Shaping our electricity future

A roadmap to achieve our renewable ambition

Summary Version

EIRGRID SONI

Shaping Our Electricity Future

Consultation

14-week
Consultation and Engagement Programme

Ireland and Northern Ireland

100+ Virtual Consultation Events

- Local Authorities
- Chambers of Commerce
- Rural Communities
- Agricultural Organisations
- Community and Voluntary Groups

500
Over 500 Consultation Responses

2
Civil Society Forums

2
Industry Forums

TEDxStormont Youth Event

National Youth Assembly in Ireland

99
Deliberate Dialogue Participants in Ireland

Roadmap

Ireland Approach
Generation-led approach with aspects of Demand-led and Technology-led

Northern Ireland Approach
A balance of all approaches, leaning towards Developer-led.

40
projects in Ireland
4 new circuits
24 upgrades to existing circuits
1 new transformer
11 new technology projects

12 projects in Northern Ireland
3 new circuits
7 upgrades to existing circuits
2 new technology projects

10-year plans for
Engagement | Markets
Operations | Networks

A plan to deliver at least 70% renewable energy by 2030, an important step on the journey to 80%, on the island of Ireland.

Expected Generation

- 5.1 GW of Offshore Wind
- 2.4 GW of Onshore Wind
- 600 MW of Micro-generation Solar
- 1.3 GW of Large Scale Solar
- 1.65GWof Battery Storage
- 2.6 GW of Derated Gas

Introduction

This document sets out our planned approach – our roadmap – to achieve our renewable ambition. This ambition is to have at least 70% of our electricity come from renewable sources by 2030, an important step on the journey to 80% to get to net-zero carbon emissions by 2050.

This roadmap is based on modelling, informed by consultation with the public and industry in both Ireland and Northern Ireland. For clarity, we present it in a question-and-answer format.

1. What do EirGrid and SONI do?

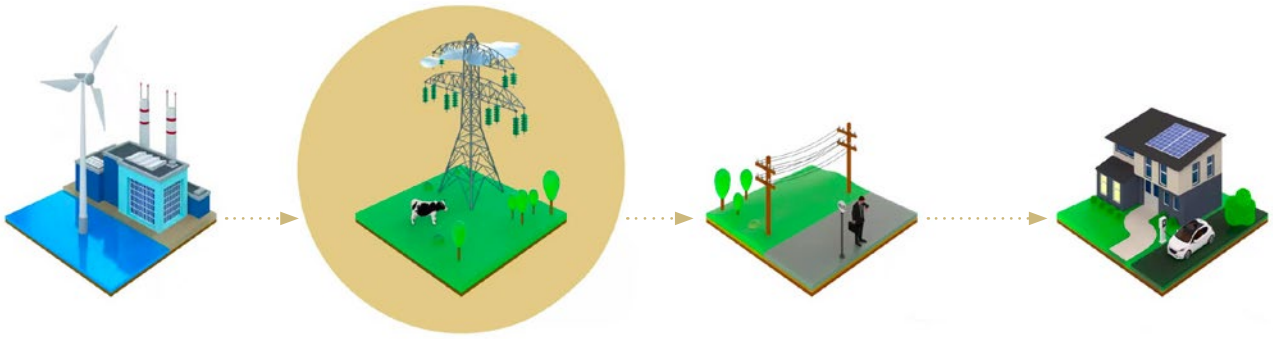
EirGrid and SONI operate the electricity transmission grid in Ireland and Northern Ireland respectively. We also work together to:

- plan the future of the grid on the island of Ireland;
- operate the grid every minute of every day;
- link with neighbouring grids in countries such as Scotland and Wales (interconnection);
- run the wholesale electricity market (where electricity is bought and sold by generators and suppliers).

In brief, we make sure that everyone has power when they need it at the most economic price possible.

2. How does the electricity grid work?

Moving large amounts of electricity around Ireland and Northern Ireland requires over 8,600 km of overhead lines and underground cables. This is the grid – and it's been safely bringing power from generators to users for decades. The grid supplies power to every home, farm, community and business on the island of Ireland. It also brings power directly to large energy users such as manufacturing companies and data centres.



Generation companies create electricity and compete to supply it at the best price.

EirGrid and SONI ensures there is enough electricity for consumers and then safely delivers this to large energy users and all around the island.

ESB Networks and NIE Networks take electricity from the grid and distribute it to everyone who needs it.

Consumers pay for electricity through their chosen electricity supplier, confident that they'll have a reliable and secure supply - now and in future.

Figure 1: How the electricity grid works.

