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2 Need

2.1 Executive Summary

1. Statements of Case from SEAT, Mr James McNally and, Ms Liz Drew and Mr Boyd Eagleson, have made a number of statements with regard to the need for this Tyrone - Cavan Interconnector project which are not accepted and are comprehensively responded to in this rebuttal.
2. In terms of competition within the Single Electricity Market, SEAT has stated that the competition aspect is *“ill-founded considering that both SONI and EirGrid are one and the same corporate entity”*. In terms of renewables SEAT have stated that the proposed interconnector does not support renewables because the proposed interconnector is *“point to point and thus no additional access points to the grid would or indeed could exist”*. SEAT continued that *“the addition of yet further wind energy would yet further weaken the already fragile grid and also cause larger frequency fluctuations....”* SEAT has further argued that the proposed interconnector does not improve security of supply because *“a further OHTL only exposes the system to the same climatic conditions as already exists...”*.
3. In regard to the competition driver, the proposed interconnector is to remove the electrical constraint between Northern Ireland and Ireland thus facilitating increased competition between generators and between suppliers in the provision of electricity on the Island of Ireland, not between transmission system operators. The proposed interconnector facilitates renewables because it strengthens the system by addressing the risk of the system separation issue. Finally the proposed interconnector improves security of supply by better sharing of generation capacity on the island. The proposed interconnector is physically separate and therefore addresses the risk of common mode failure due to weather related events implied by SEAT.
4. SEAT has queried the capacity of the proposed interconnector stating it can be *“challenged by looking at the planned consumption in NI going forward”*. SONI have explained that the nominal capacity of the proposed interconnector has been chosen to be 1500 MW to cater, with a margin of

headroom, expected powerflows of 75% of its capacity in the first ten years of service. Also in keeping with good industry practice it is matched to the nominal capacity of the existing Tandragee - Louth interconnector and the connecting 275kV double circuits in Northern Ireland.

5. SEAT has also raised the options of increasing the capacity of the Moyle Interconnector, installing new transformer capacity at Louth and restringing the existing interconnector. SONI is not aware of any plans by the owner to upgrade the Moyle interconnector. In regard to the existing Tandragee – Louth interconnector SONI have responded by stating that the option of upgrading the existing interconnector would not address any of the need drivers because there would still only be one north south interconnector.
6. SEAT has also argued that the need could be addressed by planned energy storage projects in Northern Ireland, new power stations and distribution system investment. SONI have responded stating that introducing new generation or storage would not address all of the need drivers because there would still only be one north south interconnector. SONI recognise that storage will be able to play an important role once developed but that it would be better for customers if storage could operate as part of an unconstrained larger all island market with the maximum of access to generation and demand across the island. In regard to possible generation projects SONI have explained that these are not committed as yet and would, for the same reasons as storage, not meet all of the need or be able to be optimally operated for the benefit of customers.
7. The Statements of Case of Ms Liz Drew, Mr Boyd Eagleson and Mr James McNally have raised the impact of the UK leaving the EU. SONI have responded that the terms with which the UK leaves the EU are not yet known and also whether there will be an impact on the SEM or I-SEM. SONI notes, and has quoted, the continued political support for a single electricity market post the Brexit vote, and the recognition that an all island market and system is more efficient. SONI does not believe there is any policy basis for delaying the planning process and in particular the determination of this application because of considerations like Brexit. Furthermore even if the single electricity market was not to continue, SONI believes that trading

between NI and Ireland will persist which will benefit from the larger system enabled by the proposed interconnector.

8. Nothing in the objectors' Statements of Case and representations serves to undermine the conclusions set out in the SONI Statement of Case and supporting Technical Reports. As stated in SONI's Main Rebuttal Document, the proposed Tyrone - Cavan Interconnector remains clearly acceptable in planning terms.

2.2 About the Authors

9. The rebuttals of the need for the Tyrone – Cavan Interconnector is undertaken by specialists from EirGrid Group and SONI, namely Mark Norton, Philip O'Donnell and Raymond Smyth.
10. The first SONI specialist on the need for the proposed interconnector is Mr Mark Norton. Mr Norton is EirGrid Group Manager, Network Planning, responsible for conducting network analysis of the needs and options for developing the transmission network and bringing forward reinforcement proposals including the Tyrone - Cavan Interconnector. He has previously held management roles in Transmission Access Planning and Technology and Standards sections within EirGrid. Prior to joining EirGrid he also held positions in Eastern Electricity in Great Britain. Overall he has 27 years' experience in the planning and design of electricity networks. He holds a Hons. Degree from Anglia Polytechnic University, Cambridge in Engineering and is a member of the Institute of Engineering and Technology.
11. The second SONI specialist on the need for the proposed interconnector is Mr Philip O'Donnell. Mr O'Donnell is the EirGrid Group Manager, Energy Systems Analysis, responsible for conducting market assessment of interconnector projects, demand forecasting, monitoring and reporting on generation security of supply (including the All Island Generation Capacity Statement), economic assessment of transmission projects and assessing the impact of new generation and technologies on the power system. Mr O'Donnell has previously held managerial positions in Power System Operational Planning and Settlement Operation within EirGrid and ESB

National Grid. Overall Mr O'Donnell has 34 years' experience in the planning and operation of the transmission system. He holds a BEng from University College Dublin.

