EirGrid's Response to Stakeholders' Feedback

Based on submissions to our draft grid development strategy: "Your Grid, Your Views, Your Tomorrow."

EIRGRID

The current. The future.

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Chapter 1

Introduction

We published "Your Grid, Your Views, Your Tomorrow" a discussion paper on Ireland's grid development strategy for public consultation in March 2015. In this document we detail our response to the comments and feedback we received. We also outline where we have made changes to our strategy as a result of the feedback received. The updated strategy is published alongside this document.

The consultation period on "Your Grid, Your Views, Your Tomorrow" ran for 10 weeks from March 2015 until June 2015. We received 3,386 responses. We also held three regional forums in Cork, Sligo and Dundalk. These were chaired by the Irish Rural Link and were broadcast live on the internet. We thank all those who responded.

Dialogue by Design summarised the feedback received. We published their report in November 2015. It is available on our website (www.eirgridgroup.com).

In addition to updating our strategy as a result of the feedback received, we have also updated it to account for:

- The Energy White Paper published by the Department of Communications Energy and Natural Resources in December 2015; and
- Updated information since the discussion document was published in March 2015.

Energy White Paper

The White Paper reaffirms the core objectives of energy policy, which are: sustainability, security of supply and competitiveness. There is a continued and renewed commitment to reducing Ireland's Green House Gas (GHG) emissions. Non-renewables or fossil fuels currently account for over 90% of energy consumption in Ireland. This will fall to 84% in 2020 if we reach our binding EU targets for renewables.

While there are no binding targets set beyond 2020 it is acknowledged that a radical transformation of Ireland's energy system is required to meet climate policy objectives.

The Government's vision of a low carbon energy system means that GHG emissions from the energy sector will be reduced by between 80% and 95%, compared to 1990 levels, by 2050, and will fall to zero or below by 2100. In order to reduce GHG emissions by 80-95% by 2050, fossil fuels would account for 19-30% of final energy demand in Ireland.

The White Paper discusses the key themes for the years ahead that will enable the energy transformation, including: technology and innovation, renewable energy sources, energy efficiency, electrification of heat and transport and the concept of the active 'energy citizen'. Our updated strategy is consistent with the White Paper.

Updated Information since Draft Strategy published in March 2015

We published "Your Grid, Your Views, Your Tomorrow" in March 2015. The updated strategy is published alongside this document and takes into account changes since March 2015 in the areas of demand forecasts, project delivery, developments in our major projects and forecast capital expenditure.

Document Structure

The sequence of chapters in this document follows the same as that in the Dialogue by Design report. The chapters are as follows:

- **Chapter 2:** gives an overview of the Government's Energy White Paper and the resultant changes we made to the strategy;
- **Chapter 3:** details the comments received on the draft strategy and the broader context and our response to those comments;
- **Chapter 4:** details the comments received on grid development and our response to those comments;
- **Chapter 5:** details the feedback on the theme of minimising development and energy demand and our response to that feedback;
- **Chapter 6**: details the comments received on transmission technologies and our response to those comments; and
- **Chapter 7:** details the comments on EirGrid's approach to engagement and the consultation process and our response to those comments.

In this report each chapter begins with the summary of the comments received as detailed in the Dialogue by Design report. Our response then follows, plus any updates we made to the strategy.

Chapter 2

Changes made due to the White Paper

2.1. Overview

The White Paper reaffirms the core objectives of energy policy, which are: sustainability, security of supply and competitiveness. There is a continued and renewed commitment to reducing Ireland's Green House Gas (GHG) emissions. Non-renewables or fossil fuels currently account for over 90% of energy consumption in Ireland. This will fall to 84% in 2020 if we reach our binding EU targets for renewables.

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The White Paper discusses the key themes for the years ahead that will enable the energy transformation, including: technology and innovation, renewable energy sources, energy efficiency, electrification of heat and transport and the concept of the active 'energy citizen'. Our updated strategy is consistent with the White Paper.

2.2. Summary of changes made

In many ways our draft grid development was consistent with Government energy policy. However, we have made the following changes to our strategy to explicitly align it with the Energy White Paper:

- We note that the Department plans to implement a new National Energy Forum which will contribute to policy development and implementation. We look forward to working with, and contributing to, the Forum.
- We welcome the concept of the active 'energy citizen'. This idea proposes that citizens and communities will increasingly play a more active role. This could include citizens and communities generating renewable energy and finding ways to achieve greater energy efficiency. We will play our part in supporting the concept of the 'energy citizen' introduced in the Energy White Paper.

- We note that the Energy White Paper reaffirms the government's approach to change to a low-carbon energy future. The White Paper restates Ireland's commitment to our 2020 targets. It outlines a vision and a framework to guide Irish energy policy between now and 2030. It also sets a goal of low and zero carbon energy systems by 2050 and 2100 respectively.
- We note that the White Paper recognises our recent review of strategy, and our efforts to build trust with local communities. We are achieving this by enhancing our consultation and engagement processes.
- We note that the White Paper recognises our grid development strategy as the overview of the development of the electricity grid. The White Paper states that developing, maintaining and upgrading the electricity grid is essential. The White Paper also supports and promotes further interconnection.
- We note that the Energy White Paper places great value on Ireland's relationship with Northern Ireland. In particular, it emphasises our close co-operation on a range of energy matters including the proposed North South Interconnector Project. It recognises the benefits of the proposed project.
- We note that technology and innovation are at the core of government's energy policy. It is also at the core of our strategy.
- We note that our grid development strategy is consistent with the government's Energy White Paper.

Chapter 3

Comments on the draft strategy and the broader context[1]

1 Chapter 3 / pages 15 – 22 of the Dialogue by Design Report.

3.1. Overview

This chapter summarises comments on EirGrid's draft strategy overall, as well as wider issues around energy policy at the national and international level. Some of the issues discussed in this chapter overlap with those in the following chapter, although Chapter 4 (Comments on grid development) focuses more on the need to develop the grid as set out within the draft strategy.

Aside from comments on the draft strategy as a whole, this chapter also summarises comments on a number of topics. These include different forms of renewable energy generation (including wind energy), interconnection with European countries, and the equity implications of the draft strategy.

3.2. Comments on EirGrid's overall draft strategy

Comments supporting the draft strategy

A number of respondents express support for the draft strategy; often on the grounds that they feel it adequately reflects the recent significant changes in the Irish economy and future demand projections. Other reasons for support are that the draft strategy provides for developing the grid in order to meet Ireland's wider economic, social and environmental policy objectives (see Chapter 4 for particular comments on developing the grid).

"Chambers Ireland supports the view that the electricity grid must be developed to underpin Ireland's future economic growth strategy." (Chambers Ireland, UserID 98)

The Irish Hotel Federation believes there is a need to streamline the planning process to facilitate the development of essential infrastructure central to the growth of the tourism industry. Similarly, the Irish Wind Energy Association supports the strategy and its focus on the case being made for a modern electricity infrastructure. Many respondents, including the New Ross & District Chamber of Commerce, express particular support for the emphasis in the draft strategy on the low carbon energy sector. Others praise the commitment to align the updated strategy with the Irish Government's White Paper on Energy Policy.

EirGrid's Response and Action

We acknowledge the support for the draft strategy. We have updated the strategy to take into account the Government's White Paper on Energy Policy - we have summarised these changes in chapter two of this document.

Criticisms of the draft strategy

Many criticisms of the draft strategy relate to respondents' belief that it runs counter to various legal commitments or policies. For example, some respondents believe that a Strategic Environmental Assessment (SEA) should be carried out for the strategy.

Some of these criticisms suggest a lack of public involvement in the draft strategy, with respondents claiming that it contradicts the UNECE Aarhus Convention in relation to early public participation in environmental decision-making, as well as the Public Participation Directive.

Respondents consider that whilst EirGrid is not solely responsible for determining the Irish National Energy Plan, it has a duty to ensure that the legal basis for all components of the plan is sound. Respondents level a number of other criticisms. They believe that the draft strategy:

- is focused too much on economic considerations rather than the needs of Irish citizens. Some argue more specifically that it has been influenced by economic policy at the EU level, promoting the interests of multinational energy companies.
- builds on a 'flawed energy policy' focused too narrowly on wind energy.
- still appears to promote 400kV overhead transmission lines as the most viable solution despite the re-assessment of Ireland's electricity demand and the revised strategy for Grid Link.
- is premature, in that it has been released before the forthcoming White Paper on Energy Policy by the Irish Government, and could be overturned by this.

EirGrid's Response and Action

It is an essential part of our work to understand how the development of the transmission system has potential to affect the environment and local communities. These considerations are central to how we work – whether we are looking at a review of our overall grid strategy, or the progress of a particular project. We ensure that we comply with all national and EU guidelines.

A full Strategic Environmental Assessment (SEA) was carried out on the original Grid25 Implementation Plan (IP) 2011-2016, with both documents published in April 2012. The results of this SEA are available on www.eirgridgroup.com. It was intended that following adoption, the IP and associated SEA would have a 5–year lifespan. The review and drafting process for the subsequent IP and SEA has commenced. The updated grid development strategy forms a fundamental element of the next implementation plan and associated SEA.

We consulted on our draft grid development strategy for 10 weeks from March 2015 until June 2015. We also set up a dedicated web page on our website to make the documentation available and an online response system to accept comments. We held three regional forums to receive feedback from communities and representative groups across the country. These forums were facilitated by Irish Rural Link and were broadcasted live on the internet. We also received feedback via phone calls, emails, post and our local offices. We received 3,386 responses. The consultation, three forums and the opening of local offices were advertised in local and national media. We believe the approach to updating the strategy was reasonable and appropriate.

Other matters raised are outside our statutory remit. These include topics such as formulation of national and EU energy policy, renewable energy targets, energy subsidies, wind energy and other renewable energy sources (e.g. biomass, solar, hydro, geothermal, etc.), long-term financial and technical viability of wind energy, planning consent for wind farms, and the legal basis for components of policy or plans.

We are not responsible for the development of energy policy. Neither do we own, construct, or operate any form of generation, including wind farms. As per our statutory and licence obligations, we are required to plan and develop the transmission system to meet reasonable demands for the transmission of electricity. In addition, we are required to offer terms and enter into agreements for connection to and use of the transmission system with all those using and seeking to use the transmission system. This includes, large industrial customers, wind farms and data centres, irrespective of whether they are Irish or foreign owned.

In addition to our statutory and licence obligations, the following factors have influenced the focus of our strategy and our major projects, and are reflected in our strategy statements:

- **Feedback received during the consultation process on major projects;**
- **Advances in technology; and**
- **Changes in the external economic environment.**

In line with our strategy statement "We will consider all practical technology options" we consider all practical technology options for network development. When we propose reinforcement we will consult on a range of options appropriate for the need identified. We are not wedded to any particular technology.

While setting energy policy is outside our remit, our plans take account of wider policy statements and are aligned with these. We have thoroughly reviewed the White Paper and are confident that our updated strategy is consistent with it. We will encourage state agencies and other bodies to participate in a broader debate on why new or enhanced electricity transmission infrastructure is required. We note in the White Paper that the Department plans to implement a New National Energy Forum, which will contribute to policy development and implementation. We look forward to working with, and contributing to, the Forum.

We have considered the comments on our overall strategy and responded above. We have made changes in our strategy to account for the White Paper – these are summarised in chapter two. We have not made changes to our strategy for comments that are outside our remit, or are already accounted for in the strategy.

3.3. Comments on energy policy and renewable energy technologies

A range of issues are raised in relation to energy policy- both that of the Irish government and at the EU level. Some of these issues are outside of EirGrid's scope of influence and are noted here in order to record the feedback. Respondents discuss the EU 2020 renewable energy targets, as well as suggesting alternative sources that might contribute to achieve such targets, and commenting in more depth on different types of generation.

Comments on wind energy policy and generation

Many respondents state their opposition to further wind development and put forward a number of reasons for this. These comments are not directed to EirGrid in isolation, in that respondents point out the role of the Irish Government in promoting an energy policy they feel is too narrowly focused on onshore wind energy generation.

Many respondents express opposition to further support for wind generation, expressing doubts as to whether this is a sensible policy for Ireland. Whilst they generally appreciate the need to meet climate change and renewable energy obligations taken at the European and national level, respondents note the Government should not assume onshore wind energy generation is the only option available. Some point out that other European countries are in the process of revising their wind subsidy programmes in favour of other renewable energy sources which they feel would be most effective from a carbon saving perspective as well as minimising the potential negative impacts on the environment and landscape.

A major issue raised relates to the fact that wind power generating capacity is usually built in environmentally and visually sensitive areas remote from areas of energy need, which would cause the need for costly transmission lines and use up undeveloped landscape. Wind energy generation is also associated with overhead power lines being used for transmission:

"Why Ireland is building power generating capacity in sensitive areas remote from need? This is more costly and uses up our precious resource of undeveloped landscape." (Mountaineering Ireland, UserID 809)

Respondents question the long-term viability of wind energy both from a financial and technical point of view. From a technical standpoint (in terms of security of supply), they argue that wind energy would be intermittent and need fossil fuel-powered back up plants *"to keep the lights on when the wind does not blow" (UserID961).*

In terms of cost-efficiency, many comment that significant state subsidies to wind development are not justifiable anymore, this being a mature technology. Respondents argue that wind energy supply has reached maximum market penetration in Ireland and that continued support would lead to increased energy costs. There are references to various reports from economists or governmental bodies, which would be advising the Department of Communications, Energy and Natural Resources (DCENR) to halt expenditure on wind, generated energy.

"There will be a gross overcapacity in wind if the planned additional capacity is installed. This flawed energy policy will lead to continued high electricity prices for the Irish industrial consumer, thereby killing any Irish competitiveness." (UserID 77)

Similar concerns in relation to wind energy generation were raised in the events, particularly in relation to overcapacity. One attendee for example expressed concern about the potential social, economic and environmental damage to Ireland could entail from a policy of continued wind energy development.

