



Commission for Energy Regulation

An Coimisiún um Rialáil Fuinnimh

Consultation on Installed Capacity Cap

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RESPONSES TO:	Nigel Morris (nmorris@cer.ie)

The Commission for Energy Regulation,
The Exchange,
Belgard Square North,
Tallaght,
Dublin 24.

www.cer.ie

1. Executive Summary

This consultation paper seeks comment on the issue of varying the Installed Capacity Cap for generators connected to the grid. Currently, generators, mainly wind farms, are entitled under the Distribution and Transmission Grid Codes to install generation capacity up to the Maximum Export Capacity (**MEC**) set in their connection agreement with the System Operators (**SOs**) with an additional 5% over the MEC and a 'nearest value turbine' addition. The history of this decision is set out in CER's May 2011 paper Connection Offer Policy and Process (**COPP**) ([CER/11/093](#)) and a [covering paper](#) from the SOs accompanying it.

CER has received further submissions from industry requesting that CER review the Installed Capacity Cap policy. Some of the submissions have proposed that the cap be removed, allowing generators to "over-install" to any degree. The submissions are similar to those put forward to CER in 2011. In light of the further submissions, and the fact that the SOs have had further experience in integration of renewable generators, CER asked ESB Networks (**DSO**) and EirGrid (**TSO**) to provide a discussion paper on the issue for public consultation. This discussion paper is published with this consultation paper.

2. Introduction

2.1. *The Commission for Energy Regulation*

The Commission for Energy Regulation ('CER') is the independent body responsible for overseeing the regulation of Ireland's electricity and gas sectors. CER was established and granted regulatory powers over the electricity market under the Electricity Regulation Act, 1999. The Gas (Interim) (Regulation) Act, 2002 expanded CER's jurisdiction to include the natural gas market, while the Energy (Miscellaneous Provisions) Act 2006 granted CER powers in relation to gas and electricity safety. The Electricity Regulation Amendment (SEM) Act 2007 outlined CER's functions in relation to the Single Electricity Market (SEM) for the island of Ireland.

2.2. *Purpose of this Paper*

The purpose of this paper is to carry out a public consultation on the Installed Capacity Cap policy.

2.3. *Related Documents*

[CER/11/093](#) Decision on Connection Offer Policy and Process
[CER/11/093\(y\)](#) SO Paper on COPP (published with the above decision paper)
[SEM 13-101](#) SEM Decision on Treatment of Curtailment in Tie Break Situations

[CER/09/099](#) Treatment of Small, Renewable and Low Carbon Generators outside the Group Processing Approach

2.4. Responding to this paper

Responses to the proposals set out in this consultation paper should be sent by **11 October 2013**. Responses should be sent to:

Nigel Morris
Commission for Energy Regulation
The Exchange,
Belgard Square North
Tallaght Dublin 24

Email: nmorris@cer.ie

Tel: (01) 4000800 Fax: (01) 4000850

Unless marked confidential, all responses will be published on CER's website at the following address: <http://www.cer.ie>

Respondents may request that their response is kept confidential. CER shall respect this request, subject to any obligations to disclose information. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality.

3. Discussion and CER Proposal

3.1. *Introduction and Background:*

CER has received submissions from Industry, including at the Gate 3 Liaison Group, to review the issue of the SO Connection rule-set applying a cap on the amount of generation capacity that may be installed at a generator site. Currently the rule (**Installed Capacity Cap**) is that a generator¹ may install generation capacity to the higher of:

1. 105% of the Maximum Export Capacity (**MEC**) in its connection agreement; or
2. the nearest whole number of turbines which would just meet or exceed the generator's MEC.

The nearest whole generator unit cap was proposed by the SOs in the COPP consultation document and was accepted by CER in its COPP decision. CER accepted the SOs' submissions that generators should be allowed to produce at least up to their MEC and as MECs were not always equal to the output of whole numbers of generating units it would be unreasonable only to allow generators to install generating units that produced less than the MEC. The SOs submitted that allowing the nearest whole generator unit extension to the Installed Capacity Cap would not materially adversely affect the system or other generators.

The 105%, or nearest whole turbine cap was set in CER's COPP decision on the basis of discussions with generators after the end of the consultation period. CER accepted the generators' submissions that a range of factors within a generation site could apply a load on a generator's output prior to the connection point to the grid. These were described as "house loads". CER accepted similar submissions that generators should be allowed to install generation capacity such that they would be able to export, at their connection point, at least to the MEC of their connection agreement.

Neither the SOs, nor industry, have provided CER with any firm submissions on the effect on the amount of electricity generated that varying the Installed Capacity Cap may have. In the absence of firm submissions, CER considers that changing the cap would likely increase generated amounts. The level of this increase however, is likely to be constrained by the fact that not all generators will install up to the new Installed Capacity Cap and the key benefit for generators that do install up to the Installed Capacity Cap will only be seen when wind speeds are between medium and maximum output.

On the basis of the further submissions it has received, and the discussion paper that it requested from the SOs, CER has decided to carry out a consultation on the policy issue.

