Under the SI, TSO has the responsibility for operating a safe transmission system.

- TSO's liability will be commensurate with its role of specifying design standards and operating procedures and specifying inspection and maintenance policies and ensuring the maintenance of the system.
- TSO will be liable for the quality and standards of maintenance work instructed to TAO and for work initiated by TAO.
- The I.A. shall in so far as possible allocate responsibility for third party claims relating to the transmission system and include procedures as between the TAO and TSO relating to those claims
- TAO shall carry the major liability for its assets as owner, maintainer, detailed designer and constructor including theft and damage to transmission system assets including storm damage.

The TSO is responsible for ensuring the maintenance of the transmission system and must have sufficient control to deliver on this obligation. The TSO may be held responsible (through increased constraint costs, statutory responsibility for ensuring safety etc.) for failures on the transmission system resulting from inadequate maintenance and delays in the development process.

The I.A. shall provide for the TAO and the TSO to insure against claims due to negligence in respect of their own actions. TSO's liability shall be in respect of design standards, specifying maintenance and construction requirements and scheduling the work. TAO shall have responsibility in respect of complying with TSO's standards and instructions and carrying out the work to its own work specifications.

To the extent that the TSO may incur a liability to a customer and that failure is due to the action or inactions of the TAO in discharging its functions under the I.A. then the I.A. will provide for the TSO to have back-to-back arrangements on risk abatement with the TAO.

## **11 Duty of Cooperation**

The S.I. includes requirements on both the TSO and TAO to co-operate. The TAO can neither direct nor give any instructions to the TSO (See Regulation 9(1)), which recognises the need for the TSO to be independent in discharging its functions. The TAO is further required to comply with requirements of TSO in respect of its functions and not exercise its property rights in a way that would interfere with the obligations of the TSO. The S.I. requires the TAO to facilitate the TSO in the performance of its tasks by imposing both general requirements (for example Regulation 18 (2)(b) requires TAO to facilitate the discharge by the TSO of its functions) and specific obligations (e.g. compliance with TSO's requirements under Regulation 9(2)) on the TAO in respect of the TSO.

The I.A. will provide formal procedures and arrangements for consultation and exchange of information to underpin the statutory requirement for co-operation. The I.A., in specifying procedures and information exchange, shall set out the respective rights as required by the S.I. For example the I.A. will require the full co-operation of the TAO in the event of TSO exercising step-in rights.

## **12 Information Exchange and Confidentiality**

- The I.A. will set out procedures for co-ordinating actions between TAO and TSO including requirements to hold, maintain and exchange information.
- The information specified in the I.A. is to be made generally available between TAO and TSO in order for them to fulfil their functions
- The TAO will have a general right to all information relating to the physical characteristics and use by TSO of TAO's assets

Under the I.A. the TSO and TAO shall have obligations to preserve the confidentiality of commercially sensitive information unless required to disclose such information in accordance with the law. Commercially confidential shall

mean any matters the disclosure of which would materially prejudice the interests of any person.

TSO and TAO will also have obligations under their licences to maintain confidentiality of information. It is the CER's view that ensuring that information does not pass between ESB's transmission business and other ESB business units is a TAO licence matter and not an I.A. matter.

The I.A. will, however, set out procedures for co-ordinating actions between TAO and TSO including requirements to hold, maintain and exchange information. The information specified in the I.A. is to be made generally available between TAO and TSO and neither would have to present a case for each element of information on a need to know basis.

The I.A. shall require the TAO to provide the TSO with all information held by the TAO that the TSO requires to fulfil its functions (in accordance with Regulation 19(c) and (d)). Under the I.A. the TAO will be considered to have a general right to all information relating to the physical characteristics and use by TSO of its owned assets or future assets, and in most cases will hold prime records. The TAO will have a right to all data collected by TAO or TSO in respect of inspections and condition monitoring or special tests and any other data related to the condition, utilisation or testing of assets. The I.A. shall also require the TSO to provide to the TAO information on its use of those assets which impact on the life or condition of those assets including assigned ratings and normal and abnormal operating duty.

### **13 Remuneration of TAO**

- TAO's allowed revenue shall be determined solely by the CER and will be the outcome of the price review process
- The TAO's allowed revenue will be notified to the TSO and the TAO
- The I.A. shall specify payment schedules, dates and methods of payment.

