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# Strengthening the all island electricity network by 2020

*The benefits of increasing grid interconnection between Northern  
Ireland and the Republic of Ireland*

February 2017



# Foreword

Prepared by Ibec and CBI Northern Ireland

The proposed second North-South Interconnector is a crucial piece of economic infrastructure which will support prosperity and employment across the island of Ireland. It will ensure the effective operation of an efficient all island electricity market and support the provision of a secure, sustainable and cost-efficient electricity supply in both Northern Ireland and the Republic of Ireland. The project has the full support of both Ibec and the CBI.

## **Supporting prosperity and employment across the island of Ireland**

The Single Electricity Market (SEM) is an excellent example of how working in collaboration has provided proven benefits for citizens and businesses in both the Republic of Ireland and Northern Ireland. Collaboration through the SEM enables greater economies of scale that is more attractive to investors, improves competition – thereby lowering costs – and improves security of supply.

Like everything, the transmission and supply of electricity to employers and homes in every part of the island is underpinned by infrastructure; in this case, the current, long standing and insufficient, 275kV North-South Interconnector running from Tandragee to Louth. However, if the island of Ireland is to reap the full benefits of the SEM then a second North-South Interconnector must be constructed.

Good roads and efficient public transport are important to the success of the all island economy, but the provision of first-class electrical infrastructure is vital. And while we may take its availability for granted, without electricity, there is no economy.

If there is not sufficient electricity generation, then businesses cannot expand. If the cost of electricity is too high, then our businesses become less competitive. If renewable electricity generation cannot get to market, then both jurisdictions' decarbonisation efforts are for naught.

Domestic and non-domestic consumers in Northern Ireland and the Republic of Ireland rely on the SEM to provide an affordable, sustainable and secure electricity supply. This fact remains unchanged following the United Kingdom's (UK) decision to leave the European Union (EU) and investors need clarity on the construction of the second North-South Interconnector. The UK Government has recognised the importance of avoiding disruption to the SEM and the interconnector remains a real priority for businesses in both Northern Ireland and the Republic of Ireland.<sup>1</sup>

In an effort to better inform the debate, Ibec and CBI Northern Ireland commissioned the professional services firm Grant Thornton to research the economic benefits of constructing the second North-South Interconnector. Their research reached four main conclusions on this proposed development.

<sup>1</sup> UK Government 'The United Kingdom's exit from and new partnership with the European Union' (February 2017)



### **1. It safeguards the economy's supply of electricity**

No modern economy can thrive in an increasingly competitive global marketplace without an affordable, guaranteed, supply of electricity. The business community is therefore justifiably concerned that Northern Ireland is projected to face an electricity supply deficit from 2021. The Republic of Ireland currently has an oversupply of generation capacity, which could be used to alleviate this deficit, but with only one major North-South Interconnector there are serious limitations on the volume of spare generation capacity that can be safely dispatched.

The proposed overground North-South Interconnector will remove those limitations and is the quickest, safest and most cost-effective means to avert a security of supply crisis. The 2016 CBI / AECOM Infrastructure Survey reported that 87% of Northern Ireland businesses surveyed identified the delivery of the interconnector as a major priority for the local economy.

### **2. It will increase efficiency of the Single Electricity Market and reduce costs**

Comparatively high energy costs make it harder to attract high energy use business investments to the island of Ireland. In addition, as energy costs are an important factor in a business' overall competitiveness, high costs make those energy intensive companies already based here less competitive compared to their overseas rivals. Delivery of the second North-South Interconnector will help alleviate those costs by allowing the SEM to work to the maximum possible level of efficiency. This has been estimated to result in all island savings each year in the region of £25.5m / €30m which are in turn likely to grow in time.

### **3. It will support inward investment**

According to research from the World Economic Forum, the quality of electricity available across the island of Ireland is competitive on a global basis - supporting the island's credentials as an attractive region for investment. The second North-South Interconnector will assist in maintaining this position of strength. A recent Indecon report highlighted that 90% of firms believe that investment in the transmission network is important or very important, for the island's ability to attract foreign direct investment.

### **4. It will support sustainability**

Both the Irish Government and the Northern Ireland Executive have committed to achieving 40% of electricity consumption from renewable generation by 2020. The second North-South Interconnector will reduce current limitations on renewable use by increasing the amount of electricity that can flow between the two jurisdictions. This will enable greater levels of renewable energy to be dispatched to consumers and will support the continued reduction in carbon emissions across the island of Ireland. In 2014, the Economic and Social Research Institute (ESRI) estimated that the interconnector will facilitate a 2.6% reduction in carbon emissions.