3. Why is electricity part of the solution to climate change?

Electricity can be generated from renewable sources such as wind, sun and water. These sources of clean energy will reduce our reliance on fossil fuels like coal and oil. In the future, electricity will increasingly be used for transport, heating and other activities.

To prepare for this future, the Ireland and Northern Ireland Governments have set ambitions which require EirGrid and SONI to make the grid ready so that at least 70% and up to 80% of electricity can come from renewable sources by 2030. At present, around 40% of electricity comes from renewable generation.

This is climate action and is essential to reduce the life-threatening risks of the climate crisis.

4. Why are we talking about Ireland and Northern Ireland's electricity future?

The grid will need huge change through to 2030. We estimate that Ireland and Northern Ireland together will need at least another 10 gigawatts (GW) of electricity from clean sources – if not more. That's roughly twice as much clean electricity compared to what was available in 2020. This will replace some of the electricity generated through traditional methods (like coal and gas) and will serve some of the increased demand for electricity. This power will have to be generated, connected to the grid and delivered throughout the island.

The transition to clean electricity will be challenging but will help deliver investment and jobs. It will also make the island of Ireland more energy independent and will significantly reduce air pollution caused by electricity generation from fossil fuels.

5. How will the grid prepare for clean electricity?

We must make the electricity grid stronger and more flexible. The grid will need to carry more power. Most of this power will come from renewable generation that varies depending on the weather. Where we can, we will use the existing grid to meet this goal. However, given the scale of change needed, we must also plan for a great deal of new grid infrastructure – such as underground cables, pylons and substations.

We can't make major changes to the grid while power is flowing. Neither can we turn off the grid to get work done. If we are to keep Ireland and Northern Ireland's electricity secure, we need to time grid projects carefully to make sure we keep the lights on. This limits how many projects we can complete at any one time.

Earlier this year, EirGrid and SONI launched the 'Shaping Our Electricity Future' consultation where we asked your views on our four approaches to achieving our renewable ambitions. This was so that we can agree on a roadmap to reach the 2030 ambitions. This document outlines the responses to that consultation and highlights the next steps in the process.

