



Commission for Energy Regulation

An Coimisiún um Rialáil Fuinnimh

**Group Processing Approach for Renewable
Generator Connection Applications**

Connection and Pricing Provisions

PROPOSED DIRECTION TO SYSTEM OPERATORS

**14th February 2005
CER/05/010**

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1 Introduction

The Commission proposes to issue a direction to the System Operators – the Transmission System Operator (TSO) and the Distribution System Operator (DSO) - on certain outstanding connection and pricing provisions to be included in all future connection offers to renewable generators. The direction will be issued pursuant to Sections 34(1) and 35(2) of the Electricity Regulation Act, 1999.

The need for the proposed direction arises essentially from two recent developments:

- the unprecedented increase in wind connection applications since December 2003 when the moratorium on connection offers was introduced; and
- the Commission direction of 23rd December 2004 to resume wind connection offers and to move from an individual to a group processing regime.

These developments mean, among other things, that securing early system access has become particularly valuable and important to applicants. This, in turn, means that rules of access should be subject to more strict conditions in order to ensure fairness to all parties and to avoid wasteful hoarding of access rights. The detailed rules for operating a group processing regime will also necessitate changes to the traditional connection contractual agreements. These are the subject of the present proposed direction. The details are set out in section 4 of this paper.

The proposed direction should be read in conjunction with earlier Commission documentation on connecting wind generators, and with the following two documents in particular:

- the Commission Direction of 23rd December 2004 (CER 04/381) (“the Gate 1 Direction”); and
- the joint TSO/DSO proposal ‘*Group Processing Approach for Renewable Generator Connection Applications*’ (CER/04/317), published for consultation on the Commission’s website on 5th October 2004.

Terms used within this paper and in past papers relating to the Group Processing Approach are defined in **Appendix A**.

The Commission welcomes comments on this proposed direction to be submitted by close of business, Friday, 25th February 2005 addressed to David Naughton (dnaughton@cer.ie). Comments may be published on the Commission’s website unless otherwise marked as confidential.

2 Background

- On **5th October 2004** a joint TSO/DSO proposal for processing and issuing offers to renewable generators based on a group approach - rather than the individual processing approach which has prevailed up to now - was published by the Commission for consultation. We refer to this proposal as the “**Group Processing Approach**”. An overview of the proposed Group Processing Approach is shown in **Appendix B**.
- On **23rd December 2004** the Commission issued the Gate 1 direction to the System Operators concerning the rules for processing applications and issuing offers to Gate 1 applicants. Applications deemed complete prior to the introduction of the moratorium on 3rd December 2003 were included in Gate 1. Gate 1 applications are being processed under the Group Processing Approach philosophy. The aim of the direction was to make quick inroads into the backlog of connection applications and, in parallel, develop the ground rules for a future Group Processing Approach.
- On **21st January 2005** the Commission published the DSO’s proposed Standard Pricing Approach for Generators (CER/05/004). This paper outlines the DSO’s proposed connection pricing policy and its schedule of connection charges for all future generators applying for connection to the distribution system. The proposed standard pricing policy allows for quicker processing times under the Group Processing Approach and aligns distribution with the current transmission approach. The Commission has since received submissions from interested parties on these proposals and will be issuing a decision on the Standard Pricing Approach very shortly.
- The Commission recognised in the Gate 1 direction that Gate 2 processing rules and the remaining issues applicable to all Gates, identified in the joint TSO/DSO proposal, would have to be addressed as a matter of urgency.
- The focus of this proposed direction is on the ground rules of the Group Processing Approach. The provisions within this proposed direction will be applicable to all Gates.
- The proposed direction does *not* reopen for debate the issues raised in the Gate 1 direction. Neither does it anticipate the criteria for inclusion in Gate 2. This will be the subject of a separate proposed direction which the Commission will be issuing for consultation very shortly.

3 Guiding Criteria

The Commission has been guided by the following criteria in drawing up this proposed direction.