12. The third SONI specialist on the need for the proposed interconnector is Mr Raymond Smyth. Mr Smyth currently works in the Network Planning section in SONI. He previously held positions in the Transmission Planning function in Northern Ireland Electricity and transferred with the planning function to SONI in May 2014. He has over 28 years' experience, specialising in transmission, distribution planning and power system protection. He holds an engineering BSc (Hons) degree from the Open University and is a member of the Institute of Engineering and Technology.

2.3 Policy

13. The need for the proposed Tyrone – Cavan Interconnector project is clearly set out at domestic, national and European level as evidenced by the statements detailed in Appendix A. Section A contains statements relating to National and Regional need. Section B contains statements that demonstrate consistency with European policy.

2.4 Guidance

14. No Guidance issues have been raised in relation to the need for the project.

2.5 Further Environmental Information for the Purposes of the Inquiry

15. It is not necessary to introduce new information to address any point made by third parties or the Department and its consultees in relation to the need for the project.

2.6 “No original science or specific analysis”

16. SEAT have stated on page 3 of their SOC that:

“It is clear that the SONI application contains no original science or specific analysis, but instead falls back on all of the ROI application made by EirGrid. This needs to be borne in mind by the Department in all of its deliberations. To this end SEAT has included in the Appendices a significant number of documents from NEPPC, including its written submission in ROI, as it directly addresses many of the same statements made throughout the SONI application.”

Response

17. It is incorrect for SEAT to state that SONI's application “falls back” on the application by EirGrid. The specific analysis behind the proposed interconnector has been developed jointly by EirGrid and SONI (and previously Northern Ireland Electricity up to April 2014). It is noted by SONI that there is no analysis provided by SEAT to dispute the case of need as advanced by SONI and accepted by major stakeholders.
18. In regard to inclusion of the submission from NEPPC, it is also noted that by approving the application in Ireland, An Bord Pleanála have rejected the arguments put forward by NEPPC in that jurisdiction.

2.7 Support the Improvement of Competition

19. In the SEAT statement of Case, Page 10, paragraph 46, it is stated:

“Specific aspects claimed by SONI have included a) improving competition, b) supporting the development of renewable power generation and c) improving the security of supply. Taking these points in order I find the claim to support the improvement of competition to be ill-founded considering that both SONI and EirGrid are one and the same corporate entity and that no other agency or body has rights to charge for the transmission of bulk power no competition exists nor can exist so no “competition” can exist.”

Response

20. SONI has clearly set out the need for the project in the Consolidated ES, its addendum and in its Statement of Case. SEAT fundamentally misrepresents or at least misunderstands the nature of the competition to which the references are made. References in the application to competition mean competition in the generation and supply of Electricity in the Single Electricity

Market and forthcoming Integrated Single Electricity Market. The project thus facilitates competition between generators and between suppliers in the provision of electricity on the Island of Ireland, not between transmission system operators. This increased competition is estimated by SONI to deliver benefits to electricity consumers on the Island of Ireland of the order of €20m per annum in 2020 rising to €40m to €60m per annum by 2030. Northern Ireland would benefit from approximately one quarter of these savings as its electricity consumption is approximately 25% of the all island total.

21. It is important to note also that SONI and EirGrid are not alone in making this point. The Northern Ireland Government, the Utility Regulator and over 50 Northern Ireland companies, as well as over twenty business organisations submitted letters of support to the PAC. These included businesses (large and small), the CBI NI, the Institute of Directors and the NI Chamber of Commerce and Industry. Those submissions consistently supported the project on the basis that it will exert downward pressure on electricity prices in Northern Ireland.
22. In their licensed roles as regulated transmission system operators and as the single electricity market operators, both SONI and EirGrid do not generate or supply energy, nor do they own the network assets. As a consequence they do not receive an income from the developments they propose. The proposed interconnector will be owned by the transmission system owners, namely Northern Ireland Electricity Networks and ESB Networks in Northern Ireland and Ireland respectively.

