

Energywise Consultants

Submission to Commission for Energy Regulation
by invitation issued in Consultation Paper

Review of Connection and Grid Access Policy: Initial Thinking & Proposed Transitional Arrangements

DOCUMENT TYPE: Consultation
REFERENCE: CER/15/284
DATE PUBLISHED: 11th December 2015
EXTENDED CLOSING DATE: 5th February 2016
RESPONSES TO: Electricityconnectionpolicy@cer.ie

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

Energywise Consultants

Contact: David Widdis
22 Otterbrook Willbrook Road
Rathfarnham Dublin 14
Email: david.widdis@ewc.ie

1 Introduction:

The following is a direct response to the CER Consultation call for submissions on the Proposed Review of Connection and Grid Access Policy: Initial Thinking & Proposed Transitional CER/15/284.

We welcome the Commission for Energy Regulation's *"Review of Connection and Grid Access Policy: Initial Thinking & Proposed Transitional Arrangements"*, a review which in our opinion is necessary and long overdue as the current Gate system while well intentioned has proved to be unsatisfactory, inadvertently fostering speculation, the creation of a secondary market, inhibiting a diverse mix of generation development, and has been for some time, no longer fit for purpose. We hope that this review will result in a coherent and fit for purpose connection policy, which provides for safe, stable and secure operation, which has the flexibility to accommodate undefined future requirements, which is coherent with and supports national policy and consumer objectives and which indisputably provides a fair, open and equitable opportunity for network connections accessible to all.

Within the next 34 years we have the enormous challenge of smoothly transitioning to a sustainable low carbon fossil fuel free energy future. This transition will necessitate a profound reassessment and transformation of the existing strategies, policies, regulation and legislation.

The recently published white paper *"Ireland's Transition to a Low Carbon Energy Future 2015 – 2030"* provides the national energy policy framework and reflects the extensive consultations undertaken by the Department of Communications, Energy and Natural Resources (DCENR) following on from the 2014 Green Paper on energy policy in Ireland. The challenging task incumbent on the CER is to ensure that the ambitious energy transition outlined in the white paper and the nature and scale of the challenges we face with limited time are facilitated, enabled and realised.

Energywise Consultants (EWC) has overlapping interests and mutual objectives with other groups EWC has undertaken a series of consultations and meetings with the Micro Electricity Generation Association (MEGA) and have come to the similar conclusions and wish to highlight comparable points with some additional points and areas which need to be addressed.

Energywise Consultants (EWC) actively works with energy communities to reduce their energy use and generate their own sustainable energy. With support from the SEAI, Údarás na Gaeltachta and partnerships with NUIG, GMIT, Tyndall National Institute and others EWC has been advancing the development of "Energy Communities". Our goal is for communities to become energy responsible while exceeding national targets for energy savings, renewable energy generation and carbon emission reductions. Energywise Consultants promotes a policy of "Reduce – Produce" and are currently working with a number of energy communities which include the Aran Islands, Tourmakeady Co. Mayo, Cavan Town and Terenure, Dublin. All of which have active plans to develop locally owned generation for local use. The Aran Islands (SEAI Electric Ireland Ambition award winners 2014) have an ambition to become energy independent and carbon neutral by 2022.

We hope that this review will acknowledge new national energy policy framework, the social, economic benefits as well as the opportunities and positive contribution communities and community energy will play in the challenges to a smooth transition.

The following is a direct response to the CER Consultation call for submissions on the Proposed Review of Connection and Grid Access Policy: Initial Thinking & Proposed Transitional CER/15/284.

There has been a fundamental shift in the Irish Government Energy Policy. The Energy Transition, since the publication of this CER Consultation. EWC mindful that CER/15/284 is one of a number of consultations to assist the CER establish a coherent, viable and appropriate Enduring Connection Policy, In consultation with MEGA, Energywise Consultants has decided, by consultation, that a comprehensive submission will be required this time to set out the New Policy, the Status of the Energy Sector in Ireland, in terms of its readiness to support and make successful the Energy Transition but also the fullest possible examination of the CER Document (CER/15/284) with running commentary and questions. The hope is that this will present responses which align with the new Energy Transition but also assist in opening up the fullest possible public discussion to highlight the new and brave opportunities that now lie ahead for the engagement of all Energy Citizens (as per the new policy). There seems no short way of moving from where are now to where we need to be in terms of the radical changes needed. This shift is not pre-empted in CER/15/284. Our task now is to seek to assist in its alignment with the change.

In this response EWC will draw from the specialised expertise and knowledge of the Micro Electricity Generation Association (MEGA) our partner in this endeavour. It is important, in the context of informing the reader, to give a short presentation of the group's views, knowledge, experience and intended action in the Electricity/energy Sector which is heavily dependent on the smart and timely roll-out of smart meters. It also pulls together previous CER decisions that relate to the Micro Electricity Generation Association (MEGA) and its track record over the past 6 years, with the CER, in seeking to develop an energy system in Ireland which combines stability, quality, renewable/clean energy and the full potential of the Irish people in the harnessing of modern technology towards full energy security with low emissions within decades.

The EU our Government, Government departments and agencies have important roles in setting and implementing policy. In addition utility companies, investment funds, corporate businesses and the media have important roles to play in moving us towards a low carbon future. However their combined endeavours cannot and will not deliver a sustainable energy system and a low carbon future in the required time. The transition to a low carbon future can only be achieved through mobilising the entire resources of the state. Often on overlooked Communities and Active Energy Citizen participation are a fundamental requirement if we are to achieve a successful and timely sustainable energy transition.

2 Background to the Micro Electricity Generation Association (MEGA)

The Micro Electricity Generation Association (MEGA) was founded in 2007, as an offshoot of an existing Renewable Energy Association/Lobbying Group, by Power Engineers and Corporate Leaders in the Electricity Sector in Ireland. It was incorporated in 2008 as a not-for-profit with a mandate to take action to steer a course through concrete projects, example, knowledge, testing and certification to help carry Ireland through the challenging energy decades ahead – with emphasis on Ireland, in terms of Energy Supply, as a secure, reliable, consistent, innovative, cost competitive place to live, work, do business and guide others. At the time Distributed Generation (Micro Electricity Generation) had become an area of great confusion, while widely promoted Worldwide as an important solution, opposition to Distributed Generation in Ireland was high. In fact since then, under the guises of “Auto production” and EN50438 compliant “micro generation” some progress has been made but from a Global perspective progress has

been appallingly poor (too negligible) with barriers almost everywhere. MEGA forecast this problem, sending out a strong message to all Electricity Stakeholders that:-

This reality has been clearly recognised in the energy whitepaper,

“Our energy transition will entail deeper cooperation across local and national government, agencies and departments, and with our neighbours on this island and across Europe.

There will be a new focus on citizens and communities as active participants, and agents of change in how we generate, transmit, store, conserve, and use our energy. In time, our energy system will become more decentralised, altering many traditional assumptions about demand and supply. This will require deep change in the mindsets of individual consumers, businesses, agencies, and utility companies right across our economy and society”.

Alex White T.D.

Minister for Communications, Energy and Natural Resources

- 2.1 In all jurisdictions Distributed (micro) Generation (DG), once it surpasses certain modest penetration levels must be power-matched on a local level to avoid the risk of catastrophic incidences (the perfect storm) of instability and possible grid outage. MEGA recognised in the Ireland context – a small grid with rapidly increasing poorly controlled large scale intermittent wind power projects (planned long into the future) – that DG could not be highly volatile and the industry had little hope of rapid growth without control mechanism which, by regulation, responds to grid stability needs.
- 2.2 In all jurisdictions conventional centralised power grids will have to be transformed into Smart Grids capable of handling the emerging complexities of sourcing and balancing electrical energy making best use of grid size and source diversity through increasing interconnection across national boundaries and continents. Failure to get smart grid technology up and running in these times means putting the consumer (and large electricity intensive industry) at a perilous security of supply risk.
- 2.3 Lurking beneath this imperative, it could be clearly seen, that distributed generation had another entirely crucial role to play – a role for which it was poorly recognised and because of its lack of appropriate control and regulation was unfairly mistrusted. Smart Grids, to be safe must be built from a network of “hardened nodes” or micro grids with the capability of riding through, in island mode, rapidly spreading fault contagion in a smart grid system. Micro Grids cannot carry out this function in the absence of auto-controlled local generation (power-matched DG). Failing to achieve sufficient “ride through” capacity with localised auto-control Power –matched Distributed Generation would again expose consumers (and large electricity intensive industry) to unwarranted security of supply risk.
- 2.4 The clear answer put forward by MEGA back in 2008 was to develop in Ireland a new set of rules, incentives, systems and groupings to prove and rapidly advance auto-power-matched distributed generation. It was at this point that MEGA put forward the Smart Micro Energy Cluster system as the building block of this new Smart Grid – Micro Grid hook-up essential to security of supply for the consumer.

Through its work MEGA as an Technology Industry & Community Collaborative to build bridges with the stakeholders and unity of action and direction. MEGA is connected, and works with, IWEA, IHPA, IrBEA, ESBN, ERC, EI, SEAI, NESB, IERC, Smart Grid (Europe) 2 (EU JRP), GridSens (EU JRP), Energy Co-ops Ireland, Aran Islands to name but a few – and the Media.

Through our participation and work with energy communities and interaction with citizens EWC has identified a strong appetite in Ireland for Smart Micro Energy Clusters and is through such clusters that the Irish Electricity Industry can learn the new practises that will carry the consumer across the line over the coming decades, to become satisfied participants in the Cellular Smart Grid Electricity System - and fully automated in their response.

2.5. South Dublin County Council, EI, SEAI and Tallaght Smart Grid Test Bed are working with MEGA, and the purposefully formed Smart Micro Energy Cluster-Technology Group (SMEC-TG1) to build a “baby” Smart Micro Energy Cluster Test Bed in Tallaght, operating under the EN50438 codes, but clearly demonstrating on the ground, in the field, regulated auto power matched distributed generation (EN50438 compliant) with the first group of prosumers in Tallaght. This project is rolling-out Prosumer Smart Meter & Control Units downstream of the ESBN meter and main fuse to permit automated real-time power-matching capability and systems. This work is in the interest of Public Policy Formation and directly to the consumer. In MEGA’s submission to CER/11/191 a request was made to carry this project through as part of the next phase of the National Smart Meter Roll Out Programme – a direct response is awaited – such collaborations save public money. This is Virtual Power Plant behaviour, which ranks as ancillary power (System Services), and increases the stability of any grid – it is good “white” energy and the key building block to future energy security for the consumer.

2. Current Context – Community Energy Smart Grid Developments

“With support from South Dublin County Council Tallaght City, Siemens ¹, Intel and Microsoft, MEGA is piloting a ‘smart energy cluster’ in the outskirts of Dublin, which links small-scale renewable energy generators with local consumers [as Prosumer Groups Regulated by Contract] ² through a smart grid. Instabilities arising from the introduction of large-scale renewable power generation into existing grid systems can be avoided by gradually building small cellular smart grids [with PMU-powered PQ Rectification Capacity] that can be individually linked to the grid or assembled into larger multi-cell local grids.” ³

A smart Prosumer-based **Community System** can compensate for disturbances caused by producers within the community using traded flexibility (& PQ Capacity) from other community members, be it consumers, other producers, or community owned assets such as storage. It is a ‘Grid-Edge’ system which requires (in the early days) minimum if any interaction with DSO (DNO). At the same time it is ‘Disturbance-Neutral’ as seen from the DSO (under-pinned by the dedicated Micro Grid Stabilizer with PMU System), which allows for more renewable electricity production within the community e.g. power matching: communities consuming (in “real” time) all electricity produced within the community, can be used to avoid peak power flows. Power matching is a typical example of consumers adapting their behaviour (Demand Response) to support the stable operation of the shared system (Grid/Network) i.e. by contracting to become prosumers.