The outstanding connection and pricing provisions should be:

- fair and reasonable in dealing with connections to the system;

- designed to minimise the risk to the end-user TUoS and DUoS tariffs;
- transparent;
- practical; and
- conducive to promoting the development of renewable forms of generation.

4 Commission Proposal

Connection offers to all renewable generators – those included in Gate 1 and included in later Gates - will include the following provisions:

4.1 Capacity Bond

All transmission and distribution renewable applicants will be required to post a Capacity Bond of €10,000 per MW of MEC (Maximum Export Capacity) on connection offer acceptance.¹

4.2 Connection Agreement Validity Period

All connection agreements issued to applicants will be subject to a validity period or backstop date.¹

This may involve setting responsibilities for achieving project milestones or setting an ultimate backstop date for connection. The transmission connection agreement already provides for the connecting party to meet a number of specific milestones during the process of constructing the connection asset. However, the distribution agreement contains no such provisions.

The system operators are currently reviewing their respective connection agreements with a view to aligning the necessary provisions. The Commission expects to receive the proposed detailed rules for the implementation of the connection agreement validity period shortly.

4.3 Distribution Standard Pricing Approach

All offers will comply with the forthcoming Commission direction on the DSO's proposed Standard Pricing Approach (see section 2 above). The use of standard pricing will, it has been argued, allow for quicker processing of distribution applications within the Gate system. This is also consistent with the current transmission connection pricing policy.

¹ The Commission has, in fact, already approved these two particular provisions in a direction issued to the System Operators on 6th October 2004, CER/04/319. They are included in the present proposed direction to facilitate readers having an overall picture of the revised connection contractual arrangements being proposed.

4.4 Generators Affected

The Group Processing Approach shall apply to all renewable generator applications with a Maximum Export Capacity (MEC) greater than 0.5 MW. Applications below this threshold will be treated on a case-by-case basis as deemed appropriate by the System Operators and approved by the Commission.

In the event that a connection application is received for a conventional generating plant and this has the potential to affect the offers issued to individual renewable generators under the Group Processing Approach rules, the TSO shall consult with the Commission. The Commission reserves the right to issue a specific direction to the System Operators to deal with this contingency if it concludes that such a direction is warranted on grounds of the wider public interest.

4.5 Transmission Vs Distribution Connections

The System Operators have stated that due to the volume of applications there will need to be a high degree of co-ordination between the TSO and DSO in designing the most efficient connection methods from an electricity network development perspective.

The Commission has already decided that the System Operators may nominate individual applications within Gate 1 to be treated as either transmission or distribution applications where this is technically justified from an overall system perspective.

This principle shall apply to all Gates under the Group Processing Approach.

4.6 Connection Method

The proposed Group and Subgroup connection method will be the only connection method offered to the relevant applicants in Gate 1, Gate 2 and any subsequent Gates. This is consistent with taking account of all applicants within a Group and Subgroup under the Group Processing Approach.

4.7 TSO's Dynamic Simulations for Windfarms

The TSO is in the process of carrying out global dynamic studies of connected and contracted windfarms to identify their impact on the system and any resulting network equipment which may be required. The success and swiftness of this process is partly dependent on the submission of adequate and/or validated individual dynamic models. Progress on the provision of models can be viewed on the TSO website www.eirgrid.com.

The TSO has stated that the results of these studies may potentially impact on the offers issued to applicants within the Gates. As a result the TSO has proposed that offers which issue before global dynamics studies are complete will contain a caveat stating that the connection is subject to the results of the completed dynamic analysis. The Commission understands that, while the results of such studies are unlikely to affect an applicant's shallow connection date, they could potentially lead to unanticipated

network reinforcement works being required to meet the applicant's deep connection date which could even delay that date or, in a limited number of cases, lead to a need to constrain down a generator pending completion of these reinforcements.