### **14 Scope for Incentives**

The allocation of activities in the I.A. shall have implications for allowed revenue and incentives or penalties set by CER. For example there is a need for clarity on maintenance requirements in order for CER to set TAO allowed revenues. TSO might otherwise set standards or request work not envisaged at the time CER set allowed revenue. The scope for incentives and penalties in the I.A. will be required to be compatible with the incentives and penalties that the CER imposes on both the TAO and TSO in the Use of System Price review process.

### **15 Approval of Contractors**

Approval of contractors and suppliers needs to comply with the EU procurement directive. ESB already has systems in place for approval of contractors and

suppliers. It is the CER's view that these should be documented and form the basis for the purposes of the I.A.

- TAO shall take the lead on procurement matters
- TSO's requirements will need to be included in the approval process
- On particular projects the TSO's "client's engineer" will ensure that TSO's requirements are met

Under the S.I., the TAO has primary responsibility for the procurement of contractors as part of its responsibility to deliver the Development Plan. The S.I. also requires that, subject to the law relating to public procurement, the outsourcing contractors shall be on a list agreed between the TAO and the TSO.

- The TAO will draw up proposed Pre-Qualification Criteria. The proposed pre-qualification criteria are drawn up for different work activities
- The TAO will consult and agree Pre-Qualification Criteria with the TSO. This will involve discussion of the proposed pre-qualification criteria. The TAO will revise pre-qualification criteria as required following discussions with the TSO. The revised pre-qualification criteria will be agreed between the TAO and the TSO.
- The TSO will advise of additional names (if any) to be included in pre-qualification invitation
- The TAO will conduct the Pre-Qualification Process in accordance with the law relating to public procurement
- The TAO will draw up a Draft Pre-Qualification Evaluation Report categorising respondents as "on" or "off" the list on the basis of the application of the pre-qualification criteria
- The TAO will discuss with the TSO the application of the pre-qualification criteria in the draft pre-qualification report. Following discussion of the application of the pre-qualification criteria the TAO and the TSO will agree a list of approved contractors.
- The TAO will finalise pre-qualification report
- The TAO will notify contractors as per agreed list
- Because this list will be used by the TSO when the need to exercise Step-In Rights arises, the I.A. will make provision for the TSO to participate in the selection of contractors
- TSO's "client engineer" will ensure that TSO's requirements are met on particular projects

## **16 Liabilities and Indemnities**

The I.A. shall provide for appropriate liability and indemnity between the parties with regard to each other and with respect to third parties (See also allocation of risks). In developing these provisions, consideration must be given to;

- Potential areas of liability including contractual claims, other types of claims by one party against another and third party claims

- Potential losses including death and personal injury, property damage and consequential losses
- The interrelationship between the performance levels, allowed revenues and incentives for each party and the level of risk accepted under the I.A.
- The availability and role of insurance and other risk management tools
- A process of notifying the occurrence of events in respect of which indemnity obligations arise

**Views are sought on how risks should be allocated in the I.A. and how associated liabilities and indemnities should be treated.**

### **17 Step In Rights**

- The I.A., project agreements and any agreement that TAO may have with an outsourced contractor will provide for timely, rapid and efficient step-in rights by the TSO.

The processes of joint consultation on the Development Plan and implementation plan and the maintenance and outage planning processes will provide the framework for producing a viable programme of work. These processes should avoid situations where TAO is not able to meet TSO requirements. They will also make it possible to determine whether TAO and TSO have followed due process should CER have to decide to grant step in rights.

It is envisaged that step in rights will be granted by CER only in the event that TAO is not able to meet the Development Plan or maintenance work due to constraints under its control and that TSO has demonstrated the need and timing of the work, taken into account alternatives suggested by TAO, and has a viable alternative for completion of the work or achieving standards. CER will take account of the extent to which parties have complied with the I.A. The I.A. shall provide that:

- The TAO shall bear the costs of any work undertaken under the step-in rights
- There will be a process of notification of intent, whereby the TSO shall be required to notify the TAO that it considers the TAO to be in delay or in default on the agreed delivery date of a project and that it intends to seek a direction to exercise its step in rights
- The TAO shall be given a reasonable period of time to respond to the notification of intent
- The TAO shall be required to indicate to both the TSO and the CER whether or not it accepts that there is a delay or default and the reasons supporting its view
- If the TAO accepts that there is a delay or default it should be required to indicate the corrective measures that it proposes to take to eliminate or reduce the delay

