

#### What does SONI do?

SONI is the electricity transmission system operator for Northern Ireland. This means we plan for the future of the electricity grid and operate it every minute of every day. This includes interconnecting to neighbouring grids and running the wholesale electricity market. We ensure that everyone has power when they need it at the most economic price possible. The grid safely brings power from generators and sends it to NIE Networks. They then supply electricity to every home, farm, community and business in Northern Ireland.

#### Why is electricity a solution to climate change?

Electricity can be generated from renewable sources like wind and the sun. These sources of clean energy will reduce our reliance on fossil fuels like coal and oil. Because of this, electricity will increasingly be used for more reasons, like transport and heating.

To prepare for this future, the UK government is aiming for Net Zero carbon emissions by 2050. At present, over 40% of Northern Ireland's electricity already comes from clean sources that have no carbon emissions. A key step towards the ultimate Net Zero goal is to agree an interim target to bridge this gap. The Economy Minister, Diane Dodds MLA, has stated her ambition that Northern Ireland should target at least 70% clean electricity by 2030.

This is climate action — which is essential to reduce the life-threatening risks of the climate crisis. This needs to be achieved without compromising the security of your electricity supply. Finally, the cost of this work will ultimately be paid for by electricity users — so we want you to make an informed choice about its costs and benefits.

#### How will the grid prepare for clean electricity?

To prepare for this change, SONI must make the electricity grid stronger and more flexible. The grid will need to carry more power, and 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, we will also need to plan for a great deal of new grid infrastructure – such as underground cables, pylons and substations.

#### How can you help?

We want to hear your thoughts on our four draft approaches, so we can agree on an approach to reach the 2030 goal. The move to clean electricity will affect everyone in Northern Ireland – we want to work with the public to find the best way of shaping our electricity future.

#### What are we asking you to consider?

This document explains proposed changes that will affect the future of electricity in Northern Ireland. We need to add a lot of new sources of clean electricity, and these are typically far away from where electricity is used. This document suggests four draft approaches in response. We want to hear your views to help shape our final strategy. Please read the information we've provided on our four

Please read the information we've provided on our four draft approaches on pages 14-21. Then tell us what you think, using any of the contact methods listed on page 27.

1

## Generation-led

Put clean electricity generation close to where most power is used

2

## Developer-led

Let developers decide where to locate clean electricity generation

3

## Technology-led

Try new ways to move clean electricity across Northern Ireland

4

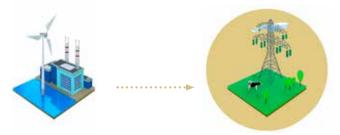
## Demand-led

Put large electricity users close to sources of clean electricity generation



#### How does the electricity transmission system work?

Moving large amounts of electricity around Northern Ireland requires over 2,000km of overhead lines and underground cables. As a shorthand, we refer to this as the grid – and it's been safely bringing power from generators to users for decades. The map on page 7 shows where Northern Ireland gets its electricity, and the transmission network that moves this power to where it's needed.



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

SONI ensures there is enough electricity, then safely delivers this directly to large energy users and all around the grid.





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

Consumers choose an electricity supplier, confident that they'll have a reliable and secure supply – now and in future.

## Why are we talking about Northern Ireland's electricity future?

The grid will require unprecedented change in the next ten years. We project that Northern Ireland will need at least another 1,300 megawatts (MW) of electricity from clean sources – if not more.

That's roughly twice as much clean electricity compared to what was available in 2020. This power will have to be generated, connected to the grid and delivered throughout Northern Ireland.

The transition to clean electricity will be challenging, but will help deliver investment and jobs. The transition to clean electricity will be challenging, but will help deliver investment and jobs. It will support economic recovery after the pandemic, and create the potential for investment across the region. It will also make Northern Ireland more energy-independent, and will significantly reduce air pollution caused by electricity generation.

#### Your protection as an electricity user

SONI is a regulated utility, which means we operate solely for the benefit of the electricity user. We do not own the electricity grid, and have no vested interest in adding to it. We only upgrade or add to the grid in response to government policy, or where it is an essential response to secure Northern Ireland's electricity supply. Our work is not paid for through taxes, or through government spending. Instead, every electricity user pays for the grid as part of the standing charge on their electricity bill.



#### Electricity grid - January 2021

Every line and cable on the grid operates at a certain voltage, indicated in kilovolts (kV). The higher the voltage, the more power it can carry.

