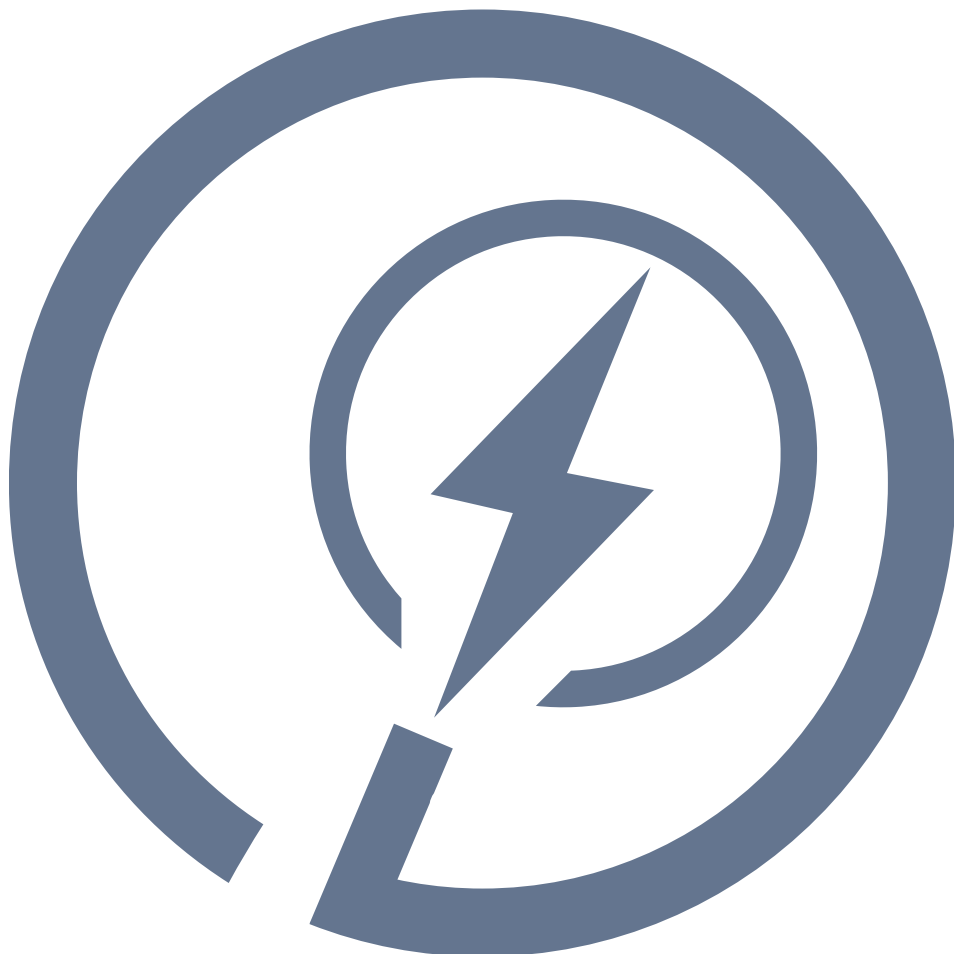


**BREXIT AND ELECTRICITY
COOPERATION BETWEEN
NORTHERN IRELAND & IRELAND**
IIEA BREXIT SECTORAL REPORT SERIES



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**Brexit and Electricity
Cooperation between
Northern Ireland and Ireland**

IIEA Brexit Sectoral Report Series


Joseph Curtin

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IIEA BREXIT

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Electricity Cooperation between Northern Ireland and the Republic under Brexit

IIEA BREXIT SECTORAL REPORT SERIES

INTRODUCTION

Brexit poses a complex set of challenges that could bring unintended consequences for the relationships between the Republic of Ireland, Northern Ireland, Britain and the European Union. The development of an integrated electricity market North and South of the Irish border gives rise to a particularly acute set of challenges for the power sector.


Against the backdrop of the UK's withdrawal from the EU, in this policy brief we explore implications for the all-island Single Electricity Market (SEM). This analysis comes at a crucial point for the deepening integration of the SEM, which will transition to the Integrated Single Energy Market (I-SEM) in October 2018. We also consider the potential implications of Brexit for the physical interconnection between electricity markets north and south of the border, and for plans to build further interconnect with mainland Britain and the EU.