2.8 Supporting Wind Energy Projects

23. In the SEAT statement of Case, Page 10, paragraph 46, it is stated:

'Secondly claims that it would support yet further additional wind energy projects is ill-founded on a number of grounds - firstly it is an interconnector thus meaning point to point and thus no additional access points to the grid would or indeed could exist. In addition despite admissions from SONI that the grid in NI is "fragile" the addition of yet further wind energy would yet further weaken the already fragile grid and also cause larger frequency fluctuations in the quality of

power being distributed. This is particularly adverse for high-tech industries that require high quality power with low (less than, say,) 3% frequency fluctuation'

Response

24. The policies of both the Northern Ireland and Ireland Governments and the respective regulators' decisions are evidence of their commitment to developing a reliable and lower carbon power system sourced increasingly from renewable energy, and the benefits this will bring to the wider society. Both SONI and EirGrid are charged with the connection of generation, demand and developing the network to support these.
25. The contention that the interconnector supports renewable generation is well founded as detailed in the Consolidated ES, its Addendum and the Statement of Case. However the primary requirement for the interconnector is not for the provision of additional access points for the connection of generation as represented by SEAT, although a connection is not precluded, subject to normal process.
26. The requirement is primarily about ensuring that the Northern Ireland transmission system remains securely interconnected, allowing power flows with sufficient capacity, to and from the larger Ireland transmission system even during credible fault outages. By securing interconnection between the jurisdictions the unacceptable risk of system separation is addressed, thus removing the need to constrain flows. This in turn increases competition within the SEM, enhances security of supply by better sharing of generation capacity and facilitates renewables.
27. A fault outage of the existing Tandragee – Louth interconnector is considered a credible contingency in the Northern Ireland Transmission System Security and Planning Standards (TSSPS). SONI is obliged by licence to develop the transmission system in accordance with these standards. With only one interconnector at present this contingency would result in system separation. System separation creates an imbalance between generation and supply, causing changes to frequency which may be beyond the capabilities of demand and generators to withstand. The subsequent disconnection of either can lead to further changes in frequency resulting in cascading loss of both demand and generation. As both

generation and demand must always be instantaneously balanced this will ultimately lead to a risk of instability. The risk of instability and a resultant blackout is increased with high levels of renewable generation because this form of generation is typically less able to respond to these frequency changes and therefore stabilise system frequency. As stated in the SONI Statement of Case TR1 there are committed applications for the connection of a further 562 MW, leading to a total of 1244 MW either connected or committed.

28. In the Consolidated ES Addendum, SONI explained that the proposed interconnector provides a parallel path to the existing interconnector. Therefore in the event of a fault on either interconnector the continued service of the other will ensure that sufficient capacity remains in place to maintain the pre-fault level of power flowing between the jurisdictions. This in turn effectively addresses the risk of system separation, the consequential problems of imbalance and the associated risks of instability and blackout.
29. SONI would agree with SEAT's position that increased renewables could raise the risk of frequency fluctuations, however the risk of frequency fluctuations is generally triggered by an event such as the fault outage of a circuit. The most onerous of these would be the fault outage of Tandragee – Louth interconnector, which results in the system separation issue as previously discussed. Therefore rather than being contradictory to the need, SONI would contend this is one of the key drivers for the proposed interconnector, i.e. to remove the system separation event and in doing so facilitate renewables.
30. It is noted that there was a consistent message within over 100 letters of support received by the PAC that the Interconnector would facilitate increased levels of renewables in Northern Ireland. A number of those letters of support were submitted by the developers of renewables generation and their representative organisations, including NIRIG and IWEA. These are parties who have significant technical expertise on what is required to facilitate renewables.

2.9 Security of Supply

31. In the SEAT statement of Case, Page 10, paragraph 46, it is stated:

“The final comment on increasing security of supply is specious to say the least as adding a further OHTL only exposes the system to the same climatic conditions as already exists and thus the identical dangers such as wind, haw-frosts and other causes of conductor and pylon failure as already exists. To increase security of supply a different form of transmission is required such as UGC's. SONI and EirGrid have made unsubstantiated claims that a saving of €30 million per annum can be achieved by "increasing security of supply" have never (or could they ever be) substantiated by any form of financial model.”