## **Conclusion**

The second North-South Interconnector is a crucial piece of infrastructure which will support prosperity and employment across the island, especially in Northern Ireland and the border region. We welcomed the permission granted by An Bord Pleanála for the scheme to proceed as planned, and we encourage the Northern Ireland Planning Appeals Commission to make the same decision as soon as possible. If granted, the Northern Ireland Executive and the Irish Government must then ensure this critical piece of all island infrastructure is constructed without further delay, and so be operable in 2020.



### **About Ibec**

Ibec is the national umbrella organisation for business and employers in Ireland with a membership base of more than 7,500 companies and organisations. Ibec staff offer a range of practical employer services, and in addition provide the opportunity to network and lobby at an industry level through a web of more than 60 business sector associations.

### **About the CBI**

Across the UK, the CBI speaks on behalf of 190,000 businesses of all sizes and sectors which together employ nearly 7 million people, about one third of the private sector employed workforce. The CBI in Northern Ireland represents around one third of the private sector workforce, and more than 60% of the largest employers in Northern Ireland. It is the leading business organisation influencing the policies of the Northern Ireland Executive and Assembly.



**Danny McCoy**  
CEO, Ibec



**Angela McGowan**  
Director, CBI Northern Ireland

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# Introduction

Developing and maintaining a robust electricity network is critical for economic prosperity. Proactive investment is required to prevent future structural deficits that could hinder the performance of the all island economy.

## A single market for electricity

The high voltage electricity networks in Northern Ireland and the Republic of Ireland are operated together to facilitate an all island market for electricity, known as the Single Electricity Market (SEM).

The SEM is designed to be an efficient and competitive market that delivers a reliable and affordable power supply for its users.

By leveraging electricity infrastructure on an all island basis, SONI and EirGrid, as operators of this network, can utilise the combined strength of both grids to secure supply for the island. This means that if generation available in one jurisdiction is not sufficient to meet demand, access to power in the other will help to keep the lights on for all users. An all island network structure also encourages competition in the market which helps to keep prices favourable for users.

The physical sharing of electricity between the networks of Northern Ireland and the Republic of Ireland takes place via grid connections called interconnectors. At present, there are three interconnectors in place between the jurisdictions.

These interconnectors exist from:

- Letterkenny to Strabane (110 kilovolt (kV) line);
- Corraclassy to Enniskillen (110kV line); and
- Tandragee to Louth (275kV line).

While the two 110kV lines are very valuable from a local power-sharing perspective, the 275kV line between Tandragee and Louth is the only one with the capacity to share large volumes of electricity between the two networks, and as such, is central to facilitating the operation of the SEM.

The 275kV line supports the majority of power travelling between Northern Ireland and the Republic of Ireland, and due to safety protocols, if this connection were to be lost, the other interconnectors would have to be removed from service. Therefore, despite the SEM being in place since 2007, there are still untapped efficiencies within this market which could be realised by greater interconnection across the island.

*"The Northern Ireland network is too small scale to run efficiently on its own. It would benefit greatly from more seamless access to the all island network."*

**Declan Billington**

John Thompson and Sons Ltd



## Investing in a network for the future

For a number of reasons, including those mentioned previously, SONI and EirGrid have proposed the introduction of an additional interconnector between Northern Ireland and the Republic of Ireland. This is planned to take the form of a 400kV line between County Tyrone and County Meath.

(Please see the image on the next page for reference of its proposed location.)

As this network development will span two jurisdictions it requires planning permission from the relevant authorities in both regions.

Approval was granted by An Bord Pleanála in late 2016 following an oral hearing in the Republic of Ireland. The Northern Ireland proposal is due to go to public inquiry with the Planning Appeals Commission (PAC) in February 2017.