BACKGROUND

The SEM is the integrated wholesale electricity market in which all electricity generated on the island of Ireland must be traded. It was launched after the Belfast Agreement (1998) in the spirit of cross-

border cooperation and is therefore of considerable political as well as economic importance. It was established by parallel legislation in Westminster and the Irish Parliament, following the agreement of a Memorandum of Understanding between both Governments, and went live on 1 November 2007. The SEM is regulated by the Single Electricity Market Committee (SEMC), which is comprised of members from the Dublin-based Commission for Regulation of Utilities (CRU) and the Belfast-based Utility Regulator. The market is run by the Single Electricity Market Operator (SEMO), a joint venture between EirGrid (Ireland's transmission system operator) and the System Operator for Northern Ireland (SONI).

The SEM is widely considered to have been a success thus far, because it has delivered a good deal for electricity bill-payers North and South of the border. It has created conditions conducive to attracting new investment in efficient generation. For example, utilities have invested in some 2,000MWs of new or refurbished conventional generation. The SEM has also facilitated a greater penetration of distributed renewables in power generation than would otherwise have been the case, and the installed capacity of wind generation has grown to more than 3000MW on the island of Ireland over



the past decade. Moreover, generation has increased competition between some 50 market participants, and has optimised the use of generation and transmission resources across the island, thereby avoiding the duplication of expensive infrastructure. These factors have lowered wholesale prices, resulting in lower bills for consumers. Market participants both north and south have expressed a high level of satisfaction with the benefits that the SEM has delivered across all three pillars of energy policy: security of supply, competitiveness and sustainability.

More Info: The Single Electricity Market

The Single Electricity Market (SEM) came into operation in November 2007, creating a wholesale electricity trading pool between the Republic and Northern Ireland. Operating across multiple jurisdictions and trading in two currencies, Ireland's SEM has improved the security of Ireland's energy supply as well as facilitating higher rates of renewable energy penetration. By closely tracking input fuel prices and the costs and bids of generators, SEM has fostered competition and transparency in both the spot market and capacity electricity market in Ireland for almost a decade.

Nevertheless, there have been a number of problems with the operation of the SEM that have been identified by market participants.

First of all, the SEM rules are out of kilter with the so-called European Target Model, which seeks to bring closer integration to European electricity markets. Second, cross-border trade in electricity remains at inefficiently low levels. Trading data since the Single Electricity Market has been in operation have revealed that there is a considerable demand for unrestricted flows of power between Northern Ireland and the Republic, with peak cross-border demand reaching 1,100MW. However, there is a current a limit of 300 MW due to lack of interconnection.

Brexit therefore comes at a potentially sensitive time for the ongoing integration of electricity markets north and south, and it is within this context that we explore the implications of Brexit for market design/integration as well as for the planning, financing and development of electricity interconnectors. We deal with these two related issues in turn below.

FURTHER MARKET INTEGRATION

The European Target Model, a development flowing from the EU's Third Energy Package (2009), seeks to bring together energy markets across Europe with the aim of creating a fully integrated electricity markets on a Europe-wide basis. The objective is to ensure that energy transactions from different bidding zones are centrally collected to maximise the most efficient and effective trades, and only restricted by cross-border capacity. The medium-term objective is to ensure

that electricity can flow freely between EU Member States, ultimately delivering a single electricity price across the EU. In reality, due to the lack of interconnection between markets, the network is often congested and prices diverge. Price differentials between bidding zones, however, should in theory provide a price signal, thereby incentivising investment in the most efficient infrastructure over time to relieve this congestion.

More Info: The EU Target Model

Introduced in the 2009 Third Energy Package of directives, the EU Target Model aims to create an internal EU energy market, which is fully liberalised, and prioritises the efficient trading of energy across borders without discrimination between countries. By focusing on a regional rather than national level, these reforms aim to encourage the cheapest electricity generators in any country to meet demand at each point in time, enhancing security of supply in each market, and facilitating the integration of renewable generation.