## High-voltage alternating current (HVAC)

- \_\_\_\_ 400 kV lines
- 275 kV lines
- \_\_\_\_ 220 kV lines
- 110 kV lines
- ---- 220 kV cables
- ---- 110 kV cables
- 400 kV station
- 275 kV station
- 220 kV station
- 110 kV station

### High-voltage direct current (HVDC)

---- Undersea interconnectors

#### Electricity generation connected to the grid

- Hydro generation
- Fossil-fuel generation
- Pumped storage generation
- Wind generation

This map does not show smaller-scale renewable generation connected to the NIE Networks distribution system.



7





## How will this consultation process work?

This document offers a summary of our initial thinking on how the electricity grid could change so Northern Ireland can have at least 70% clean electricity by 2030. There are several ways to approach this challenge, and they each have different outcomes. This consultation is about finding a balance between the benefits and potential impacts of each approach. We want to hear what you think — to help us make decisions that reflect your views.

At the end of 2021, we aim to publish our final strategy. This will then help inform the energy strategy being developed by the Department of the Economy. It will also shape the next nine years of specific changes across individual projects. Each of these projects will then have extensive public consultation and will follow the normal planning process. But by talking to us now, you can affect how the electricity grid evolves in the next decade.

## Why will we all be using more clean electricity in future?

After generations of burning fossil fuels, we must now work together in response to the resulting climate crisis. Without action, the changes in our weather systems will threaten how we live.

In response, governments are taking collective action to reduce carbon emissions. This means we have to find new ways to meet Northern Ireland's increasing need for energy without relying mainly on burning fossil fuels. Electricity helps make this possible, as it can be generated from clean and renewable sources like the wind or the sun. These sources of energy will never run out, and they don't have carbon emissions that cause climate change. This means renewable electricity will increasingly replace fossil fuels like coal and oil. Natural gas will still be used to generate some electricity as a backup when we can't rely on the sun or the wind.

## What does this mean for the electricity grid?

This creates several challenges for Northern Ireland's electricity grid.







#### Meeting a greater need for power

The grid will need to need to carry more power. Since 2000, the demand for electricity in Northern Ireland has grown by 6%. But we project the growth in demand will be substantially higher in the next ten years. These projections are based on the increasing use of electricity for transport and heating.

## Coping with variable sources in remote locations

By 2030, most of the electricity on the grid will need to be generated from clean, renewable sources – like the wind or the sun. However, the amount of electricity from these sources depends on the weather. We can't easily or economically store large amounts of electricity, so we have to allow for this variability. Also, the strongest sources of renewable electricity are typically far away from where most power is used.

## Integrating complex forms of generation

Generating electricity from the wind or sun is technically very different from burning fossil fuels to create power. The main challenge is that renewable electricity is generated at a different frequency to the rest of the power on the grid. Adding this much electricity from renewable sources is a significant technical challenge. The grid we have today cannot carry this much extra power, let alone move this much power across Northern Ireland from renewable sources. To prepare for this future, the electricity grid needs to be made stronger and more flexible.

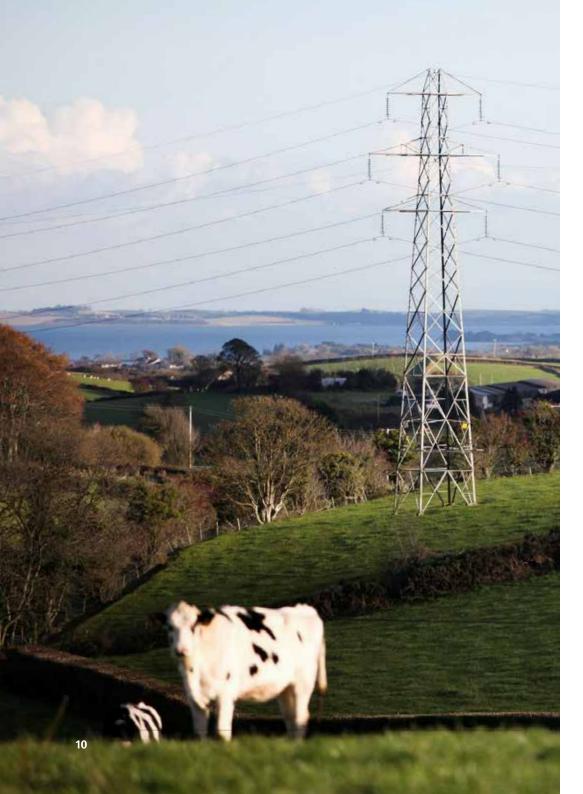
#### Managing a decade of grid upgrades

These challenges need a decade of new projects to strengthen the grid. Without this work, Northern Ireland won't be able to rely on a secure supply of electricity, and we won't have at least 70% of this power coming from clean sources by 2030. Finally, this consultation presumes