Those who oppose wind energy generation put other reasons forward:

- Wind energy is pushed forward for reasons relating to high profitability for developers, rather than for genuine environmental concerns,
- Impact on the environment (e.g. land under them dried out) and on landscape,
- Impact on tourism and jobs in other sectors of the economy,
- References to local development plans deeming specific areas unsuitable for wind farm development.

Some comments point out that the decision to refuse planning permission for wind farms and uncertainties regarding other planned wind developments would question the justification underpinning EirGrid project proposals such as Grid West.

A few respondents support wind energy generation with caveats, such as going off shore for industrial developments, or subject to community ownership for smaller ones.

Some respondents acknowledge wind energy contributes to decarbonisation and reduced reliance on fossil fuels.

There are a few comments in support of further wind development, including from stakeholders such as Coillte and Bord na Móna PowerGen. They argue this is a resource Ireland has an abundance of and could make a significant contribution to decarbonising Ireland's energy supply.

"A great deal of the opposition to wind energy seems to come from a flat refusal on the part of the opposition to accept the scientific evidence for climate change and Ireland's moral, political and legal responsibility to play our part in stopping it." (UserID 134)

Other renewable energy sources

Many respondents generally opposing further wind development suggest that biomass would represent an alternative and cost-effective renewable energy source. This view also emerged at one of the consultation events, where it was said that biomass holds a great potential due to the number of herds in Ireland as well as human waste. Some respondents argue that in recent years biomass has developed a stable market that would protect Irish consumers from international energy price fluctuations whilst ensuring security of supply and minimising potential impacts on landscape. Specific and common suggestions relate to the conversion of Moneypoint coal fired plant. It was suggested this would avoid the need for new transmission infrastructure and allow for the achievement of the 40% renewable energy generation target.

"We call for a revaluation of new technology and Bio Energy alternatives in order to both meet the Government's renewable energy target and lessen the impact to Ireland's natural scenic beauty." (UserID 101461)

Respondents request a rigorous assessment of all alternative renewable energy sources as well as suggesting particular forms of generation they feel would be most appropriate, including:

- Photovoltaic panels, which many claim would be cost-effective, generate energy where it is needed, and minimise potential negative impacts on communities,
- Combined heat and power plants (particularly employing biomass) with district heating,
- Hydropower and community developed small and micro hydro-electricity systems,
- Geothermal energy and tidal energy, in particular with reference to the formation of an Atlantic Economic Corridor along the Irish west coast and Donegal,
- The development of electric or low-carbon vehicles and the electrification of heating and cooling in parallel to the development of low- or no-carbon sources.

Comments on these forms of technology are often linked to support for increased energy efficiency and support for local generation (see Chapter 5 for more detail).

Other comments on energy policy

Some respondents express more general opposition to the recent shift towards renewable energy generation. Some feel these forms of generation are not cost effective and pose risks to security and stability of supply. Other comments explicitly oppose the 40% renewable energy generation target set at the European level, in particular because this would be responsible for the need to develop the grid.

However, others consider such a target is necessary and beneficial in terms of decarbonisation and reduced dependency on imported conventional energy. Decarbonisation is also mentioned as a reason for developing the electricity grid. Bord na Móna PowerGen argues that the electricity grid is the area in which the biggest carbon savings can be made, and that this would avoid the impacts on business and the economy that would result from measures in other sectors. By contrast others argue that there are better ways of meeting these than through the electricity grid, or question EU targets in this area.

Finally, one participant at a consultation event expressed concern about the lack of coordination and strategic planning between EirGrid and the Electricity Supply Board (ESB), suggesting that a comprehensive cross-agency list of projects, including costs and timelines, be made public.

EirGrid's Response and Action

As outlined earlier in this document, many matters raised are outside our statutory remit. These include formulation of national and EU energy policy, renewable energy targets, energy subsidies, wind energy and other renewable energy sources (e.g. biomass, solar, hydro, geothermal, etc.), long-term financial and technical viability of wind energy, planning consent for wind farms, and the legal basis for components of policy or plans.

We are not responsible for the development of energy policy. Neither do we own, construct, or operate any form of generation, including wind farms. As per our statutory and licence obligations, we are required to plan and develop the transmission system to meet reasonable demands for the transmission of electricity. In addition, we are required to offer terms and enter into agreements for connection to and use of the transmission system with all those using and seeking to use the transmission system. This includes, large industrial customers, wind farms and data centres, irrespective of whether they are Irish or foreign owned.

The integration of large amounts of non-synchronous intermittent energy poses challenges for the transmission system, particularly the operation of the transmission system. We are overcoming these challenges with the combined approach of our world-leading initiative Delivering a Secure Sustainable Electricity System (DS3)[2]and investing in the transmission system. Our DS3 Programme aims to facilitate 75% of instantaneous power coming from non-synchronous sources, such as wind farms and HVDC interconnector imports, by 2020.

Our infrastructure strategy is outlined in our grid development strategy and in more detail in our annual Transmission Development Plan which is available on our website. The updated grid development strategy is published alongside this document and has been updated with the latest information.

We work closely with ESB Networks when planning future transmission system reinforcements. Our Transmission Development Plan outlines all specific transmission reinforcement projects that we, EirGrid and ESB Networks, are currently progressing. We have also set up a joint Programme Management Office to ensure efficient management and successful delivery of grid development.

In addition, we report to the Commission for Energy Regulation (CER) annually on all projects, and quarterly on projects that involve capital expenditure greater than €10m.

We have considered the comments on energy policy and renewable energy technologies and responded above. In our strategy we have a number of references which reinforce the close working relationship we have with ESB Networks. We have not made changes to our strategy for comments that we believe are outside our remit. While energy policy is outside out remit we state in our strategy that we look forward to working with, and contributing to, the Department's new National Energy Forum.

2 See www.eirgridgroup.com

3.4. Comments on interconnection

The commitment to pursuing greater interconnection with other countries is a key aspect of the draft strategy discussed in responses. This includes comments on the principle of interconnection between Ireland and Northern Ireland (as proposed through the North South Interconnector), with mainland Great Britain (as proposed through the East West Interconnector project) and potentially with other European countries such as France. Respondents made comments on these proposals individually, as well as the principle of interconnection, more generally.

There are comments in support of interconnection with the UK and mainland Europe, as this would be in Ireland's strategic interest in terms of future energy security. It is suggested that new natural gas and biomass-fired plants would allow for the export of green energy to Europe via an interconnector to France and for the expansion of the Irish low-carbon sector:

"We support interconnection as a means of increasing competitiveness of electricity supply and enabling the trading of electricity in times of surplus or deficit to improve efficiency of the system and making good economic use of the country's national resources. Where feasible it should be incorporated into the draft strategy so that the development of the network considers scenarios during its development to ensure that new builds and uprates are consistent with new interconnection possibilities." (Bord na Móna PowerGen, UserID 101302)

By contrast, some respondents state opposition to both international interconnectors proposed, as well as to interconnection with Northern Ireland without elaborating further. Others criticise the 'ideological concept' of a "supergrid," arguing that it does not make sense to look at all-island capacity given differences in electricity demand. They also feel that the infrastructure required would be too costly.

There are a number of comments and concerns around the import or export of energy as result of interconnection. Indeed many feel that the policy of interconnection reflects the need to import energy as a result of the weakness electricity generation within Ireland. They cite high Irish electricity costs as evidence of the sector's inability to provide competitive low-carbon energy. Others express concern that an interconnector with France and the UK would lead to an increasing amount of energy being imported, which in turn would mean that Ireland would lose control over the source of imported energy, posing risks for security and stability of supply.

Conversely, some argue that the rationale for proposed EirGrid projects such as Grid Link and the North South Interconnector is driven by the goal of exporting electricity to the UK and France by means of interconnection. Related concerns that emerged at the consultation events include the suggestion that exporting energy to the UK would take massive amounts of power away from Ireland and that interconnectors are expensive, difficult to maintain and lead to transmission losses.

Many respondents oppose interconnection in combination with further wind energy generation development. They argue that wind generated over-capacity would need to be exported leading to the need for additional expensive transmission infrastructure to the detriment of the Irish consumer, of the environment and rural communities in Ireland.

"The absurd amount of wind energy connected or contracted (6,800 MW), compared to the amount of wind energy needed (3200-3800 MW) to reach the 40% target, makes it necessary to export the generated electricity in order to avoid high curtailment cost." (UserID 101807)

On interconnection with France, respondents also question the proposal for this to be developed in the south-east and not in the east of Ireland, where demand for energy is greater.

A number of other considerations and concerns are raised in relation to interconnection. Respondents question the alleged role of private enterprises in talks with other European countries about interconnection solutions. Some feel that a robust cost-benefit analysis should be made available for public and regulatory scrutiny before any investment is made on interconnection to France and the UK. Finally, some respondents argue that the 10-15% interconnection target set at the European level does not take into account the circumstances of individual member states, while others argue that Ireland is already compliant with European interconnection targets.

EirGrid's Response and Action

The benefits of interconnection with the transmission systems of other jurisdictions are:

- **increased market integration which leads to greater competition and the potential for prices to be reduced;**
- **increased security of supply by potentially deferring the need for additional generation to be constructed and/or strengthening the connection between neighbouring networks; and**
- **facilitating integration of renewable energy sources, which contributes to the decarbonisation of the energy supply and reduction in greenhouse gases emissions.**

We also have a statutory and licence obligation to explore and develop opportunities for interconnection with other jurisdictions.

Currently our focus is on further interconnection between Ireland and Northern Ireland and between Ireland and France. The North South Interconnector between Ireland and Northern Ireland is in the public planning processes in both jurisdictions. It is particularly important to consider this project in the all-island context as both Ireland and Northern Ireland have one single wholesale electricity market, the Single Electricity Market. We are also one synchronous system relying on each other for a safe, secure, reliable, efficient and economic electricity system. Details of the planning application are available at the EirGrid project website[3] and An Bord Pleanála website[4].

We are currently working with RTE, the French TSO, on a joint project investigating the business case for an interconnector between Ireland and France. Regarding the location of potential interconnection with France, the south coast has a number of advantages including strong existing connection points on the transmission system and its proximity to Brittany in France. Any decision to proceed to construction will be supported with a rigorous cost benefit analysis. As the project develops further we will consult widely with those that may be affected in line with our strategy statement "Inclusive consultation with local communities and stakeholders will be central to our approach." We would also submit a planning application to the appropriate planning authority.

3 http://www.eirgridnorthsouthinterconnector.ie/
4 http://www.pleanala.ie/

It is correct to say that interconnection will lead to imports and exports of electricity from and to other jurisdictions. We believe this is to be welcomed due to the benefits outlined above. When we develop an individual interconnection proposal we consider the costs (for example, capital and operational costs) and benefits (for example, increased security of supply and reduced wholesale electricity cost) of the project.

It is important to note that the need that the Grid Link project was catering for will now be solved by the Regional Solution. The Regional Solution is outlined in the updated strategy and also in section 6.6 "Requests for more information" of this document.

In addition some third parties are separately advancing interconnection projects between the island of Ireland and Great Britain. Details of these projects are contained in ENTSO-E's Ten Year Network Development Plan[5] and our Transmission Development Plan which is available on our website.

The current EU target for electricity interconnection is 10% by 2020. The European Commission is considering 2030 targets, one of which is a possible increase in interconnection targets to 15%. Our current interconnection level is 9%.

We have considered the comments on interconnection and responded above. We have not made changes to the strategy as the most relevant and up to date information is already included in the strategy. Further information on our interconnection projects will be available and published in various documents and reports as they progress.

3.5. Comments on equity implications at the national and international level

Some respondents are concerned that EirGrid's proposals would have the effect of allowing some areas, organisations or individuals to benefit at the expense of others.

In particular, many feel the draft strategy would favour the establishment of wind farms and data centres in Ireland, which they argue are mainly owned by foreign companies. Respondents express concerns that the data centres planned in the Dublin area would create few jobs whilst being highly energy-intensive. They believe these would receive government subsidies while Irish tax payers would need to ultimately bear the cost of required energy infrastructure and increased CO2 emissions.

5 See www.entsoe.eu

Respondents also comment on the unequal share of costs with respect to wind energy generation, arguing that the 'Transmission Use of System' charge would ultimately lead to the transfer of costs from wind energy speculators to the Irish citizens.

"...charges to generators is more pernicious in that the more transmission infrastructure that EirGrid provides to facilitate wind energy operators, the more costs are transferred from speculative investors to the ordinary citizens of Ireland. This means that individual private consumers end up subsidising speculative investors." (UserID 101808)

In terms of regional equity, many respondents note that energy generators are going to be placed in rural areas far away from the regions where the bulk of the demand is, i.e. the Dublin area. Respondents feel that the needs of densely populated areas that are going to benefit from data centres are put before the need to protect the landscape in rural areas.

EirGrid's Response and Action

We have statutory and licence obligations that cover connections to the grid. These are detailed in our Transmission System Operator Licence[6] and Statutory Instrument 445 of 2000[7]. We are required to offer terms and enter into agreements for connection to and use of the transmission system under terms approved by the Commission for Energy Regulation (CER). This includes, large industrial customers, wind farms and data centres – irrespective of whether they are Irish or foreign owned.

Generator and demand customers pay 100% and 50% respectively of their immediate shallow connection to the transmission system in line with connection charging policy. Other reinforcements that may be required in the transmission system are recovered from all users of the transmission system through Transmission Use of System (TUoS) charges. These reinforcements benefit existing and future users of the transmission system. Generator and demand customers pay 25% and 75% of network related TUoS charges respectively in line with TUoS charging policy.

6 See www.cer.ie

7 See www.irishstatutebook.ie

The cost of transmission (TUoS charges) is one element of end users' electricity bills, the other elements are:

- **The cost of producing the electricity itself (the wholesale costs);**
- **The cost of distribution;**
- **Supplier charges;**
- **Standing charges; and**
- **The PSO levy.**

The cost of transmission is approximately 8% of end users' electricity bills. Transmission charges are approved annually by the Commission for Energy Regulation.