This broader EU vision for a deeply integrated electricity market provides the context for the ongoing transformation of the all-island SEM into a new wholesale market known as the I-SEM. The I-SEM is currently at an advanced stage of planning. Key features include the implementation of a single set of all-island markets (forward, day-ahead, intraday and balancing). Market trials have been underway since 1 December, 2017, and the new market was originally intended to go live in May 2018, but is now on schedule to go-live in October 2018.

According to EirGrid, this market will increase opportunities for participants to trade in different time frames, provide participants with a variety of arbitrage and hedging opportunities, maximise the efficient use of interconnectors in system balancing, provide cost drivers for system balancing, and integrate balancing and system security actions with market operation.

I-SEM is widely anticipated to result in further benefits to market participants and customers. It will increase access to cheaper sources of electricity, deliver a more open and efficient pan-European electricity market, and deliver new mechanisms for market participants to manage risk.

THE IMPACT OF BREXIT ON I-SEM

The impact of Brexit on the I-SEM will largely depend on which Brexit outcome is ultimately delivered. There have been strong political signals from politicians and administrators in all relevant jurisdictions—the UK, the EU, the Republic of Ireland, and Northern Ireland—to support the I-SEM and the continued integration of electricity markets on the island of Ireland.

The UK Government’s White Paper on Exit from the EU, for example, stated that:

We are considering all options for the UK’s future relationship with the EU on energy, in particular, to avoid disruption to the all-Ireland single electricity market operating across the island of Ireland, on which both Northern Ireland and Ireland rely for affordable, sustainable and secure electricity supplies.

The Irish Government remains similarly committed to delivering the I-SEM, while the European Commission has also recognised its importance, and are seeking to preserve it. At a regulatory level, following the UK’s Brexit referendum in June 2016, the SEM Committee voiced its on-going support for I-SEM, noting that: “there are good economic reasons for the all-island market which exist independently of European Union law or policy”.

SCENARIOS

The challenge, as with all political Brexit visions, is to find a means to bring reality on the ground in line with the rhetoric. In a soft Brexit scenario, there would be minimal disruption to UK energy policy. Membership of the European Economic Area (EEA) would alleviate any concerns for the I-SEM, because EEA states are

party to internal European energy markets and have adjusted their energy markets to comply with the Third Energy Package Directives. In this scenario, the UK could negotiate to remain a member of European energy governance institutions including the European Agency for the Cooperation of Energy Regulators (ACER) and the European Network of Transmission System Operators for Gas (ENTSO-G) and Electricity (ENTSO-E).

More Info: Options for Brexit

The European Economic Area (EEA) or 'Norway model'

This would entail the UK staying in the EU Single Market, as part of the EEA, and leaving the Customs Union.

A New EU-UK Customs Union or 'Turkish model'

This would entail the UK leaving the EU Single Market and EU Customs Union, but creating a new customs union with the EU.

Free Trade Agreement (Japanese or Canadian model)

This would entail the UK leaving the Single Market and Customs Union, and negotiating a new bespoke bilateral free trade agreement. This could be complimented by some manner of customs agreement between the two.

World Trade Organization (WTO) model

The 'worst case scenario'. This would entail the UK leaving both the Single Market and Customs Union and leaving the EU without a free trade agreement.

However, if the UK Government were to remain on course for a harder variety of Brexit, in which Single Market and Customs Union membership are not retained, this would give rise to challenges, tensions and inconsistencies over time. In the short-term, these challenges may not become immediately apparent. Legally, the I-SEM is a product of UK-Irish bilateral co-

operation and established under Irish and UK law, rather than EU law. Withdrawal of the UK from the integrated EU energy market and associated legal provisions would therefore not necessarily result in withdrawal from the I-SEM. In the final withdrawal agreement under Article 50 TEU, the UK Government could simply maintain the I-SEM by duplicating the technical arrangements necessary for market coupling (network codes, etc.). This would require compliance with EU rules, at least for an interim period.