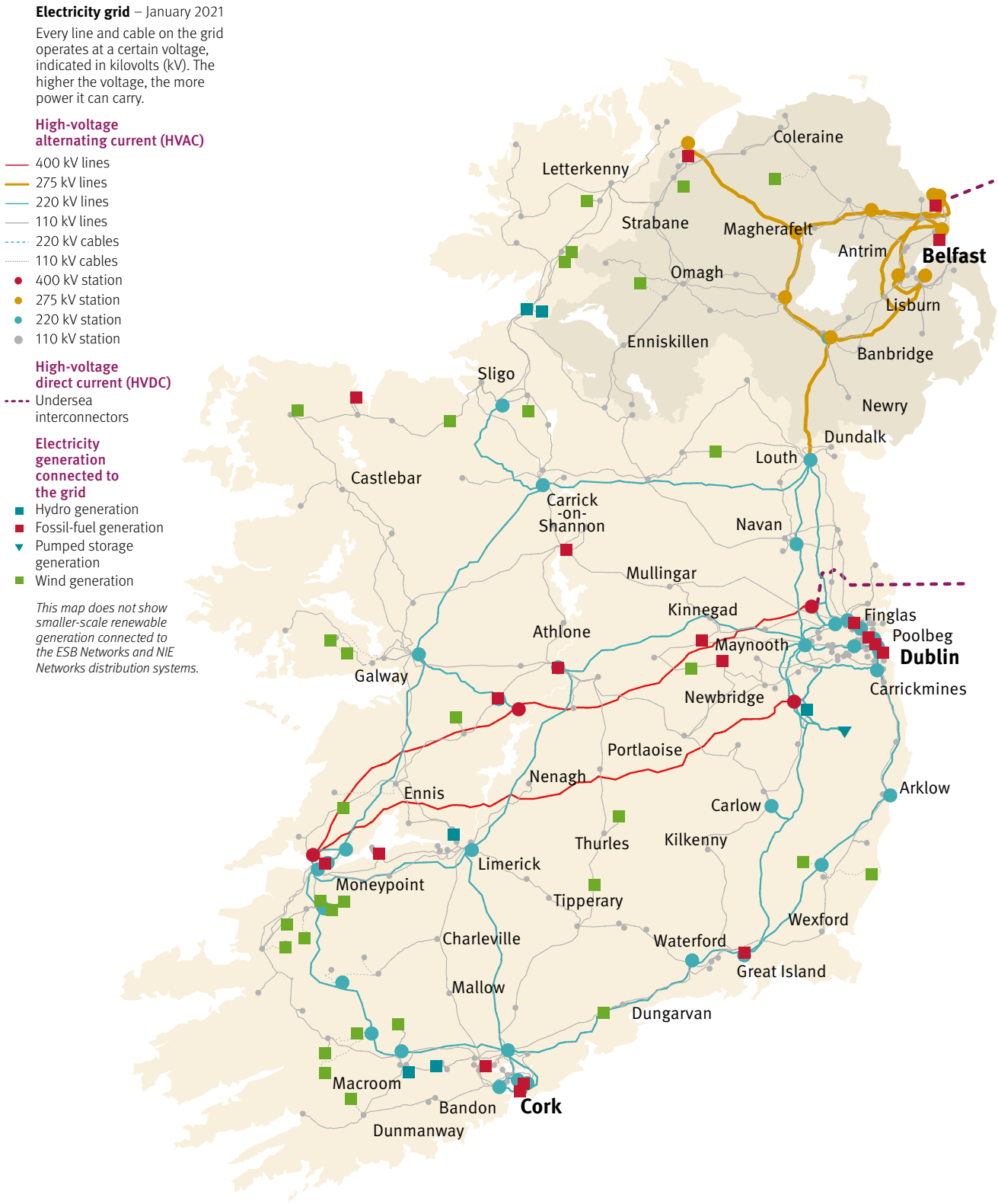


Figure 2: The electricity transmission grid in Ireland and Northern Ireland.

6. What were the four approaches presented during the consultation?

The consultation focused on four distinct network development approaches to achieving our renewable ambition.

1. **Generation-led approach** – Put clean electricity generation close to where most power is used. The most likely outcome from this approach would be, for example, more wind farms off the east coast of the island of Ireland. However, connecting them to the grid would not require much grid infrastructure apart from some new lines or cables.

2. **Developer-led approach** – Let developers decide where to locate clean electricity generation. At least 10 of the projects needed to make the grid ready for this approach will be significant in size as they will need to move large amounts of power over long distances. There will also need to be several substantial new substations.

3. **Technology-led approach** – Try new technological ways to move clean electricity across the country. This approach uses several high-voltage underground electricity cables moving power from the west to the east of Ireland and the north-west to the east of Northern Ireland. Each cable would need large converter stations at either end so that power can reconnect to the grid. Converter stations are large buildings, but we can reduce their visual impact with careful landscaping.

4. **Demand-led approach** – Put large electricity users close to sources of clean electricity generation. This approach would locate new data centres and other high-demand users near major towns and cities in the west and south of Ireland and the north-west of Northern Ireland. It would also see many more wind and solar farms in these areas.

7. How did the consultation go and who did we talk to?

We held more than 100 events across Ireland and Northern Ireland, engaging with civil society organisations, communities, local businesses, industry, consumers, agricultural groups and young people. We also received more than 500 submissions as part of the consultation. We thank everyone who attended our events, collaborated with us and provided responses to our consultation.

Below are diagrams highlighting the range of consultation events which we ran in Ireland and Northern Ireland, and the level of responses which we got from that process:

Figure 3: How we consulted in Ireland and Northern Ireland.

Figure 4: Response to the consultation in Ireland and Northern Ireland.

8. What changes to the power system can you expect?

As the energy sector moves towards a sustainable, low-carbon future, there will be major changes in:

- how and where electricity is generated,
- how and where electricity is connected to the grid,
- how electricity is bought and sold, and
- how electricity is used, for example for transport and heat.

The electricity system will carry more power than ever before and most of that power will come from renewable sources such as wind and solar. Coal and fossil fuel-based generation will be phased out in the next decade, with natural gas helping to fill any gaps while we make the changes needed.

At the same time, there will be significant changes on the demand-side as new technology allows electricity users to generate and store power and return any surplus power to the grid.

These developments will require a significant transformation of the electricity system. More importantly, these changes will need to be managed in a co-ordinated way that delivers the best outcome for the public. EirGrid and SONI, who operate the electricity transmission system and wholesale market in Ireland and Northern Ireland, have central roles to play in leading the radical transformation that is needed.

9. What are net-zero power systems – and why are they the ultimate goal?

Achieving the renewable ambition by 2030 is an important milestone on the journey to net-zero greenhouse gas emissions by 2050. A net-zero emissions target means that any greenhouse gas emissions that a country produces would be removed by using new technologies to capture and store carbon. Planting more trees which absorb carbon is another example of carbon capture.

The Government of Ireland introduced the Climate Action and Low Carbon Development Act in 2021. The goal of this bill is to achieve net-zero carbon emissions by 2050. The bill a way of setting targets for carbon emissions. The bill puts Irish law in line with European Union (EU) targets to be climate-neutral by 2050.