1 Note inserted by MEGA for clarification

2 Note inserted by MEGA for clarification

3 Euromet 15042 Supporting Smart Renewables 2016

The Community System Operator (CSO) will require a new type of license that obliges the CSO to ensure disturbance-neutral Grid-Edge Transactive Energy (Powered, behind the meter, by Distributed Cellular Prosumer Smart Meter Networks -including PMU) thereby relaxing conditions for connecting Distributed Generation.

The **enerXchange**, the MPOWER (CSO) Community System is the first commercially viable Community System. The system is based on transactions, and each transaction bid has a financial value which is settled by enerXchange - initially on a shared-benefits basis. At a certain scale a technical and commercial arrangement with the TSO-operated Flexibility Market will be needed to reflect the increasing levels of flexibility-empowered-renewables. Flexibility using spare capacity i.e. not needed for disturbance-neutrality can also be sold directly to the TSO.

As DSOs (DNOs) transition towards Smart Grids, Distribution Systems will evolve into **Utility μGrids**. Each such μGrid being capable of hosting high volumes of electricity production within its defined electrical boundaries by actively compensating for local disturbances.

A symbiotic relationship will develop between the CSO and DSO: CSOs provide a Grid Edge Market for both Flexibility and PQ Disturbance Rectification⁴ of special interest to DSO's burdened with increasing Network Connected Inflexible DER with rising PQ Disturbance issues.

As DSOs accelerate their transition to the Smart Grid, Utility μGrids will be able to disconnect temporarily from the main grid (by collaborating in the formation of Hardened Nodes) and supply from local production instead, known as islanding⁵. Islanding allows critical local services to be maintained in case of a cascading fault but also provides local resilience. While islanded production and consumption within the μGrid must be balanced at all times. This requires specific flexibility e.g. frequency response, Inertia, Synchronous Power and a reduction in consumption (Auto-rationing) to allow supply to vital services such as hospitals. EnerXchange can provide that flexibility. Islanding is of particular interest to local authorities like South Dublin County Council.

3. Previous Quotes From CER on MEGA Proposals and Submissions:

The CER stated in CER/09/099:-

A. “Mega believes that island-type local community electricity systems, with strong black start and export capability, will form the early movement towards the micro grid/smart grid vision and believes that the Commission needs to be proactive on this subject and believes that such micro grids might involve elements of all of the generating types listed in the consultation document” quote CER/09/099

B. “Taking account of the views expressed by Mega the Commission accepts that the potential exists for projects to be clustered together in a complementary manner.” – quote CER/09/099

“We also query why rural communities are prevented from producing and selling electricity while power lines traverse farmers' lands to bring power to cities. It goes on to state that the repression of the micro generation and small scale renewable sector will lead to blockages of major infrastructural projects and eventual supply failures. It believes that this is a matter of public interest. “– quote CER/09/099 (2009)

4 Distributed Energy Resources – Generation, Storage, Power Quality (PQ) Rectification.

5 Remark: Based on the projected penetration levels of DER “Islanding” must be based on two principal new “Community/Local” assets – 1: A well designed, rehearsed, smart and fair rationing system – it is unlikely that all future Micro Grids would have sufficient DG to cover all loads & 2: Substantial Reserve Capacity with ultra-high speed transition capability – hence SDCC’s obsession with using their properties to house System Services big time.

C. The CER responded in CER 10009:-

“Another respondent (MEGA) put forward a detailed case for an improved regulatory framework to facilitate increased micro-generation. This included an outline of current impediments to increased micro-generation in Ireland as well as details on how smart grids and intelligent use of micro-generation could facilitate huge growth in the sector. It was stated that the sector is being held back by inaction from the CER in advising Government to remove barriers and provide appropriate incentives and rewards. The respondent indicated that the micro-generation sector was in need of urgent remedial work from the CER and the sector has been confined by policy decisions. This submission stated that Government and CER policy if applied in a particular way could allow for micro-generation to provide up to 20% of Ireland’s electricity needs in a stable, reliable and dispatch controlled system.” - quote CER10009

D. In regard to this submission the CER decided in CER10009:-

“With regard to micro-generation, the Commission is committed to ensuring that there are no regulatory barriers in place to the further development of micro-generation. Indeed the Commission is also interested in promoting and researching smart grids over the course of this plan. Smart grids may open up significant opportunities for the development of the micro-generation sector. However further promotion of the micro-generation sector is essentially an issue for Government, in particular through any PSO or support initiatives which Government may wish to put in place for micro-generation.” – quote CER/10/009

4. Key Factor – Change in Irish Energy Policy (Whitepaper) Highlights

Ireland’s Transition to a Low Carbon Energy Future 2015 - 2030

The recent publication of the Whitepaper on Energy sets out new Government policies and identifies the radical and challenging energy transition which must be achieved in Ireland. In order for the transition to have any hope of succeeding it is necessary to engage and mobilise of all levels of society as Active Energy Citizens to support and implement a smooth energy transition.

Towards a near-zero carbon energy economy.

Much of these new policies are yet to be tailed but are likely to present challenges to the proposed Enduring Connection Policy. The success/failure of the Energy Transition set out in the new Irish Energy Policy will impact on consumer. The results could be a constantly improving, better, more affordable, sustainable and secure energy system. Alternatively, given the reasons set out in the whitepaper for these radical changes in Energy Policy, failure would present serious challenges, disruptions and higher to excessively higher end-user/consumer costs. Given the CER’s Duty to protect the consumer, the design and implementation of proposed Enduring Connection Policy must take all aspects of this new Government Policy into full account. Already the Whitepaper challenges some of the “initial thinking” of the CER on a future Enduring Connection Policy. In the above sections of this submission has set out the pioneering work of MEGA in many of the areas covered by the Whitepaper.

Curiously the Whitepaper is clearly promoting and seeking the advancement of these very areas which are the key priority actions and developments on the ground driven by MEGA and its partners. The absence of the “Electricity Industry” as active participants in these important areas of work, which is now underpinned by the new Irish Energy Policy must send a signal to the CER that all is not well in the

energy sector in Ireland and that the industry itself, not just developers seeking connections, must be assumed to be a potential barrier/disrupter of any Enduring Connection Policy set out by the CER. The

CER must be mindful of this risk throughout the process of designing and implementing the Enduring Connection Policy.

There remains within Ireland a clear conservatism and failure to take on board the key challenges that lie ahead, but also a resistance to the spirit of open collaboration and embracement of innovation as set out in the new Irish Energy Policy. The CER must also be mindful of the further risk of wasteful litigation that must arise, and multiply, out of the reforming Acts and SI's now signed into Irish Law under the various EU Directives.

The CER has been given the authority and obligation to remove such obstacles that might be used by the Big Players to block innovation and new entrants with important new solutions which the new Irish energy Policy is clearly seeking to promote. As in medicine preventative action is the key to prevent problems from spiralling out of control. The Enduring Connection Policy will be as safe as the system allows it be. In the spirit the new Irish Energy Policy there is, in our view, a clear opportunity here in this long consultation process to signal to the Industry the energy Transition brings with it the need for changes in the attitudes, policies, procedures, and governance of the Industry with regard to collaboration and support for innovation, new entrants, entrepreneurship, community and the growth of Active Energy Citizens. The onus rests on the CER to ensure that the Enduring Connection Policy will be coherent, fair, transparent, flexible and accessible to all including new community generation and that it will endure.

In this context, and in the interest of both the public and the safe and successful conclusion of this CER Consultation, We feel strongly that key aspects of the new Irish Energy Policy, recently published in the Whitepaper need to be implemented unequivocally. This we now set out below in short form while advising that the full Whitepaper should be closely studied by all for the purpose of arriving at the best possible results for this consultation. We therefore Quote the Whitepaper as follows (in Italics):-

[The] “emphasis on technological change and innovation will be one of the central planks of our energy policy. Ireland is well placed to make further advances in this area, through our many research institutes and facilities, and because so many technology companies – large and small, indigenous and foreign-owned – are located here

There will be a new focus on citizens and communities as active participants, and agents of change in how we generate, transmit, store, conserve, and use our energy. In time, our energy system will become more decentralised, altering many traditional assumptions about demand and supply. This will require deep change in the mindsets of individual consumers, businesses, agencies, and utility companies right across our economy and society.

Alex White T.D.

Minister for Communications, Energy and Natural Resources

Within the National context the National Policy Position on climate action and low carbon development policy clearly recognises the necessity for holistic action with the “Climate Action and Low Carbon Development Bill 2015” being passed into law.

Climate Action and Low Carbon Development Bill 2015

The Bill provides a statutory basis for the national objective of transition to a low carbon, climate resilient and environmentally sustainable economy by the year 2050

In particular, the Bill provides for:

- *the commitment of the State to GHG mitigation and climate change adaptation measures*
- *the approval by the Government of plans to pursue, and achieve, the national transition objective. The plans shall consist of:*
 - *a National Low Carbon Transition and Mitigation Plan (known as a National Mitigation Plan). The National Mitigation Plan will specify the manner in which it is proposed to move to a low carbon economy and society, and will specify the GHG mitigation policy measures to be adopted by relevant Departments in the low carbon transition process. - a National Climate Change Adaptation Framework (known as a National Adaptation Framework). The National Adaptation Framework will provide a strategic policy focus to ensure adaptation measures are taken across different sectors and levels of Government to reduce the vulnerability of the State to the negative effects of climate change and to exploit any positive effects of climate change that may occur. The Bill provides for the making and submitting to Government of Sectoral Adaptation Plans by relevant Government Ministers.*
- Government Departments to be fully engaged in work under these plans.
- a local authority to notify the Minister or the Government of relevant mitigation measures in a local authority's administrative area which can potentially input to the development of the National Mitigation Plan.

The Bill also provides for the establishment of a Climate Change Advisory Council which will advise and make recommendations to Government and Ministers in relation to the National Mitigation Plan, the National Adaptation Framework and Sectoral Adaptation Plans. The Council will also advise on compliance with relevant obligations under EU legislation and international agreements.

Ireland's Transition to a Low Carbon Energy Future 2015 - 2030

2.6 Our Energy Vision

By 2050:

A radical transformation of Ireland's energy system is required to meet our climate policy objectives. This transformation will result in a low carbon energy system by 2050. By this we mean that GHG emissions from the energy sector will be reduced by between 80% and 95%, compared to 1990 levels. By 2100 our GHG emissions will have fallen to zero or below.

By 2030:

- * we will have achieved the highest possible level of energy efficiency particularly focussing on the non-ETS sector supported by increased Government and private investment.
- * we will be a leader in renewable energy deployment with a broad portfolio of large and small-scale renewable energy technologies.

- * the energy system will be part of a single, physically interconnected EU internal energy market, which will bring greater security of supply and easier access to cross-border flows of electricity and gas from other EU Member States.
- * there will be a marked reduction in our reliance on fossil fuels, with energy related GHG emissions falling in line with agreed targets
- * we will excel in the application of innovative approaches and smart technologies for decarbonising energy systems
- * we will have created sustainable jobs through the development and deployment of the new approaches and technologies required for the transition including through *the exploitation of indigenous energy resources and by supporting industrial development*
- * *we will continue to provide high quality, stable, transparent, cost efficient and predictable regulation for the electricity and gas markets, enabling cost efficient investment in the energy system*
- * *the energy system will be underpinned by strong investor confidence and supported by substantial private investment*
- * *the energy system will have the infrastructure necessary to provide the services that citizens and businesses need and want*
- * *citizens and communities will be active participants in the energy transition, with robust public and stakeholder engagement in energy policy, and effective community consultation on energy infrastructure developments*
- * *the energy system will act as a catalyst for change in how all citizens lead their lives – at home, at school, at work and in their communities.*
- * *new technologies, services, energy network architectures and community-based energy initiatives will emerge to facilitate and drive the transition. Policy will evolve to optimise the benefits from innovative initiatives.*

Human ingenuity and technological development will be central to Ireland's energy transition. While certain actions can and must be taken immediately, there is also a need to phase other aspects of our policy response to ensure that we benefit from new solutions as they emerge. This will require careful and prudent judgement, and the flexibility to react to new developments and technologies at the optimal time.

