



An Coimisiún
um Rialáil Fóntas
**Commission for
Regulation of Utilities**

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Regulatory Approach to Maintaining Local Security of Supply in Electricity

Information Paper

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Executive Summary

This paper sets out the CRU's objectives, principles and intended approach to maintaining local security of supply in response to significant demand growth or a generator exiting the market. The CRU considers it important that the system has sufficient capability to respond to changes in local supply and demand balance and has set out proposals in this paper to address this issue.

Over the last number of years there has been significant growth in forecasted demand, with particular growth in the establishment of new data centres¹, which tend to have large demand loads, and relatively short construction lead times. This can create challenges for network planning. Such potentially rapid demand growth creates a range of considerations and challenges for network operators and regulators to ensure efficient investment and development of network infrastructure. The CRU will engage further with EirGrid in relation to monitoring and pre-empting potential security of supply risks in relation to anticipated demand growth.

The CRU is of the view that there may be merit in adopting a strategic approach when considering proposed options to mitigate a potential local security of supply risk or local operational constraint. This could involve building transmission infrastructure which is likely to be needed to meet rapid demand growth but which would not be built under usual planning assumptions due to the level of uncertainty around forecasts. This could also include other mitigation options such as targeted operational support provision, demand side measures, or voltage support provision. It should be noted that there is a risk that this strategic expenditure may not be required if expected demand growth does not ultimately connect. However, such an approach may improve the overall long-term capacity in strategic, but potentially constrained, areas of the network.

Local security of supply issues can arise not only due to increases in demand in an area but also due to reductions in generation capacity in a particular area. The SEM Committee has made a range of decisions to establish the ISEM, which from May 2018 will replace the existing SEM market arrangements. The new market arrangements, in particular the Capacity Remuneration Mechanism (CRM), could result in some generators leaving the market as only capacity that clears in the auction will receive contracts. Whereas currently all available generators receive capacity payments through the Capacity Payment Mechanism (CPM). The CRM arrangements includes a T-1 auction and a T-4 auction, that is an auction for delivery in one year's time and an auction for delivery in four years' time. Both auctions will be run each year. The purpose of holding an auction four years ahead of delivery is that it allows for efficient entry and exit from the market.

¹ <http://www.eirgridgroup.com/site-files/library/EirGrid/All-Island-Ten-Year-Transmission-Forecast-Statement-2016.pdf>

The new Capacity Remuneration Mechanism (CRM) will set a price for capacity four years ahead of time, each year. However, for the transitional period of the CRM, the first four years, there is an increased risk of generator exit. The CRU requested EirGrid to assess areas with locational issues, and EirGrid has identified Locational Capacity Constraint Areas for the purposes of the CRM auction (including one for the Dublin Region). However, notwithstanding national capacity requirements being met, generator exit in these constrained areas may cause transmission network issues and the CRU has set out in this paper its approach to dealing with any such issues that might arise.

The current requirements, under the Grid Code, on generators is that they give three-years notice of closure. This notice period is important for the stability of the market (by giving the market time to respond to exit) and for system security reasons (by giving the TSO time to respond to any system issues). Without this notice period there is a greater risk of market instability and greater risk to system security. When a generator gives notice that it intends to close, the TSO will have to undertake analysis to determine if there are any system implications, and if so what remedial actions are required. In some cases additional transmission reinforcement may be necessary which can take several years to put in place. Therefore it is important that a generator gives sufficient notice to the TSO to enable an assessment to be carried out and for remedial actions (if necessary) to be implemented. If it were the case that a generator could close without giving sufficient notice to the TSO, it would be possible that customers in a given geographic area could experience a loss of electricity supply. The CRU considers that this is not an acceptable outcome for electricity customers, notwithstanding the wider economic and social ramifications. Accordingly, the Grid Code obligations on generators to give notice of their intention to close is essential to maintaining security of supply.

In terms of the market interactions, the four year capacity auction process established by the SEM Committee and the three-year notice period required by the Grid Code complement each other by aligning market signals with system planning requirements. However, it should be noted that remedial actions identified by the TSO may take longer than three years to put in place. It is also possible that a generator may consider that it may be unable to give three years notice, and may consider that it needs to close in a shorter time period. In both cases regulatory intervention may be required. The framework that the CRU will apply in deciding on such regulatory intervention is summarised below.