In 2019, the United Kingdom (UK) was the first major world economy to introduce a commitment to a net-zero emissions target. Northern Ireland contributes to the UK net-zero target for 2050 under the Climate Act 2008. Northern Ireland is in the process of drafting a new energy strategy, due to be released in late 2021. The Northern Ireland Executive is also considering two Climate Change Bills.

Electrical power systems have always relied heavily on oil, coal and natural gas to generate electricity. For power system operators to achieve a net-zero power system, they must move to clean energy production technologies such as wind and solar-based generation. This involves a fundamental overhaul of the power systems which will significantly change how they operate.

There are a range of technical difficulties associated with operating an electrical grid from mostly renewable sources. Much of this difficulty is associated with replacing traditional coal, oil and gas generators with wind, solar and other renewable source generators.

EirGrid and SONI are world leaders in incorporating large-scale renewable generation to the grid.

To achieve the 2030 renewable ambition, we will need to be capable of operating the grid with almost 100% renewable sources at times. This helps compensate for when the wind is not blowing and the sun is not shining. The roadmap to 2030 is key to making sure we succeed in meeting our targets.

10. Why do we need community participation in the Renewable Energy System (RES) transition?

EirGrid and SONI believe that communities must take part directly in the energy transition if we are to achieve the ambitious targets set out in both the Climate Action and Low Carbon Development Act in Ireland and the UK Climate Change Act in Northern Ireland. We believe that if communities across the island are enabled to build a sense of local ownership of the transition to clean energy, the importance of new grid infrastructure, which is a critical part of the process, will be better recognised.

11. How do we involve communities in the energy transition?

One way is through energy auctions. An energy auction lets energy project developers offer to supply electricity generated from renewable sources to the national grid. In July 2020, EirGrid operated the first renewable electricity auction in Ireland under the new Renewable Electricity Support Scheme. It included a category for community-owned projects and seven community-owned projects were successful. It is hoped this marks the beginning of a new era for communities investing in their long-term energy needs.

In 2021, the Minister for the Environment, Climate and Communications announced that all projects applying to the community category in future energy auctions in Ireland must be 100% community-owned. This is to make sure that communities retain the benefits associated with generating their own electricity to provide a secure long-term financial boost to the community. This also allows reinvestment into the community's energy future.

The development of microgeneration, the small-scale generation of heat and electric power by individuals and communities, is ongoing. This will support communities and individuals to deliver small-scale renewable energy projects locally and exporting their excess domestic electricity to the grid.

More broadly, establishing a way for communities to take part in the energy transition will help increase acceptance of the critical grid infrastructure needed to deliver the energy transition. The Government of Ireland believes it will also bring about significant support for climate action. For this reason, it is exploring more ways to involve communities in renewable energy projects to help Ireland achieve net-zero emissions by 2050 and deliver on the European Green Deal (a plan for all European Union member states to be climate neutral by 2050).

In Northern Ireland, SONI expressed a similar view about the importance and benefits of community participation in renewable energy projects in its submission to the Northern Ireland Energy Strategy consultation.

SONI looks forward to future engagement with the relevant Government Departments on the role that communities can play in the low carbon transition.

12. What did we learn from our consultation on the roadmap?

We learned a lot both from the public stakeholders (academics, advocacy organisations, civil society and the general public) and from industry stakeholders (developers, investors, lobbyists and suppliers). You will find full consultation reports about what we heard from these stakeholders on our websites at www.eirgrid.ie/shaping and www.soni.ltd.uk/shaping.

Public consultation feedback

Benefits for regional and rural communities

Rural communities stressed that they need to share in any economic upturn as a result of the implementation of plans to achieve renewable energy targets. This includes, encouraging large energy users such as data centres to locate in regional towns and cities, and balancing offshore and onshore generation to sustain jobs and investment.

Community ownership

There was strong support for community ownership of renewables such as wind farms and that communities should be supported in developing community-owned renewable projects. Many people said that a community-led approach to renewable project development would provide significant community benefit, support acceptance of energy infrastructure and demonstrate a grassroots contribution to achieving climate action targets. However, they stressed that systems and incentives need to be put in place to encourage ideas in this area.

Keeping costs manageable

Cost was a consistent concern raised by the public and industry. They want more information on how the move to a low carbon power system will affect the consumer in terms of electricity bills, levies and other taxes. There is clearly no appetite for the cost of electricity to rise. People also highlighted the need to protect vulnerable consumers. They believe that every energy developer, provider and supplier has a role to play in keeping electricity costs as low as possible.