¹ Currently, the rule is expressed to apply mainly to wind generators, but it is currently open to other types of generators as well.

CER is now considering increasing the installed capacity cap, with a possible modification being that the generation capacity which a generator may install at a generation site is the higher of:

1. the nearest whole generator unit above the MEC of the site; or
2. 120% of the MEC of the site.

The Installed Capacity Cap **does not, and will not**, allow generators to generate more than their contracted MEC at their connection point.

CER and the SOs will monitor any change in the Installed Capacity Cap to assess its effects on the various issues discussed below.

3.2. Industry submissions

The industry submissions received up until this point in time argue, *inter alia*, that:

1. generators should be allowed freedom to determine the optimal configuration of their generation site while they remain within the MEC of their contract;
2. the installed capacity is only one of a range of factors² within the design and construction of a generation site which will affect the capacity factor³ (Capacity Factor) of a generation site, and none of those other factors are regulated in a generator's connection agreement;
3. lifting or removing the Installed Capacity Cap allows for generator unit downtime for maintenance and breakdowns;
4. the economics of a particular project will dictate the level of generation above the MEC which is viable, with excessive capacity leading to increased capital costs which would not be sustainable;
5. developers are required to pay for shallow connections to cater for the entire MEC of a project, so they should be able to make use of this full capacity, even in periods of lower wind;
6. the current rule-set discriminates against larger projects as they can only over-install by a lower percentage than a smaller project;
7. the rate of over installation in the period before COPP when there was no Installed Capacity Cap, was relatively low, with some generators installing below their MEC. Overall, the aggregate level of installed capacity was lower than the aggregate MEC;

² Some of which are set out in the attached SOs' paper.

³ Capacity Factor is the ratio of expected, or actual, output of generation units compared to the theoretical maximum output over a given period.

8. limiting the installed capacity permitted goes counter to the objective of reaching renewable energy targets by unnecessarily restricting the amount of electricity generation from renewable sources.

3.3. SO paper

In response to the industry submissions, CER asked the SOs to draft a discussion paper on this topic, which is attached. CER asked that the paper cover all of the key considerations involved in making a change to the existing Installed Capacity Cap. The SOs have said, *inter alia*:

1. removing the Installed Capacity Cap entirely could affect constraints in local transmission and distribution routes and the SOs' ability to plan the grid development most efficiently;
2. however, lifting the Installed Capacity Cap to 120% should not materially adversely affect:
 - a. the planning or build-out of the grid;
 - b. grid investment;
 - c. the levels of constraint associated with Gate3;
 - d. curtailment costs prior to 2018; or
 - e. the delivery of FAQs; and
3. increases to installed capacity should be subject to the connection agreement modification process.

The SOs have identified a number of issues for clarity/ consideration in this review. These include:

1. whether the nearest whole generator unit allowance is now necessary;
2. to which classes of generators should any increase in the Installed Capacity Cap apply; and
3. the effects, if any, on REFIT payments of increasing the Installed Capacity Cap.

CER welcomes comment from the industry on the SOs' paper and specifically on the issues raised.

3.4. CER view

CER sees justification for a review. It is important that electricity transmission and distribution infrastructure paid for by electricity customers is used in the most efficient and optimal manner. For this reason, the CER can see the potential benefit from increasing the Installed Capacity Cap, which will allow more generation up to

generators' MEC. Given the network has been designed to provide capacity for this MEC, this should result in a better use of the system. In addition, this should also lead to a small increase in wind penetration which may ultimately assist in achieving the 2020 renewables targets.

CER considers the key questions are:

1. to what level can the Installed Capacity Cap be set without an adverse effect on the system;
2. to what level can the Installed Capacity Cap be set without an adverse effect on the system or on the TUoS and DUoS customer;
3. to what level can the Installed Capacity Cap be set without there being an adverse effect on other generators;
4. at what level will the Installed Capacity Cap allow the most efficient utilisation of the network?

CER sets out below a range of issues on which it seeks submissions. CER is particularly interested in submissions on the following:

- a) planning;
- b) grid stability;
- c) constraints;
- d) curtailment;
- e) effects on other generators (existing, under offer or future);
- f) costs to the TUoS or DUoS customers;
- g) REFIT payments.

CER would also be interested in submissions on any issues related to the Installed Capacity Cap which are not covered below.

Discussion on Proposal

3.5. Installed Capacity Cap Level

Prior to the COPP there was no Installed Capacity Cap. However, since the introduction of the COPP policy, SO's have been operating on the basis that installed capacities will not be higher than the Installed Capacity Cap. The SOs advise (based on the estimate of their experienced engineers, but not on any formal modelling) that increasing the Installed Capacity Cap to 120% should not have any materially adverse effects.

There are a range of views on whether the Installed Capacity Cap level should be varied, and if so, to what level. CER accepts that allowing generators to determine, on an economic basis, what level of generation capacity they install is the least intrusive, and potentially allows the greatest renewable energy to be generated within the constraints of the system. Likewise, CER accepts that there are a range of factors which affect the Capacity Factor of a generation site, over which the SOs have no control nor knowledge, so limiting one and not others does not appear logical (subject to the rule, to which industry agrees, that generators are not permitted to export above their MEC).