The Commission does not wish to see the delay of the processing of applications in the absence of completed global dynamic studies. Indeed, this was the basis for rejecting the TSO's proposed Criterion 2 when lifting the moratorium in the direction, *Wind Generator Connection Policy* (CER/04/245). However, the Commission believes that the TSO request is reasonable and proposes to approve this condition being attached to offers. The Commission expects the TSO to have the results of the first stage (for connected windfarms) of these global dynamic studies available within three months of receipt of all the models, on the assumption that satisfactory data is made available by connection applicants.

4.8 Connection Charging Issues

The proposed changes to the connection charging policy arise largely due to the concept of the Shared Connection Asset and the means of recovering the costs associated with the asset. The Shared Connection Asset also raises issues of the appropriate allocation of financial risk between the generator and the TUoS and DUoS final customer.

The charging principles of the Shared Connection Method are not new; indeed they have been encountered in the Government's Grid Upgrade Development Programme (GUDP) for Renewables (See CER/03/208).

Existing Connection Charging Policy

Generators connecting to the transmission system pay for 100% of the shallow connection costs associated with their connection. This is paid on a staged basis, as the expenditure is required. A connection charges bond is posted by the transmission applicant on offer acceptance to cover its connection costs.

A generator connecting to the distribution system pays for 100% of the attributable costs of its connection. Therefore, it will pay for all of its shallow connection costs along with deep reinforcement costs caused to the wider distribution system as a result of its connection. 25% of the applicant's connection costs must be paid on offer acceptance.

The cost of the connection is based on the Least Cost Technically Acceptable (LCTA) principle. Under the GUDP for Renewables the LCTA principle applies to the method of connection for the Dedicated Connection Asset. The Shared Connection Asset must also be based on the LCTA principle of connection, taking into account all applicants within a Subgroup.²

Dedicated and Shared Connection Asset

² A Subgroup is referred to as a cluster in the Grid Upgrade Development Programme for Renewables.

The connection pricing policy as proposed by the System Operators incorporates the charging for the Shared Asset. In essence, the first-mover does not have to pay for the initial high costs of the Shared Connection Asset.

The Commission believes that the final charging regime for the Group Processing Approach must be fair, cost reflective and transparent. Charges should be allocated correctly to each generator and minimise the financial risk to the final electricity customer.

The System Operators' proposal aims to recover the full costs of both the Shared and Dedicated Connection Assets. The System Operators have proposed that the connection charging policy under the Group Processing Approach be implemented as follows:

1. Determine the overall "connection method" for a Group/Subgroup (Shared plus Dedicated Assets);
2. Charges for connection to the Shared network will be based on a per MW basis in accordance with the formulae in Figure 1;
3. Generators will be charged 100% of the cost for providing the Dedicated Connection Asset;
4. In the event that another generator is connected to an existing Subgroup, the connection charges for this generator and all other existing generators in this Subgroup are recalculated and refunds are apportioned to existing generators in accordance with the relevant System Operator policy; and
5. Following connection, the generator will be subject to the Annual Ongoing Service charges in respect of the connection.

The Commission considers this approach to be reasonable and consistent with current connection charging policy. In relation to point 1 above, the overall "connection method" shall be in line with the Least Cost Technically Acceptable (LCTA) principle, taking into account all applicants within a Group/Subgroup.

Proposed Charging Formula

The generator will continue to be required to pay for 100% of its Dedicated Shallow Connection Asset. The System Operators have proposed that the formulae as outlined in Figure 1 be applied to the Shared Connection Asset to generators under the Group Processing Approach.