4.2 Energy Citizens

All citizens are energy citizens, interacting with the energy system as consumers, employees, transport users, householders and landowners. Every citizen has a role to play in the energy transition. Consumer choice, in the home, in the community, at work and when travelling is an important aspect of the energy citizen's role and responsibility.

Energy citizens will play an active role in the transition to a low carbon energy future in the following ways:

- * *communities of citizens, in rural and urban areas, will be able to work together on energy efficiency initiatives and renewable energy projects*
- * *the public and business sectors will set examples of best practice in sustainable energy*
- * *innovators will contribute by developing new models and technologies that will help Ireland move to a low carbon energy system*
- * *entrepreneurs will avail of business opportunities in energy efficiency building work, clean technologies and innovative digital technology applications, creating jobs and increasing prosperity*

- * *the energy industry will work to ensure that all relevant policies, regulation, products, services and technologies, as well as the generation and supply of energy itself, contribute to a secure, competitive, sustainable and low carbon energy system*
- * *landowners, neighbours and communities will be able to engage with infrastructure providers and local government to ensure acceptable outcomes for all energy users.*

4.3 Energy Infrastructure

The installation of new energy infrastructure can give rise to a wide range of local concerns including the siting of the infrastructure, the decision-making process, the distribution of costs and benefits, and the impact on individuals, local communities and the environment.

Formal processes for community consultation and engagement on infrastructure planning and implementation are well established. However, in some instances the approach used by industry and public authorities in the past, has resulted in a lack of trust. Significant practical steps have been taken to address this, particularly by EirGrid. For large projects An Bord Pleanála requires project proposers to demonstrate in-depth community consultation, public engagement, and a thorough understanding of the concerns of affected communities. The actions set out at the end of this chapter will strengthen community and citizen engagement on the development of new energy infrastructure.

There is increasing recognition of the value that effective communication and a participative approach between developer, local community and local authority can bring to the development of energy infrastructure. Effective engagement between these parties is a two-way process of sharing information, understanding different views, listening and responding to ideas and suggestions and developing trust and communications to the mutual benefit of all involved.

The National Economic and Social Council (NESC) [24] [25] examined how social support for the transformation of Irish energy could be achieved. It identified three components of social support, based on national and international best practice:

- * *an overarching energy transition process that facilitates and guides society-wide efforts to transform energy systems*
- * *an effective and inclusive process of public participation that helps to shape and share local value, and*
- * *enabling organisations, and, in particular, intermediary actors, which support the kind of problem solving and entrepreneurialism necessary to initiate renewable energy developments.*

4.4 Community Energy Projects

Community-level energy efficiency and renewable energy projects, using a range of technologies, will play an important role in the energy transition.

There will be opportunities for communities to collaborate, including with local government and energy agencies, to develop community energy efficiency and renewable energy projects.

4.5 Actions

Achieving our energy transition, and the vision set out in chapter two of this White Paper, will be a huge collective national undertaking. It will depend on the active engagement of citizens and communities. It will also require a deeper national awareness of the nature and scale of the challenge, and the development of consensus about the broad policy measures required to meet it. To help achieve this consensus, we will:

- * *establish a National Energy Forum modelled on the successful National Economic Dialogue, which took place in July 2015. The National Energy Forum will meet periodically to consider evidence-based inputs on the challenges arising from the energy transition outlined in this White Paper and a report on the findings of the Forum will be published thereafter.*

We will work to widen the opportunity for participation by:

- * *supporting community participation in renewable energy and energy efficiency projects, via the SEAI, to share best practice, provide information and ensure that local strategies align with broader Government policy*
- * ***facilitating access to the national grid for designated renewable electricity projects, and developing mechanisms to allow communities to avail of payment for electricity, such as the ability to participate in power purchase agreements***
- * *providing funding and supports for community-led projects in the initial stages of development, planning and construction. These will be defined using criteria such as scheme size and degree of community ownership*
- * *providing a new support scheme for renewable electricity which will be available from 2016*
- * *developing a framework for how communities can share in the benefits of substantial new energy infrastructure which is located in their area.....*
- * *supporting, in particular, the emerging energy co-operative movement as one means of facilitating community participation*
- * *exploring the scope to provide market support for micro generation. This will be informed by an SEAI analysis of the potential of technologies in the field of small-scale wind, solar, micro-CHP and small-scale hydro*
- * *engage with local government on advising consumers on energy efficiency initiatives and clean energy options, integrating energy options, scoping the opportunities for demand and supply related local energy action through integrating energy issues into local area planning, and bringing stakeholders together to find locally appropriate solutions that bridge the gap between demand and supply (E.g. biomass fuel, district heating solutions).*

Renewable energy will also play a central role in the transition. No single renewable energy technology – existing or emerging – will alone enable Ireland to overcome the low carbon challenge. Rather, a diverse range of technologies will be required along the supply chains for electricity, heat and transport.

New technologies and processes will include better ways of harnessing current energy sources, new techniques for unlocking untapped energy sources, alternative sustainable fuel sources, innovative approaches for distributing and storing energy, and advanced solutions to enable consumers to control and use energy efficiently.

5.3 Renewable Energy

The long term development of Ireland’s abundant, diverse and indigenous renewable energy resources is a defining element of this energy policy. Not alone is renewable energy of key environmental importance, it also provides a sustainable, economic opportunity for Ireland, both in terms of providing a secure, indigenous, source of energy, and as an export in the longer term. As we move to a decarbonised energy system, support for renewable energy is vital from both an economic and environmental perspective.

Thus far, renewable electricity projects have typically been large scale. While there will continue to be an important role for larger projects, there will also be an increasing role for smaller, community-level projects (§95-97). As new renewable energy solutions such as bioenergy, solar photovoltaic (PV) and offshore energy mature and become more cost effective they will be included in the renewable energy mix.

The REFIT 2 and 3 schemes remain open the DCENR is developing a new support scheme for renewable electricity to be available from 2016. A key component of this process is stakeholder engagement. The scheme will be subject to the new rules on public support for projects in the field of energy, adopted by the European Commission in 2014, which seek to promote a gradual move to market-based support for renewable energy.

The objective of the new support scheme will be to incentivise the introduction of sufficient renewable generation to deliver the broader policy objectives of security of supply, climate change and economic development in a cost effective manner. Key issues in developing this support scheme include assessing the various technologies available and feasible for deployment in Ireland, including their cost effectiveness, and determining whether supports are necessary to incentivise their deployment and if so, the level of support required. This analysis will inform the development of a support scheme that provides regulatory and policy certainty to developers, enables cost effective investment in renewable energy, seeks to minimise cost to the consumer, supports effective market operation, and minimises the administrative burden of the scheme.

Bioenergy is a versatile source of energy that can be used for heating, transport and power generation. The most advantageous economic benefits arise when it is used for heating. Bioenergy encompasses a range of fuels in solid, liquid and gaseous forms, including forest-based biomass, dry agricultural residues, energy crops, organic materials including wastes, and landfill gas and other biogases. Bioenergy can contribute to broader policy objectives such as waste recovery and rural development, as is the case with anaerobic digestion, which not only generates energy, but also gives effect to national waste policy in terms of utilising waste as a resource. It has been highlighted in waste management plans as a technology suitable for development at a local and regional level and at varying scales.

Anaerobic digestion also has the potential to improve air quality, for example through mitigation of ammonia emissions and odour by diverting slurry from land spreading.

However, expanding the uptake of bioenergy involves several challenges, including the availability of sufficient sustainably-sourced biomass, competition with other land uses such as food production, and the cost of support. Consideration must be given to the most prudent uses for bioenergy.

Waste Management Policy in Ireland recognises the need to develop efficient ways to extract as much value as possible from waste in accordance with the requirements of the waste hierarchy and the opportunity for waste to be used as an indigenous energy resource. In this regard, three new regional waste management plans for the period 2015-2021 support the development of additional thermal recovery and biological treatment capacity within the State. The REFIT schemes, which support the generation of electricity and CHP technologies including waste-to-energy, anaerobic digestion and landfill gas, continue to support the use of waste as a renewable energy feedstock.

Solar photovoltaic (PV) technology is rapidly becoming cost competitive for electricity generation, not only compared with other renewables but also compared with conventional forms of generation. The deployment of solar in Ireland has the potential to increase energy security, contribute to our renewable energy targets, and support economic growth and jobs. Solar also brings a number of benefits like relatively quick construction and a range of deployment options, including solar thermal for heat and solar PV for electricity.

Grid energy storage involves the storage of electrical energy on a large scale, transformed into other forms of energy, for optimum utilisation by the grid. A variety of technologies can be used including pumped storage hydroelectricity, compressed air storage, battery storage and thermal storage devices. Electrical energy is stored during times when production exceeds consumption and this is returned to the grid when production falls below consumption. Grid energy storage can mitigate some of the grid-connection challenges posed by intermittent power plants, such as renewable electricity plants powered by wind, solar or tidal power, and can help to better manage the electricity system.

CHP is the generation of usable heat and electricity in a single process. It is also referred to as cogeneration. Electricity generation from fossil fuels (and some renewable sources such as biomass) involves much of the input energy being lost as waste heat. This may be released to the atmosphere or river systems. CHP systems put this heat to useful purposes such as industrial processes or heating buildings. Therefore, CHP can provide a method of improving the efficiency of energy use leading to emissions reduction.

5.4 Technology Choices

Decisions about the development and deployment of new technologies will inform the sustainable energy mix and impact on the role of citizens as energy consumers. The transition offers opportunities for the relatively passive energy consumer of today to become a more proactive consumer (sometimes called a ‘prosumer’). Smart metering, the broadening of renewable heat and transport options, local energy storage solutions, smart appliances, and micro-generation all have the potential to transform and enhance the way homes, businesses, communities and citizens use energy.

Energy Network Innovation

Ireland is acknowledged as a world leader in energy systems integration technology and innovation, which will have a major influence on how energy networks are developed and operated during the transition. In particular, electricity system operators are likely to adopt innovative ways of improving efficiency and adapting to a diversifying electricity generation portfolio.

- “smart home” devices like smart hot water or heating controllers which will link with digital meter data to automatically choose the lowest-cost schedule
- more sophisticated services for consumers who choose dynamic tariffs along with smart home technologies. For example, at times of very high wind generation, domestic hot water or heating systems will be incentivised to switch on and then turn down when wind generation drops
- consumers who invest in micro-generation, solar PV or storage systems are enabled and incentivised to participate actively in the electricity market.
- ensure that the public sector continues to contribute substantially to Ireland’s energy efficiency effort to 2030 with the establishment of a further target for public sector energy efficiency for the period 2020-2025.
- **ensure that grid connection policy will have due regard to current and future renewable energy policy, including in relation to community renewable energy projects; this policy, will be defined using criteria such as scheme size and degree of community ownership**
- publish a Renewable Electricity Policy and Development Framework (with a spatial dimension) to underpin the proper planning and development of larger scale renewable electricity generation development on land. This plan will give guidance to those seeking development consent in relation to larger-scale onshore renewable electricity projects, and to planning authorities, statutory authorities and citizens

- develop a policy framework to encourage the development of CHP, taking account of the findings and recommendations of the comprehensive assessment required by the European Union (Energy Efficiency) Regulations 2014.