We have considered the comments on equity implications at the national and international level and responded above with additional information regarding connection and TUoS charging policies - we have not made related changes to the strategy.

3.6. Requests for more information

There are only a small number of requests for information relating to the draft strategy and policy. One respondent asks what impact the draft strategy will have on the White Paper on Energy Policy, while another asks if the future de-commissioning of wind turbines has been taken account of. Respondents request more detailed and technical information on the plans for interconnection with other European countries. At one of the consultation events there was a request for more information on what the benefits would be for Ireland of having interconnection plans with the UK and France.

Participants asked whether there is a government target on the amount of renewables that can be generated in the North West and what are the real reasons for which some wind farms proposals might seem to skip the queue under Gate 3. More information was also requested on curtailment payments for wind farms, i.e. timeline, amounts and the process governing them.

EirGrid's Response and Action

Our plans take account of wider policy statements, such as national environment, energy and economic policies, and are aligned with these. Our updated grid development strategy, published alongside this document, has been updated to reflect the Energy White Paper, which was published in December 2015.

Regarding future de-commissioning of wind turbines - wind turbines typically have an asset life of approximately 20-30 years. All generator connections are governed by their connection agreement and the Grid Code, irrespective of generator type.

We are not aware of a government target or policy provision relating specifically to the amount of renewable energy that can be generated in the North West. However, Local Planning Authorities (for example, county councils) do have county development plans and renewable energy strategies. These detail their approach to renewable energy. Ireland's overall renewable energy target is 16% of total final consumption to come from renewable energy by 2020.

This target will be made up of contributions from:

- **renewable energy in electricity, 40% by 2020;**
- **renewable energy in transport, 10% by 2020; and**
- **renewable energy in heat, 12% by 2020.**

The Gate process is administered by the Commission for Energy Regulation (CER) and not EirGrid. Therefore, questions regarding wind farms "skipping the queue" under Gate 3 should be directed to the CER.

Curtailment payments for wind farms – such as timeline, amounts and the process governing them – are beyond the scope of the grid development strategy. However, it is important to note that we publish detailed annual Renewable Energy Constraint and Curtailment Reports which are available on our website.

We have considered the requests for more information and responded above. We have made changes in our updated strategy to account for the White Paper – these are summarised in chapter two.

Chapter 4

Comments on grid development[8]

8 Chapter 4 / pages 23 – 28 of the Dialogue by Design Report.

4.1 Overview

This chapter summarises respondents' comments on developing the electricity grid. These issues are raised in responses to all questions, although particularly in responses to Questions 1 and 2, which relate specifically to the reasons for this development. Question 1 asks 'What are your views on our proposals to develop the electricity grid to support current plans for new investment and jobs?' Question 2 asks 'What are your views on our other reasons for continuing to develop the electricity grid?'.

As well as the relationship between development of the electricity grid and regional development, respondents comment on the forecasts for demand and the need to maintain a secure supply. They also highlight a number of other specific considerations to be taken into account in EirGrid's approach to developing the grid, in particular around costs and the potential impacts on local communities.

4.2. Comments on growth

Respondents express support for EirGrid's proposals to develop the grid in order to support investment and jobs. For example the Sligo Chamber of Commerce and Industry comments that:

"The provision of a stable and secure electricity transmission system is crucial to the economic development of Sligo, the North-West and the entire West of Ireland from Kerry to Donegal. It is also fundamental to the harnessing of the full potential of renewable energy resources in the West of Ireland." (Sligo Chamber of Commerce and Industry, UserID 100402)

As the above quote, many also believe that enhanced transmission infrastructure will help support regional development. A small number of respondents also underline the relationship between electricity supply infrastructure and economic growth or regional development, without reference to the draft strategy.

"Without good capacity and reliability such businesses are less likely to consider regional locations. Development of the transmission system in the Western Region can therefore make a significant contribution to the economic potential of the Western Region and bring substantial benefits beyond those directly related to the transmission system." (Western Development Commission, UserID 56)

Many respondents challenge the link between development of electricity infrastructure and capacity and economic growth as implied in Question 1. Respondents put forward a number of arguments in this area. They believe that:

- Economic growth is not dependent on increased energy use. Some oppose the goal of increased growth or at least feel that this should be considered against the potential impacts of new development;
- The projected benefits associated with grid development and increased energy capacity has been overstated by EirGrid;
- Regional development would not increase as regional industries such as tourism agriculture and the equine industry are generally not energy-intensive;
- The landscape is an important asset in rural areas. If affected by infrastructure development this would have a negative impact on tourism and the local economy; and
- Development would mainly benefit the major centres of demand such as Dublin.

Participants in the consultation events raised similar points. For example community groups expressed disagreement with the viewpoint of EirGrid and the Industrial Development Agency Ireland (IDA) that grid development is necessary to attract industry. Participants also argued that rural areas such as the west of Ireland are very much economically dependent on tourism which might be negatively affected by the introduction of pylons and wind farms.

Many of the comments on the equity of regional development relate to interconnection. These are summarised in Chapter 3, Paragraph 3.4.

EirGrid's Response and Action

EirGrid acknowledges the support for our proposals to develop the grid in order to support investment and jobs. There is a relationship between economic growth and electricity consumption. However, due to more efficient energy use and structural changes in the composition of the economy, proportionately less energy is required as the economy grows. Ireland has a target of a 20% improvement in energy efficiency by 2020. The Energy White Paper dedicates much attention to the issue of energy efficiency. We welcome developments in energy efficiency and demand reduction. However, we are currently forecasting a modest increase in demand over the lifetime of our grid development strategy, due to the forecasted increase in the population and economic activity, the anticipated development of large-scale data centres and the potential for increased electrification of transport and heat.

In addition to supporting regional development and economic growth, grid development is required to maintain security of supply, to integrate renewable energy sources, and to facilitate further interconnection with neighbouring jurisdictions. These benefits also need to be considered.

Having carefully considered the matter, we do not believe that we have overstated the benefits associated with grid reinforcement and development. Energy is the lifeblood of Ireland's economy and society, and the transmission system is the backbone of the national electricity network. Access to a high quality, secure, reliable and cost effective energy supply is critically important to attract and retain both domestic and foreign investment and build Irish enterprise.

This theme is echoed in many government and state agency documents including the recently published Government White Paper on Energy, the IDA's Strategy 2015, the Government's Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure and the Government's Regional Action Plans for Jobs.

Indecon Economic Consultants also assessed the regional benefits of the forecast capital expenditure on the grid. In many ways the benefits of avoiding a power outage which are detailed in "Your Grid, Your Views" are more significant. For example, it is estimated that a 24 hour national blackout would cost residential users €580 million and the whole economy €1,090 million (see report by Indecon National and Regional Evaluation of the Economic Benefits of Investments in Ireland's Electricity Transmission Network 2015).

Tourism, equine and agriculture are major industries in the economy in the regions of Ireland. That is why we recently published reports on our approach in respect of these industries in developing the transmission grid. However, having regard to the various Government Policy documents outlined above, we share their view. In particular, we believe that Ireland and its regions will be held back without appropriate infrastructure - including energy, water, transport, and broadband. Without these, the regions are likely to be less attractive to other industries that could locate there and diversify the local economy. Landscape and cultural heritage of rural areas are also vital to the well being of these areas. Through our strategic and project level environmental approach we always seek to minimise to the greatest extent possible any potential negative impact of our projects. This is detailed in the Strategic Environmental Assessment of our Implementation Plan (IP), and in project-specific Environmental Impact Assessments respectively.

In our grid development strategy we outline the forecast capital expenditure required in each region. While the Dublin region requires investment in the transmission network, substantial investment is required in all the regions. Such investment in high quality, secure and reliable strategic transmission infrastructure will benefit the entire State.

We have considered the comments on grid development and growth and responded above. We have updated the economic and demand forecasts in our strategy. We have also emphasised that energy efficiency and electrification of heat and transport will play a greater role in future in line with the ambitions in the White Paper.

4.3. Comments on electricity demand and security of supply

Respondents believe it is necessary to develop the electricity grid in order to provide sufficient capacity to meet future levels of demand for electricity. Indeed, maintaining and improving security of supply is a key issue raised in responses, cited by some respondents as a reason in support of grid development and in many cases simply underlined as a key consideration.

"The Irish Academy of Engineering fully supports grid development to support current plans for new investments and jobs. Security of supply and price competitiveness should be key considerations." (The Irish Academy of Engineering, UserID 74)

Respondents express support for EirGrid's revised forecasts for electricity demand on which the draft strategy is based. Some simply state agreement that further development of the grid is necessary to provide sufficient capacity, often mentioning the needs of enterprises and the renewable sector.

Others are more sceptical of the need for increased capacity. Respondents cite a number of factors that they feel have not been properly considered in assessing demand. These include population decline, the economic downturn and the decline of manufacturing.

Respondents question EirGrid's demand forecasts, or cite other evidence suggesting demand will not be as great, in some cases claiming that EirGrid's own reports show this. Some argue that EirGrid have not taken account of national energy requirement forecasts. Others argue that demand requires more detailed consideration and independent assessment:

"The figures you provided for predicted demands were well in excess of the real amounts required. In order to achieve a realistic set of figures for the country's electricity demands a more detailed investigation should be undertaken, one that can be trusted and one which realistic plans can be accounted for." (UserID 164)

Participants at the consultation events also questioned the need for development, in particular the need to build massive infrastructure if the timeframe is medium-term, especially if there is currently a 50% over capacity in energy generation.

Some respondents question about the accuracy of long-term forecasts in general, emphasising the difficulty predicting and planning accurately for future levels of demand. Others highlight the need for any development to be 'future proofed' in terms of future changes in demand. The need to plan for the long term is a key consideration for many respondents, without expressing support for the proposals.

Some respondents who question the need for increased capacity argue that the case for developing the grid is primarily driven by the aim of connecting new wind energy developments in order to meet Ireland's renewable obligations. Comments on energy policy are summarised above in Chapter 3.

Finally, a small number of respondents comment upon the uneven nature of demand, which varies in different parts of the countries and at different times. Domestic generation feeding into the grid is suggested as a possible way of addressing such variations, as is series compensation.

EirGrid's Response and Action

We acknowledge the support for maintaining and improving security of supply, and in particular to provide sufficient capacity for all users of the transmission system.

There are a number of factors or drivers that are driving the need to reinforce the grid and provide extra transmission capacity. These are changes in demand, generation and interconnection.

Our demand forecasts are based on the Economic and Social Research Institute's (ESRI) forecasts of economic activity. Our demand forecasts are updated annually in the All Island Generation Capacity Statement[9] (GCS). In 2008 our demand forecast for the year 2025 was 8,000 MW. In 2015 we reported in the draft grid development strategy that the 2025 forecast had been considerably scaled back to approximately 5,100 MW. Based on GCS 2016 our median forecast for 2025 is now approximately 5,500 MW. This is a modest forecast increase in existing demand. This is in the context of an increasing population and new demand. The CSO projects that the population will grow up to an average of 1% a year from 2011 to 2026. This is an increase of over 700,000 people in this period.

There is also the potential for significant demand increases, in some areas, particularly data centre demand.

In addition the integration of renewable energy is driving the need to reinforce the grid and provide additional transmission capacity. Ireland is in a strong position to meet the Government's renewable energy target of 40% of electricity demand from renewable energy by 2020. A large proportion of this renewable electricity will come from wind power. As outlined above, matters such as formulation of national and EU energy policy and renewable energy targets are outside our statutory remit. We are not responsible for the development of energy policy. Neither do we own, construct, or operate any form of generation, including wind farms.

Generation capacity and adequacy is reported in our annual All Island Generation Capacity Statement (GCS). We forecast, based on the base case scenario in GCS 2016-2025, that the security of generation supply in Ireland will exceed the adequacy standard for the period of GCS 2016.

9 Formerly known as the Generation Adequacy Report.

This forecast is based on two factors: that most of the current portfolio remains available, and that we can rely on capacity being available in Great Britain to import over the East West Interconnector when needed. However, additional sensitivity scenarios point to potential security of generation supply risks towards the latter years of GCS 2016-2025.

While demand does vary around the country, we plan and operate the grid to ensure a consistent level of security of supply. Local distributed generation will play an increasingly important role in the future grid. EirGrid and ESB Networks, the Distribution System Operator, will continue to work together to operate a co-ordinated distribution system and transmission system.

The need for development is determined by assessing long-term future network performance against technical standards embodied in the Transmission System Security and Planning Standards (TSSPS)[10]. When it is established that changes on the network cannot be accommodated without violating the TSSPS, a wide range of issues is taken into account in selecting transmission reinforcement. These include environmental, technical and economic assessments that attempt to take into account the costs and benefits associated with each of the viable transmission reinforcement options. The cases of need for our major projects were outlined in the draft strategy. These have been updated in the updated strategy.

We believe our strategy of maximising the use of the existing network will limit unnecessary capacity increases and the risk of stranded assets. This is in line with our strategy statement "We will optimise the existing grid to minimise the need for new infrastructure."

We have considered the comments on electricity demand and security of supply and responded above. As noted earlier in this document, we have updated the economic and demand forecasts in our updated strategy.

4.4. Considerations and concerns related to grid development

As well as commenting on the need to develop the grid, respondents also highlight a number of considerations that they feel need to be taken into account in any development. Most of these relate to the costs of developing the grid, and the specific impacts that they believe will result from such development.

10 Formerly known as the Transmission Planning Criteria (TPC).

4.4.1 Comments on the costs of developing the grid

Many respondents express concern about the cost of developing transmission infrastructure, often stating that this would not be cost effective. These comments often make reference to projections for future capacity and demand (see paragraph 4.3 above), with respondents questioning the need for expenditure in light of these.

"To proceed with a grid costing billions which may not be necessary with the cost levied on an already burdened consumer is reckless." (Suir Valley Environmental Group, UserID 100781)

Many respondents express particular concern about the investment of such a large amount of public money and underlining the need for proposals for development of the grid to be as cost-effective as possible.