Figure 1: TSO/DSO proposed Connection Charging Formulae

<p><u>Transmission Connections:</u> $P_T * X * (Z/W)$</p> <p><u>Distribution Connections:</u> $[(P_T * X) * (Z/W)] + [(P_D * Y) * (Z/V)]$</p> <p>Where:</p> <p>X = Total cost of providing the associated transmission works of the Shared Network including remote end station allocated charges</p> <p>Y = Total cost of providing the associated distribution works of the Shared Network</p> <p>Z = MEC (in MW) of the specific generating plant</p> <p>W = Total MEC (in MW) of the Generator Applications in that Subgroup</p> <p>V = Total MEC (in MW) of the DSO Generator Applications in that Subgroup*</p> <p>P_T = Transmission Probability Factor</p> <p>P_D = Distribution Probability Factor</p>

Note: The variable **V**, which was omitted from the Joint TSO/DSO proposal, has been added to the Distribution Connection formula. This takes into account the generators using the distribution Shared Connection Asset. The variable has been added to the Sample Calculation in Figure 2 to ensure full cost recovery of the Distribution Shared Asset.

The above formulae include a probability factor (P_T and P_D), which is aimed at minimising the cost liability if a committed project fails to proceed after offer acceptance. The System Operators proposed the use of a probability factor on the basis that it:

- Promotes certainty for the developer;
- Charges are cost reflective;
- Increased probability of recovering the actual costs;
- Expedites process for all applicants; and
- Frees up resources to progress further offers.

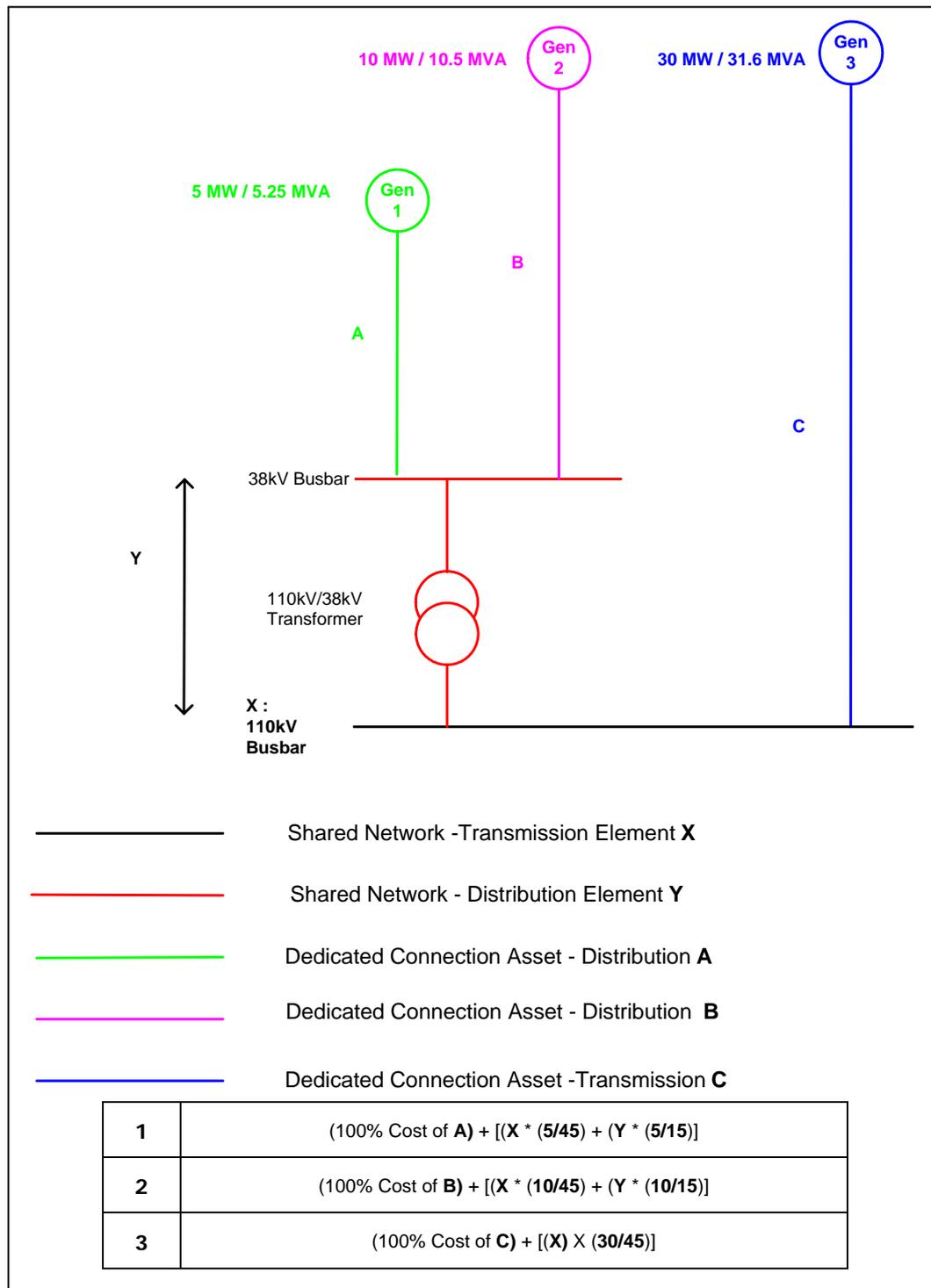
The cost liability can either directly be placed on the generator or the final electricity customer. The Commission allowed a probability factor of 1 to be applied to Gate 1 applications. This essentially assumes that all wind generators within Gate 1 will proceed with their project and will pay the full applicable connection charges.