However, leaving the Single Market and the integrated energy market would allow the UK to pursue a potentially different electricity market trajectory over time. A short-term fix could therefore potentially come under pressure under a hard Brexit scenario. The harder the Brexit—meaning the greater the overall regulatory divergence over time between the UK and the EU—the greater the pressures that could potentially arise for the I-SEM. This is because the I-SEM must comply with provisions under the THIRD ENERGY PACKAGE, as well as any future electricity market legislation emanating from Brussels. Furthermore, the legal framework for I-SEM falls under the jurisdiction of the European Court of Justice (ECJ), and indeed the regulatory supervision of the EU's ACER.

Following a hard Brexit, however, the UK and Northern Ireland would no longer be obliged to comply with EU Directives and Regulations or to harmonise its rules in line with the EU Target Model.

According to the Commission, the UK representatives might still remain as observers at various bodies, but current rules would not allow non-EU members to vote on crucial market design issues.

CREATIVE SOLUTIONS

Given that unwinding I-SEM is neither economically or political desirable, there is a need to explore creative solutions under a hard Brexit scenario to maintain the integrity of the I-SEM. One approach would be for the UK to provide a designated special status for Northern Ireland, so that it would continue to be subject to current and future EU law (either under the arbitration of the ECJ, or by delivering

a ring-fenced status for I-SEM compliant with EU law under a new arbitration mechanism). This type of arrangement appears to be envisaged under paragraph 49 of the *Joint Report from the Negotiators of the European Union and the United Kingdom Government on Progress During Phase 1 of Negotiations*, published December 2017, which requires the UK to:

...maintain full alignment with those rules of the Internal Market and the Customs Union which, now or in the future, support North-South cooperation, the all island economy and the protection of the 1998 Agreement.

This would create a scenario, however, in which the UK would have to accept potential regulatory divergence between two parts of the United Kingdom. It is debatable the extent to which this would be possible while ensuring adherence with paragraph 50 of the same report, which states that:

...the United Kingdom will ensure that no new regulatory barriers develop between Northern Ireland and the rest of the United Kingdom, unless, consistent with the 1998 Agreement, the Northern Ireland Executive and Assembly agree that distinct arrangements are appropriate for Northern Ireland.

The Draft Agreement on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the EU of 19 March 2018, indicated that progress was made on maintaining common wholesale electricity markets. Chapter III of the Withdrawal Agreement is concerned with the so-called “backstop” of establishing a “common regulatory area” comprising the Union and the United Kingdom in respect of Northern Ireland. It is concerned with ensuring regulatory alignment in the event that it is not possible to agree a comprehensive Free Trade Agreement with full regulatory alignment between the EU and the UK by some other means (and also assuming that Single Market and Customs Union membership are not retained). The section on the Single Electricity Market, Chapter III, Art. 6, stated that:

The provisions of Union law governing wholesale electricity markets listed in Annex 2.7 to this Protocol shall apply to and in the United Kingdom in respect of Northern Ireland.

This section was marked in yellow, meaning that there is agreement in principle (a political agreement) that the UK should retain membership of the EU’s single electricity market, but that there was no legal or technical clarity on how this might be achieved in practice.

It should be noted, however, that a “common regulatory area” effectively means keeping Northern Ireland in the Customs Union, an option which DUP leader Arlene Foster branded as “constitutionally unacceptable and would be economically catastrophic for Northern Ireland”. While there may therefore be political momentum behind finding a solution that involves keeping Northern Ireland in the single electricity market, how this might play out in practice remains to be determined.

The devil will be in the detail, and the details will depend on the type of electricity market future the UK might pursue post-Brexit. Should the UK decide to diverge significantly from the provisions of the THIRD ENERGY PACKAGE, or future EU legislation, this could potentially cause regulatory or even political friction between the UK and the I-SEM. Another challenge is that Stormont does not have the competence to transpose EU directives, meaning that the UK Parliament could potentially be required to transpose future EU Directives only applying to Northern Ireland. The political sustainability of such an arrangement is debatable.

It might be argued that scenarios involving significant regulatory divergence are economically irrational, and therefore unlikely, and that the UK will not therefore diverge in any substantial way from the EU Target Model post-Brexit. Indeed the European Commission has pointed out that it is not in the UK’s interest to seek a competitive advantage for its companies by discriminating against UK-based EU energy companies, or by seeking competitive advantage through lowering energy taxes or environmental standards.