In considering any intervention the CRU will seek to meet the following objectives:

1. To keep the lights on
2. To protect consumers from loss of supply and ensure the most cost effective long term solution
3. To allow efficient market exit by generators through a managed process that provides sufficient time:

- a. for the market to respond;
 - b. for the TSO to update their planned transmission development
 - c. to address short-term or local security of supply issues
4. That generators are capable of financing their efficient activities during the exit period

In seeking to meet the above objectives the CRU will have regard to the following principles for any intervention:

1. The CRU will allow the market to work in the first instance
2. Inefficient units should exit the market
3. The established notice periods for closure will be enforced
4. Regulatory intervention will only be taken where necessary to maintain security of supply
5. Insofar as appropriate, the least cost approach for the consumer will be taken
6. Any intervention will be targeted and temporary in nature and will not prevent the eventual closure of any unit that has given notice to close.

Accordingly the CRU intends to take the following general approach to generator closure:

1. A Generator submits a closure notice to the TSO
2. The TSO carries out a technical assessment and identifies any options required
3. The CRU will review the analysis and issue any necessary approvals or directions
4. If the generator considers that it needs to close in advance of the notice period required by the Grid Code they can request a derogation.
5. The CRU will review the TSO recommendation and, if necessary, will decide on the appropriate regulatory intervention.

The CRU will adopt the approach outlined in this paper when taking decisions in relation to generators exiting the market.

Public/ Customer Impact Statement

This paper sets out the CRU's approach to enabling system security in a time of anticipated rapid demand growth. It also addresses how the CRU will take action to maintain local security of supply in response to a generator deciding to close. Generators are generally required to give three years notice before closing. This allows EirGrid to assess if there is any impact on system security. Where there is a potential impact the CRU will require EirGrid to identify the issues and potential solutions. The CRU will consider these options and may direct EirGrid to implement remedial actions to resolve the system security issue.

The processes set out in this paper are intended to facilitate demand growth while also protecting consumers from loss of supply and ensuring the most cost-effective long term solution.

Table of Contents

Table of Contents	5
1. Introduction	7
1.1 Commission for Regulation of Utilities.....	7
1.2 Background	7
1.3 Purpose of this Paper	8
1.4 Legal Background.....	8
1.8 Structure of this Paper	8
2. Objectives & Principles	9
2.1 Objectives	9
2.2 Principles.....	10
3. Approach to Generator Closure	12
3.1 Closure Notice	12
3.2 Derogation Process.....	13
3.3 Regulatory Intervention	14
3.4 Measures to Mitigate Future Disorderly Exit.....	16
4. Demand Growth and Local Constraints	17
5. Conclusion	19

Glossary of Terms and Abbreviations

Abbreviation or Term	Definition or Meaning
CRU	Commission for Regulation of Utilities
TSO	Transmission System Operator – EirGrid

1. Introduction

1.1 Commission for Regulation of Utilities

The Commission for Regulation of Utilities (CRU) is Ireland's independent energy and water regulator. Our remit is to regulate water, energy markets, energy networks and energy safety in the public interest.

The CRU was established in 1999 as the Commission for Energy Regulation (CER) and now has a wider range of economic, customer protection and safety responsibilities in electricity, gas, water and wastewater systems. Following the commencement of the Energy Act 2016, the CER has changed its name to the Commission for Regulation of Utilities to fully reflect its broadened remit and mission.

Further information on the CRU's role and relevant legislation can be found on the CRU's website at www.cru.ie.

1.2 Background

The CRU, working with the Utility Regulator (UR) through the SEM Committee, is responsible for establishing wholesale electricity market arrangements that produce efficient market outcomes for the benefit of consumers. The SEM Committee has made a range of decisions to establish the ISEM, which from May 2018 will replace the existing SEM market arrangements. The new market arrangements, in particular the Capacity Remuneration Mechanism (CRM), could result in some generators leaving the market as only capacity that clears in the auction will receive contracts. Whereas currently all available generators receive capacity payments through the Capacity Payment Mechanism (CPM). The CRM arrangements includes a T-1 auction and a T-4 auction, that is an auction for delivery in one year's time and an auction for delivery in four years' time. Both auctions will be run each year. The purpose of holding an auction four years ahead of delivery is that it allows for efficient entry and exit from the market.