"For Ireland to remain an attractive destination in which to do business and to invest, it is imperative that energy costs can be maintained at an efficient level. Developing the grid should thus be done through the most cost-efficient approach." (New Ross & District Chamber, UserID 100754)

Some respondents are concerned or critical of the use of public money to fund development of the grid, often mentioning public subsidies to electricity companies and wind farm developers. A small number of respondents state more specifically that the costs of developing new infrastructure should be borne by the developer (EirGrid) rather than using public money.

Many are concerned about public expenditure and emphasise the importance of cost effectiveness, with many stating that "best value for the Irish people" should be the guiding principle in decisions on building new electricity infrastructure. Many respondents argue that a more cost effective approach would be based on addressing specific areas of the current electricity transmission grid where capacity is needed.

In some comments the discussion of costs relates to energy prices. For example respondents express concern that the cost of development would result in increased costs to the consumer. Many note the current high costs of electricity in Ireland and its effect in competitiveness, while others emphasise potential economic impacts if a rise in prices increased costs for businesses.

Others argue that the benefits of new development - in terms of increased capacity - should reduce energy prices to the consumer.

"EirGrid should quantify the major cost savings that are claimed and to translate them into a reduction in electricity cost for the Irish consumer." (UserID 101809)

By contrast, some suggest that it would be acceptable for this extra cost to be financed by consumers through electricity bills.

Some respondents feel that alongside creating investment and jobs, non-monetary costs have not been sufficiently taken into account. In particular, they mention impacts on local communities, the environment and tourism. Others feel that the economic benefits in terms of growth and jobs have been exaggerated. Some of these respondents state that a full cost benefit analysis should be provided for new developments. Participants at the consultation events also raised this point. These participants noted that the Electricity Supply Board (ESB) has investment plans for grid upgrading amounting to EUR55 billion by 2030, but that these plans don't make the case for why these upgrades are needed. Given this, they asked for a comprehensive cross-agency list of projects, including costs and timelines, to be made public.

Some respondents also criticise EirGrid's expenditure and management of costs, or highlight perceived inconsistencies or changes to costings for the draft strategy and individual projects.

EirGrid's Response and Action

As noted earlier in this document energy is the lifeblood of Ireland's society and economy, and the transmission system is the backbone of the national electricity network. Access to a high quality, secure, reliable and cost effective energy supply is critically important to attract and retain both domestic and foreign investment and build Irish enterprise. This theme is echoed in many government and state agency documents.

EirGrid's capital expenditure allowance is set and approved by the Commission for Energy Regulation (CER) every five years at the start of the Price Review. During the Price Review, EirGrid and ESB report quarterly and annually on projects' progress and costs. This process ensures that only efficient and cost effective capital expenditure is incurred.

In addition we believe our approach uses a number of factors to ensure only efficient and cost effective capital expenditure is incurred. These factors include: selecting transmission reinforcement (taking environmental, technical and economic factors into account), our strategy of maximising the use of the existing network, and our use of innovative technology where appropriate.

As noted earlier in this document capital expenditure is funded through Transmission Use of System (TUoS) charges that are charged to all users of the transmission system – namely large and small-scale demand and generation customers. Generator and demand customers pay 25% and 75% of network related TUoS charges respectively. The cost of transmission (TUoS charges) is one element of end users' electricity bills, the other elements are:

- The cost of producing the electricity itself (the wholesale costs);
- The cost of distribution;
- Supplier charges;
- Standing charges; and
- The PSO levy.

The cost of transmission is approximately 8% of end users' electricity bills. The CER approves transmission charges annually.

In addition it is important to note that forecast capital expenditure has decreased substantially since 2008. In 2008 the forecast capital expenditure for Grid25 was €4 billion. The total is now estimated in the range €2.6 billion to €2.9 billion.

As noted earlier in this document environmental concerns are dealt with at both the strategic level and at individual project level. At the strategic level we have undertaken a Strategic Environmental Assessment (SEA) of the Grid25 Implementation Programme 2011-2016. The Implementation Programme (IP) outlines a practical strategic overview of how the early stages of Grid25 are intended to be implemented. Both the IP and SEA were published in April 2012. The purpose of the SEA is to anticipate and avoid, where possible, potential adverse environmental impacts arising from the IP. The review and drafting process for the subsequent IP and SEA has commenced. It is anticipated that the IP and SEA will be published in 2017. The updated grid development strategy forms a fundamental element of the next implementation plan and associated SEA.

In addition, at the individual project level, all projects undergo Screening for Appropriate Assessment. Depending on the location, extent, scale and/or potential impact of the project, Appropriate Assessment and Environmental Impact Assessment are undertaken as part of the public planning applications process.

Environmental topics, including agriculture, tourism and local heritage, are considered at both a strategic and a project level. Following previous public consultations, we committed to address the potential impact proposed projects have on agriculture, equine, tourism and local heritage. We published reports responding to these concerns in 2015. They are available on our website.

We work very closely with ESB in operating the transmission system in real-time, and in planning future transmission system reinforcements. Our Transmission Development Plan, which is available on our website, outlines all transmission reinforcements that we - EirGrid and ESB - are progressing. In addition, together we report quarterly to the Commission for Energy Regulation (CER) as part of the Price Review Process. These joint reports relate to on-going projects that involve capital expenditure greater than €10m.

We have considered the comments on costs of developing the grid and responded above. We have not made related changes to the strategy. We have also updated the strategy to highlight that we have published reports responding to concerns raised regarding agriculture, equine, tourism and local heritage.

4.4.2 Comments on the potential impacts of new development

In discussing the need for development of electricity grid, respondents express concern about the potential impacts associated. Many of these concerns reflect those expressed about overhead transmission lines, in particular. These impacts are listed under Chapter 6.

The need to avoid certain impacts is noted as a caveat or consideration by those who otherwise agree with the need for development.

"I have no problem at all with the development of the grid for investment and jobs, in fact I applaud and support it. It is the issue of turning the country into an industrial estate by erecting pylons and wind farms [...] everywhere that I have a serious objection to." (UserID 142)

Some respondents who are opposed to development (especially in the form of overhead power lines) argue that long-term impacts should be weighed against other considerations. These include many of the impacts discussed above:

"EirGrid must take a longer term view of what you are doing and you must avoid scarring a landscape that has been the beauty of Ireland forever." (UserID 85)

Many of these considerations and concerns are closely related to the degradation of rural landscape and are often mentioned together. A campaign group highlights the potential impact on agricultural enterprises that market themselves on environmental stewardship and farming in an unspoiled landscape.

Similarly, participants at one of the consultation events noted while EirGrid is promoting the positive effects of infrastructure on employment, they did not feel being taken seriously regarding their concerns about tourism, property devaluation and health.

EirGrid's Response and Action

As noted earlier in this document agriculture, equine and tourism are major industries in the economy in the regions of Ireland. That is why we published reports responding to concerns raised. We also recently published a report analysing the relationship between property values and high-voltage overhead transmission lines. The reports are available on our website.

Landscape and cultural heritage of rural areas are also vital to the well being of these areas. Through our strategic and project level environmental approach, that is Strategic Environmental Assessment of our Implementation Plan (IP), and project-specific Environmental Impact Assessment respectively, we always seek to minimise to the greatest extent possible any potential negative impact of our projects.

We design and operate the transmission network to the highest safety standards and comply with the most up-to-date national and international guidelines. The Department of Housing, Planning, Community & Local Government recently published an expert review of Electric and Magnetic Fields (EMF) and public health. We will continue to monitor engineering and scientific research in this area and provide information to the general public and to staff on this issue. We will adopt any new recommendations. Information on EMF and health is available on our website www.eirgridgroup.com.

We have considered the comments on the potential impacts of new development and responded above. As noted earlier in this document we have updated the strategy to highlight that we have published reports responding to concerns raised about agriculture, equine, tourism and local heritage. We also highlight that we have published information on EMF, the recent publishing of an expert review on EMF by the Department of Housing, Planning, Community & Local Government, and that we will continue to monitor research in the area and adopt any new recommendations.

4.5. More information

Respondents ask for further detail or clarity on a number of the issues related to the development of the grid. Some state that EirGrid's proposals and rationale for development of the grid are not set out clearly enough. At one of the consultation events a recommendation was made to communicate the need for grid development in a clear and easy language.

Respondents request more detailed information on the need case for development for the grid; in particular on the extent to which the case for development is driven by the need to connect new wind energy developments to the grid.

"Nowhere in the current strategy document has EirGrid addressed the question of how many of the other proposed transmission projects would be necessary if there were no further expansion of wind power." (UserID 1000 25)

Respondents also feel that more information is needed on the costs relating to new development (both in general and in relation to specific projects) such as the cost of transmission required to connect new electricity generation be published in the name of transparency, with some mentioning wind energy projects in particular.

EirGrid's Response and Action

The drivers of network development are noted earlier in this document. The drivers and the cases of need for the major projects were outlined in the draft strategy "Your Grid, Your Views, Your Tomorrow" and it's Technical Analysis (Appendix 1). Updated information is also presented in the updated strategy published alongside this document. In addition, the drivers and needs for all on-going projects are described in our annual Transmission Development Plan which is available on our website. Usually there are a number of drivers for each project. We are committed to consistently reviewing a project to ensure the original need remains, and the proposed solution/s is/ are appropriate. This may arise if the drivers of a project are reduced or removed – for example if demand is less than forecast, or a wind farm does not progress. We have demonstrated this approach already whereby the forecast capital expenditure has now reduced from €4 billion in 2008 to a range of €2.6 billion to €2.9 billion.

We are committed to ensuring that information is presented in a straightforward way. We use the National Adult Literacy Agency (NALA) "plain English" guidelines in public-facing reports and communications.

We have reviewed our public consultation and engagement process. This is in line with:

- our 12 commitments in our report "Reviewing and improving our public consultation process" which is available on our website; and
- our strategy statement "Inclusive consultation with local communities and stakeholders will be central to our approach."

We are committed to consulting local communities and stakeholders earlier in the project development process. We are committed to clearly explaining the available methods of consultation and involving our stakeholders in developing these methods. As a result of the review, we have developed a new project development framework. This clearly and transparently outlines the steps we take when developing the grid, and how communities can have their say. Our new framework replaces the previous Project Development and Consultation Roadmap.

We have recruited community and agricultural liaison officers to facilitate enhanced dialogue with local communities and interest groups and to develop sustained long-term relationships in local areas. In line with our strategy statement "We will consider all practical technology options," we consider all practical technology options for network development. When we propose reinforcement we will consult on a range of options.

The power system and the wider energy industry are undergoing a significant transformation. In order to accept and be better prepared for this transformation and future uncertainties, our approach to the long-term development of the transmission system is evolving. This approach will include enhanced stakeholder engagement at an earlier stage and a review of the assumptions for how we plan the transmission system. We will do this by developing future scenarios for the power system. These scenarios will represent a number of plausible possibilities for what the future of the electricity industry might look like. For more information please see the Tomorrow's Energy Scenarios section in chapter four of the main strategy document.

EirGrid and ESB Networks report quarterly and annually to the Commission for Energy Regulation (CER) on projects' progress and cost as part of the Price Review Process. The CER monitors the progress and cost of individual projects.

We have considered the requests for more information on a number of issues related to grid development and responded above. We have made the following changes in the updated strategy:

- We provide updated information on how we are continuing to enhance our public consultation and engagement processes, including: adoption of the NALA "plain English" guidelines; recruitment of community and agricultural liaison officers; and our enhanced consultation process.
- We have included an overview of our future energy scenarios work.

Chapter 5

Feedback on theme of minimising development and energy demand[11]

11 Chapter 5 / pages 29 – 33 of the Dialogue by Design Report.

5.1 Overview

This chapter summarises comments on minimising development and energy demand. Respondents comment on a number of issues within this theme, including the optimisation of the existing network, reducing energy demand and localising electricity generation. Each of these is outlined below.

5.2 Comments on optimising existing infrastructure

The optimisation of the existing network in order to minimise new development is a key issue within this theme. This is most often discussed in responses to Question 3, which asks for respondents' views on the strategy statement "The network will be optimised to minimise requirements for new infrastructure."

5.2.1 Comments in support of optimising existing infrastructure

Many respondents are in favour of optimising existing electricity infrastructure. Some respondents go further to add that this should be a central part of EirGrid's strategy and that the development of new infrastructure should be minimised.

"EirGrid should absolutely stop real construction. The under taking of developing further energy should only be done in areas that the Grid is substandard. Replacement and upgrade should be the primary focus of EirGrid's Grid strategy." ((UserID 71)

Those who support this principle of optimising the existing network cite a number of benefits in connection with this. In particular, many feel such an approach would be more cost-effective.

"Where pinch points occur, these can be corrected at local level without the unnecessary massive expenditure of €3.9 billion plus the additional associated costs" (campaign response, e.g. UserID 10 1273)

Others argue that utilising existing infrastructure would provide extra capacity quickly without the impacts associated with the development of new infrastructure. Many of those who advocate minimising the development of new infrastructure refer to specific impacts associated with such infrastructure. These include impacts on the landscape, nearby communities, property values, or on the local economy and businesses.

Some also refer to technological innovation as an argument against further development of the electricity grid. Some of these respondents highlight the potential of series compensation to increase capacity on existing lines while others mention developments in energy efficiency and demand reduction that they believe would make new infrastructure unnecessary. Many of these respondents are particularly against the use of pylons, which they see as an out-dated form of technology.

EirGrid's Response and Action

We agree with respondents' views that maximising the use of the existing network should be a central part of our strategy. That is why it is one of our three strategy statements "We will optimise the existing grid to minimise the need for new infrastructure." We only invest and reinforce the network where we anticipate there is a need to do so. In other words, where the existing network is expected to fall below the standard required for security of supply.

We also agree that maximising the use of the existing network is a cost effective approach and should deliver extra capacity relatively quickly, with potentially less impact on the environment and communities. This approach has partly allowed the forecast total capital expenditure to now fall from €4 billion in 2008 to a range of €2.6 billion to €2.9 billion.