On the other hand, not all decisions are taken solely on the basis of a rational analysis of costs and benefits, nor does economic self-interest always appear to have been pre-eminent in the minds of decision makers since June 2016.

If a *sui generis* solution were found for Northern Ireland within the I-SEM, this would allow the I-SEM to be maintained, but the opportunity of significant market coupling with the UK could be lost in a regulatory divergence scenario. Perhaps a more optimal scenario would be to use Brexit to promote the opportunity of a regional electricity market arrangement between Ireland, Britain and Northern Ireland post-Brexit, using the precedent of the Nordic electricity market arrangement (Nord Pool) as a model (indeed this was what was envisaged for I-SEM pre-Brexit).

More Info: Nord Pool

Nord Pool was the world's first multinational exchange for trading electric power.

It is the largest market for electrical energy in Europe, measured in volume traded (TWh) and in market share. More than 80% of the total consumption of electrical energy in the Nordic market is traded through Nord Pool.

This would tie the UK into compliance with the wider EU target model, alleviate concerns in the North of regulatory divergence with the UK, and would bring substantial benefits for consumers north and south of the border. The catch is that it would require the UK to be compliant with the rules of the single electricity market, without necessarily having the same influence over designing these rules. The UK might be willing to accept the slight loss of sovereignty that this would entail as the bitter pill it has to swallow to make one of its many Brexit headaches go away, and to facilitate the continuation of an important aspect of the Good Friday Agreement. Even if the UK was open to continued membership of the integrated electricity market, however, it is unclear to what extent the European Commission

would be open to so-called “cakeism” when it comes to electricity market membership. The EU has clearly stated that it will not allow the UK to ‘cherry-pick’ parts of the existing *acquis* that suit its need, while jettisoning other aspects on a case by case basis. “Cakeism”, on the other hand, certainly makes sense from an Irish perspective in this instance.

PROSPECTS

None of these scenarios come without their challenges. Given the close and deep integration, unique circumstances and technical complexity associated with electricity markets North and South of the border, it would make sense, at least from an Irish perspective, for negotiations on the electricity sector to be dealt with separately from the broader Single Market negotiations.

It is unclear when we might expect to achieve some clarity on these issues. It is perhaps in the interests of the UK to retain an element of constructive ambiguity in ongoing negotiations and to leave thorny issues of the future relationship to be resolved in the next phase of negotiations, once the UK's withdrawal has been formalised under Article 50, TEU. Postponing hard decisions, and fudging the sacrifices and prices the UK will be forced to pay for enhanced “sovereignty” and “freedom”, would present domestic opponents of Brexit less to object to, ensuring a smoother passage of the Withdrawal Bill through the UK legislative process. On the other hand, the EU has been at pains to point out that the UK will lose market access further to its withdrawal from the EU, and would probably like to see the broad shape of the future relationship come into shape as part of the Withdrawal Agreement.

ELECTRICITY MARKET INTERCONNECTORS

As noted above, there is an urgent requirement for greater interconnection between the electricity markets North and South to promote the effective functioning of the I-SEM. The level of interconnectivity between the I-SEM and the UK is also currently limited to two interconnectors: the 500 MW Moyle Interconnector between Scotland and the North; and a 500 MW

East-West Interconnector between the Republic and North Wales. Electricity trading between the SEM through this interconnectors is important economically for Ireland, and in particular allows for the export of wind in periods of high generation. Meanwhile, there is currently no direct interconnection between the I-SEM and the mainland European market.

More Info: Energy markets and interconnection

Achieving deep energy market integration is a fundamental aim in the European Union. Interconnection is seen as a vital prerequisite for such energy market integration across Europe. Physical interconnection between Member States' energy infrastructure will increase security of cross-border energy supply and enable a reduction in generation costs by lowering dependence on peaking plants.

Brexit comes at an important time for three so-called Projects of Common Interest (PCIs). These PCIs are projects that have been identified by the European Commission as having a significant impact on energy markets and market integration in at least two EU countries, and which therefore have the right to apply for funding from the Connecting Europe Facility,¹ among other benefits.