The Grid Code requires that generators above 50MW give three years notice before closure, and two years for those below 50MW. This period allows the TSO to carry out analysis to determine if there are any system impacts that need to be addressed before the plant closes. In some cases additional transmission reinforcement may be necessary which can take several years to put in place. Therefore it is important that a generator gives sufficient notice to the TSO to enable an assessment to be carried out and for remedial actions (if necessary) to be implemented.

The four year capacity auction process established by the SEM Committee and the three-year notice period required by the Grid Code complement each other by aligning market signals with system planning requirements. However, it should be noted that remedial actions identified by the TSO may take longer than three years to put in place. It is also possible that a generator may consider that it may be unable to give three years notice, and may consider

that it needs to close in a shorter time period. In both cases regulatory intervention may be required. In addition it is noted that the initial four year transitional period of the new CRM process (after which there will be continually four years of price certainty for capacity) that there is an increased risk of generator exit. The CRU has asked EirGrid to consider local areas of the network that may be at risk due to generator exit. EirGrid has identified Locational Capacity Constraint Areas for the purposes of the CRM auction, however, notwithstanding capacity requirements being met, generator exit in these areas may cause transmission network issues and the CRU has set out in this paper its approach to dealing with such issues.

1.3 Purpose of this Paper

The purpose of this paper is to set out the CRU's approach to ensuring significant demand growth, in particular rapid demand growth concentrated in a constrained area of the network, can be effectively managed while maintaining security of supply. In addition this paper sets out the CRU's approach to addressing generator closure and any regulatory intervention that may be required to maintain security of supply. This paper does not address any market issues, any changes to the energy trading arrangements or capacity market are SEM matters, and therefore are a matter for the SEM Committee.

1.4 Legal Background

Section 9 of the Electricity Regulation Act, 1999, as amended require the CRU to have regard to ensuring security of supply. In addition Regulation 28 of SI 60 of 2005 puts additional security of supply obligations on the CRU and the TSO, including the requirement that "The Commission shall take such measures as it considers necessary to protect security of supply". SI 60 of 2005 also provides for the CRU to secure new or additional generation capacity, with the consent of the Minister for Communications, Climate Action, and the Environment.

Clause PC.4.5 of the Grid Code places an obligation on generators above 50MWs to provide the TSO with three-year's notice prior to closing.

1.8 Structure of this Paper

Section 1 sets out the background and relevant legislation. **Section 2** sets out the CRU's objectives and principles. **Section 3** sets out the CRU's approach. **Section 4** sets out the CRU's approach to addressing demand growth in constrained areas of the network.

2. Objectives & Principles

This section sets out the CRU's objectives in relation to managing the closure of a generator and the principles the CRU intends to apply to any action the CRU takes under these circumstances. Section 3 sets out the CRU's approach in detail.

2.1 Objectives

It is proposed that the CRU's policy on managing generation exit would have the following objectives:

1. To keep the lights on
2. To protect consumers from loss of supply and ensure the most cost effective long term solution
3. To allow efficient market exit by generators through a managed process that provides sufficient time:
 - a. for the market to respond;
 - b. for the TSO to update their planned transmission development
 - c. to address short-term or local security of supply issues
4. That generators are capable of financing their efficient activities during the exit period

As discussed in section 1 above, the effective operation of the market and maintaining security of supply requires generators to provide sufficient notice of closure to the TSO. Additionally, for any regulatory intervention to be possible there will need to be a reasonably structured process within which the CRU can evaluate the situation and any options and analysis presented by the TSO.

The CRU considers that the primary objective is that it “keeps the lights on”, that is to maintain security of supply to customers within Ireland. It is the CRU's view that this is most efficiently ensured through market mechanisms and therefore the second objective is to ensure an efficient, and managed, generator exit from the market. It is key that this is a managed process in order to allow sufficient time for other market participants to respond and for the TSO to assess the impact of a generator closing and take any measures that may be necessary. Without a managed process to a generator's exit, where the loss of a generator creates security of supply issues, the CRU would possibly need to carry out more pro-active intervention than would otherwise be the case. It is the CRU's view that frequent regulatory intervention is not in the consumers long-term interests, and that market processes should be relied upon where possible.

The third objective reflects the CRU's legislative duty to have regard to the capability of generators to finance their licenced activities. The CRU's view is that by ensuring a market based approach which allows sufficient revenues to competitive generators as set out in its second objective it largely achieves this third objective, and should also have regard to this third objective when intervening to maintain security of supply.