Finally, this consultation presumes that existing grid upgrades – such as the North South Interconnector – will go ahead as planned and on schedule. Without these existing projects, it will be difficult if not impossible to achieve 2030 goals.

#### Building and improving partnerships

All our draft approaches depend on support and flexibility from our partners and stakeholders. This includes Government, the Utility Regulator, NIE Networks — and all those who work in Northern Ireland's electricity system.



## What are the challenges of clean electricity?

SONI does not generate electricity – we transport it from generators across the grid. We use the grid to supply power to NIE Networks, who then distribute electricity to all consumers in Northern Ireland. This includes hospitals, schools and homes.

We know that there will be potentially enough new sources of renewable electricity to meet 2030 targets. But we don't know if the electricity grid will be ready to carry this power. As a result, the electricity grid – including the regulations and policy that affect the grid – needs to change.

The changes we discuss in this consultation are so the grid can meet the unique challenges of renewable electricity. This form of energy:

- is generated far from where it's needed:
- comes from variable sources: and
- has a different frequency to the rest of the power on the grid, and so is technically harder to work with.

#### Dealing with remote locations

We are obliged to provide a connection to the grid for new generators, no matter where they choose to locate. Solar energy projects in Northern Ireland tend to be located closer to where more power is needed – and so can be accommodated. However, the greatest source of renewable energy in Northern Ireland is wind. And the strongest and most reliable source of inland wind power is in northern and western regions. Yet most of Northern Ireland's electricity is used in and around Greater Belfast.

Moving wind-generated electricity from inland locations would require a lot of new grid projects. We would need to upgrade the grid where we connect new renewable generators — and then make the overall grid stronger to carry their power.

## Upgrading the grid without disrupting your supply of electricity

We can't make major changes to the grid while power is flowing – and neither can we turn it all off to get work done. If we are to keep Northern Ireland's electricity secure, we have to carefully sequence the timing of grid projects to ensure we keep the lights on. This limits how many projects we can complete at any one time.

## Informing the public and responding to their concerns

We know that new grid infrastructure projects lead to robust and emotive debates. Communities expect compelling and persuasive reasons for disruptive change. That's why we offer the public an opportunity to influence our decision-making process. We aim to build trust by clearly explaining our goals and our limitations, and then asking for your response. Where possible, we aim to propose final solutions that reflect your views — and so are more likely to be accepted.

#### Responding to these challenges

All these factors influenced our thinking – and informed the four draft approaches that we now offer for consultation.



#### What do we need to achieve?

The way electricity is generated is changing due to government policies that respond to climate change. The UK has set a Net Zero target for carbon emissions by 2050. The Economy Minister Diane Dodds MLA and her department are now developing policy to set targets for Northern Ireland. As an interim goal, the Minister has indicated an ambition of achieving no less than 70% renewable electricity by 2030. This broadly aligns with the targets set by our regional neighbours.

## Who do we need to work with to achieve this?

SONI, as the operators of the grid, will play a key role, but we cannot deliver this goal on our own. Achieving at least 70% by 2030 will require change across the entire electricity sector. There needs to be action from electricity generators and developers, from the regulator, from the Northern Ireland executive and from NIE Networks. All key players will need to work together, and there will be a need for flexibility and innovation from all.

This consultation is based on what SONI can do, but it also considers how others in the electricity sector can help reach the 2030 ambition. In fact, some of the four draft approaches we propose are dependent on what other organisations can do to make this journey possible.

Because of this, and of the complexity of this ten year transition, the four draft approaches are not standalone solutions. There are some foundation projects that are common to all four approaches – and the final plan is likely to include elements of all approaches, strongly led by one of them.



## Is it possible to reach the 2030 goal with all four draft approaches?

No. It's important to be open about how hard it is to reach the aspired levels of clean electricity in nine years. One of our four draft approaches will achieve at least 70% – but not by 2030. Another of the draft approaches also has a high risk of missing this deadline. We have included these approaches so you understand the scale, cost and impact of moving towards clean electricity. We need to hear your views so we can make the best possible decision.