Microgeneration

There was strong support from communities across Ireland and Northern Ireland for microgeneration, that is the connection of community-based renewable energy projects to the national grid. Communities are eager to get involved in this aspect of the electricity system and believe microgeneration should have a role in attaining the 70% renewable energy target.

Social acceptance

The consultation clearly showed that ‘social acceptance’ (broad acceptance by the public and local communities) is vital to achieving our renewable ambition targets. People need to feel they can trust EirGrid’s and SONI’s approaches to the planning and development of infrastructure. But, equally important, they also need to feel they can trust the approach of electricity infrastructure developers to deliver renewable and low carbon infrastructure.

Summary of other public feedback

- **Environment and ecology** – there is concern about how the outcome of Shaping Our Electricity Future could affect the landscape and the raw materials used in developing renewables.
- **Landowner concerns** – landowner rights must be recognised and protected where development takes place on farmland.
- **New technology and future-proofing** – the grid must work beyond 2030 and should include using new technology.
- **Offshore wind generation** – many people preferred offshore wind generation as they felt the environmental and visual impact would be lower.
- **Onshore electricity generation** – wind energy is accepted as a solution, but people would prefer onshore solar generation.
- **Public engagement processes** – there must be meaningful engagement and consultation by all stakeholders involved in implementing this plan with the public, communities and landowners.
- **Role of EirGrid and SONI** – there is a lack of understanding of the role EirGrid and SONI play in relation to the electricity grid and markets.
- **Security of supply** – energy supply must be maintained despite the infrastructural and other changes needed to reach the targets.

What did we conclude from the public responses to the consultation?

From the public point of view, no one approach achieved complete support. Overall, the feedback from the public showed that there is a lot of support for a low-carbon future and a clear understanding that real action must be taken to address climate change. In Ireland and Northern Ireland, there was clear support for a blend of the **Generation-led** and **Demand-led** approaches. You can read the consultation reports on our websites www.eirgrid.ie/shaping and www.soni.ltd.uk/shaping.

How are we responding to what the public said?

We looked closely at all of the consultation feedback and considered all the responses. We used this feedback to influence the modelling (see page 13) we use to determine the approach we take.

This helps us determine:

- Where the grid will be strong and weak.
- What type of electricity generation we can expect.
- What new electricity infrastructure projects we will need.

Technical models

To reflect the feedback we received from the public, the following are practical changes we made to our models:

- **Large energy users:** We are anticipating that some new large energy users will locate in regional towns and cities. We anticipate the power demand for these will be 316MW.
- **Microgeneration:** In Ireland, we are making an assumption that there will be 500MW of microgeneration by 2030. We originally modelled between 100MW and 400MW. In Northern Ireland, we are assuming a further 100MW in addition to the 100MW currently in place.
- **Offshore wind:** In Ireland, we are planning for 5GW of offshore wind generation to be in place by 2030. Most of this will be based off the east coast of Ireland as it is more technologically feasible than the south and west coasts. We originally modelled between 1.8GW and 4.5GW. In Northern Ireland, we have reduced the amount of offshore wind modelled based on the feedback and we are planning for a 100MW pilot of offshore generation.
- **Onshore wind:** We are planning for an additional 2.4GW of onshore wind generation to be in place by 2030. We originally modelled between 0.26GW and 4.66GW.
- **Storage:** We are planning for 1.65GW of battery storage to be in place by 2030. This will help store wind and solar energy to be used when there is no sun or wind. We originally modelled 750 MW.

	Ireland	Northern Ireland
Offshore Wind	+5,000 MW	+100 MW (Pilot)
Onshore Wind	+1,300 MW	+1,100 MW
Solar PV	+1,500 MW (500 MW micro-generation)	+400 MW (100 MW micro-generation)
Batteries	+1,450 MW	+200 MW
De-rated Gas Capacity	+2,000 MW	+600 MW

Table 1: A summary table of the new generation we expect in Ireland and Northern Ireland by 2030.

Industry consultation feedback

Summary of industry feedback

- **Alternative technologies** – we must consider new and emerging technologies in any future development.
- **Costs** – in line with the feedback from the public, industry participants said that keeping costs as low as possible during the changeover to a low-carbon electricity system would be vital.
- **Market enhancements** – electricity markets must change to support investment for electricity generators and suppliers taking part in the market.
- **Network reinforcements** – we must continue building the network to support renewables as quickly as possible.
- **Network delivery** – social acceptance by local communities and society is crucial to make changes quickly.
- **Operations processes and tools** – these must change to manage different ways of generating power.
- **Renewable targets** – we must plan for an energy system which has little or no impact on the environment and the 70% renewables target is just a step towards that.
- **Resourcing** – EirGrid and SONI need funding and resources to achieve the targets.
- **Security of supply** – in line with the feedback from the public, industry participants said that security of energy supply is important in reaching the target.