The first of these PCIs is the North-South interconnector. This is an interconnector with a capacity of 1,500MW, passing through the counties of Monaghan, Cavan and Meath in the Republic, and Armagh and Tyrone in Northern Ireland. EirGrid have estimated that the planned 138km 400 KV line, with an estimated cost of €280 million could save between €40m – €60m per annum by 2030. According to IBEC, the project will also deliver a more stable environment for investment, enhanced security of supply and greater deployment

of distributed renewables.² However, the project has been highly controversial and has already been subject to several delays, arising from objections by local citizens and landowners.

EirGrid first submitted a planning application to An Bord Pleanála under the Strategic Infrastructure Act in 2009, but withdrew the application the following year. Following a review in 2013, EirGrid resubmitted its proposal in 2015, and planning approval for the project was granted in December 2016. This was subsequently made the subject of judicial review proceedings further to the intervention of the grassroots opposition organisation, the North East Pylon Pressure Group (NEPPG). This objection, however, was dismissed by the High Court last year and in January 2018, the high Court upheld planning approval for the southern element of the North-South Interconnector. This was followed by the North's Department of Infrastructure granting full planning permission for the project on Jan 23, 2018, leaving no legal and procedural obstacles in the way of the project proceeding.

The Second PCI is the construction of a 700 MW high voltage direct current (HVDC) cable (known as the 'Celtic Interconnector') between the I-SEM and France. The total length of this interconnector would be approximately 600km, of which approximately 500km would be undersea. This proposal arises from EirGrid's 2009 Interconnector Economic Feasibility report. This was followed by a number of joint studies into the feasibility of the interconnector, carried out with the French TSO Réseau de Transport d'Électricité (RTE) since 2011. These studies have indicated that if built, an interconnector between the two countries would be beneficial for electricity customers in Ireland, France and the EU. A preliminary feasibility study was completed in August 2016 and the project is now undergoing a two-year design phase. Most recently, in May 2017 EirGrid and RTE completed further joint assessment of the feasibility of the Celtic Interconnector and in January 2018, EirGrid submitted an application for

¹ <https://ec.europa.eu/inea/connecting-europe-facility/cef-energy>

² [https://www.ibec.ie/IBEC/Press/PressPublicationsdoelib3.nsf/vPages/Newsroom~north-south-interconnector-needed-ahead-of-brexit-threat-10-04-2017/\\$file/North-South+Interconnector+report.pdf](https://www.ibec.ie/IBEC/Press/PressPublicationsdoelib3.nsf/vPages/Newsroom~north-south-interconnector-needed-ahead-of-brexit-threat-10-04-2017/$file/North-South+Interconnector+report.pdf)

a Foreshore License in order to carry out surveys to further assess the subsea cable route and landfall options.

A third PCI seeks to add a 500–700 MW interconnector the Greenwire Interconnector (the so-called Greenlink), between Wexford County in Ireland and Pembroke in the UK. Greenlink is proposed as a 500 – 700MW HVDC sub-sea cable of approximately 172km in length. The European Commission is conducting a series of environmental studies and surveys exploring the regulation, grid and financial aspects of this proposed project.

The question we explore below is what the potential impact of Brexit could be for these projects.

IMPACT OF BREXIT ON INTERCONNECTORS

In the case of the North-South interconnector, the most urgent of the three PCIs, politicians and business leaders have argued that Brexit underscores the importance of the project. In February 2017, Irish Minister for Communications, Climate Action and Environment, Denis Naughten, said that the interconnector would be unaffected by Brexit because it is based on legislation adopted by the Oireachtas and the British parliament, not EU law. Ibec, meanwhile, have argued that the potential competitive pressures that Brexit might bring underpins rather than undermines the requirement for the interconnector.³ Furthermore, the aforementioned granting of full planning permission for the project on 23 January, 2018, by Northern Ireland's Department of Infrastructure, was a signal of commitment to the project by the Northern Ireland administration.