5.7 Actions on Technology Choices

New low carbon and energy storage technologies are expected to evolve from research to deployment and will play a significant role in the energy transition. To facilitate this, we will:

- . monitor and encourage the development of new transition technologies
- . examine and address any administrative, market or regulatory barriers to the implementation of energy storage projects
- . examine the case for designating large-scale storage projects as strategic energy infrastructure under planning, regulatory and policy criteria.

6.6 Emergency Management

Responding to and recovering from the impact of unanticipated disruptions to electricity, gas or oil supplies are important aspects of energy security. The National Risk Assessment for Ireland [48] approved by the Government Task Force for Emergency Planning in 2012 and the National Risk Assessment 2015: Overview of Strategic Risks [5] by the Department of the Taoiseach have both identified “disruption to energy supply” as a risk that requires national mitigation. Energy emergency management is therefore an important element of national energy security.

Since 1997, driven by strong EU and national regulation, the telecommunications sector has evolved from a fixed basic telephony service and architecture to one of constant growth – mobile services, broadband services, broadcast services and a mix of all. This growth has brought jobs and economic prosperity.

Although the energy sector is more complex, it is likely that it will also undergo transformational change and that the boundary between energy and communications services will blur. We are starting to see this already, for example, with the development of smart energy services and smart metering systems capable of being driven by mobile applications and offering broadband functionality. This offers a new horizon for entrepreneurs, innovators, the research community and for job creation. The pace of change will be led by strong EU and national regulation and by the energy industry.

The energy transition will create opportunities in technology and business by encouraging enterprise to innovate and invest in the development of products, services and technologies needed to enable the transition to our low carbon future. Ireland has several advantages in this regard including our open economy, modern infrastructure, creative entrepreneurs, innovative business models, and existing expertise in low carbon technologies. Our single TSO, single DSO, coordinated smart metering programme and high penetration of renewable energy will also help create the conditions for innovation.

The energy transition will have a positive impact on innovation, economic activity and job creation in Ireland. However, enterprises, sectors and localities that depend on more traditional energy activities will need to adapt to the changing environment as our dependence on these activities declines. We will work with national, regional and local economic development agencies to support jobs and local economic activity, including by seeking to attract alternative energy business and by supporting businesses to change and embrace new technologies and developments.

9.2 Energy Innovation

Ireland is well placed to participate in the technological innovation that will drive the energy transition. We support the advancement of the EU digital agenda, which will converge with the energy system and change it radically at all levels. The National Broadband Plan will assist the energy transition by providing

every home, school and business with access to affordable high-speed broadband. With many of the world’s leading IT companies located in Ireland, and a growing number of indigenous entrepreneurs developing innovative energy products and services, we can credibly aspire to becoming a European hub for energy innovation by 2020.

9.4 Actions

To encourage innovation and maximise its economic and business opportunities, we will:

- actively support Ireland’s energy research sector, creating the conditions for entrepreneurs to develop and commercialise business models and technologies and identify new concepts and technologies that will assist the transition
- oversee the implementation of the energy research strategy, aligning energy policy and research strategy with EU energy policy and research strategy and maximise Ireland’s potential to secure funding under the EU Horizon 2020 research programme
- work with national, regional and local economic development agencies to support jobs and local economic activity, including by attracting energy business and helping organisations to embrace new technologies
- actively promote a coordinated approach among economic development agencies (IDA Ireland, Enterprise Ireland, Údarás na Gaeltachta, SEAI and others), which identifies and captures enterprise opportunities in the energy transition” – end quote

5. Key Areas of CER Query in the current consultation CER/15/284

Quote CER Consultation CER/15/284:-

Executive Summary

Existing CER policy for connection to the electricity network in Ireland is captured under two broad policy approaches: the Group Processing Approach (GPA) and the Non Group Processing Approach. The non GPA approach relates to the processing of connection offers for small, renewable and low carbon generators that fulfil public interest criteria.

EWC Question: Does the New Energy Policy, set out in the White Paper, now change the current CER Definition of “public interest criteria”? Mindful that this is the first stage of a multi-stage consultation process, and in the interest of ensuring informed public participation in the consultation, EWC requests that the CER set out a clear definition of the “public interest criteria” and how this must now alter to adjust to the New Irish Energy Policy or later as a result of its implementation.

Quote CER Consultation CER/15/284:-

Executive Summary

This Consultation Paper represents the CER’s initial step in the development and implementation of an integrated and enduring connection policy for the electricity system in Ireland (the ‘Enduring Connection Policy’) which will succeed the existing connection policy.

The CER’s policy objective for connection and grid access is to provide a fair opportunity for generation to receive offers of connection to the network taking account of system needs, efficiency, national policy and the consumer interest. Accordingly, the policy will be fair, non-discriminatory and promote efficient use of the existing network. This in turn should reduce the end-user cost of the network and facilitating competition in the wholesale energy market, thereby reducing energy prices.

EWC Response: *In setting out the CER’s Policy Objective for connection and grid access the CER aims to achieve the goal of “fair opportunity for generation to receive offers of connection to the network taking account of system needs, efficiency, national policy and the consumer interest”. There has been a radical change in National Policy since the publication of this consultation. The new Energy Transition Policy links the welfare of consumers to the successful implementation of this Energy Transition. This change requires not only Connection Policy changes but also the attitude to the issue of connections and how connections can enable the increased innovation and on-line testing including such aspects as the temporary nature of some such connections, the speed at which they are enabled and the general collaboration of key players in the Electricity Industry in facilitating the successful third party project development through affirmative collaboration and support in the spirit of the Transition*

“actively support Ireland’s energy research sector, creating the conditions for entrepreneurs to develop and commercialise business models and technologies and identify new concepts and technologies that will assist the transition” Energy Transition Whitepaper

CER Consultation CER/15/284:- Executive Summary

The CER proposes to maintain the GPA for the enduring policy but proposes more frequent batching and processing of applications. This approach will allow for a more flexible policy that enables the achievement of the overall policy objective for connection and grid access and which can be tailored to better reflect the needs and development of the network over time. In particular the CER considers that the approach taken for Gate 3 may no longer be appropriate and that subsequent gates may need to be smaller, more frequent, and not focused on a specific technology type.

This Paper requests views on whether connection policy should:

- Facilitate the mix of generation, technology, and provision of system services required for a safe and secure operation of the system;
- Prioritise projects which make the most efficient use of the existing network;
- Encourage large demand connections to make efficient use of the existing network;
- Include planning permission as a criteria for offer issuance; and
- Include projects currently processed under the non-GPA process in the GPA process.

EWC Response: *The principal of mainstreaming routine connection processes through a uniform and fair processing system broadly based on an existing system, with proven high volume capability, but with more frequent batch processing, on the face of it, must assist in lowering the cost of processing and whole range of other advantages. But due caution must be given to the changing nature of the grid and electricity system itself – to get this wrong could drop consumers and the national economy, on which consumers depend, into a quagmire of grid instability, rolling black-outs, supply interruptions and economic crisis. The Department of Energy Communications’ and Natural Resources (DCENR) has made great strides in identifying all of those risks and putting forward solutions based on a radical change in Government Energy Policy – this change in policy must now be considered carefully and addressed in this consultation process.*

CER Consultation CER/15/284:- Executive Summary also states

Part 2 of this Paper proposes a limited number of policy measures in 2016 to assist the transition from the existing connection policy towards the Enduring Connection Policy. The proposed transitional arrangements are:

- The refunding of first stage payments to those projects that will not progress and agree to release their capacity;
- Permitting existing units to increase their capacity, under certain circumstances; and
- Providing offers to providers of system services that take part in the DS3 System Services procurement process.

It is proposed that applications under the transitional arrangements be accepted up to the 30th June 2016, and then processed as a group to ensure an efficient assessment and offer process.

EWC Response: *Whereas the transitional measures make sense, on the face of it, the impact of the new Energy Transition Policy is now not reflected in the thinking. The Energy Transition will not come “free of cost”. Its purpose though is to protect the consumer and nation from severe and unexpected losses, or even economic collapse arising out of outdated energy policy and systems. Its other purpose is to take, and enable, action to bring down costs. None of this will come without investment. In this regard requests that the CER be mindful that it would need to draw in additional funding to ensure that it can provide the needed regulatory supports, informed decision-making, and environment for innovation demanded by the Energy Transition. EWC along with MEGA proposes that the CER consider the need to create within the CER a special dedicated Energy Transition (multi-disciplinary) Unit which can feed into and inform Connection Policy, particularly during the period of migration to the new Enduring Connection Policy – but also in its implementation. We all have to step up to the mark, in this we have no choice, we carry a great responsibility and little time – failure of the Energy Transition will cast long reputational and performance shadows over our entire economy and foreign direct investment. The Energy Transition provides a unique (once-in-a-lifetime) platform for energy system excellence and consumer protection in the turbulent years ahead. It recognises that innovation/leadership in both the Irish Tech Industry and community organisation will deliver the best and safest results for the end-user.*

CER 15284 in 1.3 The purpose of the Two Part Consultation Paper

“Firstly the Paper represents the initial step in the development and implementation of an integrated and enduring connection policy for the electricity system in Ireland (the ‘Enduring Connection Policy’). Part 1 of the Paper sets out the CER initial thinking on:

- the policy objective of the Enduring Connection Policy;
- the principles which should underpin the Enduring Connection Policy;
- the high level approach/process to connection under the Enduring Connection Policy which best enables the policy objective to be achieved in accordance with identified principles”. Also “the key strategic issues which may need to be considered when determining the appropriate connection criteria under the high level approach/process.

In Second Part “the Paper sets out CER proposals for a limited number of policy measures in 2016 to assist the transition from the existing connection policy towards the Enduring Connection Policy.”

Further “Section 4 discusses a range of key issues which may need to be considered when determining the appropriate connection criteria.”

EWC Response: *Whereas these issues will be considered in greater detail later in the submission, EWC along with MEGA wishes to highlight that the future described in the Whitepaper recognises the uncertainties and unforeseen changes that lie ahead which will impact on any Enduring Connection*

Policy unless this policy consciously embraces 1) these uncertainties and 2) the new imperative to take ownership of the challenge at all levels of society in search of appropriate solutions and, consequently, 3) the need to ensure that the Enduring Connection Policy is sufficiently flexible, nimble and responsive to facilitate safely - innovation, real-life trials of new solutions, and the consequential requirement that the SO's need to be equally involved in and supportive of the success of the Energy Transition, by responding constructively to the enablement of new systems, connections and trials. These now need to be among the above mentioned "key" and "strategic issues" in line with the new Government Policy under the Energy Transition.

To quote the White Paper Introduction

"This emphasis on technological change and innovation will be one of the central planks of our energy policy. Ireland is well placed to make further advances in this area, through our many research institutes and facilities, and because so many technology companies – large and small, indigenous and foreign-owned – are located here.....There will be a new focus on citizens and communities as active participants, and agents of change in how we generate, transmit, store, conserve, and use our energy. In time, our energy system will become more decentralised, altering many traditional assumptions about demand and supply. This will require deep change in the mindsets of individual consumers, businesses, agencies, and utility companies right across our economy and society".

Alex White T.D.