**An Bord Pleanála** approved the proposed interconnector investment on the basis that the development would:

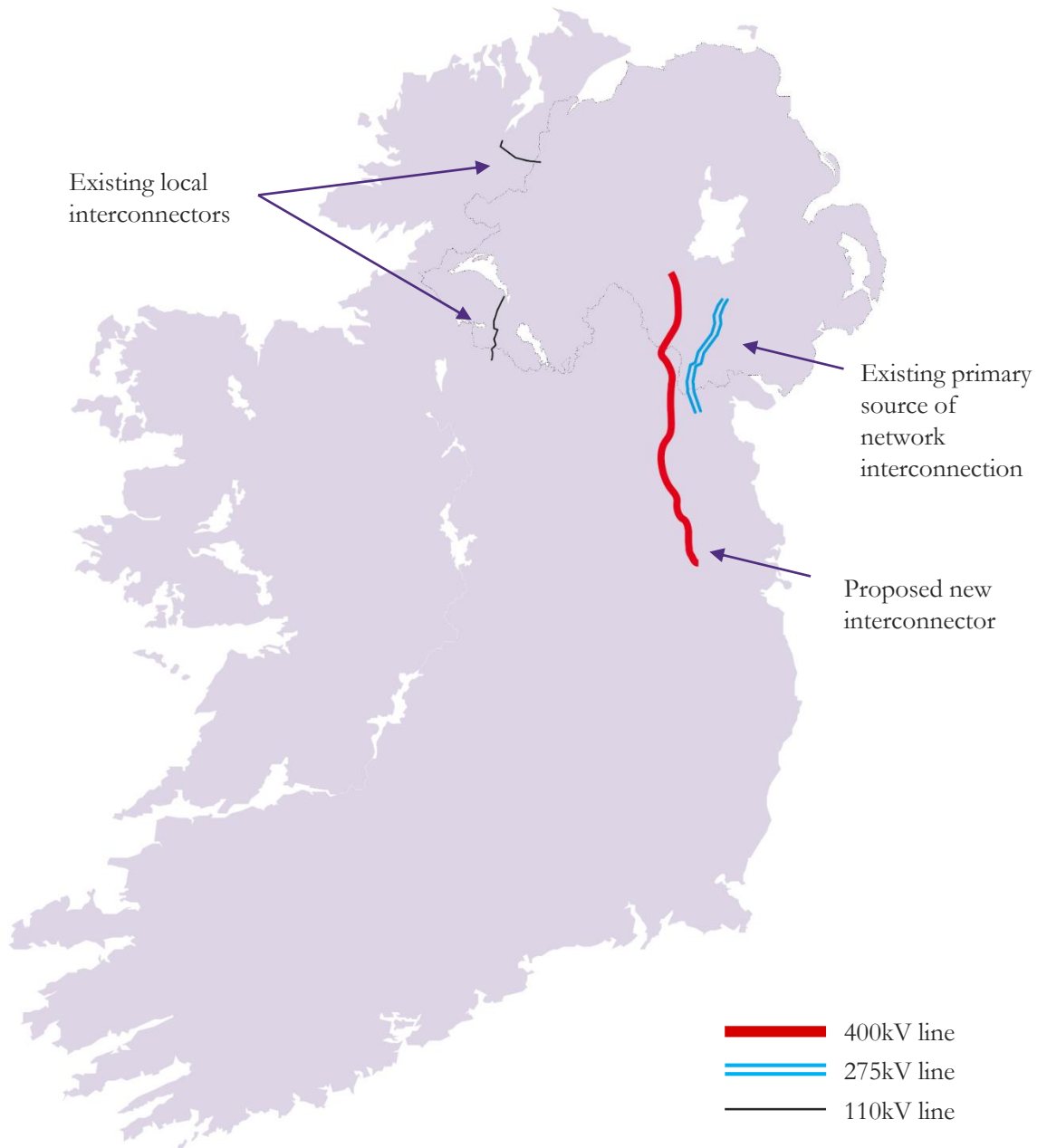
- support energy policy on sustainability, security of supply and competitiveness;
- address existing restrictions that limit cross-border electricity flows between Northern Ireland and the Republic of Ireland;
- facilitate the more efficient operation of the Single Electricity Market on an all island basis;
- facilitate greater penetration of renewable energy; and
- provide benefits to the economies of both jurisdictions.<sup>2</sup>

This report explores the pressing need for this investment, and the benefits of it being in place by December 2020.

<sup>2</sup> An Bord Pleanála 'Board Direction' to support decision on North-South Interconnector (December 2016)



### Existing and proposed grid connections



#### History of interconnection across the island

Until the year 1970, when the 275kV interconnector was constructed, the island operated with two electricity networks. The 275kV line was not in operation between 1975 and 1995, but it is now back in use. The two 110kV interconnector lines have been in place since 1994.

The above image has been prepared by Grant Thornton based on images sourced from the EirGrid Group.





# 1. Security of supply

Access to a reliable supply of power can often be taken for granted. However, as demand on the grid rises, investments such as the proposed new North-South Interconnector will be increasingly important for sustaining security of supply.

## 1.1 Understanding security of supply

EirGrid and SONI are responsible for managing and operating the transmission network in such a way as to ensure users have a secure supply of power. This is achieved by maintaining a robust physical network and sufficient levels of generation to meet demand.

**Security of supply** refers to the ability of an electricity system to ensure that the volume of power available on the grid matches the needs of users without any disruptions or failures.

The existing 275kV interconnector aids security of supply by enabling Northern Ireland to access additional generation in the Republic of Ireland when its own supply is insufficient to meet demand, and vice versa.

However, in spite of having a greater transfer capacity, this interconnector only facilitates a maximum of 300MW of power flowing in either direction. This is the result of an operational limit put in place to protect the overall grid in case of an issue with this point of connection.