It seems that Brexit will therefore pose few direct challenges for the project. Rather the greatest challenges it faces continue to arise from local residents who argue that the project should be undergrounded. Many people living along the route remain implacably opposed and have stated that they are unwilling to allow EirGrid to erect pylons on their land regardless of the

³ <https://www.ibec.ie/IBEC/Press/PressPublicationsdoclib3.nsf/vPages/Newsroom~north-south-interconnector-needed-ahead-of-brexithreat-10-04-2017?OpenDocument>

compensation offered.⁴ EirGrid's position, however, is that underground AC cables are unsuitable for higher voltages over longer distances, and that this option is prohibitively expensive and technically sub-optimal.

A second implication is that Brexit may affect the attractiveness of interconnection between the I-SEM and Britain compared to the EU, potentially increasing the attractiveness of the latter. There are a number of factors at play here. The first factor is that PCIs are for projects between two EU Member States, and the Greenwire project would no longer meet this criteria post-Brexit. Furthermore, the UK would no longer enjoy access to European Investment Bank, the European Fund for Strategic Investment or the Connecting Europe Facility post Brexit, potentially creating greater project finance challenges.

Finally, it has been argued that the attractiveness of pursuing greater levels of interconnection with Britain compared to Europe depends ultimately on the extent to which Britain continues to integrate its grid with continental Europe.⁵ If the UK were to pursue further integration with the EU market, prices would migrate towards the EU-average over time, reducing the incentive for Ireland to connect directly with Europe. However, if the UK and EU prices remain decoupled, there is a greater incentive for Ireland to build direct interconnection to Europe, not least to manage exposure to price volatility in the UK market. At this time it is impossible to predict whether the UK will continue to pursue electricity market integration with the EU, but it is safe to conclude that Brexit reduces momentum for integration,

⁴ <https://www.irishtimes.com/news/ireland/irish-news/eirgrid-warned-it-faces-long-battle-to-build-north-south-interconnector-1.3367468?mode=sample&auth-failed=1&pw-origin=https%3A%2F%2Fwww.irishtimes.com%2Fnews%2Fireland%2Fnews%2Feirgrid-warned-it-faces-long-battle-to-build-north-south-interconnector-1.3367468>

⁵ Barrett, A., Bergin, A., FitzGerald, J., Lambert, D., McCoy, D., Morgenroth, E., Studnicka, Z. (2015). Scoping the Possible Economic Implications of Brexit on Ireland. Dublin: The Economic and Social Research Institute.

and increases the risk of a sustained decoupling of markets and prices.

Finally, a further factor to consider is that all of the I-SEM's imported electricity arrives through interconnectors from Britain, potentially rendering the island vulnerable to disruptions in this market. In a post-Brexit world, disruptions might be considered somewhat more likely in the absence of the protections afforded by the EU's Single Market framework and the arbitration of the ECJ, further boosting the attractiveness of the Celtic Interconnector.

CONCLUSIONS

I-SEM is scheduled go live in October 2018, notwithstanding the uncertain backdrop created by Brexit. In the medium term, Brexit poses risks for the I-SEM, in particular in a hard Brexit scenario. While there is a strong political commitment among all key players to maintain the SEM/I-SEM, and there are a number of options to manage Brexit risks, none of the solutions on the table are ideal. Options such as finding a unique solution for Northern Ireland could create challenges and tensions over time, particularly if regulatory divergence were to become an issue between Britain and Europe. An ideal solution would be for the UK and the I-SEM to use the opportunity of Brexit to pursue a common coupled electricity market post-Brexit, thereby turning a challenge into an opportunity. It is unclear if this would be an option from a UK perspective, nor is it clear if the EU would permit the UK to cherry pick aspects of the Single Market in this fashion.

In terms of interconnectors, Brexit is unlikely to have a material impact on the North-South interconnector. The prospect of Brexit would appear to increase the attractiveness of the Celtic Connector vis-à-vis further interconnection with the UK. It is, however, impossible to determine if these marginal changes to risk factors would have a material impact on the attractiveness of one project over another.

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The Institute of International and European Affairs,

8 North Great Georges Street, Dublin 1, Ireland

T: +353-1-8746756 F: +353-1-8786880

E: reception@iiea.com W: www.iiea.com