Minister for Communications, Energy and Natural Resources

CER/15/284 describes in 2.1.2 the Gate 3 Process for Connections and access to the Grid as follows:-

The Gate 3 Direction (CER/08/260)8 issued in December 2008 provided for the issuance of connection offers by the SOs to approximately 4,000MW of renewable generation. This Direction set out the criteria under which projects which had applied for a connection offer would be eligible for inclusion in Gate 3 and it also outlined the process by which firm network access would be allocated to projects in Gate 3. Gate 3 was the largest Gate to date. Gate 1 saw 370MW of offers issued to renewable generators while Gate 2 saw offers issue to approximately 1,300MW of renewable generators. The approach taken in Gate 3 after significant consultation was a simple date order of application criterion with inclusion of sufficient generation volume (forecast) in the Gate in order to meet the 40% renewable target by 2020 based on demand projections at the time (2008).

The CER outlined its view in CER/08/260 that including applicants in Gate 3 by application date order met the objectives of fairness, simplicity, transparency, timeliness, practicality and facilitation of optimal network development. Approximately 140 renewable connection offers were issued under Gate 3.Indeed with the connection of the Great Island CCGT in 2015, there is a significant capacity surplus, both in terms of dispatchable generation (7,487MW11) and total plant (9,598MW) on the system....However, while capacity margins remain satisfactory, it is important that efficient new plant can enter the Single Electricity Market (SEM) and displace older, less efficient plant in the merit order. In addition to this, it is evident from work carried out by the System Operators (Facilitation of Renewables Studies 2010) and the current DS3 project that the right type of generation capacity, in particular flexible generation capacity, is needed to facilitate an increase in System Non-Synchronous Penetration (SNSP) and to release the benefit of renewable generation for the market. Accordingly, the CER is of the

view that connection policy in Ireland now needs to explicitly address the SEM Committee’s decisions of DS3 (SEM-13-060 and SEM-14-108) and provide for the issuance of connection offers to plant who meet the appropriate criteria.

EWC Response: *Whereas, the CER emphasises the current oversupply of production capacity in Ireland but also the need to replace inappropriate and inefficient plant, the Energy Transition is demanding a far more radical approach – with a new priority on innovation and systems which are ahead of the game – not just state-of-the-art. In this context a closer look at the current fleet, in the context of the Energy Transition, could not accept the view that there is an oversupply in production plant – out of date plant does nothing for the success of the Energy Transition.*

Whereas it has to be agreed that special arrangements must be made for DS3 System Services, DS3 System Services alone cannot solve the building SNSP⁶ challenge. As MEGA has in collaboration with a wide array of Energy Tech Co’s, Communities, Agencies, Research Bodies and Local Authorities, has been developing, as set out above, Cellular Smart Grid Systems, which with intelligent Grid-Edge Transactive Automation enables local area RE Production balancing, in real-time, and enrichment (Local Grid-Edge Power Quality Rectification – including Synchronous Power Flexibility) to provide increasing levels of Disturbance Neutral Renewable Generation (+ Flexibility) within local Prosumer Groups - Communities, Co-ops and Regulated Local Energy Companies. This movement too needs the new prioritisation as set out in the Energy Transition.

EWC like MEGA asks where are the SOs in this new Flexibility - Providing System Advancement. Are new ways of regaining “Flexibility”, in an increasingly inflexible National Electrical System, on a both Local and National Level, not in the interest of Consumers?

We take the view that the Energy Transition will require that the CER look into and beyond the SOs to ensure that Irish Innovation in this area is embraced in Ireland – rather than “hung-out-to-dry” while the concepts developed here are simply exploited by other Energy Systems outside of this jurisdiction. Will the Energy System not require substantial change in the SOs themselves? If so, will this change not have to be driven by the CER?

CER 15284 in 2.1.4 describes the GPA (Gate Processing System) Applications Build Up further as flows:-
 “With connection and access offers closed since 2009 (save for the non-GPA process), a large number 13 of applications to the SOs for connection to the system has built up. The number of outstanding applications currently results in a total of 25,400MW of capacity seeking to connect to the electricity system.The CER is of the view that the approach to accepting and processing applications for connection needs to change and it is simply not sustainable to continue to carry and add to the already existing high number of outstanding applications.

EWC Response: *The new connection applications in the order of 25,400MW of capacity (presumably mostly Solar Farms) quite obviously present major challenges and opportunities for Ireland. This logically presents the CER with the need to change and to streamline connection policy and assure fairness. This is yet another good example where the CER is showing leadership and strength. There can be no doubt that the CER deserves full support in creating the necessary changes in a timely manner.*

⁶ System Non Synchronous Penetration (SNSP) – The level of asynchronous and non-synchronous generators in the electricity system at any instant of time as opposed to the level of inertia-rich synchronous power which holds the Grid together

Further in CER/15/284 – the CER describes connections and grid access outside of the Gate Processing System (Non-GPA)

“In CER/09/099 “Treatment of Small, Renewable and Low Carbon Generators outside the GPA”, (i.e. the non-GPA process), the CER sets out policy for the processing of connection offers for small, renewable and low carbon generators, that fulfil public interest criteria. These generators were specifically processed outside of the GPA due to their characteristics limited impact on the system and the different nature of these projects compared to conventional generation and wind renewable generation. There is approximately 170.89MW of energised non-GPA projects on the distribution system, and a further 210MW of contracted non-GPA. The non-GPA process has been deemed to be largely successful; however a number of issues have arisen around the scale of projects which can be processed through non-GPA and more recently the cumulative impact on the network of a large number of small scale projects, particularly clustering of projects at certain points on the network. The volume of applications received in 2015 is far in excess of that in the previous years, leading to long lead times for non-GPA applicants. Therefore the existing policy may no longer be fit for purpose.”

EWC Response: *There can be no doubt that the CER has proved above the need for change. Change in the Non-GPA System is most obviously urgent and needed.*

CER/15/284 sets out the CERs view that significant changes are now needed in Connection and Grid Access Policy as follows:-

“As the non-GPA was developed in 2009, the CER considers it appropriate that a review of the non GPA approach should also be undertaken at this stage in the context of developing an Enduring Connection Policy. While the CER does not wish to restrict network access for smaller scale or innovative projects, it may be appropriate nonetheless to review the type of projects which can be processed outside of the GPA or indeed ensure that greater account is taken of the network impacts (particularly cumulative impacts) of these projects.

EWC Response: *In reforming the Non-GPA Process it is most important not to throw out the “baby with the bathwater”. The GPA System has processed many thousands of MW in connections while the Non-GPA System remains in the 100’s of MWs. Many of these Non-GPA Systems offer scope for Cellular Smart Grid System Development and the reduction of the SNSP challenges. Those already processed are obviously most different to the projects which have created the huge rise in Non-GPA Applications. EWC along with MEGA is calling for the continuation of the Non-GPA Processing System for those projects which continue to fall outside this new bracket but also for the innovative, Test Bed, Trial, and Non-traditional projects such as schemes falling below a c. 2 MW Threshold but also schemes that offer neutrality/enhancement or local balancing (power-matching) to the Network and Grid. Such stabilising technologies should be considered when assessing the network impact.*

3.1 Enduring Connection Policy Objective and Underlying Principles

The CER’s policy objective for the Enduring Connection Policy is to provide a fair opportunity for generation to receive offers of connection to the network taking account of system needs, efficiency, national policy and the consumer interest. Accordingly, the policy will be fair, non-discriminatory and promote efficient use of the existing network. This in turn should reduce the end-user cost of the network and facilitating competition in the wholesale energy market, thereby reducing energy prices. The CER considers the following principles to be applicable to its considerations in developing an Enduring Connection Policy:

- End User Impact: Ensure that the process minimises the impact on the end-user cost of electricity and delivers services needed by consumers.
- Equity of Treatment: Fair treatment for all those applicants wishing to connect and between different technologies of plant; and
- Compliance: must be compliant with national and European legislation.
- Security, reliability of supply and competition: must maintain (and improve) Ireland’s security and reliability of electricity supply and contribute to competition;
- Efficiency in the use of resources and project development: must provide for efficient use of scarce network capacity and system operator resources, thereby favouring viable projects and discouraging ‘hoarding’ of capacity;
- Transparency: must be transparent and allow all developers seeking a connection to understand the process which must be followed and the reasons why they have been successful or unsuccessful in obtaining an offer;
- Practical, and timely implementation: should not be overly burdensome on system operators to implement or developers to engage with; and
- Optimal Grid Development: allow the grid to develop in an optimal and cost effective manner and facilitate optimal use of the transmission system. This should minimise the need for new infrastructure.

Do you agree with the policy objective for the Enduring Connection Policy? Are there other matters the CER should consider?

EWC Response: *The Whitepaper sets out the new imperatives of the Energy Transition many of these have not been traditional drivers, as outlined above, for Connection and Grid Access decisions and need to be specifically included and prioritised. Specifically the due consideration must be given to the new Irish Government Energy Policy (published after this consultation was launched) as quoted here “By 2030:*

- * *we will be a leader in renewable energy deployment with a broad portfolio of large and small-scale renewable energy technologies*
- * *we will excel in the application of innovative approaches and smart technologies for decarbonising energy systems*
- * *we will have created sustainable jobs through the development and deployment of the new approaches and technologies required for the transition including through the exploitation of indigenous energy resources and by supporting industrial development.*

An Enduring Connection Policy can only endure if it fits with the needs of the Irish Government’s National Policy and the people. The consultation process, which the CER has initiated in CER/15/284, must now, EWC along with MEGA submit, examine thoroughly how these new priorities for our energy system can become positively and dynamically supportive of these new energy policies and this new Government understanding of Energy Security and Sustainability through Leadership. The Connection Process in Ireland is for most a very arduous, lengthy and uncertain process. Enterprising people from outside of Ireland have been completely appalled at the barriers put up and the lack of nimble, informed and entrepreneurial skill applied to the processing of even the most simple connection application. The question arises then as to how these mundane connection barriers can be removed and smoothly replaced by pro-enterprise, pro-energy-leadership, pro-connection, pro-community, pro-citizen systems?

CER/15/284 – connection Criteria set-out	EWC Response
<ul style="list-style-type: none"> • End User Impact: Ensure that the process minimises the impact on the end user cost of electricity and delivers services needed by consumers. 	<p>This is the Primary Duty of the CER YES</p>
<ul style="list-style-type: none"> • Equity of Treatment: Fair treatment for all those applicants wishing to connect and between different technologies of plant; and 	<p>Yes</p>
<ul style="list-style-type: none"> • Compliance: must be compliant with national and European legislation. 	<p>YES</p>
<ul style="list-style-type: none"> • Security, reliability of supply and competition: must maintain (and improve) Ireland’s security and reliability of electricity supply and contribute to competition; 	<p>YES – The Energy Transition emphasises the urgent connection between innovation, user-participation, R & D – on reliability and security of supply. There is a need for change in how these factors are evaluated – traditional thinking can/has fall short.</p>
<ul style="list-style-type: none"> • Practical, and timely implementation: should not be overly burdensome on system operators to implement or developers to engage with; and 	<p>YES – special interest and energy transition Projects should, in this regard, be considered for preferential treatment.</p>
<ul style="list-style-type: none"> • Efficiency in the use of resources and project development: must provide for efficient use of scarce network capacity and system operator resources, thereby favouring viable projects and discouraging ‘hoarding’ of capacity; 	<p>Yes – and this is key. Cellular Smart Grid systems embedded and power-matching local areas does make best use of Network Resources – this is Grid Edge Citizen-driven – such projects require systemic prioritisation. Yes – eliminate “Hoarding” & speculation by consent or strict interpretation of contract terms.</p>
<ul style="list-style-type: none"> • Transparency: must be transparent and allow all developers seeking a connection to understand the process which must be followed and the reasons why they have been successful or unsuccessful in obtaining an offer; 	<p>Yes</p>
<ul style="list-style-type: none"> • Optimal Grid Development: allow the grid to develop in an optimal and cost effective manner and facilitate optimal use of the transmission system. This should minimise the need for new infrastructure. 	<p>Yes – and this is also key. Cellular Smart Grid systems embedded and power-matching local areas does make best use of Network Resources – this is Grid Edge Citizen-driven – such projects require systemic prioritisation. And Yes – eliminate “Hoarding” by consent or strict interpretation of contract terms.</p>

Do you agree with the application of the above underlying principles to the development of Enduring Connection Policy? Are there any other principles that the CER should consider?