In addition, and as noted earlier in this document, EirGrid's capital expenditure allowance is set and approved by the Commission for Energy Regulation (CER) in a Price Review every five years. During the Price Review, EirGrid and ESB report quarterly and annually on projects' progress and costs. This process ensures that only efficient and cost effective capital expenditure is incurred. This is in line with our statutory obligations to develop an economical and efficient electricity transmission system.

We are committed to using new technologies where appropriate as demonstrated in our strategy statement "We will consider all practical technology options."

A practical example of this approach is our decision in October 2015 to progress the Regional Solution as the preferred solution for Grid Link. The Regional Solution includes the use of series compensation, which will be its first use in Ireland. It is an advanced, smart grid technology that will enable more power to flow through existing lines, and so does not require new 400 kV overhead lines.

To complete this solution, an underwater cable across the Shannon estuary is required in addition to some upgrade works to existing transmission lines. We are moving forward with the Regional Solution to meet the needs of the Grid Link project.

We are committed to using new technologies where appropriate. In order to minimise the impact of potential new pylons, we are sensitive to where towers are sited. We are also investigating new tower designs.

While developments in energy efficiency and demand reduction are envisaged this must be balanced with forecast increases in the population and economic activity. We also need to consider the potential development of large-scale data centres and the potential electrification of transport and heat. Changes in demand, generation and interconnection may require grid reinforcements in order to maintain security of supply standards. This is in line with our statutory and licence obligations.

We have considered the comments in support of optimising existing infrastructure and responded to the comments above. We believe these comments are adequately and appropriately dealt with in our strategy. Therefore, other than updating the strategy for the Regional Solution and new capital expenditure range, we have not made related changes in the strategy.

5.2.2 Concerns about optimising existing infrastructure

Some respondents, while supportive of proposals for optimising the existing network, also express reservation about this approach. They express concern that this approach should not be followed too rigidly, stating that security of supply in the long-run should be the main consideration. Some who express concern about security of supply in stronger terms state their opposition to optimising the existing network as a consequence. Others are more concerned that developing new infrastructure should not be ruled out if this is necessary.

Respondents also feel that the commitment – to optimise the current network in order to minimise requirements for new infrastructure – is too vague. They argue that it is hard to disagree with a statement like this, but further elaboration is needed on how this will be done. Some simply underline their opposition to pylons and seek confirmation that these will not be used.

Respondents who live near existing lines express concern about the potential impact of upgrading works on individuals and communities.

EirGrid's Response and Action

We are committed to maximising the use of the existing network and using new technologies, where appropriate. We will do this in line with our statutory and licence obligations to ensure a reliable, secure electricity supply.

We will maximise the use of the existing network through:

- **uprating, including voltage uprating, of existing equipment; and**
- **installation of smart transmission technologies, for example voltage support devices and series compensation.**

Where upgrading works have the potential to impact individuals and local communities we will consult with them. We have reviewed our public consultation and engagement process. This is in line with our 12 commitments in our report "Reviewing and improving our public consultation process" which is available on our website. It is also supported by our strategy statement: "Inclusive consultation with local communities and stakeholders will be central to our approach." As a result of the review, we have developed a new project development framework. This clearly and transparently outlines the steps we take when developing the grid, and how communities can have their say. Our new framework replaces the previous Project Development and Consultation Roadmap.

Where necessary, we will develop new infrastructure. This will be to maintain security of supply standards, as required by our statutory and licence obligations. These standards are unchanged. The same reliability and quality of supply standards will be retained, and no deterioration to customers' security of supply will occur.

We have considered the concerns about optimising existing infrastructure and have responded to the comments above. We believe these principles are adequately and appropriately dealt with in our strategy. Therefore, we have not made related changes in the updated strategy.

5.3 Comments on reducing energy use

Many respondents argue that reducing overall energy demand and usage should be a priority.

"A combination of proper insulation standards for the home, coupled with mandatory solar hot water installations, is all that is needed, to make a huge impact on demand, and contribute greatly to Ireland's 2020 renewables target." (UserID 48)

Other respondents add that the focus should be on funding energy saving and conservation measures including retrofitting, triple glazing and water harvesting. They argue that in addition to the environmental benefits, this approach would create significant employment. It would also avoid negative impacts associated with developing new infrastructure.

Respondents also make the more specific point that the energy supply needs to be decarbonised in order to reduce the reliance on fossil fuels.

EirGrid's Response and Action

Ireland has a target of a 20% improvement in energy efficiency by 2020. The Energy White Paper dedicates much attention to the issue of energy efficiency. We welcome developments in energy efficiency and demand reduction. However, we are currently forecasting a modest increase in demand over the lifetime of our grid development strategy, due to the forecasted increase in the population and economic activity, the anticipated development of large-scale data centres and the potential for increased electrification of transport and heat.

Changes in demand, generation and interconnection may require grid reinforcements in order to maintain security of supply standards. This is in line with our statutory and licence obligations.

The decarbonisation of the whole energy system is government policy as detailed in the Energy White Policy. We continue to support the implementation of government policy working within our statutory remit.

We have considered the comments on reducing energy use. As noted earlier in this document, we have updated the economic and demand forecasts in our strategy. We have also emphasised that energy efficiency and electrification of heat and transport will play a greater future role, in line with the ambitions in the White Paper. We have responded to the remaining comments above.

5.3.1 Comments on proposals for reduced long-term power capacity

Respondents also comment more specifically on the need to plan for a lower level of demand in the long term. This is discussed particularly in responses to Question 6, which asks for respondents' views on EirGrid's proposal to meet project needs but with reduced power capacity in the long term.

Respondents express support for EirGrid's proposal for reduced power capacity in the long term, in some cases stating agreement with the assessment of forecast of future demand. They state that further capacity (or indeed the same level) will not be required in the long term. Some of these respondents refer to changes within the Irish economy to support their view:

"The Irish Academy of Engineering fully supports the approach now being taken by EirGrid in light of Ireland's changed economic circumstances since the publication of Grid25 in 2008 and the significant reduction in projected peak electricity demand in 2025 compared to the forecasts which were made back in 2008." (The Irish Academy of Engineering, UserID 78)

While supportive of the idea of reduced long-term power capacity, some respondents are wary that if this aim is followed too rigidly it could undermine long-term security of supply.

Others express this concern more strongly, and disagree with the proposal for reduced long-term power capacity on this basis. They argue that capacity does need to be increased in the electricity grid, in a few cases specifying that capacity should be increased in the renewable sector in particular. Waterford City and County Council argue that reduced capacity could constrain economic development.

"The PA [Planning Authority] consider that long term strategic infrastructure should be guided by 'maximum attainable growth' rather than a 'scaled back' moderate economic growth model, as predicted by the ESRI [Economic and Social Research Institute]." (Waterford City and County Council, UserID 1014666)

A small number are sceptical about the forecast for reduced demand, highlighting the difficulty of long-term forecasting. They note that a number of factors could affect this (including economic development) and that these will need to be planned for in order to ensure there is an adequate supply of power.

EirGrid's Response and Action

As noted earlier in this document our demand forecasts are based on the Economic and Social Research Institute's (ESRI) forecasts of economic activity. These forecasts are updated annually in the All Island Generation Capacity Statement[12].

Ireland has a target of a 20% improvement in energy efficiency by 2020. The Energy White Paper dedicates much attention to the issue of energy efficiency. We welcome developments in energy efficiency and demand reduction. However, we are currently forecasting a modest increase in demand over the lifetime of our grid development strategy - see All Island Generation Capacity Statement 2016-2025, which is available on our website, for our most recent forecasts. This is due to the forecasted increase in the population and economic activity, the anticipated development of large-scale data centres and the potential for increased electrification of transport and heat.

Changes in demand, generation and interconnection may require grid reinforcements in order to maintain security of supply standards. This is in line with our statutory and licence obligations. We will seek to ensure that the grid is not a barrier to economic growth.

We have considered the comments on proposals for reduced long-term power capacity. As noted earlier in this document we have updated the economic and demand forecasts in our strategy. We have also emphasised that energy efficiency and electrification of heat and transport will play a greater role in future in line with the ambitions in the White Paper. We have responded to the remaining comments above which are already accounted for in the strategy.

5.4 Comments on local electricity generation

Many respondents support the promotion of decentralised (or localised) generation as an alternative to large-scale generation projects that would need to be connected to the grid.

In particular, respondents express support for distributed generation: generating power closer to the point of consumption. To this end, some criticise the Irish government's policy on wind energy on the grounds that it fails to take account "viable alternatives that would create and use power locally." Many of these comments focus on the idea that such an approach would minimise the need for transmission.

12 Formerly known as the Generation Adequacy Report.

Some respondents advocate moving towards community run grids or microgrids, and there are comments in support of community generation, with specific mention of combined heat and power (CHP) and biomass as renewable energy technologies applicable at this scale.

At the consultation events, participants asked about the role of small-scale generation in EirGrid's plans for transmission and whether the draft strategy would make it easier for small-scale producers to supply the grid.

EirGrid's Response and Action

As noted earlier in this document we do not own, operate or construct generation. Policies and processes for, and the promotion of, any generation including decentralised (or localised/community) generation is outside our remit and is a matter for government.

We note that the Energy White Paper includes a strong commitment to encouraging the development of community participation and/or ownership of energy projects. We will support measures taken in that direction working within our statutory remit.

Local distributed generation will play an increasingly important role in the future grid. EirGrid and ESB Networks, the Distribution System Operator, will continue to work together to operate a co-ordinated distribution system and transmission system including the integration of distributed small-scale generation.

We detail the forecasted amount of small-scale generation in our annual All Island Generation Capacity Statement.

We have considered the comments on local electricity generation. We have made changes in our strategy to emphasise that we will support measures to facilitate community participation and ownership of energy projects working within our statutory remit. We have responded to the remaining comments above.

5.5 Other comments and suggestions on minimising development and energy use

Respondents comment on a number of other issues relating to minimising development and energy use:

- **Series compensation** is mentioned as a technology which involves enhanced utilisation of existing networks. As this is generally discussed in relation to the consideration of different technology options these comments are summarised under the chapter on Technology (Chapter 6 Comments on transmission technologies).
- **Costs:** cost-effectiveness is an important consideration cited by respondents in support of proposals for planning for reduced long-term capacity. Others argue that a full cost-benefit analysis should be carried out to ensure that respondents have sufficient information on which to base their opinion on the proposal. In some cases this relates to options presented in particular projects.
- **Smart meters:** These are electronic devices for monitoring electricity consumption at the level of the individual household. They are intended to reduce electricity demand and are mentioned in this context. Some respondents express concerns that they don't work, that they are an invasion of privacy and that they would present a potential cancer risk.

EirGrid's Response and Action

We are very conscious of the need for efficient and cost effective solutions. It is important to note that in 2008 the forecast capital expenditure would be €4 billion. The estimate is now in the range €2.6 billion to €2.9 billion. The reduction has been achieved through a combination of the following:

- **Use of new technology e.g. new conductors to uprate existing circuits, series compensation and new tower designs to facilitate voltage uprating; and**
- **Reduction in needs due to reduction in drivers e.g. lower 2025 demand forecast now than we had forecast in 2008.**

In addition our capital expenditure allowance is set and approved by the Commission for Energy Regulation in a Price Review every five years. During the Price Review period EirGrid and ESB report quarterly and annually on projects' progress and cost. This process ensures that only efficient and cost effective capital expenditure is incurred.

The need for development is determined by assessing long-term future network performance against technical standards embodied in the Transmission System Security and Planning Standards (TSSPS)[13]. When it is established that changes on the network cannot be accommodated without violating the TSSPS, a wide range of issues is taken into account in selecting a transmission reinforcement. These include environmental, technical and economic assessments that attempt to take into account the costs and benefits associated with each of the viable transmission reinforcement options.

The decision to proceed with a project and make an investment in the grid involves a strict governance and approval process. We also consistently review our proposals to ensure the original network need remains and the proposed solution is appropriate.

When we bring forward proposals for grid development we will provide extensive information on the solution options. This is in line with our 12 commitments in the report "Reviewing and improving our public consultation process" which is available on our website. It also supports our strategy statement "Inclusive consultation with local communities and stakeholders will be central to our approach." This was the approach we used for the analysis and reports we did on Grid West and Grid Link for the government appointed Independent Expert Panel (IEP). The Grid West and Grid Link reports produced for the IEP are available on our website.

While we are engaging with the National Smart Metering Project as an interested observer, the rollout of Smart Meters is outside our remit. It is overseen by the Commission for Energy Regulation (CER) and will be implemented by ESB Networks. We will continue to keep informed of developments in the project.

We have considered the remaining comments and suggestions on minimising development and energy use. We have made changes in our strategy to emphasise that we are promoting and facilitating a smart grid. Smart meters are one aspect of a smart grid. We have responded to the remaining comments above which are already accounted for in the strategy.

13 Formerly known as the Transmission Planning Criteria (TPC).

5.6 Requests for more information

Many respondents request further information or clarity on a number of particular aspects of minimising development and energy use, including:

- The proposed upgrading of the existing electricity lines, in terms of what this involves, the extent to which it is proposed (both generally and in relation to specific projects) and how it would interact with new development.
- The potential impact of upgrades on nearby communities.
- Smart Grids: participants at one of the consultation events asked for more information on these and the logic behind them. They questioned whether these were to educate communities or to get communities to use power at times when this is not currently fully used, in order to balance out the overall power level on the grid.
- How EirGrid intends to meet national requirements for energy companies to achieve 1.5% energy savings per year through energy efficiency measures. They question in particular how proposals for new development will take account of these requirements.
- Participants at one of the consultation events asked about the time frame for power matching. This is when supply is increased at peak times to meet demand while storing energy at off peak times.

EirGrid's Response and Action

There are two approaches to uprating the power transfer capacity of existing lines:

- **Replace the existing conductors with higher capacity conductors; and**
- **Increase the operating voltage of the circuit.**

There are other smart technologies which do not increase the power transfer capacity of existing lines but allow more power to flow than would otherwise. These technologies include:

- **Series compensation;**
- **Dynamic line rating;**
- **Power line guardians; and**
- **Routers.**

These technologies are detailed in the grid development strategy, and in the accompanying Technical Report.