2.2 Principles

In considering actions to achieve the above objectives the CRU will consider to the following principles:

1. The CRU will allow the market to work in the first instance
2. Inefficient units should exit the market
3. The established notice periods for closure will be enforced
4. Regulatory intervention will only be taken where necessary to maintain security of supply
5. Insofar as appropriate, the least cost approach for the consumer will be taken
6. Any intervention will be targeted and temporary in nature and will not prevent the eventual closure of any unit that has given notice to close.

The CRU is of the view that the typical scenario is one in which a generator wishes to exit the market is that a unit sends its closure notice into the TSO, serves out its three-year notice, and then closes, with no regulatory intervention required. This would enable the TSO to carry out any necessary remedial actions identified by the TSO as soon as possible and ideally within the three year notice period although this may not always be possible. This allows for a more stable and predictable market environment.

Cases where the unit wishes to close in advance of the notice period or where there is a local security of supply issue are considered to be exceptions. For the avoidance of doubt it should not be assumed that the notice period should only be enforced when there is a pressing security of supply issue. The CRU expects generators to have reasonable foresight of their business and to exercise prudence to ensure that they are in a position to honour their commitments under the Grid Code. It is expected that such considerations by generators would be taken into account prior to making a decision to close and as such to have made appropriate financial arrangements to ensure that the generator remains solvent over the three year closure period.

Accordingly, the CRU considers that in most circumstances the most effective means of achieving its objectives as set out in section 2.1 is to allow the market and Grid Code mechanisms to work as intended and to avoid taking any intervention in the market that would prevent, or delay, the closure of a generator. As per the fourth principle the CRU will intervene where it considers that failure to do so would risk security of supply on all or part of the system.

However, any intervention will take the first three principles into account in that market mechanisms will be used to the extent appropriate, the process will prioritise options that facilitates the orderly closure of the generator, and the closure notice period will be enforced in order to allow the CRU implement a cost-effective solution.

However, in reference to the fifth principle, it is noted that the most cost-effective solution to the immediate security of supply issue may not be in the long-term interests of the electricity customer. Of particular relevance here is the concept of moral hazard and the possibility that a generator will initiate the plant closure process, or fail to operate with sufficient financial prudence, on the assumption that regulatory intervention will be forthcoming. Therefore, the most appropriate regulatory intervention may be one that imposes higher short-term costs on the consumer but that permits the closure of the generator. In such a case, the higher short-term costs may be appropriate if they reduce the risk of generators in the future either operating without sufficient financial prudence or using the threat of closure to extract out-of-market revenues. Therefore, while the CRU will take the least cost solution where appropriate, part of its consideration of the options will be the risk of moral hazard.

Consistent with the five preceding principles the CRU will seek to ensure that any intervention will be targeted and temporary in nature. The CRU considers that this will mitigate any potential market distortion that may arise from the intervention. The CRU also considers it essential that any intervention does not prevent a generator closing that would have closed due to the efficient operation of the market. Therefore, while the CRU acknowledges that under certain circumstances it may be necessary to carry out a regulatory intervention that delays the closure of a generator that is necessary for local or system-wide security of supply; it will seek to structure its intervention such that the generator does indeed close, albeit perhaps at a date later than would have been the case if left to market forces. This approach may involve initiating several interventions in parallel to cover the short, medium, and long term issues respectively. It is noted that the temporary nature of short term interventions may increase short-term costs, however, the CRU considers that this is consistent with the above principles and reduces the long-term impact of any regulatory intervention.

3. Approach to Generator Closure

The CRU will adopt the following approach to achieve the objectives, and implement the principles, set out in section 2 of this Paper. The approach is described in detail in this section, however, in summary the following steps will be taken:

1. A Generator submits a closure notice to the TSO
2. The TSO carries out a technical assessment and identifies any network issues related to the proposed generator closure and potential solutions to identified issues. The CRU will review the analysis and issue any necessary approvals or directions
3. If the generator considers that it needs to close in advance of the notice period required by the Grid Code they can request a derogation.
4. The CRU will review the TSO recommendation and, if necessary, will decide on the appropriate regulatory intervention.