What did we conclude from the industry responses to the consultation?

The feedback from industry stakeholders showed that there is a lot of support for a low-carbon future and a clear understanding that real action must be taken to address climate change. However, there was no clear coming together on any one of the four development approaches.

How will we respond to what industry said?

Industry stakeholders provided a wide range of feedback covering the technical elements of the markets, networks and operations of the electricity system. Their feedback and our response is available on our websites www.eirgrid.ie/shaping and www.soni.ltd.uk/shaping.

13. What new electricity transmission network projects will be required?

Based on the modelling that we have done, we have completed a set of transmission network planning studies. These studies help determine what potential transmission network projects will be required by 2030 to deliver our renewable ambition.

These projects would be in addition to projects that are already being undertaken by EirGrid (see here) and SONI (see here). Most importantly, each individual project will be required to undergo detailed assessment, meet relevant planning regulations and undergo engagement prior to moving forward.

Type of project	Description of project	Ireland	Northern Ireland
New Circuits	A new circuit means the development of a new overhead line or underground cable.	4	3
Uprating of Existing Circuits	The uprating of existing circuits means upgrading an existing line or cable to take more power at the same voltage.	17	7
Replacing Existing Circuits	Replacing an existing circuit means replacing an existing line or cable in the same place with more modern technology.	5	-
Upvoltage Existing Circuits	Upvoltage existing circuits means upgrading an existing line or cable to take more power at a higher voltage.	2	-
New transformer	Equipment for reducing or increasing voltage level, usually installed in a substation.	1	-
Power Flow Controllers	Power flow controllers mean a device installed on a transmission circuit to allow control over how power is directed along that circuit and neighbouring circuits.	6	-
Dynamic Line Rating	Dynamic line rating means a tool that applies a real time rating to an overhead line throughout the year by assessing the prevailing weather conditions and determining the maximum power flow that can be safely accommodated at that time.	5	2

Table 2: Potential new electricity transmission network projects.