The decision to limit this interconnector's transfer capacity is taken to safeguard its continued operation as a fundamental facilitator of the SEM and for a secure supply. Without other large scale interconnectors in place to support it, such precautionary measures must be taken.

In order to fully realise both the benefits of the 275kV line, and the possible economies of scale of the SEM, further cross-border grid interconnection is required. The proposed new North-South Interconnector is in fact designed to have a capacity of 1,500MW, which will match the capacity of the existing interconnector and alleviate transfer limitations.

*"Having bottlenecks in the network impacts on people's lives and jobs."*

**Dermot Byrne**  
Engineers Ireland

## 1.2 Future supply shortages in Northern Ireland

Each year, SONI and EirGrid carry out detailed forecasts of generation (supply) and demand across the island for the coming decade. This information is published through the annual 'All-Island Generation Capacity Statement'.



When assessed on its own for the years 2016-2025, Northern Ireland will face security of supply challenges from the year 2021 due to insufficient generation being available to meet demand.<sup>3</sup> (Please see Figure 1.1. for reference.)

Figure 1.1

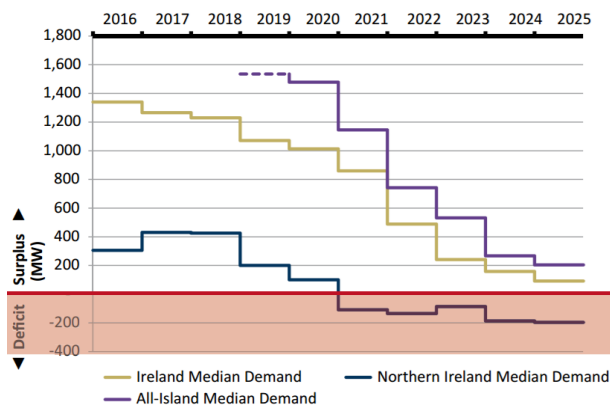


Figure 1.1 illustrates the amount of surplus or deficit plant available to meet demand on the network in any given year. When the result for a year is a deficit, it is plotted below the red line, e.g. Northern Ireland in 2021.

Since early 2014, Northern Ireland has consistently imported more power from the Republic of Ireland than it has exported. With the impending closure of some conventional generators in Northern Ireland, i.e. at Kilroot and Ballylumford power stations, this reliance on imports is likely to continue.<sup>4</sup>

This threat to security of supply in Northern Ireland has already resulted in the setup of a contract to secure back up supply through generation units at Ballylumford power station. EirGrid estimate the annual cost of this reserve supply to be £8m per annum.<sup>5</sup>

This trend highlights the importance of grid interconnection between Northern Ireland and the Republic of Ireland with respect to maintaining ongoing security of supply in both jurisdictions.

*“Due to the restriction on... power that can flow across the border, Northern Ireland will simply not have enough electricity. This could lead to rolling blackouts...”*

**EirGrid**

### An overhead solution

Interestingly, in terms of considering an underground High Voltage Direct Current (HVDC) solution rather than the overhead line option proposed by SONI and EirGrid, a number of the stakeholders interviewed referred to a study by Parsons Brinckerhoff which concluded that an underground HVDC option would cost in the region of £687.5m / €810m.<sup>6</sup> Compared to recent estimates of the cost of an overhead line solution, an underground option could be up to three times that amount.

From an environmental perspective they also mentioned in the context of an underground HVDC solution the need for at least two converter stations at either end of the cable, and more stations at any future point of connection to the cable, all of which would have a major impact on the environment.

Constructing an underground cable of this size would also need a 20-25 metre wide strip of land cleared along the entire length of the route during construction. This would have a further environmental impact on the local regions the interconnector is proposed to travel through.<sup>7</sup>

Following extensive assessment, the proposed development by EirGrid via overhead means has been deemed by An Bord Pleanála to be the **“most appropriate and cost effective solution”** to satisfy current requirements of the proposed interconnector.<sup>8</sup> As such, the focus of this report is on the need for the proposed interconnector to be constructed, but in particular by means of an overhead line.

<sup>3</sup> EirGrid 'All-Island Generation Capacity Statement 2016-2025'  
Note: The above image has been sourced from the EirGrid All-Island Capacity Statement for 2016–2025. Also note that all exchange rates used within the report are as per those on 14<sup>th</sup> February 2017.

<sup>4</sup> United Kingdom Government National Statistics on Electricity  
<sup>5</sup> EirGrid 'The Need for a Second North-South Electricity Interconnector' (May 2015)  
<sup>6</sup> Parsons Brinckerhoff 'Comparison of high voltage transmission options' (2013)  
<sup>7</sup> EirGrid 'North-South Interconnector: Answering Your Questions'  
<sup>8</sup> An Bord Pleanála 'Board Order' on North South Interconnector as published in 10 December 2016



### 1.3 Meeting future user needs

As the electricity requirements of users evolve, the island’s electricity infrastructure will have to develop in tandem to maintain a sufficient and reliable supply of power.