#### What do we need you to do?

You will now learn more about each of our four draft approaches to prepare Northern Ireland's grid for clean electricity. We then need your feedback (see page 27) so we can create a final strategy. This strategy will then lead to specific plans for each of the individual projects that need to be delivered before 2030. All of these projects will be open to public consultation and will be subject to planning permission, as usual.

## Generation-led

Put clean electricity generation close to where most power is used

Currently, SONI and NIE Networks must connect new electricity generators to the grid wherever they request. This applies even where the grid is weak or the local demand for electricity is low. Given that many developers plan to build new sources of clean electricity in remote locations, this creates a need for significant additions to the grid.

With this approach, new renewable generation would be located based on existing strengths and weaknesses of the electricity grid. The current model for locating renewable generation would be replaced by one that is led by government policy.

This approach would lead to more renewable generation being developed near more densely populated areas – as this is where there is greatest demand for electricity.

With this approach, a large proportion of new clean electricity that Northern Ireland needs would come from offshore wind farms on the east coast. This would then be balanced with some new wind and solar farms inland in other areas.

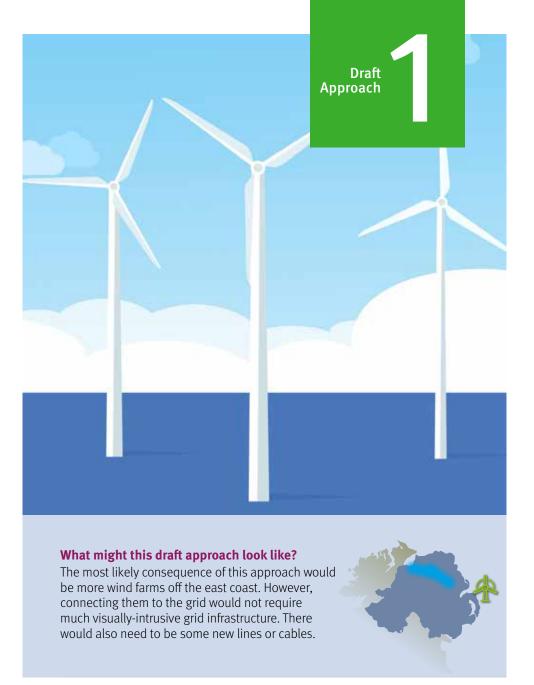
## What work will be needed, and how much might it cost?

With this approach, we estimate we would need around 8 projects to add to or upgrade the electricity grid.

We estimate this approach is a less expensive way to prepare the grid for 2030 goals. It would cost approximately £120 million for related grid upgrades across the 8 projects. It presumes that 700 MW of the renewable electricity target comes from offshore wind off the east coast. This will be supported by about 500 MW of new solar energy and inland wind farms.

However, this approach needs a change in government and regulatory policy. It also needs the cooperation of the generation sector, and relies on the development of new renewable generation offshore.

This approach is highly likely to result in a grid that allows at least 70% of Northern Ireland's electricity to come from renewable sources by 2030.



## Developer-led

#### Let developers decide where to locate clean electricity generation

Northern Ireland has a successful track record in adding renewable electricity – over 40% of our electricity already comes from wind generation. This success was due to many factors, one of which was the incentivising of renewable generation. This was the goal of government and regulatory policies over the past decade or more.

As a result, SONI and NIE Networks have connected new sources of renewable electricity, regardless of the local strength of the grid. If this approach continues, we forecast that developers can build enough generation to meet the demands of the 2030 target. However, our studies show that it will be very challenging to expand the grid in time for Northern Ireland to use all of this power.

We estimate that developer-led locations will need around 19 projects to add to or upgrade the grid. These will see new overhead lines or underground cables as well as upgrades to existing infrastructure – across Northern Ireland. These projects will be necessary to strengthen the grid near new sources of renewable generation. They will also be needed to bring power from the remote sites of renewable generation to densely-populated areas where power is used.

The challenge with this approach is the number of projects and the time it will take to complete them. For reasons of safety and security of supply, there are practical limits to the number of major projects we can work on at the same time. We have extensive experience on how long it takes to plan, manage – and particularly gain public support – for grid projects. Given this, we forecast that it would be very challenging to complete this number of projects by 2030.