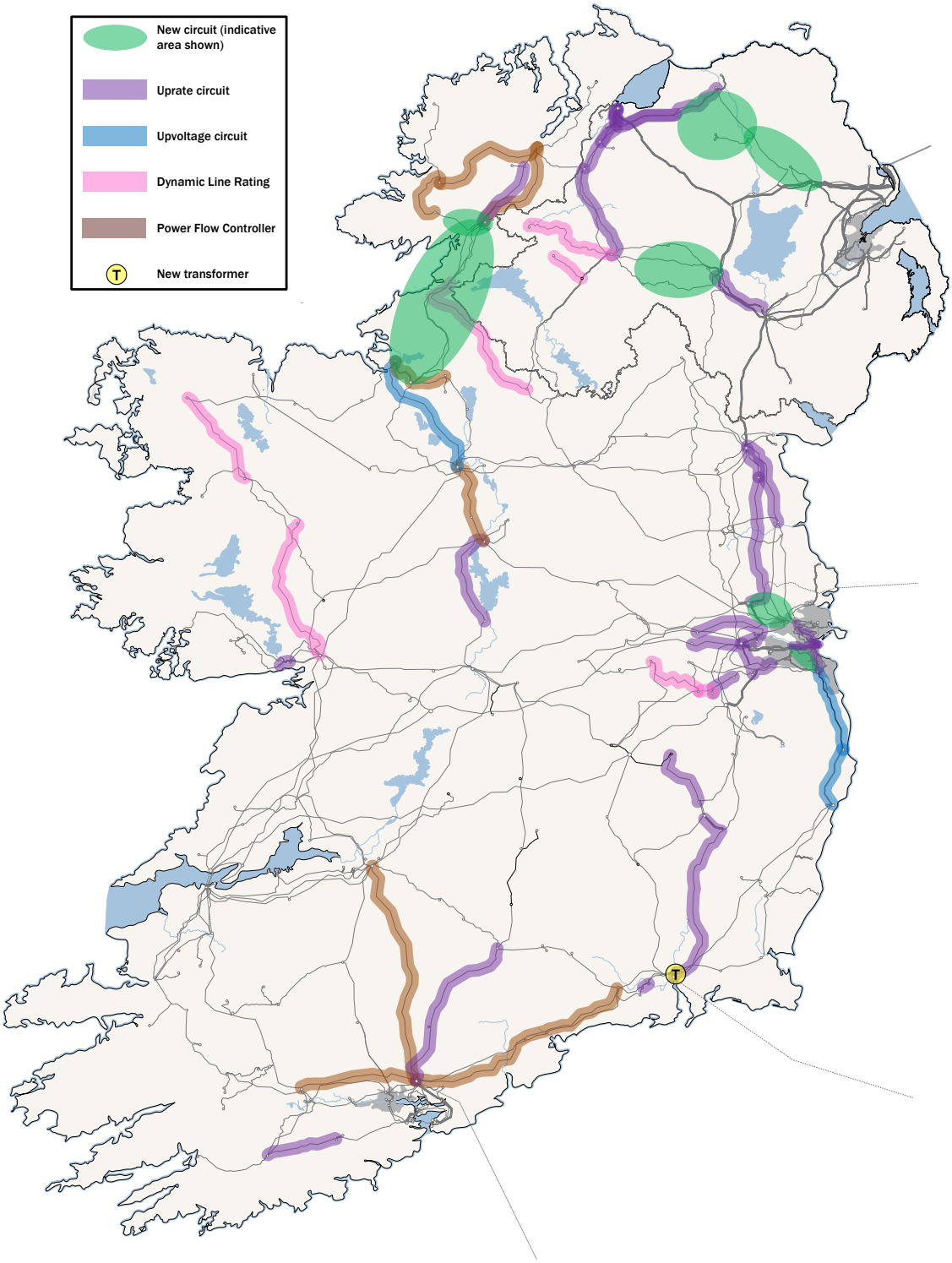


Figure 5: Map of potential new electricity transmission network projects in Ireland and Northern Ireland.

14. What engagement will be undertaken to help deliver this plan by 2030?

Our public engagement will provide a comprehensive, thoughtful, transparent and inclusive approach. We must listen to those who live near future grid infrastructure and to local and national policy makers and decision makers. Only with their support will we be able to achieve the scale of change required in the next few short years. The scale of this challenge is enormous – but the benefits will be immeasurable.

In response, EirGrid and SONI are making community engagement and participation part of this Shaping Our Electricity Future roadmap. This will complement and enable our well-established expertise in engineering. Our aim is to develop a cohesive approach that reflects and is framed by the secure transition to a low carbon electricity system – and by the urgent context of climate action.

In Ireland, we will:

- Embed our new consultation and engagement toolkit within the Framework for Grid Development, putting communities at the heart of grid development.
- Commence the roll out of regional energy citizens' assemblies which are modelled on Ireland's citizens' assembly but at a local level.
- Continue to engage with individual local authorities and regional assemblies on future grid needs in their area, including Climate Action Regional Offices.
- Partner with a youth organisation with regional reach to deliver awareness programmes and initiatives on transitioning Ireland to a cleaner, greener energy future.
- Explore the introduction of a new strand of community benefit funding to support landowners and communities undertaking microgeneration projects.
- Continue rolling out new community forums on projects in collaboration with the community and voluntary sector.
- Coordinate and host regional knowledge hub initiatives that support communities with the practical information and tools to commence their community energy journey.
- Develop a knowledge portal for communities to explore topical queries in relation to the grid such as EMF, underground cabling, overhead lines, cost of the grid, how EirGrid is funded, and how renewable electricity works.

In Northern Ireland, we will:

- Embed SONI's enhanced three-part process and SONI's new consultation and engagement toolkit within Northern Ireland project delivery, putting communities at the heart of grid development.
- Subject to regulatory funding approval, engage elected representatives, CEOs and planning officials. Complete a biennial cycle of council engagement on key topics and how we engage, including annual workshop with council planners and regular updates to SOLACE.
- Develop a knowledge portal for communities to explore topical queries in relation to the grid such as electromagnetic field (EMF), underground cabling, overhead lines, cost of the grid, how SONI is funded and how wind energy works.

15. What do we need to do?

- The Shaping Our Electricity Future Roadmap shows us the key elements to help reach net-zero emissions by 2050. As a crucial first step in this process, this roadmap identifies the direction of travel needed so that at least 70% of our electricity comes from renewable electricity by 2030.
- The outcome of the consultation and what we believe is the best possible solution to deliver our renewable ambition by 2030 is:
    - EirGrid will take a Generation-led approach complemented by aspects of the Demand-led and Technology-led approaches.
    - SONI will take a balanced approach model, leaning towards Developer-led.
- The pipeline of proposed renewable projects in Ireland and Northern Ireland suggests that there will be enough projects in place to reach our renewable ambition for 2030.
- We need to build additional network infrastructure to modernise the grid to support our renewable ambition. This is complex and can take many years to deliver from planning through to producing power.
- We must make sure the existing power grid operates at full levels of efficiency so that we can deliver our renewable ambition and reduce the scale and quantity of new projects. This can also help cut down challenges from, for example, building new overhead lines or underground cables.
- It is very important that we change how the power system works so that we can produce enough power to both meet energy demand and reach our targets.
- Operating the future power system with renewable generators is technically challenging. To deliver our renewable ambition, we will need to facilitate the entry of renewables such as offshore wind, onshore wind and solar.