#### 1.3.1 Requirements of the business community

While modest growth in the demand for electricity is expected in Northern Ireland over the coming decade, the need for an unwavering supply will remain critical to supporting ongoing business operations in the region. This is especially relevant given the supply shortages forecast for Northern Ireland from 2021.

If no action is taken to mitigate this looming risk, Northern Ireland will not have sufficient levels of electricity to meet user needs. This could lead to brownouts or blackouts when demand exceeds supply. Such events would greatly threaten the business community in that region, as well as that in the Republic of Ireland due to the intertwined nature of the network.

**Brownouts** are drops in the power available to users. While users still have electricity, they have less of it. Brownouts are announced intentionally where the grid does not have enough power available to meet demand.

**Blackouts** are power failures where users have no access to electricity. They are caused by a number of factors including damage to the network or power shortages where generation cannot match demand.

In the event of a blackout in Northern Ireland, the local economy could stand to lose up to £139.6m / €164.5m per day. If such an occurrence spanned the island it could cost up to £568.5m / €669.8m per day.<sup>9</sup>

Smaller businesses in Northern Ireland are amongst the most vulnerable in these scenarios as they are unlikely to have their own sources of generation. The very small business user group are those businesses which consume less than 20MWh per annum. They represent 66% of business users in Northern Ireland.

While on an individual basis the electricity needs of users in this group may appear small, their collective demand for power and the fact that they represent 46,766 network connections, highlight just a sample of the total businesses at risk from any shortage in power.<sup>10</sup>

*“As a generator based in Northern Ireland we are acutely aware of the need for up-to-date and modern infrastructure in order to fully utilise opportunities for efficiencies in the market. The new North-South Interconnector will give our business sustained access to the wider all island market and we see this as a positive development for our business.”*

#### Belfast Power Limited

Potential brownouts or blackouts leave not only this user group exposed from a business continuity perspective, but it also threatens the jobs of those in their direct and indirect employment.

The significance of an unreliable supply of power could also have a chilling effect on inward investment decisions, hampering potential opportunities for further job creation across the island.

Members of CBI Northern Ireland recognise the potential issues arising from a shortage in supply, and they have identified the second North-South Interconnector as the number one priority project for Northern Ireland.<sup>11</sup>

<sup>9</sup> Blackout Simulator from the Energie Institut as assessed on 14<sup>th</sup> February 2017

<sup>10</sup> Utility Regulator Transparency Report (Q3 2016)

<sup>11</sup> CBI/AECOM Infrastructure Survey (November 2016)



### 1.3.2 Supplying a growing population

Another reason for the increasing focus on security of supply is the island's growing population. The population has been increasing in recent decades, as a result of high birth rates and low death rates.

Assuming that this growth trend continues, the all island population is estimated by Ibec and the CBI Northern Ireland to grow from today's levels of 6.6 million to 10 million by 2050.<sup>12</sup> This growth will contribute to an increase in pressure on the network with respect to maintaining ample supply to satisfy demand.

### 1.4 How the proposed new interconnector will support security of supply

By increasing interconnection between the networks in Northern Ireland and the Republic of Ireland, the all island network will have greater flexibility and stability with which to adapt to the evolving requirements of its users. This will help SONI and EirGrid to deliver greater security of supply for users right across the network.

Over the short term this security of supply benefit is more relevant for Northern Ireland than the Republic of Ireland. Reserve supplies are already being put in place to provide a back-up source of generation in that region. However, the Republic of Ireland will nevertheless benefit from the mutual network reinforcement as both commercial and domestic user demand in that jurisdiction increases in the coming years.

Greater interconnection will also support continuity of business operations on the island, and in turn sustain employment from the businesses already in place. However, realising the full scale of this benefit requires that the new interconnector is in place by 2020.

*"...both sides [Northern Ireland and the Republic of Ireland] benefit from the extra security of supply which an all island market brings."<sup>13</sup>*

**John FitzGerald**

Adjunct Professor, Department of Economics, TCD

#### **The proposed new interconnector will help:**

- facilitate greater security of supply; and
- will in turn sustain business operations and jobs across the island.

<sup>12</sup> CSO and NISRA Population Statistics

<sup>13</sup> Irish Times 'Debate about second electricity interconnector needs to get real', January 2017



## 2. Maintaining competitive prices

The cost of doing business on the island of Ireland can greatly impact the competitiveness of indigenous companies and the island's ability to attract inward investment. The proposed interconnector will help realise electricity cost savings for the market, thereby helping to maintain competitive prices for users.