EWC Response: *Whereas in general the principles, as set out by the CER above, remain appropriate - the Energy Transition, as quoted below, sets out the greater Challenge of these new times – Ease of Connections and New Smarter Ways of protecting the Electrical System will be urgent to enable this radical change:-*

- “New technologies, services, energy network architectures and community-based energy initiatives will emerge to facilitate and drive the transition. Policy will evolve to optimise the benefits from innovative initiatives
- Human ingenuity and technological development will be central to Ireland’s energy transition. While certain actions can and must be taken immediately, there is also a need to phase other aspects of our policy response to ensure that we benefit from new solutions as they emerge. This will require careful and prudent judgement, and the flexibility to react to new developments and technologies at the optimal time.
- Innovators will contribute by developing new models and technologies that will help Ireland move to a low carbon energy system
- the energy industry will work to ensure that all relevant policies, regulation, products, services and technologies, as well as the generation and supply of energy itself, contribute to a secure, competitive, sustainable and low carbon energy system
- communities of citizens, in rural and urban areas, will be able to work together on energy efficiency initiatives and renewable energy projects (§97-99).
- supporting community participation in renewable energy and energy efficiency projects, via the SEAI, to share best practice, provide information and ensure that local strategies align with broader Government policy
- facilitating access to the national grid for designated renewable electricity projects, and developing mechanisms to allow communities to avail of payment for electricity, such as the ability to participate in power purchase agreements
- Position Ireland as a leading European energy innovation hub to ensure that Irish-based firms benefit from increasing investment in sustainable energy innovation”

EWC along with MEGA commits to working with the CER, SOs and all others interested to enable the Connection Process Design fit for the achievement of these new well informed, enlightened, smart and objectives all in the long term interest of the consumer.

- ensure that grid connection policy will have due regard to current and future renewable energy policy, including in relation to community renewable energy projects; this policy, will be defined using criteria such as scheme size and degree of community ownership
- Renewable energy will also play a central role in the transition. No single renewable energy technology – existing or emerging – will alone enable Ireland to overcome the low carbon challenge. Rather, a diverse range of technologies will be required along the supply chains for electricity, heat and transport.

CER/15/284 3.2 High level approach to Enduring Connection Policy

Having considered the issues identified under the review of the existing connection policy (section 2), and mindful of the proposed policy objective and principles for the Enduring Connection Policy outlined above, the CER is of the view that connection policy may need to move away from the current approach of separate large rounds to a more long term, sustainable approach that provides for an enduring set of principles and policies, to the long-term benefit of consumers. This is not to say that the Group Processing Approach itself should be discontinued but rather that within group processing, the approach to issuing offers and processing connections should change from infrequent, relatively large batches to more frequent, smaller rounds of offers, where the connection criteria have been met. Developers who meet the criteria should be eligible for an offer in the relatively near term, rather than having no sight of when an offer will be issued.

EWC Response: *It is common knowledge that in Ireland Renewable Energy Developers emulate the practices of the once powerful Speculative Building Developers. Whereas the Energy Systems needs a more “designed” approach to fit new RE generation needs (etc.) and the ability to balance such new (mostly inflexible) systems and make best use of its network and grid resources. Smaller more frequent batch processing must fit better with the real needs of the system. Gate 3 was driven by the need to use one source as the principal driver to achieve Irish Government Renewable Energy Obligations. The new emphasis is on System Capacity to carry intermittent renewables and to overcome the constant creep of System Non Synchronous Penetration (SNPS) and growing need for Flexibility at both supply and demand levels. EWC along with MEGA is in full support of this CER Proposal. Non-GPA Connection Applications must however be treated /processed on a priority (Energy Transition), continuous and dynamic basis.*

CER/15/284 on High Level Policies also sets out the following:-

- It is expected that the 2020 RES-E targets can be achieved through completion of Gate 3. Connection policy should enable a more sustainable approach which, while allowing for wide ranging policy considerations, will provide for the optimal connection of generation and large demand customers.
- Increasing focus around planning and consenting and the difficulties some Gate 3 projects have experienced means that the planning process is an important consideration;
- A steady regime will facilitate regulatory certainty amongst developers and investors; and
- A process of open, ongoing qualified access to the networks will reduce the need for a secondary market developing for the scarce resource of network capacity.

What is your view on the high level processing approach outlined above? Are there other processing approaches the CER should consider?

EWC Response: *Whereas a move to more frequent and smaller batch processing (needs-based) is to be advocated. Care must be taken not to destroy the way forward for those smaller more diverse projects who could not possibly survive the GPA Process. The Non-GPA Process has enabled projects to go Live which would not otherwise have survived the GPA Process – Projects of great importance though undersubscribed have advanced in this way and are slowly paving the way for better more diverse RE solutions – projects which will assist greatly in the Energy Transition. When a particular type of project becomes so numerous and large in nature it should be more thoroughly investigated for the purpose of deciding that such projects no longer fit (or continue to fit) the Non-GPA Process. What is called for is a clear and transparent way of coming to such a determination in the interest of establishing an efficient and smart Enduring Connections Policy. Consideration should be given to the establishment within the CER (as mentioned elsewhere) a Special Energy Transition Unit.*

CER/15/284 4 examines - Enduring Connection Policy: Key Policy Drivers to Determining Appropriate Connection Criteria

Having set out the CER’s initial thinking on appropriate policy objective, underlying principles and high level approach for the Enduring Connection Policy, this section examines the policy drivers which the CER sees as

Specifically this section considers the following policy drivers:

- Renewable targets (section 4.1);
- Interconnection, demand and generation forecasts (section 4.2);
- Treatment of non-GPA applications (section 4.3); and
- Connection and Grid Access Considerations (section 4.4).

4.1 Renewable Targets

The All Island Generation Capacity Statement 2015-2024 15 notes that between 3,200MW and 3,800MW of wind power needs to be installed by 2020 to meet the Ireland’s renewable target required by European legislation of 40% of consumption being met by renewable sources, taking into account the electricity demand forecast and other RES. Recent figures provided by the SOs indicate that there is currently 2,380MW of installed wind capacity, and 3,510MW of contracted wind capacity in Gate 3. In addition there is 330MW of non-wind renewable generation connected and a further 475MW of non-wind renewable generation contracted. On the basis of these figures, Ireland is on track to have sufficient renewable generation connected in order to facilitate meeting its RES-E target of 40% of electricity consumption from renewable sources. ...connecting a large number of renewables to the system to achieve the RES-E 40% target may no longer be as significant a driver of policy. Therefore, the CER proposes that connection policy will have to consider a wider range of economic and policy drivers and there is not likely to be one single driver which dictates the direction that the policy should take.

Do respondents agree that the CER should consider the connection of renewables as one of several drivers to be balanced in the development of an enduring connection policy?

EWC Response: *Renewable Energy is the priority and is emphasised as such as quoted below in the White Paper on Energy which has ushered in the new Energy Transition as the primary roadmap for Irish Government Energy Policy. This being said Renewable Energy is dependent entirely on the ability of Networks and Grids to allow its best, safe and stable use. Renewable Energy is a principal Driver which must be viewed side by side with System Services, new Cellular Smart Grid Systems which provide local area embedding and balancing systems and capacities, freeing up the Grid for long haul of remote generation and ensuring that within any substation area optimum use is being made of local generation through real-time local consumption, storage and recycling.*

The new Irish Government Energy Policy – The Energy Transition – Sets out the new policy on Renewable Energy as quoted below:-

“5.3 Renewable Energy

The long term development of Ireland’s abundant, diverse and indigenous renewable energy resources is a defining element of this energy policy. Not alone is renewable energy of key environmental importance, it also provides a sustainable, economic opportunity for Ireland, both in terms of providing a secure, indigenous, source of energy, and as an export in the longer term. As we move to a decarbonised energy system, support for renewable energy is vital from both an economic and environmental perspective.

Thus far, renewable electricity projects have typically been large scale. While there will continue to be an important role for larger projects, there will also be an increasing role for smaller, community-level projects (§95-97). As new renewable energy solutions such as bioenergy, solar photovoltaic (PV) and offshore energy mature and become more cost effective they will be included in the renewable energy mix.

- * we will be a leader in renewable energy deployment with a broad portfolio of large and small-scale renewable energy technologies*
- * we will excel in the application of innovative approaches and smart technologies for decarbonising energy systems*
- * new technologies, services, energy network architectures and community-based energy initiatives will emerge to facilitate and drive the transition. Policy will evolve to optimise the benefits from innovative initiatives.*
- * ensure that grid connection policy will have due regard to current and future renewable energy policy, including in relation to community renewable energy projects; this policy, will be defined using criteria such as scheme size and degree of community ownership*
- * Renewable energy will also play a central role in the transition. No single renewable energy technology – existing or emerging – will alone enable Ireland to overcome the low carbon challenge. Rather, a diverse range of technologies will be required along the supply chains for electricity, heat and transport.*
- * communities of citizens, in rural and urban areas, will be able to work together on energy efficiency initiatives and renewable energy projects*
- * innovators will contribute by developing new models and technologies that will help Ireland move to a low carbon energy system*

CER/15/284 4.2 examines - Interconnection, Demand and Generation Forecasts

The CER proposes that the Enduring Connection Policy should provide for new interconnection, should viable projects emerge.

It is noted that interconnection is treated differently from generation and demand connections. The provisions of the Third Package and the EU Network Codes require preferential treatment for interconnectors and such projects are explicitly facilitated under the Projects of Common Interest (“PCI”) Regulations. Therefore it may be appropriate to consider the connection of interconnectors separately to the wider connection policy that pertains to generation and demand. Alternatively the connection of interconnectors could be considered within the enduring connection policy albeit with different criteria as required by the applicable legislation.

Should connection policy make explicit provision for interconnectors? If so, what issues should the CER take into consideration?

EWC Response: *The provisions of the Third Package and the EU Network Codes require preferential treatment for interconnectors and such projects are explicitly facilitated under the Projects of Common Interest (“PCI”) Regulations. Therefore it must be seen as appropriate to consider the connection of interconnectors separately to the wider connection policy that pertains to generation and demand.*

4.3 Treatment of Non-GPA Applications

There are currently a large number of non-GPA applications for solar connections. Given the volume and geographical clustering of these applications the CER considers that the non-GPA process, and the sequential processing of applications, may no longer be appropriate for projects where there are a large number of projects clustering in specific areas of the network and that a form of group processing is now required. It is also noted that the volume and clustering of these projects seen in 2015 is on a scale significantly in excess of any previous year that the non-GPA process has been in existenceTherefore it is proposed that all applications under the non-GPA process will be processed in line with the policy decided upon as a result of this consultation process. In advance of new policy being put in place applications will continue to be processed under the existing non-GPA process – any applications still outstanding would then be processed under the new policy, where applicable.

The CER considers that, given the objectives of the proposed new connection policy, a non-GPA process for specific technologies may no longer be appropriate. However the CER requests views on whether certain categories of generators, such as those under a set MW threshold or R&D projects, should be processed outside the GPA process.

Should the technologies and projects currently covered under the non-GPA process be processed under the GPA process when the new connection policy is implemented?

Should some categories of project be processed outside the GPA process when the new connection policy is implemented?