Short and medium term issues

- In the short or medium term, we may face issues around balancing new renewable sources of power while we phase out older, less environmentally-friendly power sources such as coal, oil and gas (which make up about 60% of all power generation on the island of Ireland at this time). We will need to plan carefully to achieve this balance.
- A lot of power will need to come from new sources of generation over the next decade so that we can meet growing demand. To decrease risk to supply, we will need to carefully co-ordinate the closure of older plants as we open up new ways of generating and accessing power. The situation in Northern Ireland is less difficult than in Ireland but still requires careful monitoring.
- We will need to be able to generate large amounts of power even when renewable sources such as wind or solar energy aren't available due to weather conditions. Gas-fired generation is expected to be used, replacing older plants and providing power when there isn't enough wind and sunshine. Various resources such as batteries will be needed.

Keeping the power system resilient will be vital

- System services will play a key role in managing the resilience of the power system. System services have been key to achieving 40% renewables in Ireland and more than 40% renewables in Northern Ireland by 2020. New system service capabilities from low carbon sources are required to address the technical and operational challenges arising from levels of instantaneous renewables increasing to close to 100% by 2030.
- Heat pumps and electric vehicles offers the opportunity to consumers to provide demand-side flexibility services. An example of such a service would be the ability to shift consumption to different times of the day. This can bring benefits by avoiding peak electricity consumption periods when it can be costly to produce electricity and when the power system can be under more stress. It can also allow us to take advantage of conditions when there are higher levels of renewable generation available to meet demand requirements.

  To help release the full potential of demand-side flexibility we will need partnerships between the distribution system operators (ESB Networks and NIE Networks) and the transmission system operators (EirGrid and SONI).
- The design of the electricity market needs to be closer to the long-term renewables policy objectives of Ireland and Northern Ireland (and, by extension, the EU and UK). This is critical so that developers get a return on their investment while still providing power at an affordable cost to the consumer.
- In the consultation, both the public and industry participants acknowledged EirGrid's and SONI's approach to engagement. They stressed that engagement must be open, transparent and consistent. In particular, the public should be empowered and respected in their engagement with EirGrid and SONI.

16. What are the next steps?

Given the relatively short timescale between now and 2030, the roadmap must do three things:

- stay affordable for consumers,
- deliver reliable power generation, and
- meet our renewable energy targets.

In preparing this roadmap, we carried out detailed technical reviews of current market operations, system operations and network infrastructure. This included taking account of expected changes in consumer demand, new technology and economic growth.

It is not possible in a planning study to explore every potential outcome or technology development. That is why EirGrid and SONI consulted widely with the public and industry to select approaches that were broadly considered the most useful going forward.

The roadmap serves EirGrid and SONI's obligation to:

- the governments of Ireland and Northern Ireland to identify projects that economically meet the renewable ambition; and
- inform the public and industry of investment opportunities and proposed market and operational changes.

Based on our technical reviews, feedback from the public and industry, and planning assumptions, we believe it is technically possible to achieve the renewable ambition for the Ireland and Northern Ireland electricity power system by 2030. However, this process will be complex and uncertain.

We recognise the need for and commit to ongoing substantive engagement and collaboration with the public and industry. In addition to this, we will continually assess:

- market operations;
- network infrastructure planning; and
- electricity system operations.

These will help us to identify what updates might be needed to the roadmap for technology improvements and to minimise risks while maintaining a reliable electricity system and providing the most economical and deliverable solution.

EirGrid and SONI plan to refresh the Shaping Our Electricity Future Roadmap every two years. We will do this sooner if there are major changes to the assumptions we have made up to this point.

A secure transition is an achievable goal and we are focused on the delivery of an electricity generation model which can deliver 70% of our electricity from renewable sources, which will in turn deliver a more environmentally friendly future for generations to come.

17. Where can I find out more?

Read the detailed Shaping Our Electricity Future Roadmap and consultation reports on our websites **www.eirgrid.ie/shaping** and **www.soni.ltd.uk/shaping**.

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