### 2.1 Current electricity prices

The Single Electricity Market is operated in such a way as to promote competition and to deliver reasonable prices for users.

According to data from the end of Q2 2016, the cost of electricity for businesses on the island is broadly in line with the EU average.<sup>14</sup>

Maintaining current prices, and reducing them where possible, will support the competitiveness of indigenous companies when competing with firms from across the EU.

It will also help to encourage inward investment across the island and a move towards a more sustainable energy future, as explored in sections three and four of this report.

### 2.2 How the proposed new interconnector will help maintain cost competitiveness

Investment in electricity infrastructure which helps to reduce costs for users, will help to improve the overall competitiveness of businesses right across the island of Ireland.

In 2013, Curtis (et al) assessed the impact of the North-South Interconnector on the cost of electricity system. This study simulated system costs in 2016 and identified that with the additional interconnector in place, total system costs would be reduced by 1.5%. In this scenario, wholesale electricity costs would be reduced by 0.9% per annum.<sup>15</sup>

The proposed new interconnector, by enabling plants across the island to transport power onto the network with less restriction, will also contribute to a fall in constraint costs. By reducing these constraints, more lower cost generation will be dispatched across the network and will help contribute to a fall in costs for users across the island of Ireland.

According to the Single Electricity Market Operator (SEMO), these costs totaled £95.9m / €113m between October 2015 and September 2016 alone.<sup>16</sup>

**Constraint costs** are the payments made to generators when they are constrained from transporting their scheduled amount of electricity onto the grid.

<sup>14</sup> All data has been extracted from SEAI 'Electricity & Gas Prices in Ireland' report from June 2016. Prices for Northern Ireland are from the Q2 2016 Transparency Report and have been converted to Euro using exchange rates on the 4<sup>th</sup> of July 2016 to be as directly comparable with the aforementioned SEAI data as possible.

<sup>15</sup> Economic and Social Research Institute (ESRI) 'Irish Energy Policy: An Analysis of Current Issues' (October 2014)

<sup>16</sup> SEMO Value of Market Statistics as accessed 20<sup>th</sup> January 2017



The reality is that the absence of this additional piece of network infrastructure is already costing users money. Without this reinforcement in place, the Commission for Energy Regulation (CER) estimates that users are paying an additional £16.9m / €20m per year for electricity.

This cost is driven by the restricted ability to share power across the network in addition to increased production costs. Worryingly, it is forecasted that this cost could rise to between £25.5-30m / €30-40m per annum in the medium term.<sup>17</sup>

*“Our members appreciate the benefits of the SEM and so are very supportive of the North-South Interconnector as an essential, necessary investment to ensure sufficient energy capacity to protect the competitiveness of firms and organisations across the island.”*

### **Ibec**

The absence of additional interconnection means that the existing market is simply not as effective as it could be. After all, the basic functionality of the all island market is dependent on strong connections between the transmission networks, and today there is an overreliance on one connection point.

Addressing supply issues through increased interconnection rather than through increased generation alone, will help to encourage a competitive wholesale market for electricity. This will ultimately benefit users by maintaining price competitiveness.

*“Lower production costs and / or lower investments in generation, achieved through the interconnection of electric power systems, should have an impact on rates to the customers’ advantage.”<sup>18</sup>*

### **E7 Guidelines**

#### **The proposed new interconnector will:**

- reduce system, constraint and wholesale costs; and
- enable the market to operate more efficiently.

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<sup>17</sup> CER ‘Proposed Incentive for the Delivery of the North-South Interconnector’ (July 2013)

<sup>18</sup> E7 Guidelines for the interconnection of electric power systems



## 3. Supporting inward investment

Maintaining quality of supply is important not just in the context of providing security for users already connected to the network, but it also acts as a key point of attraction by which to encourage inward investment.

### 3.1 High quality electricity supply

According to research from the World Economic Forum (WEF), when compared to 145 countries across the globe, Northern Ireland ranked 32<sup>nd</sup> for quality of electricity supply while the Republic of Ireland ranked 17<sup>th</sup>.<sup>19</sup>

**Quality of electricity** is an assessment of how reliable a power supply is and whether it is impacted by interruptions or voltage fluctuations.

This research from the WEF highlights that the quality of power available across the island of Ireland is competitive on a global basis, supporting the island's credentials as an attractive region for investment.

With that as a strong starting position, the focus ought to be on maintaining the competitiveness of the existing network and ensuring that Northern Ireland and the Republic of Ireland continue to rank favourably against other regions.

### 3.2 How the proposed new interconnector will help to sustain quality of supply

Investment in the North-South Interconnector will act to further bolster the ongoing provision of a high quality supply of power.