3.1 Closure Notice

EirGrid submitted the Plant Closure Process to CRU on 12 December 2017 for approval and will publish it on the EirGrid website once approved. The notification of closure from a generator under the Grid Code process will initiate the process set out in this paper. As set out in section 2 the CRU considers the market processes are best able to efficiently deliver long-term security of supply. Therefore, as discussed above, the CRU will only intervene where there is a necessity to do so in terms of security of supply. In practical terms this generally requires a formal notice of closure, as without clarity on the timing and location of the generation due to close it would not be possible for the TSO to carry out sufficiently detailed studies to identify the full range of technical issues and potential solutions. It is also noted that depending on the financial circumstances of the generator, a formal notice of closure may initiate a disorderly, and potentially immediate, exit from the market. Therefore, the CRU may, on a case-by-case basis, take action in the absence of a formal closure notice, where there is a demonstrable, material, and imminent likelihood of closure. The CRU must be clear, before taking any action, that such action is indeed required and not either a generator's premature concern in response to market trends or an attempt to extract additional, and unnecessary, revenues from the consumer.

In addition, as noted above the four year transitional period of the CRM process presents a greater risk of generator exit, particularly in Locational Capacity Constraint Areas. Where a generator in a Local Capacity Constraint Area makes a submission to the CRU clearly indicating a demonstrable, material, and imminent likelihood of closure the CRU may consider this a trigger to the processes set out in this paper.

Furthermore, by using the established Grid Code processes the CRU can ensure that any action that may be ultimately taken is the result of a robust process and a clearly identified need. Without such procedural clarity there is the possibility of additional legal and

procurement complexity in relation to any regulatory intervention that may be taken.. Notwithstanding these concerns the CRU considers that, in the normal course of events, seeking confirmation that the generator intends to close, in advance of any assurance (or indication) that the CRU will intervene, is in the best interests of consumers as otherwise there is a greater risk of moral hazard. The CRU considers that a process that incentivises generators to threaten to close in order to seek assurances from the CRU of additional out-of-market revenues is not in the consumers long-term interests.

Once the TSO has received the closure notice it will initiate the respective Grid Code and Connection Agreement processes. In addition the TSO will carry out a robust technical assessment and determine if any system issues will arise following the scheduled closure date of the generator. If any issues are identified the TSO is required to assess potential options and provide their analysis and a recommendation to the CRU. Where no issues are identified the TSO will still submit a report to the CRU.

The CRU will review the report submitted by the TSO and will decide whether any action is required. Such actions could include approving additional capital expenditure, accelerating a planned network project, or some other action including regulatory intervention. This possibility is discussed further below.

3.2 Derogation Process

It is possible that a generator will need to close in advance of its notice period for technical, financial, or other reasons. In these cases the generator may apply for a derogation and if granted the closure process will work towards the closure date set in the derogation. It is expected where a derogation is requested the application will be submitted to EirGrid at the same time as the closure notice (which should include the closure date that complies with the Grid Code notice period until a derogation is granted for a different date).

The review of the application will follow the established derogation process. Therefore the applicant will need to include the level of compliance from which it needs the derogation (i.e. the proposed closure date), include the reasons why the derogation is needed and the actions taken to mitigate non-compliance. Where the reason the derogation is being requested is financial the applicant will be required to submit, and substantiate, its view on its financial losses over the period (i.e. between the proposed derogated date and the Grid Code requirement). In addition the applicant would need to demonstrate they had exercised sufficient financial prudence and explain how the measures taken were not sufficient to allow the generator comply with its Grid Code obligations.

In line with the established derogation process, EirGrid will receive the application in the first instance and will assess the application, requesting any additional information that may be required. As part of this assessment the TSO will assess the potential security of supply implications, technical solutions to address any identified risks to security of supply and potential costs imposed on other system users were the derogation to be granted. Once the TSO's assessment has been completed the TSO will then send to the CRU its recommendation to grant, or not grant, the derogation.

The CRU will then review the application and EirGrid's recommendation before making a decision on the derogation. It should be noted that, consistent with established practice, where the reason for the derogation application is financial the CRU will not necessarily take a view on the accuracy of the generator's estimates of the financial impact. The CRU will take all relevant considerations into account before coming to a decision on a derogation application, including the likelihood of a significant financial impact on a generator.

If the CRU grants the derogation then the TSO would be required to modify the connection agreement to terminate on the derogated closure date. It is noted that in such circumstances (i.e. where a generator leaves before its notice period) additional measures may need to be taken to ensure security of supply in advance of the enduring remedial actions being in place. This may include measures that delay the closure of the generator until other solutions can be put in place.