Replacing existing conductors with higher capacity conductors has already been used extensively around the grid – this will continue. It is expected that the other technologies will be used in due course. Details on individual projects are reported in our Transmission Development Plan which is available on our website.

Not all of these upgrading works are likely to impact individuals and local communities. However where there is the potential, we will consult with them. This is in line with our 12 commitments in our report "Reviewing and improving our public consultation process" which is available on our website. It also supports our strategy statement "Inclusive consultation with local communities and stakeholders will be central to our approach."

A Smart Grid is an electrical power system that uses technology to better manage and respond to usage needs. This can include large-scale integration of renewable energy sources (RES), and efficient use of the electricity infrastructure through optimal use of Information and Communications Technology (ICT). A smart grid can also seamlessly integrate the actions of all users connected to the power system in order to deliver sustainable, economic and secure electricity supplies for all consumers. The Smart Grid in Ireland involves a number of different things, including:

- Transmission Technology, including series compensation, voltage support devices, dynamic line rating, power line guardians and routers, which can change the way power flows around the system in real-time;
- Demand Side Engagement, including Smart Metering whereby customers will be enabled to play a part in the real-time electricity market, reduce their consumption at high demand times and save money; and
- Communications and Control, where the operators in our National Control Centre can remotely monitor and control the power system in real-time to operate it in the most efficient way and ensure supply and demand balance.

There are a number of demand management schemes at both industrial and domestic level. We are involved with Glen Dimplex, Intel, ESB Networks and SSE Airtricity in a €15million project, funded by the EU, investigating how local energy storage in smart electric space and water heaters in the home can be used to provide both energy reduction and cost savings to the consumer. We also have a trial with Electric Ireland called "Power Off and Save." This will reward householders to reduce their energy consumption at high demand times. Both of these initiatives have the potential to bring benefits to customers, energy suppliers and grid operators.

The national requirement to achieve 1.5% energy savings per year through energy efficiency measures is a requirement on energy suppliers who supply final customers. EirGrid is not an energy supplier and does not supply final customers. Thus, this specific requirement is outside our remit. However, when we develop proposals for new development we include in our cost benefit analysis the impact these proposals have on transmission losses.

We have considered requests for more information on aspects of minimising development and energy use. As noted earlier in this document we have made changes in our strategy to emphasise that we are promoting and facilitating a smart grid. We have responded to the remaining comments above, some of which are already accounted for in the strategy and others that are outside our remit.

Chapter 6

Comments on transmission technologies[14]

14 Chapter 6 / pages 34 – 39 of the Dialogue by Design Report.

6.1 Overview

This chapter summarises comments on transmission technologies. Respondents made comments on EirGrid's strategy statements related to transmission technologies. They also submitted specific comments on individual technology options. Among the transmission technology options, most comments relate to concerns about overhead transmission lines and support for undergrounding. A smaller number of comments relate to other technology options such as series compensation. Each of these is summarised below.

6.2 Comments on EirGrid's consideration of technology options

EirGrid's consideration of technology options is a key issue within this theme of transmission technologies. This is most often discussed in response to Question 3 which asks for respondents' views on the strategy statement , "The network will be optimised to minimise requirements for new infrastructure," and Question 4 which asks for respondents' views on this strategy statement, "All practical technology options will be considered for network development."

There are some comments about the wording of the strategy statement,"All practical technology options will be considered for network development." Some suggest that the word "practical" is too ambiguous and others suggest that the parameters should be clearly outlined in the statement, including the need for a high quality network while limiting the social and environmental impact.

EirGrid's Response and Action

Our statutory and licence obligations are the basis for all our work and inform our strategy statements. The obligations require us to operate, maintain and, if necessary, develop a safe, secure, reliable, economical and efficient transmission system. We are obliged to do this with a view to ensuring that all reasonable demands for electricity are met, having due regard for the environment. The obligations clearly outline the need for a high quality network while limiting the impact on local communities and the environment.

Our strategy statements are guiding principles. In line with our strategy statement "We will consider all practical technology options", we consider all practical technology options for network development. When we propose reinforcement we will consult on a range of options appropriate for the need identified.

The word practical is used in the strategy statement to account for the fact that:

- **We will only deploy proven technologies that have successfully completed a trailing and testing process; and**
- **Some technologies are not suitable to solve some needs. For example, HVDC technology is best suited to transferring large bulk power flows from one point to another over large distances. Therefore, it is unlikely that HVDC would be a practical technology option if, for example, the need could be met with a lower capacity 110 kV solution.**

We have considered the comments on EirGrid's consideration of technology options and have responded above. We believe the comments are adequately and appropriately dealt with in our strategy. Therefore, we have not made related changes in the updated strategy.

6.2.1 Comments in support of EirGrid's consideration of technology options

Many respondents are supportive of EirGrid's consideration of all practical technology options for developing the network. There is particular support for the consideration of advanced, new or recently available technologies, and for alternatives to overhead lines and pylons.

"It was most heartening to read your new draft strategy for grid development which apparently takes into account new technologies" (UserID 1000022)

Some respondents note that including all possible transmission technology options for public consultation would increase the transparency of the process.

EirGrid's Response and Action

We agree that considering and consulting on all practical technology options will increase the transparency of the process.

We have considered the comments in support of EirGrid's consideration of technology options. We believe the comments are adequately and appropriately dealt with in our strategy. Therefore, we have not made related changes to the updated strategy.

6.2.2 Comments expressing caveats or further considerations

Respondents make some suggestions for further considerations with relation to technology options, suggesting that additional options should be considered alongside those listed in the draft strategy document. There are some suggestions that Ireland should lead the way in developing and using new technologies, rather than only using options that have been used elsewhere. In contrast, others state that only proven technologies should be used.

"I believe that EirGrid should broaden the range of technologies it is considering to cover the areas of demand management and distributed generation." (UserID 82)

Specific suggestions for consideration include:

- Wireless electricity transmission,
- Partial undergrounding with cross-linked polyethylene cables,
- Supercooled transmission,
- Tesla home battery or other local battery or inverter systems,
- Electromagnetic induction,
- Microgeneration, and
- Bio-gas.

Some respondents raise cost considerations relating to technology options. Respondents state that EirGrid's cost comparisons of different technologies only take into account immediate costs and request that whole project costs should be included, particularly for comparing overhead and underground options. Others request an up to date and full cost/benefit analysis of technology options. Some suggest that cost should not be the deciding factor for technology options.

There are contrasting views about the timelines associated with using new technologies. Some feel that grid development should be delayed in order to assess how emerging technologies will develop, or what their impact will be, and then make informed decisions about what technologies to use. Some highlight a risk that assessing all possible technology options could lead to delays in implementing grid development and solutions. Others emphasise that options should be appropriate for short, medium and long-term needs.

Other suggestions include monitoring changes in energy demand over the coming decades. This is in light of developments such as improved insulation, decarbonisation, and micro generation capabilities and prioritising technology options that would support such trends.

Some respondents state that although alternatives to overhead lines are included in the draft strategy document, they are concerned that overhead lines may be being positioned as though they are the most feasible or cost-effective solution.

EirGrid's Response and Action

When installing transmission assets, our main focus is on transmission technology that uses proven technologies. We are trialling a number of innovative technologies to investigate how they can be used to manage the power system. There are also technologies in the Research and Development stage that we will continue to monitor.

Demand Side Response is currently being facilitated through a number of ways: Industrial-scale Demand Side Units are active market participants, consumer-led participants will be facilitated in a number of ways, including the National Smart Metering Project.

We are working with a number of parties to identify how consumers can play their role in demand response. We are working with Glen Dimplex, Intel, ESB Networks and SSE Airtricity in a €15million project, funded by the EU, known as RealValue. The aim is to investigate how local energy storage in smart electric space and water heaters in the home can be used to provide both energy reduction and cost savings to the consumer. We also have a trial with Electric Ireland called "Power Off and Save." This will reward householders to reduce their energy consumption at high demand times. Both of these initiatives have the potential to bring benefits to customers, energy suppliers and grid operators.

Regarding generation technology, we cannot own, operate or construct generation. Therefore while we are interested in generation technology, our interest is in how it interacts with the grid and can potentially support the grid. We have a world-leading initiative Delivering a Secure, Sustainable Electricity System (DS3) which has three important strands, one being to incentivise the delivery of system services to ensure the stability of the grid as more non-synchronous generation connects.

Since the publication of our draft strategy in March 2015 we published the Grid West and Grid Link reports that were submitted to the Independent Expert Panel. These reports detail the environmental, economic and technical performance of the solution options for the two projects. We have decided to progress the Regional Solution for Grid Link as the preferred option. We have not yet made a decision regarding the Grid West Project. Depending on the final volume of generation seeking connection, the solution may be a more local reinforcement of the grid. We are currently investigating how we might do this.

Although it is a central consideration given our statutory and licence obligations, cost is not the deciding factor when we select a preferred option/technology. We are currently developing a multi criteria decision-making framework. This will take environmental, social, technical, deliverability and economic considerations into account when selecting a preferred solution option and technology.

In the grid development strategy that is published alongside this document we describe technology in three different categories:

- Technology that is available now;
- New technology that is ready for trial use; and
- New technology that is at the research and development stage.

We constantly keep up to date and monitor technology developments. We develop projects in a timely manner to ensure they match the anticipated point when a need is forecast to arise on the network. In addition we can put short/medium term operational measures in place while we develop or defer the development of longer-term solutions. It is likely that this approach could be taken if we expect to use new technology in category two. However it may not be possible to wait for the development of new technologies that are in category three. This decision would have to be made for each individual project. This approach would only be taken if security of supply can be maintained at all times.

We support government policy to increase energy efficiency and distributed generation, and the decarbonisation of our energy supply. Through our grid development programme, our world-leading initiative "Delivering a Secure Sustainable Electricity System (DS3 Programme)," our use of new technology, and our Smart Grid Innovation Hub, we will contribute to these goals. Through our Smart Grid Innovation Hub we are working with businesses and entrepreneurs to develop and trial Smart Grid products, services and solutions that will enable a more flexible and dynamic grid.

We have considered the comments that express caveats or further considerations in relation to technology options. As noted earlier in this document, we have made changes in our strategy to:

- **Emphasise that we are promoting and facilitating a smart grid;**
- **Emphasise that energy efficiency and electrification of heat and transport will play a greater role in future;**
- **Emphasise that we will support measures to facilitate community participation and ownership of energy projects that are within our statutory remit; and**
- **Update the Grid Link section and document the decision to proceed with the Regional Solution for Grid Link.**

We have responded above to other comments that are already accounted for in the strategy.

6.3 Comments on overhead transmission lines

Many respondents express opposition towards overhead transmission lines, with some respondents expressing general opposition to any overhead line and others stating their opposition towards overhead lines in specific locations or areas. Of these, some comments refer to specific project proposals, while others are more general in nature.

Some respondents frequently describe AC (alternating current) overhead transmission technology as out-dated and urge the consideration of innovative or new technology options instead. Some state their opposition to overhead lines being included as an option in the draft strategy at all.

"Scrap the unsightly line grid, pylons and other environmental eyesores and try to innovate instead." (UserID 83)

Respondents provide a number of different reasons for their opposition, including the following potential impacts of overhead lines:

- Visual impact on the landscape,
- Impact on communities, the local population, wellbeing or quality of life,
- Impact on cultural heritage assets,
- Impact on wildlife or biodiversity,
- Impact on the environment in general,
- Impact on agriculture,
- Impact on the local economy or tourism,
- Property devaluation,
- Health and safety concerns,
- Noise pollution,
- Impact on geology, and
- Impact on aviation.

Often, these concerns are interlinked. For example, respondents feel that overhead lines would have a negative impact on the landscape and cultural heritage sites and that this in turn would affect residents' quality of life as well as discouraging tourism in the area, with a knock-on detrimental effect on the local economy.

"EirGrid's analysis fails to account for the visual intrusion of pylons across landscape and the overall impact this will have on tourism, the countryside and areas of natural beauty including the damage to heritage both natural, cultural and architectural." (UserID 153)

Respondents express concern that the need case for overhead lines appears to be driven by wind farm development. They question the efficiency or need for wind farms, particularly when weighed against the perceived negative impacts such as those listed above.

There are comments about the relative cost of overhead lines, suggesting that the long-term costs of any impacts such as loss of tourism or cost to the environment must be accounted for in any cost/benefit analysis. Others raise concerns about the costs of maintaining overhead lines, particularly following strong winds and storms.

There are a few suggestions for how the impact of overhead lines could be mitigated, including running the infrastructure alongside main roadways or developing new pylon or tower designs. A few respondents oppose new overhead lines but support the upgrading of existing lines.

Some respondents express support for overhead lines because they believe these would provide greater capacity than other options, or because they appear to be the most cost effective option.

EirGrid's Response and Action

We are committed to considering all practical technology options in line with our strategy statement "We will consider all practical technology options." We are also committed to engaging with the public before we identify a preferred technology. This consultation will explain the transmission technology options, and seek feedback from stakeholders. This will help us to determine the best technology for future projects. We are committed to looking for alternative options that may avoid or reduce the need for new overhead lines.

As noted earlier in this document we design and operate the transmission network to the highest safety standards and comply with the most up-to-date national and international guidelines. The Department of Housing, Planning, Community & Local Government recently published an expert review of Electric and Magnetic Fields (EMF) and public health. We will continue to monitor engineering and scientific research in this area and provide information to the general public and to staff on this issue. We will adopt any new recommendations. Information on EMF and health is available on our website www.eirgridgroup.com.

When we do progress an overhead line solution we seek to mitigate, to the greatest extent possible, any negative impacts. At the individual project level we do this through our approach to Appropriate Assessment and Environmental Impact Assessment. The results of these assessments are documented in our Natura Impact Statement, Environmental Impact Statement and planning application to the planning authority. At the strategic level we seek to mitigate any negative impacts through our:

- **Grid25 Implementation Programme 2011-2016 (IP) and its Strategic Environmental Assessment (SEA). The review and drafting process for the subsequent IP and SEA has commenced. The updated grid development strategy forms a fundamental element of the next IP and its associated SEA; and**

- Recently published reports on agriculture, equine, tourism and local heritage in which we address concerns raised in recent public consultations.