In the meantime, due to a lack of capacity on the grid, there would be excess power produced that can neither be exported nor used. This means that on a very windy or sunny day we would have to ask wind and solar farms to stop generating electricity.

## What work will be needed, and how much might it cost?

This approach is based on 700 MW of new renewable generation coming from inland wind farms, 350 MW each from solar and offshore wind. This option is both expensive and disruptive – with 19 projects and a likely bill of £361 million for grid upgrades and additions.

More importantly, taking this approach means it's very unlikely that the grid will be ready to take 70% of Northern Ireland's electricity from renewable sources by 2030.



#### What might this draft approach look like?

At least 3 of the required projects needed to make the grid ready for this approach will be significant additions. These will need to move large amounts of power over long distances. There will also need to be a substantial new substation.



## Technology-led

#### Try new ways to move clean electricity across Northern Ireland

One of the challenges of clean electricity is how to move large amounts of power from source to use. Rather than put generation near demand, or demand near generation, this approach considers innovative ways to move the power itself.

The purpose of the grid is to move power in bulk over long distances, while also integrating this power throughout the entire network. Achieving these goals typically requires overhead lines carrying alternating current (AC) – as they are reliable and robust. But, as noted in Approach 2, it would be very challenging to complete the required amount of new AC lines before 2030.

As an alternative, this approach uses a high-capacity underground direct-current (DC) cable. This cable would exclusively move power from wind and solar farms in the North and West to the greater Belfast area where more power is needed.

High-voltage DC cables like this are typically used in long-distance connections between separate grids. They are rarely used as an integrated part of any national electricity grid. This is because DC electricity is hard to integrate with existing AC grid infrastructure. For instance, DC cables like this need large, expensive and complex converter stations at both ends of every cable.

For these reasons, these DC cables would not form an integrated part of the grid. They would be isolated, oneway connections between renewable generation and urban centres.

To enable this approach, we will also need to install sophisticated electronic devices on existing AC lines – to change how power flows on the rest of the grid.

Although SONI plans for the future of the grid, NIE Networks builds and owns the actual grid infrastructure. To deliver this approach, we would need to work together to implement these technologies at an unprecedented scale.

## What work will be needed, and how much might it cost?

This draft approach is based on 700 MW of new renewable generation coming from inland wind farms and 350 MW each from solar and offshore wind.

We estimate it would lead to over 14 projects costing approximately £535 million to upgrade and add to the grid. There is also a high degree of technical uncertainty in this draft approach.

For this reason, we believe it would be very challenging to complete all the necessary work in time. This means this approach is unlikely to make the grid ready for at least 70% clean electricity by 2030.



#### What might this draft approach look like?

This approach uses a high-voltage DC underground electricity cable to move power from the north and west to the east. This cable would need large-scale converter stations at either end so power can reconnect to the grid. Converter stations are substantial buildings, but their visual impact can be reduced with careful landscaping.



## Demand-led

## Put large electricity users close to sources of clean electricity generation

The amount of electricity carried by the grid will significantly grow in the next ten years.

As has always been the case, a small percentage of electricity users use most of the generated power. Northern Ireland has relatively few large electricity users — and currently none of them get their supply of electricity directly from the grid. However, in the future, high-demand users in the pharmaceutical, high tech or computing sectors may need a direct grid connection.

At present, SONI has no say on where high-demand users such as these would locate. As a regulated utility, we would be obliged to provide a connection to the grid wherever they choose, regardless of existing demand for power in the area.

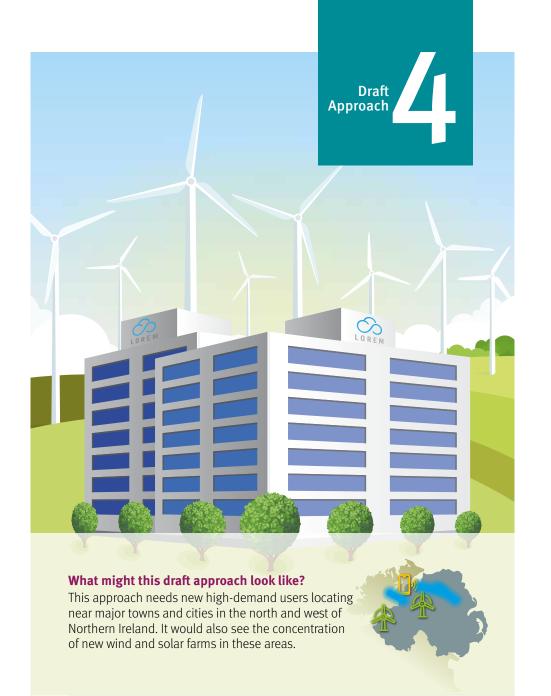
With this draft approach, a change in energy policy would compel new high-demand users to locate closer to sources of clean power.