- If the TSO remains of the view that the TAO is in delay or default and if the TSO is not satisfied with the corrective measures proposed by the TAO, the TSO may request a direction from the CER that it exercise its step in rights, giving reasons why the CER should so direct and indicating the means by which it intends to remedy the default or delay
- The CER shall seek and take into account the views of the TAO and of the TSO and shall decide whether or not to issue a direction to the TSO to step in
- Rather than directing the TSO to exercise step in rights, the CER may at its discretion, in the interests of customers, direct the TAO to undertake the corrective actions proposed by the TSO or other corrective actions that it may see fit
- In order to enable the TSO to exercise its step in rights the TAO shall include a general clause in all contracts which will allow the TAO to terminate or to assign the contract to another party

## **18 Dispute Resolution**

Regulation 18(8) confers on the CER an arbitration role for the resolution of differences and disputes arising from the I.A. The I.A. shall provide for the CER's function, as defined in the S.I., in resolving differences between TAO and TSO. The I.A. shall also require the TSO and TAO to bi-laterally resolve the dispute in the first instance, before referral to the CER. Dispute resolution procedures shall include, *inter alia*, for the exchange of information to support each viewpoint and for an independent technical adviser to report on technical matters under dispute.

## **19 Periodic Review**

The I.A. shall provide for TSO and TAO to meet on a mutually acceptable timeframe, which is acceptable to the CER, to review the operation of the I.A. The I.A. shall specify details of the periodic review procedure. Any changes to the rights and obligations of the I.A. requested by either party shall only be approved provided they are consistent with the general purposes of the I.A. and are technically achievable. The I.A. shall require each party to annually report separately to the CER on the operation of the I.A.. The CER shall take account of the extent to which parties are complying with the I.A. and the effective operation of the I.A.

## **20 Modifications**

Any modifications to the I.A. shall arise principally as a result of directions issued by the CER in accordance with Regulation 18(1)(c) or as a consequential impact of the Periodic Review. The I.A. shall specify details of the modification procedure.

## **21 Emergency Arrangements**

The S.I. recognise the requirement for either party to act promptly in the case of an emergency. Regulation 18(7) provides for either party, but in different circumstances, to carry out emergency action. The I.A. shall specify, in so far as possible, the procedures to be followed in the event of an emergency. The I.A. will require each party, in the event that an emergency occurs, to inform the other party as soon as is practicable so that a course of action can be agreed to resolve and normalise the emergency situation, including assigning responsibility for managing the emergency situation. The I.A. shall set out standard procedures for the TAO to act in “critical situations” without direct instruction from the TSO. In all other circumstances the TAO shall not act other than under instruction from the TSO. The S.I. confers power on the CER to direct the cessation of measures put in place for emergency reasons when the emergency measure is taken by the TSO, but not when the measures are taken by the TAO. The I.A. will therefore also provide for the TSO to take over, at its discretion, emergency measures adopted by the TAO.

## **22 Operation Services**

### **22.1 System Operation**

System operation is an exclusive function of TSO and involves the direction and control of the transmission system including system configuration and loading, voltage control, control of outages and switching operations, managing system abnormalities and emergencies and liaison with other parties. The I.A. shall specify the procedures required to enable the TSO to carry out these functions as follows:

Outage planning procedures: To allow TSO to co-ordinate outages between TSO and TAO and all users of the transmission system and to allow TAO to put forward proposals for circuit outages as required to meet its construction programme for agreement or modification by TSO.

Equipment commissioning procedures: To allow TSO to verify the operational and technical characteristics and integrity of all new equipment connected to the system and establish operational records before connecting to the system. In defined circumstances these procedures will also apply following maintenance or refurbishment of equipment.

System operation procedures: To allow TSO to specify the manner in which system operations are to be carried out and recorded by TAO in respect of field operations associated with construction and maintenance work and field operation services.

System safety procedures: TSO will establish safety rules and procedures for ensuring the safety of the system and for co-ordinating safety between users. TAO

will establish safety rules and procedures in respect of safety of personnel working on the system and these will be subject to approval by TSO as far as its functions are concerned.

## **22.2 TAO Operations Functions**

In addition to maintenance and construction activities which are stated in the S.I. to be monopoly roles of the TAO, there are a number of operational services (such as manually operating switchgear equipment and other equipment in substations and operating equipment by remote control from control centres) currently provided by the TAO to the TSO that will continue to be required in the future to support the operation of the system. Some operational field services are required in addition to those associated with construction and maintenance and much of this is carried out from TAO control centres by remote control. It is the CER's view that this work is closely allied to other TAO functions and it is impractical and uneconomic (in the short to medium term at least) that these services be made contestable. The I.A. shall provide for arrangements for the continuation of such services to agreed levels. This shall not prevent the TSO from entering arrangements with other parties to have these services provided in suitable circumstances.