EWC Response: *Whereas a move to more frequent and smaller batch processing (needs-based) is to be advocated. Care must be taken not to destroy the way forward for those smaller more diverse projects who could not possibly survive the GPA Process. The Non-GPA Process has enabled projects to go Live which would not otherwise have survived the GPA Process – Projects of great importance though undersubscribed have advanced in this way and are slowly paving the way for better more diverse RE solutions – projects which will assist greatly in the Energy Transition. When a particular type of project becomes so numerous and large in nature it should be more thoroughly investigated for the purpose of deciding that such projects no longer fit (or continue to fit) the Non-GPA Process. What is called for is a clear and transparent way of coming to such a determination in the interest of establishing an efficient and smart Enduring Connections Policy. Consideration should be given to the establishment within the CER (as mentioned elsewhere) a Special Energy Transition Unit.*

4.4 Connection and Access Considerations

In developing a new connection policy it will be necessary to consider and take into account other relevant policy issues which may shape the direction of connection policy. The CER has identified a range of such policy issues below:

- I-SEM design;
- DS3;
- Network issues;
- Demand;
- Government commitments and European policy;
- Community based schemes; and
- Planning and consenting considerations

4.4.1 I-SEM Design

The SEM Committee published its decision paper on the high level design of I-SEM on 17th September 2014. This paper describes the SEM Committee decisions on the features of the new energy trading arrangements, the need for a Capacity Remuneration Mechanism (CRM) in the new market, and indicated that two years of detailed design are required in order to implement the I-SEM market. Since then, significant work has been on-going on the I-SEM energy trading arrangements, CRM and market power.

Accordingly, the CER recognises that while the I-SEM high level design provides a significant amount of certainty for investors, with regard to the shape of the future market, there remains a lot of work to be completed before all aspects of the new market are known. The purpose of connection policy is ultimately to facilitate entry by efficient new generators to the market. By facilitating the entry of efficient generation into the market connection policy plays an important role in ensuring the market signals drive efficient entry and exit in the market. Therefore the CER considers that more a more frequent GPA process would complement the market signals in the wholesale market. However, the CER does not consider that there are any direct interactions between connection policy and I-SEM that would require the development of the Enduring Connection Policy to wait until the full implementation of I-SEM was completed.

Do respondents agree that the CER should progress the development of the Enduring Connection Policy in advance of I-SEM go-live?

EWC Response: *EWC along with MEGA **agree fully** with the CER, on the face of it, there are apparent direct interactions between connection policy and I-SEM that would require the development of the Enduring Connection Policy to wait until the full implementation of I-SEM was completed. Further a two year wait time could cause damaging uncertainty and upset possibly the dynamic development of the Energy transition. In any case it has to be supposed that even the tenets of an Enduring Connections Policy might need review downstream given the uncertainties that lie ahead.*

CER/15/284 4.4.2 examines the Connection Needs of DS3 – System Services

The DS3 programme which is being implemented by the TSOs, EirGrid and SONI, aims to develop solutions to the technical challenges associated with increasing the levels of renewable generation on the electricity system. 21 The DS3 programme formally commenced in September 2011, following from a review by the CER and NIAUR of EirGrid and SONI’s Report on Ensuring a Secure, Reliable and Efficient Power System 22 . The on-going deliberations on the detailed design of DS3 System Services, and whether there is a requirement to provide for additional flexible plants in order to support the achievement of the 2020 targets will be important in the development of a new connection policy. Therefore, connection policy may need to be more focused on facilitating a mix of generation on the system, as opposed to a focus on a particular type of generation, such as renewables. A final decision on the DS3 system services procurement framework was published by the SEM Committee in December 2014 (SEM-14-108) and the SEM Committee is currently working with the TSOs to develop the detailed design for system services. The CER considers that connection policy should facilitate generators that can provide system services needed by the system.

Should connection policy facilitate a mix of generation and in particular facilitate providers of system services? Should connection policy focus on certain technology types or rely entirely on market signals?

EWC Response: EWC along with MEGA **agree fully** with the CER that connection policy should facilitate Generators/Power Quality (PQ) Rectification Systems that can provide system services needed by the system. In so doing EWC and MEGA requests that the CER be mindful of the importance of innovation, small projects, start-ups and new entrants. Renewable Energy Technologies and much innovation did not originally develop out of large companies or established industry players or favourites – renewable energy, particularly Wind Power Technology originated in small and start-up companies and communities (particularly in Denmark) who were systematically opposed by utilities and grid operators and ignored (if not sliced and diced) by large companies. If these companies (many of which were wiped out by the barriers and aversions of utilities) – if these small start-up companies had not persisted in developing and testing these radically new RE technologies then the Renewable Energy Technology that today is driven by Large Companies would not exist, or be as Technology Ready as it now is. DS3 is a journey into uncharted territories – the goal of achieving, through DS3, 75% SNSP is bold and ambitious and sets EirGrid apart as a world-class TSO. – but to ignore the troubles that lie ahead, to rely on incumbents and established operators, to inadvertently forget how innovation and break-through’s have come about in this and other sectors is to play with fire.

For example Tesla has significantly disrupted the car and battery sectors. Risk mitigation requires that a fleet of new innovators be brought under the wing of the operation – to provide greater learning and insights and to capture break-through systems as they come to the surface.

All the signs are that DS3 is not mindful of the “sometimes muddled” way we got to advances made over the past 40 years to where we are now. We ask that the CER watch this departure carefully and provide space to champion the new entrants and small innovative projects - through its connections, and other policies - to protect the consumer from the costs that will be incurred if we repeat the mistakes of the past. We would also ask that the CER be mindful that the success of DS3 will only enable at certain limited growth of Renewable Energy on the Grid.

Solutions that will enable increased Renewable Penetration that are Long-term and Grid Supportive must remain the key objective for the CER on behalf of the consumer. Systems must be put in place to assist, or at least not block, such grid-friendly renewable energy projects.

CER/15/284 4.4.3 examines – Network Issues

Significant levels of network investment have occurred in Ireland since 2010. Over €1.1 billion has been spent by EirGrid and ESB Networks in upgrading and expanding the transmission system between 2010 and 2015, with further significant investment to be made between now and 2020. With such significant levels of investment by consumers in the electricity system, it is important that the most efficient use of this network capacity is made and that connection policy incentivises efficient use of the existing infrastructure.

Should projects which make the most efficient use of the existing network be prioritised over projects driving more deep reinforcements?

EWC Response: *As Distributed Energy Resources (DER) are inadvisability deployed at ever increasing rates over the coming years and decades, Networks, even the Grid, are at risk of serious congestion and Power Quality/Stability Challenges. The key Challenge is steer this movement towards optimum network*

usage, even Network and Power Quality support. This, and Grid stability, are the two key factors that demand the intelligent and Smart Deployment of DER. The Energy transition emphasises the change in make-up, composition, attitude and operating model that will be required to create the level of collaboration required between the TSO, DSO and organised Prosumers (Grid-Edge) to achieve optimum Network Usage and to free up the Grid for Long Haul operations from remote generation sites. Optimum use of Networks is a priority but smarter ways need of achieving Optimum Network Usage which must be cultivated using smart grid technologies (Smart local power-matching & Storage) as an even higher priority for connection – in the Energy Transition.

Quoting the Energy Transition:-

“Energy Network Innovation

Ireland is acknowledged as a world leader in energy systems integration technology and innovation, which will have a major influence on how energy networks are developed and operated during the transition. In particular, electricity system operators are likely to adopt innovative ways of improving efficiency and adapting to a diversifying electricity generation portfolio.”

CER/15/284 4.4.4 examines - Demand

Existing connection policy makes no differentiation between demand connections – all are facilitated as and when demand connection applications are received. As the economy grows it is possible that there will be an increase in the type and number of demand connections requested (especially large demand loads). Indeed in recent years there has been a positive and significant influx of large data centres onto the system. In certain circumstances where a very large demand load seeks to connect to the system wider network issues may arise. These could include system operation issues such as voltage control, local congestion etc. Such issues may be resolved with sufficient local generation or network reinforcements or the use of flexible local resources (e.g. using storage, demand side or other flexible solutions). Therefore it may be in the interest of the long term development of the system that demand connections above a certain size should be encouraged to connect in locations which make the most efficient use of the existing network.

Should large demand connection which make the most efficient use of the existing network be encouraged through the Enduring Connection Policy?

EWC Response: Yes – and this is good reason for Local Authorities to get involved in ensuring that they can assist in the energy and network provision challenge to continue to attract large demand customers/business that enable investment into smarter network improvement and smart grid technologies.

CER/15/284 4.4.5 examines - Government Commitments and European Policy

..., the CER has due regard to the Government’s Energy Policy and wider EU policy. Accordingly the CER will be cognisant of the Government’s Energy policy when developing its connection policy. In particular the CER will consider the implications of the Government’s forthcoming White Paper when developing its policy.

EWC Response: *The radical new energy development trajectory set out for Ireland as the Energy Transition as published in the White Paper is requiring profound changes at all levels in the quest for excellence in the Global Energy Challenge.*

CER/15/284 4.4.6 examines - Community Based Schemes

The CER notes local initiatives to establish and develop generation projects advanced under a community based scheme. The CER considers that such schemes may be beneficial for the communities involved and promote the sustainable development and connection of new generation. That being said, it is noted that the CER and the SOs have legal obligations of non-discrimination between users seeking to connect to the system.

Are there any specific issues the CER should take into consideration regarding community based schemes?

EWC Response: *The new Energy Transition wisely places a strong emphasis on the community and the Energy Citizen as having a key role in achieving success in the unavoidable journey towards greater energy independence and a future (2050) near carbon zero energy economy. Further since 2012 EWC has been extremely instrumental and fully supportive of the Aran Islands Energy Community which the whitepaper specifically identifies as a positive example of Community Energy. The Whitepaper states:-*

“Community Energy Projects

Community-level energy efficiency and renewable energy projects, using a range of technologies, will play an important role in the energy transition.

There will be opportunities for communities to collaborate, including with local government and energy agencies, to develop community energy efficiency and renewable energy projects.

- supporting community participation in renewable energy and energy efficiency projects, via the SEAI, to share best practice, provide information and ensure that local strategies align with broader Government policy
- facilitating access to the national grid for designated renewable electricity projects, and developing mechanisms to allow communities to avail of payment for electricity, such as the ability to participate in power purchase agreements
- ensure that grid connection policy will have due regard to current and future renewable energy policy, including in relation to community renewable energy projects; this policy, will be defined using criteria such as scheme size and degree of community ownership
- providing funding and supports for community-led projects in the initial stages of development, planning and construction. These will be defined using criteria such as scheme size and degree of community ownership

Renewable energy will also play a central role in the transition. No single renewable energy technology – existing or emerging – will alone enable Ireland to overcome the low carbon challenge. Rather, a diverse range of technologies will be required along the supply chains for electricity, heat and transport.

- New technologies, services, energy network architectures and community-based energy initiatives will emerge to facilitate and drive the transition. Policy will evolve to optimise the benefits from innovative initiatives.
- supporting, in particular, the emerging energy co-operative movement as one means of facilitating community participation

Thus far, renewable electricity projects have typically been large scale. While there will continue to be an important role for larger projects, there will also be an increasing role for smaller, community-level projects (§95-97).

As new renewable energy solutions such as bioenergy, solar photovoltaic (PV) and offshore energy mature and become more cost effective they will be included in the renewable energy mix.”

There can be no doubt that the Whitepaper is expecting a lot more than the simple lowering of the “cost of opposition” from communities. Communities are clearly seen as an engine for smart energy solutions and better use of Networks and the Grid and more diverse and rich sources of both Renewable Energy and storage/Power Quality Enhancement.