## What work will be needed, and how much might it cost?

This draft approach is based on 700 MW of new renewable generation coming from inland wind farms and 350 MW each from solar and offshore wind. It is also one of the least expensive approaches. We estimate it would lead to approximately 10 projects to upgrade or add to the grid at a cost of £113 million.

However, this approach would need alignment and support from development agencies such as Invest NI.

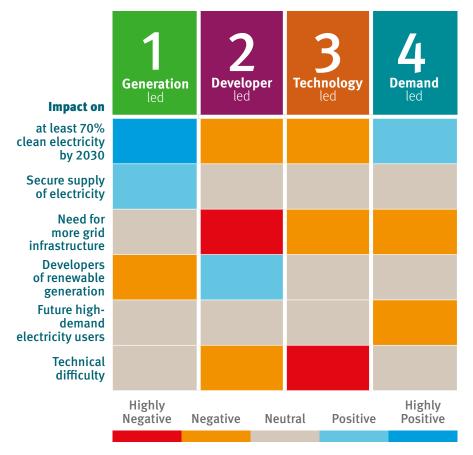
This approach would make the grid ready for 2030 clean electricity targets. But this success requires large electricity users to locate in the preferred regions of the grid going forward.





#### How do these different approaches compare?

This is a complicated issue that needs detailed, technical solutions – which makes them difficult to assess. For comparison purposes, we have created a summary table that shows our views on the strengths and weaknesses of each approach. This is a high-level overview, and it reflects our informed opinion. You can give your views on the impact of each approach in your response to this consultation.





## SONI

# How we run the electricity market How we plan the electricity grid

# How we operate the electricity grid

## What does SONI need to change so at least 70% of Northern Ireland's power can come from renewable sources?

SONI carries out three connected roles in the electricity system.

- We run the electricity market.
- We plan for the future of the grid.
- We operate the grid including interconnection with neighbouring grids.

The public consultation you're now reading focuses on preparing the grid for more renewable electricity. This is because changes or additions to the grid have more potential to impact communities and individuals.

But the grid is just one aspect of the electricity system. Achieving at least 70% renewable electricity by 2030 will also see considerable change in how the grid is operated – every minute of every day. Our proposals, if adopted, will also lead to changes in how the wholesale electricity market works.

#### Changes to how we operate the grid

There are many technical challenges to running the grid when most electricity comes from renewable sources. Our goal is to ensure the electricity system remains stable and supply is secure.

Our operational response to these challenges will lead to a range of new technical solutions, policies and tools. Consultation with the electricity sector will help us find the best set of solutions.

## Changes to the wholesale electricity market

We do not generate electricity – we operate a set of all-island markets. These markets are run as a joint venture with EirGrid, who operate the grid in Ireland.

These markets give generation companies a chance to compete to supply power. They also allow specialist providers to offer solutions that keep the electricity system strong and stable.

The markets are operated using a series of regulatory rules. At present, these rules are largely driven by the price paid for energy. These rules were designed to ensure consumers pay the lowest costs possible when generators use fossil fuels like oil and gas. However, a market dominated by renewable generation creates new financial and technical challenges. In particular, renewable generation costs more to develop, but then has lower operating costs.

The markets also need to fund investment in new technical solutions to maintain the resilience of the electricity system. For example, how do you run the power system when there is no wind for a long period of time? For these reasons, a market dominated by renewable generators will need new rules. Our consultation

## Do you want to know more about these changes?

on the energy markets aims to

suggest and agree these rules.

Both of these aspects of the clean energy transition are also open to separate consultations. These are mainly technical, procedural and regulatory changes. If you want to learn more about them, please visit

consult.soni.ltd.uk

25



#### How can you influence our thinking?

This content summarises our four draft approaches in early 2021. We now want to hear your views, so we can refine and improve our approaches in a final strategy by the end of the year. This will then help inform the energy strategy being developed by the Department of the Economy.