It will illustrate to potential foreign investors that sustaining high quality electricity infrastructure is of the utmost strategic importance to senior leadership on the island.

An Indecon report commissioned by the EirGrid group highlighted that 90% of firms believe that investment in the transmission network is important or very important, for the island's ability to attract FDI.<sup>20</sup>

In sustaining quality of supply, the electricity network may help to secure inward investment and the creation of additional job opportunities across the island.

**The proposed interconnector will** aid the ongoing reliability of supply across the network. Reliability is a key determinant of quality of supply and hence supports the maintenance of current quality levels.

<sup>19</sup> Economic Advisory Group (EAG) 'Competitiveness Index for Northern Ireland' (June 2013)

<sup>20</sup> Indecon 'National and Regional Evaluation of the Economic Benefits of Investment in Ireland's Electricity Transmission Network' (March 2015)



## 4. Unlocking greater sustainability

The transition to a sustainable energy future is already underway. Increasing grid interconnection across the island will support this journey by increasing the penetration of renewable energy on the system and by reducing carbon emissions.

### 4.1 Understanding the focus on renewable energy

Under the EU 2020 Climate and Energy Package, a number of targets have been set including those to:

- reduce greenhouse gas emissions by 20% from 1990 levels; and
- increase the share of renewable energy to 20% of total energy consumption.

Similarly stretching targets have also been set in these areas under the 2030 Framework for Climate and Energy.

Each of these target sets represent a stepping stone on the journey to a sustainable energy future. This strategic vision is not a short term objective. It will continue to be of prominence for the decades and centuries to come.

### 4.2 How the proposed new interconnector will help unlock greater sustainability

The interconnector will enable the increased penetration of renewably generated power on the grid. It will do so by reducing constraints on generators and facilitating larger volumes of renewable generation to be produced and transported across the network.

This transition is already underway with renewably generated power representing 25.4% of total generation in Northern Ireland and 27% in the Republic of Ireland according to recent data.<sup>21</sup>

By increasing the penetration of renewable sources of generation on the grid in this way, the island's reliance on fossil fuels should also decline.

It has been forecast by the ESRI that the proposed new interconnector will reduce carbon emissions produced by the grid by as much as 2.6%.<sup>22</sup>

The Irish Wind Energy Association (IWEA) have openly endorsed the interconnector development and has publicly stated that:

*"The development... would enable the more efficient use of our island's significant renewable energy resource by allowing more efficient cross-border use of our renewables capacity, and bringing with it the significant climate benefits associated with increased renewable use."<sup>23</sup>*

**IWEA**

<sup>21</sup> Department for the Economy, Electricity Consumption and Generation Statistics and SEAI 'Energy in Ireland 1990 – 2015' (2016)

<sup>22</sup> As per reference 15.

<sup>23</sup> IWEA letter to An Bord Pleanála (August 2015)





While it has to be acknowledged that this investment is likely to be in place too late to support delivery of the aforementioned 2020 targets, it will have a key role to play in the wider journey to a sustainable energy future through 2030 and beyond.

**The proposed interconnector will aid the:**

- reduction in renewable generation constraints; and
- lowering of carbon emission levels created by the electricity system.



# Conclusion

The proposed new North-South Interconnector is a fundamental piece in the all island infrastructure jigsaw. It will enable the ongoing provision of a secure supply of power at a competitive price, while also positively influencing inward investment decisions and the transition to a sustainable energy future.

Developing and maintaining robust electricity infrastructure is important for sustaining a competitive economy in which businesses prosper, foreign direct investment is stimulated and citizens have access to a reliable supply of electricity.

Investment in the high voltage network, such as that of the proposed new North-South Interconnector, can have significant benefits for both Northern Ireland and the Republic of Ireland. This particular development will benefit the island in the following areas.

## **1. Security of supply**

Maintaining sufficient supply is becoming increasingly difficult as demand grows and some traditional sources of generation are scaled back. An additional interconnector would facilitate greater security in the face of this challenge by enabling the transfer of larger volumes of electricity between the networks in Northern Ireland and the Republic of Ireland. It would ensure that, in the event of a shortage in one jurisdiction, any excess in the other could help address the difference. It is vitally important for future security of supply in Northern Ireland that this network enhancement is in place by 2020.

## **2. Maintaining competitive prices**

By virtue of operating on an island, businesses indigenous to Northern Ireland and the Republic of Ireland can face higher operating costs than their competitors in mainland Europe.

For this reason, maintaining the island's currently competitive electricity costs is pivotal. These costs must be maintained at a minimum, and reduced where possible. The proposed new interconnector will have a significant benefit in this regard.