3.3 Regulatory Intervention

There are broadly two circumstances set out in this paper under which the CRU may consider regulatory intervention, where:

1. the TSO identifies a system issue that will arise as a result of a generator closing (section 2.1); or
2. a generator considers that it is unable to comply with the Grid Code notice period (section 2.2).

Upon receipt of the TSO analysis the CRU will consider all available options and will seek to minimise consumer cost and potential market distortion. Accordingly the CRU will apply the principles set out in section 2.2 when evaluating the options. In general the CRU will consider network reinforcements, the use of system services (including locational scalars), TSO operational support contracts, demand side response measures, and potentially directing EirGrid to procure, through an open procedure, a specific Local Reserve Contract, which may be provided by new generation.

Where it was deemed appropriate to procure a Transmission Reserve Contract, the CRU would direct EirGrid to initiate an open procurement process. The details of the generator's remuneration under such a contract would be decided on a case-by-case basis. However, the CRU would seek to limit any potential distortion to the market and incentivise performance from the provider. As discussed above, the CRU considers it important that consumers are protected from the costs that may arise due to moral hazard. Therefore, were such a procurement exercise to be undertaken, the CRU would consider whether or not, in the interest of consumers, that the ultimate owner/directors of the closing generator entity should be excluded from taking part in the procurement process. The rationale to allow the owner of the generator into such a process creates a perverse incentive on the owner to close a generator in an area it knows to be locally constrained with the intention of precipitating a procurement exercise that would otherwise not be required. The use of an open and competitive procurement exercise does not remove this concern, as the owner is likely to have a competitive advantage (having access to a site, planning permission, and grid connection

suitable for a power plant in the same location as the plant that is closing). Therefore the CRU considers that it could be an important element of the process that a generator cannot benefit from a process established to solve a security of supply event that they themselves have created. The CRU is of the view that this would be clearly in the interests of consumers, the stability of the market, and the public interest more generally.

As noted above it is also the case that it may not be possible to implement such measures (network reinforcements, transmission reserve procurement, etc.) in the time available. This could be either because the remedial action will take longer than the three-year notice period or that the generator considers it is unable to meet the three-year notice requirement. In such cases the CRU will similarly examine all options, this will include the option of directing the TSO to enter into a bi-lateral Transmission Reserve Contract with the generator to maintain the adequacy of the relevant local area of the transmission system until the appropriate remedial action was implemented. However, as discussed above the CRU will take the issue of moral hazard into account in these circumstances too. Therefore, the CRU may avoid the option of a Transmission Reserve Contract by deciding upon an alternative option that was more expensive than the expected cost of the Transmission Reserve Contract.

Where the CRU considers that such a bi-lateral Transmission Reserve Contract is necessary the CRU will consider applying the following conditions:

- The direction to EirGrid would be issued after the CRU had completed its review of the derogation application (or the generator's submission demonstrating a significant, material and imminent likelihood of closure) and EirGrid's recommendation in the case of early closure; and after a review of the EirGrid technical assessment in the case of Grid Code compliant closure notification.
- Given that the purpose of the contract would be to defer the closure of the generator, it is not envisaged that the generator would remain in operation beyond the contract period. Therefore, it is expected that the termination date for the contract and the connection agreement should be aligned with the closure date of the generator.
- The duration of the contract should only be long enough to implement the appropriate medium-term (or long-term) option, this period may include contingency, and therefore some overlap in the solutions may be permissible.
- The owners of the contracting generator would not be eligible to participate in any procurement exercise being carried out in parallel.

However, the CRU will take the relevant circumstances of the situation into account when deciding what conditions to include in such a Direction to EirGrid. Therefore, the CRU may not include all of the above conditions and may include additional conditions as appropriate. In deciding on whether to issue a Direction to enter into a Transmission Reserve Contract and the conditions to include in such a Direction, the CRU will have regard to the principles set out in this paper.

3.4 Measures to Mitigate Future Disorderly Exit

As set out above the CRU considers that it is important for security of supply and the ongoing stability of the market that generators are capable of exiting the market in a managed and orderly manner – as required by the Grid Code. In practical terms it may be difficult to enforce the Grid Code requirement to provide notice where a generator has not exercised sufficient financial prudence. If such a generator finds itself in a demonstrable, material, and imminent likelihood of closure, it could pose a serious security of supply risk to the system. The CRU considers it prudent to put in place measures to ensure that on an ongoing basis generators are in a position to provide notice of closure and maintain operations for the full three year period.