#### Public response: Submitting your views

We will be running a range of initiatives to allow the public to make their views known on our draft approaches.

The consultation period is open until 12 noon on 14 June 2021. You can submit your views several ways:

#### Our consultation portal

SONI have launched a new consultation portal to make it easier for you to give your feedback. You can access the portal at: **consult.soni.ltd.uk**Here you can access more information

about the project, fill out a survey or make a detailed submission.

#### Email

info@soni.ltd.uk

#### Post

Shaping Our Electricity Future SONI, Castlereagh House 12 Manse Road, Belfast BT6 9RT

#### What happens next?

When we have received all feedback, we will then consider how best to respond. Our goal is to publish a plan for Our Electricity Future before the end of 2021.

## Our plans to learn the views of stakeholders on our draft approaches

We are working with a range of partners to help stakeholders have their say and engage directly with us. These include:

- Hosting an Industry Forum. This will bring together generation companies and developers, large energy users and suppliers.
- Hosting a Civic Society Forum. This will bring together representatives from a wide range of disciplines. These include academia, agriculture, community, environment, sustainable development and social justice.
- Workshops with key partners such as the Northern Ireland Chamber of Commerce

Each of these initiatives will produce outcome reports which we will publish on our website. If you would like to participate in one of these events, please get in touch with us or find out more on how to get involved on **consult.soni.ltd.uk** 

# Questions to consider

We want to hear your views on our four draft approaches to ensuring at least 70% of Northern Ireland's electricity comes from renewable sources by 2030. If you visit our consultation portal at consult.soni.ltd.uk you can answer an easy-to-use online questionnaire. This raises the key issues we want you to consider. We've listed these questions here so you can consider your answers first. If you would prefer to send us your views in another way or in a more open format, we welcome that too. Just use the contact details shown on page 27.

On our consultation portal, we'll ask for your opinion on a series of statements. For each statement, we'll ask you to tell us what you think by picking one of the following answers:

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree
- Don't know

We'll then give you the space to provide more information. This could include the reasons for your answer, or anything else that gives some context for your views.

Here are the five statements where we need your response – and a concluding question we ask at the end of our online questionnaire.



#### Introduction

Northern Ireland should do everything possible so that by 2030, at least 70% of its electricity comes from renewable sources like wind turbines or solar panels.

#### What do you think?

#### **Draft Approach 1: Generation-led**

When connecting new sources of renewable electricity, locations should be guided by the strength of the grid and demand for power near the proposed site.

#### What do you think?

#### **Draft Approach 2: Developer-led**

Companies that develop renewable electricity should decide where to locate new wind or solar farms.

What do you think?

#### **Draft Approach 3: Technology-led**

Renewable electricity needs to be moved from remote locations to where most power is used. To achieve this, we should use new technology like high-voltage direct current underground cables.

#### What do you think?

#### **Draft Approach 4: Demand-led**

Companies that use a huge amount of power should locate new facilities near sources of renewable electricity and where the grid is strong.

#### What do you think?

#### Conclusion

Do you have any other feedback or is there anything that you feel we have not considered?

#### **Shaping our electricity future**

The next decade has the potential to be revolutionary for Northern Ireland's electricity system. With your help, we can build on the results already achieved in the last ten years. We can continue to lead the world in how much of our electricity comes from clean, renewable sources. We have the potential to meet the challenge of the climate crisis with innovation and cooperation that will be an example for others. Our electricity supply will become cleaner and we will become more self-sufficient. A strong, clean and regionally balanced grid will help both local businesses and foreign direct investment.

Northern Ireland can make a meaningful difference to a global crisis, but it will mean embracing and accepting change. Some of these changes may have local impacts, but they will benefit all of Northern Ireland's citizens for generations to come.

SONI is committed to a collective and collaborative form of decision-making. We want to hear your concerns and listen to ideas that you may not see in our draft approaches.

If we can reassure you, we will. If we can use your suggestions to improve our draft approaches, we will. We are genuinely open to workable ideas that can prepare the grid to take at least 70% of Northern Ireland's electricity from renewable sources by 2030.

The first step is to tell us what you think, or to ask any questions you may have about these draft approaches. We want to hear from you – so please get in touch.





Castlereagh House, 12 Manse Road, Belfast BT6 9RT Telephone: 028 907 94336 www.soni.ltd.uk