## **3. Supporting inward investment**

In sustaining a reliable supply of power, the new interconnector will sustain the quality of both Northern Ireland and the Republic of Ireland's electricity supply. In doing so, it should positively influence inward investment decisions and in turn encourage the potential creation of new job opportunities across the island.

## **4. Unlocking greater sustainability**

By reducing existing limitations on renewable generators, the new North-South Interconnector will help boost the levels of renewable electricity transported across the network. This will support the transition to a more sustainable energy future and the delivery of the respective targets at key points in that journey.

For all of the reasons outlined, Grant Thornton is of the opinion that having this overhead line investment operational would not only be positive for the all island economy, but also for the island's business community and Northern Ireland in particular.

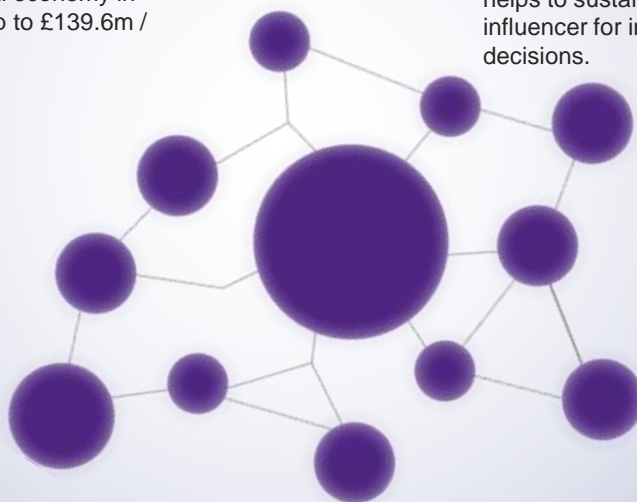
# Benefits of strengthening the all island electricity network by 2020

## Security of supply

- network reinforcement will reduce the risk of power shortages in Northern Ireland from 2021; and
- will greatly decrease the risk of blackouts, which could cost the local economy in Northern Ireland alone up to £139.6m / €164.5m per day.

## Supporting inward investment

- maintaining a reliable supply of power helps to sustain quality of supply; a key influencer for inward investment decisions.



## Maintaining competitive prices

- total system costs will be reduced by approximately 1.5%;
- users on the island will save from £16.9m / €20m per annum on their electricity bills; and
- wholesale costs will fall by circa 0.9%.

## Unlocking greater sustainability

- greater levels of renewable energy on the system will aid the delivery of renewable energy targets; and
- greenhouse gas emissions produced by the electricity system should fall by 2.6%.

# Appendix

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# Report context

## Objective of this report

The primary objective of this report is to outline the benefits of the proposed new North-South Interconnector for the all island economy, with an emphasis on the significance it will have for the business community. The report also explores the need for this development to be constructed and operational by December 2020.

All commentary put forth in this report assumes that this investment project is developed in line with the specifications outlined in SONI and EirGrid's respective planning applications in Northern Ireland and the Republic of Ireland.

## Approach adopted

In the preparation of this report, Grant Thornton's approach was to split the task into four phases.

### Phase 1 : Set-up

This phase consisted of project initiation meetings between Grant Thornton and the Joint Business Council (JBC) of Ibec and CBI Northern Ireland. These meetings were used to discuss and agree the scope, parameters and direction of the project.

### Phase 2 : Discovery

The discovery phase encompassed the gathering of relevant secondary data on the subject matter at hand. Phase 2 also involved carrying out an extensive consultation process with prominent stakeholders from across Northern Ireland and the Republic of Ireland.

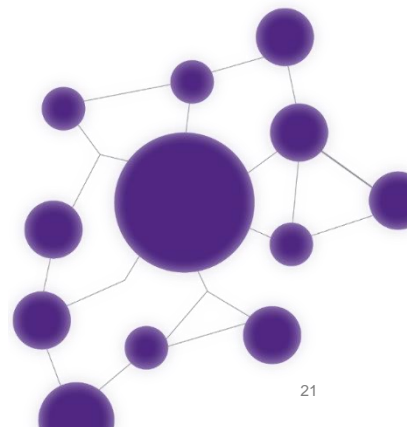
This exercise was undertaken in order to gather an understanding of overall views on the proposed development and its perceived impact for the organisations interviewed. Those engaged represent a mix of industry bodies, state organisations and members of the business communities in Northern Ireland and the Republic of Ireland.

### Phase 3 : Analysis

The analysis phase focused on the interpretation of data gathered in discovery. The insights gathered from this analysis informed the structure of the report, which is laid across four key themes.

### Phase 4 : Report preparation

Finally, phase 4 involved Grant Thornton meeting regularly with representatives of the JBC of Ibec and the CBI Northern Ireland to review the content of the report and to ensure it was a fair reflection of the sentiments of their stakeholder group and those interviewed.





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# Notes

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