We also recently published a report analysing the relationship between property values and high-voltage overhead transmission lines which is available on our website.

Projects have a number of drivers that may or may not include wind farm development. Government policy has set a target of 40% of electricity to come from renewable sources by 2020. While there are no binding targets set beyond 2020 it is acknowledged that a radical transformation of Ireland's energy system is required to meet climate policy objectives. This is noted in the Government's commitment in the White Paper published in December 2015 to significantly decarbonise the whole energy system (i.e. electricity, heat, transport) by 2050 and to completely decarbonise it by 2100. At the moment onshore wind farm development is seen as one of the most cost effective ways of meeting Ireland's interim 2020 target and beyond.

While overhead lines are exposed to strong winds and storms, they are designed to withstand these forces. If faults occur, sometimes they can be cleared remotely or else may need ESB Networks to fix them. When we weigh up our options to choose a preferred solution we take into account how overhead lines and underground cables deal with faults.

From our experience to date there would be a range of issues with running infrastructure alongside main national roads. Providers of other critical national infrastructure, including the National Roads Authority (NRA) also take a strategic long-term approach. They wish to protect their infrastructure for potential future expansion and development. Therefore, they wish to reserve land close to existing main routes. In addition, there would also be the potential for widespread and prolonged disruption to the electricity infrastructure if work, such as maintenance or widening work, had to be done to the road. Similarly, there could be disruption to main national roads if works had to be undertaken on the electricity network. We are working on new tower designs to minimise visual impact. This is discussed in the strategy and in the accompanying Technical Report.

We are committed to maximising the use of the existing network, including upgrading of existing lines, and deploying new technologies with a view to offsetting the need for new overhead lines.

We have considered the comments on overhead transmission lines and responded above. We have made the following changes in the strategy:

- **We highlight that we recently published reports responding to concerns raised regarding agriculture, equine, tourism, local heritage, and property values; and**
- **We also highlight that we have published information on EMF, the recent publication of the expert review of EMF and public health by the Department of Housing, Planning, Community & Local Government; and that we will continue to monitor research in the area and adopt any new recommendations.**

6.4 Comments on underground/ underwater technology

The use of underground cables receives a high level of support from respondents. Respondents often assert that underground cables would mitigate or minimise many of the detrimental potential impacts they associate with overhead lines, such as impact on the landscape. Respondents feel that any lines above a certain capacity should be placed underground as the default option, and that smaller capacity overhead lines should be limited to wooden poles. Some refer to other countries described as having similar policies, such as Denmark and Belgium.

"In terms of future development I believe that undergrounding all existing 220kv and 400kv transmission lines should be put into action. The maximum OHL compatible with a rural environment is 110kv line supported by double timber poles." (East Cork No Pylon Group, UserID 161)

Respondents feel that undergrounding is a cost effective transmission option when costs are considered in the long term, and in light of the indirect costs they associate with overhead lines such as property devaluation or health costs, as indicated in 6.3. Similarly, respondents contend that the costs of undergrounding have been over-estimated when compared with those associated with overhead lines. They believe that the costs of laying underground cables in the short-term will be justified and offset by the long-term benefits of doing so. Others note that the cost of undergrounding has fallen as the technology has advanced and that cost should no longer be a limiting factor in relation to this option.

Some comments express opposition towards undergrounding on the basis of cost or of disruption to farmland and local communities during the period required to lay the cables.

Some respondents state that if a 400kV line is required, then undergrounding is their preferred option in the case that underwater cables are found not to be feasible. Some believe that underground cables should be the next option only if series compensation using existing infrastructure is demonstrated not to be sufficient.

Respondents express particular support for the use of underwater cables. They believe that underwater cables along the coastline would minimise disruption and impacts on the landscape and quality of life and could support new businesses moving to Ireland.

EirGrid's Response and Action

We are committed to considering all practical technology options in line with our strategy statement "We will consider all practical technology options." We are also committed to engaging with the public before we identify a preferred technology. This consultation will explain the transmission technology options, and seek feedback from stakeholders. This will help us to determine the best technology for future projects. We are committed to looking for alternative options that may avoid or reduce the need for new overhead lines.

In our reports to the Independent Expert Panel on the Grid West and Grid Link projects we take into account environmental, technical and economic considerations for both overhead and underground options. We also consider a partial underground (hybrid) option for Grid West and a suite of projects including series compensation for Grid Link. Options for potential new projects in the future will be presented comparably from an environmental, technical and economic/cost effectiveness perspective.

There is some confusion surrounding Denmark and Belgium policies, here is an overview of them. In 2009 a plan[15] was published in Denmark for the undergrounding of the entire 132 kV / 150 KV grid over a period extending to 2040.

15 Energinet.dk - Cable Action Plan:132 - 150 kV Grids - March 2009

The plan for the 400 kV grid is however quite different. Even though there appears to be a national desire and a willingness to pay for the undergrounding of the entire 400 kV grid, it was determined that it was not achievable. This is due to the technical difficulties, uncertainties and risks associated with the installation of long lengths of 400 kV UGC.

In summary: Belgium is not systematically replacing existing overhead lines with underground cables. They will continue to build new overhead lines when needed at higher voltage capacity, such as 220 and 380 kV. However, when they build new 220 or 380 kV overhead lines, they compensate for the extra kilometres of new overhead lines by undergrounding some lower voltage lines.

As noted earlier in this document we design and operate the transmission network to the highest safety standards and comply with the most up-to-date national and international guidelines. The Department of Housing, Planning, Community & Local Government recently published an expert review of Electric and Magnetic Fields (EMF) and public health. We will continue to monitor engineering and scientific research in this area and provide information to the general public and to staff on this issue. We commit to adopt any new recommendations.

We recently published reports on agriculture, equine, tourism, local heritage and property values in which we address concerns raised in recent public consultations.

Underwater AC cables are currently used to cross short spans of water. Underwater DC cables are used in the East West Interconnector to connect the Irish and British transmission systems. The suitability of underwater cables is dependent on the need, the stations to be connected and the distance to the sea.

We have considered the comments on underground/underwater technology and responded to these comments above.

We have made the following changes in the strategy:

- We highlight that we have published information on EMF, that the Department of Housing, Planning, Community & Local Government recently published an expert review of EMF and public health, and that we will continue to monitor research in the area and adopt any new recommendations; and
- We also highlight that we recently published reports responding to concerns raised regarding agriculture, equine, tourism, local heritage, and property values.

6.5 Comments on other transmission technologies

Respondents also comment on other transmission technologies referred to in the draft strategy document. These comments are summarised in turn below.

6.5.1 Series Compensation

Respondents welcome EirGrid's consideration of series compensation technology. Respondents state that series compensation appears to best meet the objective of maximising use of existing transmission networks and would be an innovative solution that could avoid the erection of any new pylons and overhead lines.

Respondents support this option because they feel it would minimise the impact on the landscape, environment, local communities, and economy, while meeting the energy needs of the foreseeable future. It is also noted to be a cost effective option both when compared with overhead lines and when considered over the long term.

Some respondents express concern about series compensation. Where reasons are given, they include concerns about network stability and concerns about whether such infrastructure would be able to adapt to future levels of demand.

EirGrid's Response and Action

The use of series compensation in the Regional Solution for Grid Link will be the first time the technology will be used in Ireland. By using it we will maximise the use of the existing high capacity circuits between Moneypoint and Dublin, while ensuring the network remains stable, thereby removing the need to build a new circuit between Munster and Leinster.

While series compensation works well in meeting the specific network need for the Grid Link project, this does not automatically mean that it can be used in all instances where extra capacity is required. As with all investments there is a limit to the capacity that will be realised with series compensation. If the need arises in the future for more investment, all practical technology options will be considered at that time.

We have considered the comments on series compensation and responded to these comments above. We believe these comments are adequately and appropriately dealt with in our strategy. Therefore, other than updating the strategy for the Regional Solution, we have not made related changes in the strategy.

6.5.2 HVDC

Respondents often refer to High Voltage Direct Current (HVDC) in association with their support for underground cables. They believe it is important to use new technology options that are already proven to be effective, and that HVDC underground cables meet this criteria as well as minimising the impact on the environment and landscape.

EirGrid's Response and Action

In both the Grid West and Grid Link reports to the Independent Expert Panel we detail, amongst two other options, HVDC underground cable as one possible option to cater for the need.

Options for potential new projects in the future will be presented comparably from an environmental, technical and economic/ cost effectiveness perspective. Irrespective of which solution we progress we will seek to mitigate to the greatest extent possible any negative impacts on local communities and the environment.

We have considered the comments on HVDC and responded to these comments above. We have not made related changes in the updated strategy as the comments are already accounted for in the strategy.

6.5.3 Dynamic Line Rating

Among those who comment on dynamic line rating, there is support for it. Dynamic line rating involves the installation of devices to monitor weather conditions and allow higher power flows on lines when possible. Some make general reference to dynamic line rating as a positive indication of EirGrid's consideration of new technology options. Others highlight specific benefits of this technology, such as allowing the system to better accommodate high wind energy output.

EirGrid's Response and Action

Dynamic Line Rating (DLR) may be suitable for use in the short term to reduce potential network bottlenecks while awaiting delivery of grid development projects. It is not generally relied upon for long-term system planning and development. We have trialled DLR on several lines and will continue to evaluate whether additional use is appropriate in specific circumstances.

We have considered the comments on DLR and responded to these comments above. We have not made related changes in the updated strategy as the comments are already accounted for in the strategy.

6.6 Requests for more information

There are requests for more information about series compensation, and some respondents feel that the information provided to date is not clear or detailed enough for members of the public to comment. They request further information outlining the nature of series compensation technology specifically in relation to Grid Link, and a cost/benefit analysis of the option.

Respondents also request further information on a number of other issues including:

- The impact of high voltage power lines on health,
- EirGrid's position on overhead lines and pylons,
- More detailed information about costs, particularly for undergrounding,
- Cost/benefit analysis and risk assessments of different technology options including all direct and indirect costs and effects, and
- Information about the implementation plans for specific projects.
- Participants at a consultation event requested more information about series compensation technology and asked for any past studies to look at the social and environmental impacts of existing 400kV lines in the country.

EirGrid's Response and Action

We published the Grid Link report for the Independent Expert Panel in October 2015 which is available on our website. The report details the three alternative solution options including further information on series compensation which is part of the Regional Solution. The Regional Solution is a suite of transmission network reinforcements centred on the reinforcement of the existing 400 kV circuits. These consist of:

- Series compensation devices installed in three locations on the existing 400 kV overhead lines, namely:
  - Oldstreet 400 kV station in County Galway;
  - Moneypoint 400 kV station in County Clare; and
  - Dunstown 400 kV station in County Kildare.
- An underwater 400 kV cable between Moneypoint and Kilpaddoge stations under the Shannon Estuary; and
- Uprating of the Great Island – Kilkenny and Great Island – Wexford 110 kV overhead lines as well as uprating of the Wexford 110 kV station busbar.

In our reports to the Independent Expert Panel on the Grid West and Grid Link projects we take into account environmental, technical and economic considerations for both overhead and underground options. We also consider a partial underground (hybrid) option for Grid West and a suite of projects including series compensation for Grid Link. Options for potential new projects in the future will be presented comparably from an environmental, technical and economic/cost effectiveness perspective.

As noted earlier in this document we design and operate the transmission network to the highest safety standards and comply with the most up-to-date national and international guidelines. The Department of Housing, Planning, Community & Local Government recently published an expert review of Electric and Magnetic Fields (EMF) and public health. We will continue to monitor engineering and scientific research in this area and provide information to the general public and to staff on this issue. We commit to adopt any new recommendations. Information on EMF and health is available on our website www.eirgridgroup.com.

Overhead transmission lines have been used for quite a long time and are used extensively around the world. They are a robust and reliable means of transmitting electricity and can be the right solution depending on the specifics of the project. For that reason we will continue to include AC overhead lines as a possible technology choice in the future.

Information regarding specific projects is included in our Transmission Development Plan, which is available on our website.

We recently published a suite of evidence based environmental studies which examine the actual environmental impacts of existing transmission infrastructure in the country. These are published on our website, and will inform the environmental considerations of our projects.

We have considered the requests for more information and responded above. We have made the following changes in the updated strategy:

- We have updated the Grid Link section and documented the decision to proceed with the Regional Solution for Grid Link; and
- We highlight that we have published information on EMF, the recent publication of an expert review on EMF and public health by the Department of Housing, Planning, Community & Local Government, and that we will continue to monitor research in the area and adopt any new recommendations.

Chapter 7

Comments on EirGrid's approach to engagement and the consultation process[16]

16 Chapter 7 / pages 40 – 43 of the Dialogue by Design Report.

7.1 Overview

This chapter summarises comments on the consultation process and other engagement undertaken by EirGrid. This includes comments on the strategy statement in the consultation document, which sets out EirGrid's approach to engagement and its commitment to "Foster open engagement and inclusive consultation with local communities and stakeholders as a central principle to developing the grid." However the majority of comments on this theme relate to the way the current strategy consultation has been run, as opposed to future engagement and consultation activity that EirGrid should undertake.

Respondents raise a number of issues around EirGrid's approach to consultation and engagement. These are summarised in the chapter below.

7.2 Comments on Strategy Statement 1

Respondents to the consultation generally support EirGrid's commitment to consulting and engaging with the public, as stated in the strategy statement.

Many of those who support the statement simply state their support outright without providing further context. Of those who do elaborate, reasons for support include that:

- The opinion of those affected by developments matters,
- The opinion of the public matters,
- It's important to engage with and get agreement from affected communities,
- It's important to have engaged communities, and
- It would prevent miscommunication.