The importance of the positive involvement of communities can be evidenced through the recent (2015) Community Energy Proclamation which effectively pre-empted the Whitepaper. The Proclamation states

“As an island Ireland has a relatively small grid which requires additional grid resilience earlier. We recognize the necessity for grid stability and support measures which utilize the grid fairly and for the common good. We envisage communities contributing to, and benefiting from, the growth of a secure and stable smart grid via smart meters and micro-grids. We see, within reach, active energy citizens acting as ‘Prosumers’ (both producers and consumers) in local area groups actively providing grid support and stabilization services while enabling the increasing penetration of renewable energy towards a near zero carbon energy future.”

Community Energy Proclamation signed by over 100 Communities.

CER/15/284 4.4.7 examines Planning and Consenting Considerations

Existing and previous connection and access policy has considered planning and consenting issues to be separate considerations outside the remit of connection policy. The CER has no role in making planning or consenting decisions for either generation projects or the network to connect these projects. Accordingly the CER has previously considered that connection policy should not be dependent upon or linked to planning matters. However, in recent years, since the Gate 3 decisions were issued, there have been three main developments which may warrant a change in position on this approach:

Should the CER include planning permission in the criteria for receiving a connection offer?

EWC Response: *This is not a simple question to answer. Strategic Projects will often need parallel decision-making on Planning permission and Connection. However there are projects with planning permissions which have no grid access and there are plenty of grid connections without planning permission or even a proposed project. EWC recognises the need for flexibility but are of the opinion that a valid planning permission would be generally appropriate. The Whitepaper raises the question of large storage projects. The surplus energy that must result, periodically and unpredictably, from the escalating levels of Wind Power Capacity and now the likely rush into the “gold-mine” of Solar Parks of less than 5 MWs (4.99 MW!-non controllable power modules) – so much energy with nowhere to go. EWC proposes that whereas it is fair that GPA approved projects should be prevented from holding up progress through planning permission issues – it is also fair that Strategic Projects be facilitated through some form of parallel process that synchronises planning approvals with connection agreements through “in principal agreements – subject to”. Small projects of up to 2 Mw inclusive which are of “ Significant public interest with scalable (Ireland or internationally) RD&D projects including either technology and ownership /operational structures as certified by independent body to SO”*

4.5 Conclusions

This section has outlined a number of policy issues which need to be considered as part of determining appropriate connection criteria under the Enduring Connection Policy. In reviewing these issues however, it is apparent that the new connection criteria will need to be different from Gate 3. The legal framework, policy and system requirements are now different to those pertaining at the time Gate 3 was developed. Accordingly taking the drivers identified above, it is the CER's view that a targeted set of connection policy initiatives will be necessary to address the wide ranging policy considerations. In addition to this, the CER is of the view that connection policy should now transition to a more enduring, steady state arrangement, compared to the current approach of separate large rounds of offer issuance.

Have we identified the correct policy issues? Are there policy issues which we have not accounted for?

EWC Response: *It would seem that since the publication of the Whitepaper some rethinking will be essential to get the connection process back on track and in sync with Irish Government Energy Policy.*

Should the GPA process be retained? And should there be more frequent rounds of offer processing?

EWC Response: *In general – Yes – but not at the expense of the Non-GPA Process for Special Projects, Small, R & D, Innovative, Beyond State-Of-The-Art, Exemplar and Community.*

Should the non-GPA approach be revised?

EWC Response: *YES. A ranking scheme based on PUBLIC INTEREST in its widest interpretation could prioritise for example critical time limited actions for RD&D. These must be fast tracked and protected from GPA delays (use it or lose it), reserved capacity for “community”, Rebalance disadvantages resulting from the “GPA peculator friendly process” Cooperative, NGO/Charity common good projects with >50% NFP ownership structures.*

PART 2:

Transitional Arrangements

5 Proposed Transitional Arrangements

CER's proposal to implement a number of inter-related transitional arrangements in the following areas:

- (1) Release of existing capacity;
- (2) Existing connections seeking to increase capacity; and
- (3) Units seeking to provide System Services required by the TSO.

EWC Response: *It is important to be mindful of the new Energy Transition which is calling for a radical increase in R&D Projects, Innovations, Collaborations, & other special purpose projects. Such projects can be extremely time and funding sensitive. We request that the CE include the following category – (4) Energy Transition Related Connections. This is the new Irish Government Energy Policy and it is calling on all citizens and organisations to get behind this major drive for energy autonomy in a future near zero carbon economy.*

5.1 Release of Existing Capacity

In order to facilitate the connection of new generation to the system it is necessary to have a clear view of the spare capacity on the network. This can be difficult if there is some uncertainty regarding projects which, despite having signed their connection offers, may not complete construction. These projects'

connection agreements can only be terminated where they have failed to meet the longstop dates specified in the connection agreements. This could result in capacity not being released back to the system for several years. Therefore the CER proposes to incentivise projects which are unlikely to become operational to release their capacity before the termination of their Connection Agreement. The CER proposes to direct the SOs, where a project has applied to terminate its Connection Agreement in advance of the next applicable longstop date, to refund 100% of a project’s first stage payment, net of monies spent by the SOs, until 30th June 2016.

It is proposed the refund would only be payable after the completion of the termination process, not the date the process commenced.

EWC Response: *EWC agrees with the release of capacity particularly as some of the allocated capacity will probably never be connected, however with due consideration of need to protect certain special projects in view of the low penetration of RD&D projects including community projects, charity projects (including NGOs RD&D with significant international benefits as projects with technology, financial or social systems scalable models for achieving the UN “Energy related sustainable development goals”, distributed embedded generation controllable technologies (DER Cellular Micro Smart Grids). While connection policy claims to be non-discriminatory, this has to be questioned. The lack of access to the grid is self-evident by the almost total absence of community or charity owned projects in Ireland, which is in stark contrast to most EU countries particularly Germany and Denmark. It is necessary to re-evaluate policy to ensure an unequivocal fair and level playing field for all.*

5.2 Existing Connections

The CER proposes that the SOs would issue a modification to the connection offer/agreement to generators fulfilling the following criteria:

- The generator applies for the modification before the 30th June 2016;
- The generator is already connected to the network or will be connected before 30th June 2016;
- The increase in capacity is no more than 10% of the current MEC firm capacity allocation to that generator;
- The increase in capacity will not drive any new deep reinforcements;
- The increase in capacity will not require a change to the connection assets;
- The generator is not required to issue Directed Contracts in the SEM; and
- The increase in capacity will not have any interactions²⁶ with currently contracted generators.

EWC

An unintended consequence of the GPA system has been that many existing projects have been built at the disadvantage to other system users through ill-informed and wasteful utilisation of the scarce available grid resources.

This has been driven historically by;

- a. the currency of speculation which in early development is “megawatts with connection offer and megawatts in planning”. Once a connection offer had been made, based on the gate order, an unexplainable and perverse incentive was, unintentionally (or otherwise) in place to build out to the maximum megawatt rating - resulting often in 33% of the installed capacity only capable of generating at the most extreme end of the high wind distribution curve resulting in peaky generation - causing frequent curtailment of more efficient generation.

- b. the issue of derogations allowing a large proportion of the wind fleet to be non-controllable forcing other generators to curtail or constrain
- c. the misguided or perverse rule of installed capacity being limited to 105% of export capacity and this limit enforced. This rule has now been relaxed allowing existing generators to generate more energy (not power) from their existing connections.
- d. A secondary market whereby developers have resold the precious grid capacity in some cases for millions of Euros rewarded poorly conceived projects whose aim was to grab the maximum megawatt grid capacity has ultimately been paid for by the user including the communities who host these projects and consumers.
- e. A further unintended consequence has been the increasing resistance of communities to the development of large wind generation projects and much needed grid infrastructure.

EWC believes that the CER must have an alternative to the 10% give-away to existing generators - this give-away will lead again to more “free speculative megawatts” without first optimising both energy and grid compliance or including strong national interest features such as RD&D. Such a give-away would surely increase the inequality already created by the unforeseen consequences of a, b, c and d above.

CER/15/284 .3 examines - Units seeking to provide System Services required by TSO

The CER proposes that the SOs would provide connection offers to generators and other providers of system services fulfilling the following criteria:

- The unit can provide system services identified by the TSO as being in insufficient supply from the current fleet;
- The capability of the unit, in relation to those system services, is in excess of that required by Grid Code;
- The generator is not required to issue Directed Contracts in the SEM
- The unit will be operational within 12 months of offer issuance or the unit commits to taking part in the system services auction (and is awarded a contract) ; and
- The unit can demonstrate that it can deliver the DS3 System Services in the timeframe required by the DS3 procurement process.

The purpose of this proposal is to facilitate the connection of units which will benefit the security of the system, consumers and are complementary to the connection of variable renewable generation. Units that can provide system services needed by the TSO will help increase the SNSP limit and this will lower curtailment levels; facilitating variable renewables and lowering the wholesale cost of electricity.

Whether these transitional measures should be implemented ahead of the development and implementation of the Enduring Connection Policy;

The timing of such arrangements (30th June 2016 for policy measure (1) and (2));

The appropriate level of increase in capacity under policy measure (2) to deliver most final customer benefit.

EWC Response: *The GPA scheme grouped projects and connected them effectively to the transmission system. The requirements for system services should ideally be provided at points of demand optimising active and reactive power flows, and local resilience to transmission constraints. EWC along with MEGA believe there is a case to be argued for reserving certain system services capacity for embedded “power*

modules” and this should be incorporated in the connection offer process – including transitional arrangements.

Exemplar development on the Tallaght Smart Grid Test Bed supported by South Dublin County Council could be accidentally blocked if System Services are not distributed into areas of demand rather than areas distant from demand. Downstream Smart Grid development would be hampered and delayed if such short term (convenient) solutions were adopted. The Smart Grid requires a system-wide mesh of Smart Nodes these require embedded System Services within each Smart Node (City/Town). Failure to provide the needs of such future Smart (hardened) Nodes would be detrimental to consumers. The Local Authorities are best equipped to promote and develop such Smart Nodes – not only for Smart Grid Roll-out and Stability but also for Emergencies. DS3 and System Services which ignore this principal, because it is simply not urgent now, will cause harm to consumers downstream. It may be helpful to revisit the Financial Collapse which arose out of short term consumer-centric thinking.

Yes it was good for Bank Customers (consumers) to get easy loans in the short term – but now it has been established that such easy loans, which were pro-consumer at the time, were incorrect and the regulator should have been mindful of, not just the immediate benefits for the consumer, but also the medium/long-term interest of consumers. These Irish consumers now will carry this huge burden for generations ahead. What is easy and comfortable for SOs today is not necessarily good for the consumer who do not only live for today but expect also a good outcome in the future. All eyes should be on the needs of the future Smart Grid to be in the consumer’s best interest.

**PART 3:
SUMMARY AND NEXT STEPS**

6 Summary and Next Steps

Part 1 of this Paper is intended to commence the debate on the Enduring Connection Policy. It is not intended to be an exhaustive list of options and approaches which could be taken to connection policy in Ireland. However the CER would like the views of stakeholders with regard to the conceptual approach outlined in this paper; the retention of the GPA process but movement away from large one-off gates towards a more regular, iterative connection process and the movement towards the requirement for a higher threshold to be met before offers are issued.

EWC Response: EWC believes that CER should rank “all “the public interest and system benefits for projects – in so doing offer to “high rank projects” certain reserved percentage of capacity not less than 10% of total.

Priority should be given to distribution connected embedded projects which utilise “smart grid” knowhow to redress the current embedded generator / auto producer imbalance created by the GPA system. It is notable that current barriers to auto producers (i.e. contiguous rule) is effectively barring industry / data centres and communities from offering sustainable resilient progressive valuable renewable energy and system balancing and support services.