With the introduction of application fees and, depending on the criteria to be applied to Gate 2 applicants, the Commission believes that the risk of stranded assets should be reduced. In addition all generators will be required to post a capacity bond of €10,000 per MW upon offer acceptance. Should the generator not proceed after offer acceptance the bond will be drawn down to minimise the exposure to the final customer resulting from stranded assets.

On the basis of existing mechanisms in place the Commission proposes to set the probability factor to 1 for Gate 2. If in practice, however, the probability factor of 1 is overly optimistic the Commission, and the System Operators, will review the situation, but with a view to ensuring that applicants who have taken up offers are not adversely affected.

The sample calculation of connection charges as provided by the operators with a probability factor of 1 is shown in Figure 2 below.

Figure 2: Sample Calculation of Connection Charges



Distribution Payment Schedule

While no change was proposed to the transmission connection charges payment schedule the DSO proposed that the distribution applicant would be required to pay, in addition to 25% of the cost of the Dedicated Connection Asset, 100% of its per MW share of the Shared Connection Asset on offer acceptance.

The Commission has received representations from several parties who have stressed that the proposed payment schedule would be a significant burden on the small windfarm developer. In particular, the issue of payment of 100% of Shared Connection Asset up front raises the problem for small developers of having to reach financial close at a premature stage, where in most cases 25% could be raised independently to the overall financial package.

The DSO has argued that the DUoS customer will be placed at significant risk if 100% of the Shared Asset is not payable upfront. In addition the Commission has been advised by the DSO that under the current payment schedule it will need to wait for 50% payment of the Shared Asset from all applicants within a Subgroup before including the project on its work schedule and starting the construction stage. Therefore, construction may be delayed due to the non-payment of costs by one or more applicants.

As an alternative to 100% upfront payment for Shared Assets the DSO has proposed that a connection charges bond be required to cover the risk of stranding the Shared Asset. The Commission requests comments on this proposed alternative.

Given the introduction of the Capacity Bond for distribution applicants the Commission does not propose to change the distribution payment schedule at this time. However, the Commission highlights the risk that this may place on applicants within a Subgroup in the absence of upfront payment or a connection charges bond to cover the Shared Asset.

Therefore, the distribution payment schedule is proposed to remain as follows for both the Dedicated and Shared Connection Assets:

- 25% on Offer Acceptance
- 50% at Pre-Construction Stage
- 25% at Final Energisation

4.9 Contestability of Connections

A transmission-connected generator or demand customer has a right to build a connection to the transmission system under Regulation 33 of SI 445 of 2000. However, generators connecting to the distribution system cannot, at present, construct their own connection. Regulation 33 states:

"(1A) An offer under subsection (1) may, on request of the applicant, be on the basis that the applicant constructs, or that either or both the

applicant and the transmission system operator arranges to have constructed, the connection to the transmission system, and any such connection constructed or arranged to be constructed by the applicant shall be the property of the person with whom the agreement is made, and shall, for the purposes of section 37, be deemed to be a direct line."