Other respondents express support for the wider principle of engagement in planning for grid development. Some of these respondents suggest that good engagement could address some of the concerns of communities potentially affected by proposed developments.

"We acknowledge that there can be significant public opposition to essential energy infrastructure and [...] welcome EirGrid's commitment to enhance community engagement and consultation" Department of Jobs, Enterprise and Innovation (UserID 100288)

Other respondents express more reserved or conditional support for this strategy statement. These respondents, while supporting the commitment to engagement in principle, often express doubt about how the draft strategy consultation has been carried out and how future engagement would be organised.

"I welcome EirGrid's new attempt at consultation, however, there are still major flaws in this area that will prevent some people from participating." (UserID 100010)

A small number of respondents express concern about the approach to consultation and engagement. They raise issues such as the potential for impact on timescales or emphasise their preference for no further development of the electricity grid.

EirGrid's Response and Action

We agree that the views of communities hosting infrastructure and the general public are a very important part of project development. It helps to provide valuable information that can shape a particular approach or development and ultimately for the best solution to be developed. While we have consulted widely on various projects and initiatives in recent years we do acknowledge that our consultation and engagement processes can be enhanced. That is why in December 2014 we published the 12 commitments in "Reviewing and improving our public consultation process" which is available on our website. These commitments will be implemented as we develop project proposals into the future. The 12 commitments are grouped under three common themes as follows:

Theme 1: Develop a Participative Approach

- Clear Communications: We will ensure that information is presented in a straightforward way.
- Process for Consultation in Project Development: We will improve the effectiveness of our consultation process to clearly define consultation opportunities, to explain how feedback can be provided and to efficiently assess feedback received.
- Consultation Toolkit: We will clearly explain the available methods of consultation and involve our stakeholders in developing these methods.
- Improved Community Relationships: We will locate staff in the regions to facilitate enhanced dialogue with local communities and interest groups and to develop sustained long-term relationships in local areas.
- Demonstrate Consideration of Social Impact: We will increase the transparency of the consultation and decision making process.

Theme 2: Change our Culture and Processes

- Consultation Handbook: We will create a consultation handbook that sets out the purpose and principles of our consultation process, to ensure that high standards are met.
- Consistency of Information: We will consistently review a project to ensure the original network need remains, the proposed solution is appropriate and that any changes are communicated in a transparent and consistent manner.
- Complaints Process: We will immediately put in place a system to manage and investigate complaints or feedback. This will include providing the opportunity to investigate and resolve a complaint.

Theme 3: Encourage Leadership & Advocacy

- Support of Policy Makers: We will encourage state agencies and other bodies to participate in a broader debate on why new or enhanced electricity infrastructure is required.
- Input from Representative Groups into EirGrid's approach to grid development: We will establish a structured approach to work more cooperatively with national representative groups, and with the associations who are acknowledged as key influencers.
- Regional Discussion Forums: We will create forums to allow for meaningful dialogue on different technical and environmental matters when developing the grid.

- **Independent EMF monitoring & compliance: The Department of Housing, Planning, Community & Local Government review of the latest research and developments concerning electric and magnetic fields was published recently. We will continue to monitor engineering and scientific research in this area and provide information to the general public and to staff on this issue. We will adopt any new recommendations. We will also investigate the role an independent body could play in the area of monitoring EMF levels for both compliance and reassurance.**

We are making progress with many of these commitments. We use the National Adult Literacy Agency (NALA) "plain English" guidelines in public-facing reports and communications. NALA have awarded their Plain English Mark to the updated grid development strategy that we published following this review of our draft strategy.

We have recruited community and agricultural liaison officers to facilitate enhanced dialogue with local communities and interest groups and to develop sustained long-term relationships in local areas. We have reviewed our public consultation and engagement process in line with our commitments. As a result of the review, we have developed a new project development framework. This clearly and transparently outlines the steps we take when developing the grid, and how communities can have their say. Our new framework replaces the previous Project Development and Consultation Roadmap.

We note that the Energy White Paper specifically recognises our efforts to build trust with local communities and stakeholders.

We have considered the comments on strategy statement 1 and responded above. In the updated strategy we provide updated information on how we are continuing to enhance our public consultation and engagement processes.

7.3 Comments on the EirGrid draft strategy consultation

Respondents to the draft strategy consultation make a substantial amount of comments on the way that the consultation has been designed and run. These comments cover aspects such as the accessibility of the consultation, consultation events, the timeline of the consultation, the consultation design and engagement principles.

7.3.1 Comments on the accessibility of the draft strategy consultation

There are a number of comments on the options available to respond to the draft strategy consultation. Some respondents criticise the consultation process for not being sufficiently inclusive and EirGrid for not promoting the consultation sufficiently. Many of the comments suggest that EirGrid has limited the public's ability to respond to the consultation through restricting the options available to respond to the consultation.

A few respondents suggest that EirGrid should have made the option to respond by post a clearer or more prominent option.

Respondents argue that the online response system is restrictive for people not computer literate or without access to the internet. These respondents suggest that people in rural Ireland often do not have access to the internet.

"This is a very poor way of collating our opinions as lack of internet access is a major obstacle in rural Ireland." (East Cork No Pylon Group, UserID 161)

Some respondents also note that a lack of internet access limits the public's ability to access consultation documentation and other information. They argue that this would therefore limit the ability of those affected to respond to the consultation, as they do not have all the relevant information.

Other respondents comment that the questions used in the online questionnaire are not fair and impartial, with some suggesting they could be leading and designed to favour EirGrid.

EirGrid's Response and Action

As noted earlier in this document we consulted on our draft grid development strategy for 10 weeks from March 2015 until June 2015. We set up a dedicated web page on our website to make the documentation available and an online response system to accept comments. We also held three regional forums to receive feedback from communities and representative groups across the country. These forums were facilitated by Irish Rural Link and were broadcasted live on the internet. We also received feedback via phone calls, emails, post and our local offices. We received 3,386 responses. The consultation, three forums and the opening of local offices were advertised in local and national media.

As per our 12 commitments, we are seeking to enhance the effectiveness of our consultation process to clearly define consultation opportunities and to explain how feedback can be provided. We will also clearly explain the available methods of consultation and involve our stakeholders in developing these methods.

All our questions were designed to be as open as possible to get as much feedback as possible.

We have considered the comments on the accessibility of the draft strategy consultation and responded above. We have not made related changes in the updated strategy.

7.3.2 Comments on the consultation events

Many respondents are critical of the events organised by EirGrid during the consultation period. Some feel there were not a sufficient number of events to be considered adequate engagement with the public. Some were also critical of the location and timing of the events, specifically that the events were held during working hours and in locations far away from areas of potential grid development. Some respondents comment that information being consulted upon in the draft strategy consultation was technical and complex and that the lack of events provision did not give the public sufficient opportunities to ask questions about the information.

Participants at these events also commented on the organisation of the events themselves. Comments included that:

- The events were badly advertised and with too short notice;
- They felt such events do not represent real engagement, rather a ticking boxes exercise;
- The top management at EirGrid being involved in more of these events. Participants enquired how EirGrid is going to listen to communities and act upon these concerns.

EirGrid's Response and Action

We held the three regional forums in Sligo, Dundalk and Cork. The forums were held to complement the consultation process and receive feedback from communities and representative groups across the country. These forums were facilitated by Irish Rural Link and broadcast live on the internet. The forums were advertised in local and national media.

While we have consulted widely on various projects and initiatives in recent years we do acknowledge that our consultation and engagement processes can be enhanced. Following feedback received in recent project specific public consultations we published the following information which demonstrates that we do listen to all stakeholders including the general public and landowners, and take feedback on board to improve our processes and the provision of information:

- Grid25 Initiatives in January 2014;
- Reviewing and improving our public consultation process in December 2014;
- "Your Grid, Your Views, Your Tomorrow" A Discussion Paper on Ireland's grid development strategy in March 2015;
- Grid West report for the IEP in July 2015;
- Grid Link report for the IEP in October 2015 detailing the decision to proceed with the Regional Solution as the preferred option; and
- Lines of Communication proposing our new enhanced consultation process.

We will continue to listen to, and take on board feedback and improve our consultation and engagement processes.

We are conscious that much of the information related to grid projects and development is complex and technical. We are committed to ensuring that information is presented in a straightforward way. We use the National Adult Literacy Agency (NALA) "plain English" guidelines in reports and communications. When we published "Your Grid, Your Views, Your Tomorrow" we published the Technical Analysis as a separate document (appendix 1) to the main "Your Grid, Your Views, Your Tomorrow" report in order to keep the main report as accessible as possible.

We have considered the comments on the consultation events and responded above. In the updated strategy we provide updated information on how we are continuing to enhance our public consultation and engagement processes.

7.3.3 Comments on the consultation timescale

There are a large number of comments on the timescale of the draft strategy consultation, many of which are critical of the time allowed for the consultation, considered as too short.

Respondents suggest that there is a substantial amount of material being consulted upon and the timescales did not allow them to read and review the information.

Some respondents think that EirGrid has not consulted the public at the correct time. Most of these respondents reference the Aarhus Convention, which recommends 'Early Engagement,' to suggest that EirGrid has consulted the public too late for plans to be influenced by the outcome of the draft strategy consultation.

Some respondents suggest that EirGrid should have waited before consulting the public for various reasons:

- To wait for the Irish government's Energy White Paper,
- To wait for the government review on Electromagnetic fields,
- To wait for all information to be available in the discussion paper,
- To wait for the publication of the National Landscape Assessment.
- At one of the events it was also suggested that the consultation should have waited until after the climate change talks due in Paris in November 2015.

A small number of respondents suggest that EirGrid should take a long-term approach to engagement and consultation.

EirGrid's Response and Action

As noted earlier in this document we consulted on our draft grid development strategy for 10 weeks from March 2015 until June 2015. In addition individual project proposals are subject to their own consultation processes. We are committed to enhancing our consultation and engagement processes. We will be consulting local communities and stakeholders earlier in the project development process.

The Government published the Energy White Paper in December 2015. We have incorporated the provisions of this national energy policy statement into the updated grid development strategy. In addition we will have full regard to national, European and International energy policy following the outcome of the climate change talks in Paris in December 2015. The Department of Housing, Planning, Community & Local Government recently published a review of Electric and Magnetic Fields (EMF) and public health. We will continue to monitor engineering and scientific research in this area and provide information to the general public and to staff on this issue. We commit to adopt any new recommendations. We will also take the National Landscape Strategy into account.

We have considered the comments on the consultation timescale and responded above. We have made the following changes in the updated strategy:

- We provide updated information on how we are continuing to enhance our public consultation and engagement processes;
- We align the strategy with the White Paper; and
- We highlight that we have published information on EMF, the expert review of EMF and public health recently published by the Department of Housing, Planning, Community & Local Government, and that we will continue to monitor research in the area and adopt any new recommendations.

7.3.4 Other comments on the consultation

Many respondents comment on the draft grid development strategy document and its relevance to the consultation questions.

Respondents often suggest that the discussion paper lacks enough information to allow the public to comment upon it. Often these comments are combined with complaints about the documentation containing conflicting information.

Many of respondents go on to criticise the general validity of the consultation after these comments.

Some respondents comment generally on their opposition to EirGrid's development proposals. Many of these respondents comment that they do not trust EirGrid and therefore feel unable to engage with the proposals.

Respondents who comment on this topic mention a variety of reasons for their distrust. Some discuss specific consultations which they do not feel were adequately run. Other respondents suggest a lack of communication from EirGrid as the reason for the distrust, while others simply state their opposition to the proposals without clarifying. Some respondents suggest EirGrid should be much more open and honest about their future plans in their engagement and communications as a way to build up trust with the public.

Participants at the events suggested that early engagement and the adoption of technology to minimise impacts on communities and the environment could be a solution to address a perceived lack of trust of EirGrid.

Comments on compensation mostly relate to the proposed process for administering compensation and respondents are largely critical of this process. Many respondents express concern that EirGrid would be responsible for setting compensation levels, suggesting it would be in EirGrid's interest to not award appropriate levels of compensation to those affected by grid developments.

Other respondents suggest compensation should be more generous due to the unknown health implications of living next to power lines.

Respondents who comment on the Community Gain Fund are largely critical of the proposal. Most respondents feel that there is unlikely to be any benefits of grid developments received by communities. One respondent, the Western Development Commission, expresses support for the scheme.

EirGrid's Response and Action

The consultation questions were designed to encourage feedback on:

- **The reasons and drivers for our proposals to develop the grid;**
- **Our three strategy statements; and**
- **Our proposal for reduced power capacity in the long-term.**

The main discussion paper was accompanied by three separate appendices, namely:

- **A detailed technical analysis prepared by EirGrid;**
- **An external peer review prepared by London Power Associates; and**
- **A national and regional evaluation of the economic benefits of investment in Ireland's electricity transmission network by Indecon Economic Consultants.**

While there may have been some typos and minor errors in the documentation we do not believe these were in any way sufficient to invalidate the discussion documents and consultation.

In December 2014, we set about transforming how we engage with communities and the public. Reviewing and Improving our Public Consultation Process which is available on our website set out the 12 commitments by which we would do this. We are now delivering on these commitments and we are putting in place an enhanced framework for the development of grid projects from conception to completion. Clear communication and information, and local presence will be critical features of this approach. Our three strategy statements reflect this approach. We hope that this approach will build trust with local communities and stakeholders.

The Government policy statement in July 2012[17] underlined the appropriateness of incorporating community gain considerations into major infrastructure projects. In response, we have created two initiatives: the Community Fund and the Proximity Payment.

They provide a direct benefit to individuals and communities who are closest to new transmission infrastructure. In April 2016, we launched the first community fund for the Mullingar reinforcement project. This fund will be jointly administered by Westmeath County Council and Community Foundation for Ireland, a not-for-profit organisation.

We have considered the other comments on the consultation and responded above. We have made the following changes in the updated strategy:

- **We provide updated information on how we are continuing to enhance our public consultation and engagement processes; and**
- **We provide updated information on the Community Fund and the Proximity Payments.**

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