The SOs submit that increasing the Installed Capacity Cap to 120% should make the nearest whole generator unit allowance redundant, apart from generators in the 5MW range. Currently, SOs must plan for grid development on the basis that the nearest whole generator unit allowance exists. Frequently, as the SOs point out, the higher Installed Capacity Cap will be larger than the nearest whole generator unit allowance. However, CER does not at this point see any material harm in retaining the nearest whole generator unit allowance rather than retaining it but only for a sub-set of generators. CER would be interested in submissions as to whether the existing “nearest value turbine” addition should be retained, either in its current form, or limited to a sub-set of generators.

In proposing to accept the SOs view that the Installed Capacity Cap should be increased to 120%, the CER seeks submissions on whether the Installed Capacity Cap should be varied, and if so to what level, e.g. MEC, 105% MEC, 120% MEC, Unlimited?

3.6. Effect on system

The SOs have submitted (on the basis of the estimate of their experienced engineers, but not on any formal modelling) that increasing the Installed Capacity Cap to 120% is unlikely to have any materially adverse effect on:

- a) grid stability e.g. SOs’ ability to forecast output and balance load and supply;
- b) SOs’ ability to design and predict future grid requirements;
- c) grid reinforcement/build out;
- d) current FAQ projections.

CER is minded to give considerable weight to these views on the basis that the SOs are expert in the area. CER would be interested in any further submissions on these issues, however, particularly those which would question the SOs’ views.

3.7. Generator Scope

The SO COPP documents state that the current Installed Capacity Cap *“is primarily designed to consider the issues associated with wind turbines but may be applicable to other types of generation”*. However, the SOs’ discussion paper now seeks to limit the Installed Capacity Cap only to wind generators.

CER is interested in submissions as to whether the policy should stay on this basis, should any change in Installed Capacity Cap apply only to wind generators, or to all or particular types of generators?

Currently, CER sees no reason to limit the scope of the Installed Capacity Cap to certain types of generators.

The SOs have asked for views on the categories of generators to which any change in Installed Capacity Cap should apply. The SOs suggest 4 possible classes:

- a) contracted (not connected) and live connection offers;
- b) connected Generators;
- c) applications in the Queue;
- d) repowering applicants.

The SOs' submissions to CER indicate that the relative size of categories b) and d) are such that they would have minimal effect if included or excluded from any varies Installed Capacity Cap. On that basis, and in the interests of fairness, CER proposes to include all of the categories above in any variation of the Installed Capacity Cap.

CER would be interested in submissions on the scope of generators to which any varied Installed Capacity Cap should apply, specifically the categories listed above, but also to any other categories to which it should apply.

3.8. Constraint and Curtailment

CER is particularly interested in any effect that varying the Installed Capacity Cap may have on constraint and curtailment. Constraint and curtailment caused by increasing the amount of electricity generated below generators' MEC may affect:

1. other generators, by reducing their allowed export; and
2. the TUoS and DUoS customers by increasing curtailment payments.

The SOs submit (based on the estimate of their experienced engineers, but not on any formal modelling) that *"the levels of constraint that are associated with Gate 3 are very low (assuming that the required infrastructure is delivered in accordance with assumed lead-times) so it is expected that the increased constraint levels and costs for over installing to a 120% maximum would be low and not material"*.

The SOs also submit that as curtailment payments will cease from January 2018 ([SEM 13-010](#)) there is unlikely to be any material effect on curtailment payments if the Installed Capacity Cap is varied. Such curtailment payments prior to would be borne by the TUoS and DUoS customers.

CER would be interested in submissions on whether varying the Installed Capacity Cap is likely to have any effect on the levels of constraint or curtailment.

3.9. *Non GPA Offers – Interaction*

In CER's policy decision on Non- Group Processing Applications, CER decided that for generators above 5MW, connections may depend on "interaction studies" performed by the SOs. The issue has not been raised by the SOs in their current submission. CER would be interested in submissions on whether varying the Installed Capacity Cap is likely to have any material effect on non-GPA offers through the effects on the "interaction" test that SOs apply when considering non-GPA offers. See [CER 09/099](#)

3.10. *REFIT*

The REFIT payment rules currently reflect the COPP Installed Capacity Cap rules. CER is consulting with DCENR as to the effects of varying the Installed Capacity Cap on REFIT and any consequential changes that may be appropriate.

3.11. *Other*

CER would be interested in submissions on any issues related to varying the Installed Capacity Cap which are not raised above.

4. Conclusions and Next Steps

CER welcomes comments on any of the issues and questions raised in this consultation paper. Informed responses from industry are significant, feeding directly to the consideration undertaken by the CER when reaching decisions. The CER would state at this point that in making any final decision, it will give considerable weight to anything that might affect costs to consumers, and that it would be reluctant to change the current framework if there was any significant increase in such costs.

CER will consider the responses to this paper prior to making a decision on the Installed Capacity Cap. CER may discuss further with the TSO and the TAO on any material responses it receives to this consultation. Thereafter CER will proceed to determine the issue and publish a decision paper.