- The IA shall specify that, at the request of the TSO and under its direction, the TAO will provide, "on the ground" services such as physical switching of transmission system assets at individual nodes throughout the country.
- The I.A. will define these services and the standards to which it is to be delivered by the TAO in terms of response times, scheduled operations completed as requested and shall include service provide under emergency conditions.
- The I.A. shall distinguish between fault and non-fault operation services and to draw the boundary between fault operation services and fault maintenance requirements.
- Fault response and repair procedures will need to be set out and agreed between the TSO and the TAO.
- The TAO shall provide 24 hour, on the ground, presence at transmission locations with responsibility for site security, site safety and site access.
- The I.A. shall provide for communication channels to be established to allow rapid communications between the TSO and the TAO's ground staff.

## **23 Definition of Transmission**

### **23.1 Principles for Defining the Transmission System**

- The specification of assets in the transmission system shall be jointly agreed by the parties and be defined by the operation and system control boundary
- TSO shall be responsible for maintaining the operational diagrams and associated schedules

- TAO owned interconnector circuits will be classed as a part of the transmission assets

Regulation 18 requires the I.A. to include a specification of the TAO assets that shall constitute the transmission system. This definition shall be agreed by the parties and defined by the operation and system control boundary, which is a well-defined demarcation between transmission, distribution and other user systems. For the purposes of the I.A., TAO owned interconnector circuits will be classed as a part of the transmission assets. The transmission system shall be defined by system operation and control boundary diagrams, operational capabilities (ratings), operational control of protection and control equipment, supervisory control and data acquisition equipment. The TSO shall be responsible for maintaining the operational diagrams and associated schedules.

## **24 Compliance with Grid Code**

Grid Code places obligations on TSO and all users of the transmission system, relating to technical matters and co-ordination of operation and development of the transmission system. The S.I. amends the 1999 Act to provide for TSO to take over the role of ESBNG in respect to the Grid Code and TSO must comply with the Grid Code. The S.I. does not require TAO to separately comply with the Grid Code since TAO is not a user of the system but has obligations direct to TSO.

The I.A. shall require the TAO to comply with Grid Code on behalf of TSO where appropriate and not as a user. This has implications for the freedom of action of TAO. For example TAO obligations on design are not set at the general level specified in Grid Code as for users of the transmission system but TAO must comply with TSO design requirements in all respects and these are likely to be more prescriptive than those applying to users under Grid Code. The I.A. is a bilateral agreement that specifies the relationship between TSO and TAO and may specify requirements which are similar to Grid Code requirements for example relating to operational event reporting.

## **25 Change of Law**

The I.A. will specify that it will be amended by the parties, subject to the approval of the CER, to the extent required by any future change in Irish or EU law.

## **26 Summary and Conclusion**

Under the S.I., the Infrastructure Agreement is subject to the approval of the CER, who may in exercising this power consult with the Competition Authority. The CER must ensure that the I.A. enables TSO to carry out its functions and for the

TAO to facilitate TSO functions and carry out its own functions. Where agreement is not reached before 20 June 2001, the CER shall, as soon as may be, direct TSO and the TAO to reach agreement to comply with industry requirements. This Transmission Infrastructure Agreement Principles Paper sets out the CER's current thinking on the I.A. should the parties fail to agree the Infrastructure Agreement.

The CER invites comments from interested parties on the Infrastructure Agreement Principles Paper not later than **Friday 22nd June 2001**

Comments, preferably in electronic format, should be addressed to:

Mr. John O'Connell,

Commission for Electricity Regulation,

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Belgard Road,

Tallaght,

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## Appendix 1

<u>Development and Construction Activities</u>	<b>Party Responsible</b>
<b>1. Conduct Planning/Feasibility Studies</b>	
<ul style="list-style-type: none"> <li>• Model network scenarios</li> <li>• Model load scenarios</li> <li>• Evaluate options</li> <li>• Determine required-by date for reinforcement</li> <li>• Select one or more indicative options</li> </ul>	<b>TSO</b>
<b>2. Develop indicative programme for project stages</b>	<b>TSO</b>
<b>3. Advance to planning permission</b>	
<ul style="list-style-type: none"> <li>• Identify alternative route(s)</li> <li>• Identify substation site(s)</li> <li>• Issue Survey Notices</li> <li>• Prepare EIS(s)</li> <li>• Iterative discussions with planners</li> <li>• Carry out public consultation</li> <li>• Select preferred route</li> <li>• Prepare preliminary design and survey</li> <li>• Go through planning process (submission of preferred candidate project; ongoing discussions with planners; planning appeals; oral hearings; legal appeals)</li> <li>• Project planning approval</li> </ul>	<b>TSO</b>
<b>4. Preliminary work for Procurement</b>	
<ul style="list-style-type: none"> <li>• Outline design</li> <li>• Outline costs</li> <li>• High level programme</li> <li>• Contract Strategy</li> <li>• Procure materials/contractor where appropriate</li> </ul>	<b>TSO</b> <b>TSO/ TAO</b> <b>TAO</b> (see text)
<b>5. Prepare Project Detailed Design and Specification</b>	<b>TAO</b>
<ul style="list-style-type: none"> <li>• Prepare detailed designs -line designs, civil works, layout and electrical</li> </ul>	(see text for TSO role)
<b>6. Construct Project</b>	<b>TAO</b>
<ul style="list-style-type: none"> <li>• Wayleaves (<b>TSO role - see text</b>)</li> <li>• Carry out work</li> <li>• Report on work progress</li> </ul>	(except wayleaves –see text)
<b>7. Project Review</b>	<b>TAO</b>
<ul style="list-style-type: none"> <li>• Supervise, check, audit, monitor</li> <li>• QA</li> <li>• Vary as required</li> <li>• Interim Certification</li> </ul>	(see text for TSO role)
<b>8. Issue Declaration of Fitness, Commission and Hand-over</b>	
<ul style="list-style-type: none"> <li>• Commission</li> <li>• Issue Declaration of Fitness</li> <li>• Certify Substantial Completion</li> <li>• Certify Completion</li> <li>• Hand-over</li> </ul>	<b>TSO/ TAO</b> (see text)

<b><u>Maintenance Activities</u></b>	<b>Party Responsible</b>
<b>1. Set and Revise Maintenance Policies and Standards</b>	
<ul style="list-style-type: none"> <li>• Analyse system performance</li> <li>• Assess performance of asset types and classes</li> <li>• Revise maintenance policies</li> <li>• Policies include maintenance prioritisation criteria in so far as possible</li> </ul>	<p><b>TSO</b> (see text for TAO input)</p>
<b>2. Determine Maintenance Requirements</b>	
<ul style="list-style-type: none"> <li>• Patrol networks</li> <li>• Carry out condition assessment</li> <li>• Report on work progress</li> <li>• Decide between maintenance and refurbishment</li> <li>• Draw up list of maintenance tasks</li> </ul>	<p><b>TSO</b> (see text for TAO input)</p>
<b>3. Draw up Maintenance Plan/Programme</b>	
<ul style="list-style-type: none"> <li>• Prioritise maintenance tasks</li> <li>• Determine outage requirements (unconstrained)</li> <li>• TSO to produce outage plan and TAO to produce a draft maintenance and construction work plan – <b>iterative process (see text)</b></li> <li>• Produce approved transmission outage plan (following engagement and discussion)</li> <li>• Finalise maintenance work plan</li> </ul>	<p><b>TSO</b> (iterative process - see text)</p>
<b>4. Procure Materials etc. (see text for TSO's client engineer role)</b>	<b>TAO</b>
<b>5. Carry out Maintenance</b>	
<ul style="list-style-type: none"> <li>• Carry out maintenance work</li> <li>• Carry out scope completion audits</li> <li>• Report on work progress</li> </ul>	<b>TAO</b>
<b>6. Deal with Discovered Work</b>	
<ul style="list-style-type: none"> <li>• Decide on appropriate response to additional requirements discovered during maintenance</li> </ul>	<b>TSO</b>
<b>7. Fault Maintenance</b>	
<ul style="list-style-type: none"> <li>• Implement Standard Procedure</li> </ul>	<b>TAO</b>
<b>8. Manage Programme</b>	
<ul style="list-style-type: none"> <li>• Review Work done</li> <li>• Confirm Next Period</li> <li>• Advise Changes</li> <li>• Issue Revision</li> </ul>	<p><b>TAO</b> (see text for TSO input)</p>
<b>9. Check work, Issue Declaration of Fitness, Commission and Hand-over</b>	
<ul style="list-style-type: none"> <li>• Carry out a regular review of work to date</li> <li>• Carry out QA audits</li> <li>• Issue Declaration of Fitness</li> <li>• Pre-commission</li> <li>• Commission</li> <li>• Hand-over</li> </ul>	<p><b>TSO/ TAO</b> (see text)</p>