The TSO has proposed that the transmission Shared Connection Assets be deemed non-contestable under the Group Processing until a "Contestability Code of Practice" is put in place, which clearly sets out each party's rights, obligations and available remedies. There is no suggestion here that the generator could not construct its Dedicated Connection Asset. The Commission understands that the TSO is currently reviewing its contestability policy and will be issuing a consultation paper to the industry.

The Commission believes that the introduction of the Group Processing Approach should not, in itself, remove the right of transmission-connected generators to construct their own connection. However, in the case of a generator's Shared Transmission Connection Assets it is clear that there is the potential for complex issues to arise. These issues could be between the TSO and individual connecting parties or between individual connecting parties themselves

There were four main concerns highlighted in the joint TSO/DSO paper:

- For a variety of reasons, an individual party, by delaying the provision of the Shared connection, can hold up the development of other party's projects without incurring any penalties and the other party having no remedy rights.
- In a contestable situation it is necessary to decide which party(s) builds the Shared connection. Other parties will have to pay for their "piece" of the Shared connection which could lead to potential disputes e.g. a party feels aggrieved by the fact that they did not build the Shared connection and that they could have done it more cheaply. This would suggest that all parties connecting would have the right to tender to build the contestable assets.
- The standards to which the Shared Connection Assets are built will affect all connecting parties. If disputes arise over the quality or standards of construction methods or material used then this will affect the timing of all other parties' connections.
- The impact of providing future connections to applicants in the same area.

In principle, the Commission proposes that the entire shallow connection of the generator should be considered contestable. This includes both the Dedicated and Shared Connection Asset.

This is on the basis that all generators within a Subgroup come to a unanimous agreement amongst themselves that they wish to make the Shared Connection Asset contestable. This should be submitted in writing to the TSO no later than one month after the connection method has formally

been indicated to applicants within the Subgroup. The applicants shall nominate one applicant who will liaise with the TSO during the process of constructing the contestable Shared Asset. The generators within a subgroup shall bear any losses and liabilities should a dispute arise between them in relation to the Shared Asset.

If the TSO considers it necessary for system security and stability reasons to make Shared transmission Connection Asset of a subgroup non-contestable it shall notify the Commission as soon as practicable. The Commission shall decide on such cases on an individual basis.

Appendix A: Definitions

TERM	DEFINITION DESCRIPTION
Capacity Bond	The bond to be provided by the Generator to the TSO/DSO in the form set out in the Connection Agreement in relation to the generator's Maximum Export Capacity (MEC) and currently calculated as €10,000 per MW of MEC.
Dedicated Connection Asset	Electrical network (lines, cables, switchgear, etc.) used to connect a single user to the Transmission or Distribution System. The connection asset is specific to the user and does not form part of the connection to any other user.
Gate	Renewable generator applications deemed complete and meeting the criteria on or before a specified date will be included in a particular Gate and will be considered in the Group study.
Group	The applicants that will have exactly the same deep reinforcements.
Shared Network	Electrical network (lines, cables, switchgear, etc.) used to connect a number of users to the Transmission or Distribution System.
Shared Subgroup Connection Asset	Electrical network (e.g. common network station equipment/site, transmission network connecting that station to the network and any associated remote end station works) used to connect more than one of the Subgroup generators to the existing network. This includes the total cost of providing the associated transmission works including remote end station allocated charges and the associated distribution works.
Subgroup	A number of applicants in the same geographic location who will share a connection method or connection assets.

Appendix B: Overview of Group Processing Approach for Renewable Generator Connection Applications