Therefore, in 2018 the CRU plans to consult on measures requiring generators to demonstrate and report on an annual basis that they are in a position to fulfil their Grid Code obligations should they be required to close one or all of their units in the next number of years. The details of this requirement in addition to the monitoring and enforcement framework will be consulted upon in 2018. The CRU acknowledges that such a framework may increase costs on generators, however, this must be weighed against the potential costs to consumers, both direct and indirect, of a disorderly exit of one or more generators – especially in constrained areas of the network.

4. Demand Growth and Local Constraints

The sections above have focused on the actions that may be required where a generator is leaving the market. However, the CRU notes that similar security of supply concerns may arise if there is a large increase in demand in a particular area of the network. In this regard it is noted that EirGrid have highlighted anticipated demand growth in the Dublin region due primarily to the number of data centres seeking to connect in the Dublin region. Data centres tend to have large demand loads, and relatively short construction lead times. This can create challenges for network planning. Such potentially rapid demand growth creates a range of issues. One of these issues is that demand connections may be delayed while new transmission reinforcements are built. Network constraints in certain locations may arise if the current network configuration cannot deliver the required power flows in high demand areas, or additionally voltage based constraints may arise.

Therefore the CRU requests EirGrid to pro-actively examine areas at risk of local security of supply issues under a set of credible scenarios, including demand growth and generator closure. Such analysis should also include an examination of technical operational constraints and a range of options to relax or resolve them.

The CRU is of the view that there may be merit in adopting a strategic approach when considering proposed options to mitigate a potential security of supply risk or local operational constraint. This could involve building transmission infrastructure which is likely to be needed to meet rapid demand growth but which would not be built under usual planning assumptions due to the level of uncertainty around forecasts. This could also include other mitigation options such as targeted operational support provision, demand side measures, or voltage support provision. It should be noted that there is a risk that this strategic expenditure may not be required if expected demand growth does not ultimately connect. However, such an approach may improve the overall long-term capacity in strategic, but constrained, areas of the network.

Where such expenditure is not required under the existing planning standards the CRU would examine the TSO's request for strategic expenditure on a case-by-case basis taking into consideration the likelihood of the scenario(s) in question, and current planned transmission works. It is envisaged that while the decision to allow a capex increase in relation to such projects would be taken on a case-by-case basis, once approved the project would form part of the capital programme and the monitoring of the project and associated expenditure would be carried out on the same basis as the rest of the programme. However, when reviewing the efficiency of overall capex within a Price Review period the CRU will take into consideration whether the objectives of such case-by-case approved projects have been met.

The CRU requests EirGrid submit proposals to the CRU on how such additional monitoring and pre-emptive capital projects could be carried out.

In addition to the above considerations, which mostly focus on transmission infrastructure, the CRU will also consider measures to send appropriate locational signals to large demand and

generation, including through network tariffs. In other words, by sending a locational signal to either, or both of, generation and demand the amount of new transmission infrastructure to connect generation with demand can be reduced. In simple terms this can involve demand locating in areas where there is sufficient existing transmission capacity or generation locating in an area electrically close to existing demand.

In regard to data centres, which have been a particular source of additional demand, it is noted that data centres can provide benefits to the system due to their typically consistent, as opposed to peaky, demand profile which can provide system support at night. In addition data centres are a potential provider of system services and demand response which is beneficial to the system. However, as noted above, where large demand is concentrated in one area of the network this can impose higher costs than if demand connected to other, less congested, parts of the network.

5. Conclusion

In this paper the CRU has set out its approach to ensure demand growth in constrained areas of the network can be met. The CRU will now engage with EirGrid to develop a process for strategic capital investment in the network. Additionally, the CRU will also consider measures to send appropriate locational signals to either, or both of, large demand and generation, including through network tariffs.

This paper also set out the objectives and principles which the CRU will have regard to in the event of a generator exiting the market. The CRU has also set out its approach regulatory intervention where there is a demonstrable likelihood of generator exit in advance of the required closure notice period.

Furthermore the CRU has set out its intention to develop a monitoring and enforcement process to ensure that generators have sufficient arrangements in place to meet their Grid Code requirements regarding plant closure, on an ongoing basis. The CRU considers that this is an important process to protect consumers' security of supply and the stability of the market.