Response

32. SONI has clearly set out the security of supply benefits for the project in the Consolidated ES, its addendum and in its Statement of Case. These benefits relate to the financial benefits arising from the ability to access spare generation capacity in Ireland thus avoiding the need to contract for extra generation capacity for Northern Ireland. It is noted that Northern Ireland customers are currently directly funding a local reserve services contract for extra generation capacity at an estimated cost of £8.9m per annum. Had the proposed interconnector been in service this cost could have been avoided.
33. The security benefit of the proposed interconnector does not only benefit Northern Ireland customers. The benefit applies on an all island basis. By fully combining the generation capacity of both jurisdictions, the proposed interconnector allows the overall generation capacity across the island to be shared in a better way. It means that the new interconnector will provide a benefit to the island of the equivalent of at least 240 MW of new generation capacity. In other words, over the lifetime of the new interconnector 240 MW less of new generation capacity will need to be built to meet all demand on the island. The benefit has been monetised at €19m per annum by 2030, based on the per MW cost of peaking plant as detailed in Appendix 3.1 of the Consolidated ES Addendum.
34. SEAT has questioned the reliability of the proposed interconnector due to weather events and by implication its ability to ensure generation capacity

can be shared. Circuits that are in close proximity can be at risk from simultaneous forced outage due to weather phenomena. However as stated in the Consolidated ES Addendum section 3.3.2.5 an important requirement for the proposed interconnector is that it would be physically separate from the Tandragee – Louth interconnector. This requirement effectively addresses the risk of weather related events affecting both interconnectors at the same time.

35. The proposed interconnector is designed as an overhead line in part because, typically, it would be available for service for a greater proportion of time than an Extra High Voltage underground cable. All cables (including EHV) can be prone to accidental third party damage however such damage is often not visible and has to be located using specialist test equipment. Furthermore the repair of EHV cables would involve the procurement of highly specialised cable jointing expertise which is generally not available in Northern Ireland or Ireland. Damage to an overhead line however is generally visible and can be repaired quickly by locally based engineers.
36. Appendix 3.1 to the CES Addendum clearly identifies the modelling approach and tools used to assess the savings for the project. This shows benefits of at least €20m per annum in 2020 from both improved competition and security of supply on the Island. The benefits are of the order of between €40-€60m per annum by 2030¹. Northern Ireland would benefit from approximately one quarter of these savings as its electricity consumption is approximately 25% of the all island total. The software and methodology used to assess security of supply are accepted by the regulatory authorities on the island of Ireland for the assessment of generation adequacy. We note that SEAT has not submitted any alternative assessment of the security of supply benefit or other evidence to the contrary.
37. SONI would contend that the security of supply is crucial to potential investors, in particular those from the information technology and manufacturing sectors.

¹ Includes €19m in security of supply benefit.

38. Finally it is also noted that there is a consistent message regarding the importance of security of supply from over 100 letters of support for the project received by the PAC. These letters provide support from businesses across Northern Ireland, business organisations as well as a number of individual politicians, councils and academic institutions.

2.10 Benefits of Energy Saving

39. In the SEAT statement of Case, Page 11, paragraph 47, it is stated:

“The need for the project can be challenged by looking at the planned consumption in NI going forward (estimated to be relatively stable at a maximum of 1500MW instantaneous) with a growth rate of perhaps only 2-4% which does NOT take into consideration any forms of energy saving such as smart meters, better insulation, low wattage lighting, energy storage etc. Hence to plan infrastructure at such a capacity makes little sense considering EirGrid's own forecasts show a maximum transmission of approximately 750MW averaging only 350MW for the next 20 years.”

Response

40. It is unclear what source SEAT has used to estimate the peak demand and the growth rate of “perhaps only 2-4%”, which they say does not take into consideration the stated energy efficiency measures. It is assumed that these are SEAT estimates that they are referring to.
41. The need for the project, as set out in the Consolidated ES and its Addendum, is based on three clear drivers, being competition within the SEM, access to generation capacity across the island for security of supply and facilitation of renewables. In terms of increasing competition within the SEM, the need for the proposed interconnector is not particularly sensitive to changes in peak electricity demand. Our analysis indicates that with the present level of electricity demand the constraint on power flows between Ireland and Northern Ireland is leading to additional generation production costs which are borne by customers.
42. In terms of competition within the SEM, the production cost savings were estimated as published in Appendix 3.1 of the Consolidated ES Addendum. These were based on the demand forecasts published in the Generation Capacity Statement 2015-2024.

43. In terms of the security of supply requirements for the project, the latest Generation Capacity Statement 2016-2025 was referenced in the Statement of Case Technical Report 1. This concluded that generation capacity adequacy assessment would be in deficit beyond 2020. SEAT has not challenged this assessment. These forecasts include the impact of energy efficiency measures in all sectors of the economy such as insulation in homes, lighting in homes and businesses etc., (see Section 2.3 of the All-Island Generation Capacity Statement 2016-2025). The peak demand for Northern Ireland was of the order of 1817 MW in 2015.
44. In the final sentence SEAT have also referred to EirGrid forecasts, which are considered to relate to the flow of power between the jurisdictions. On this basis they query the capacity of the proposed interconnector. In terms of the predicted flows between the two jurisdictions, SONI have documented in Appendix 3.1 to the Consolidated ES addendum predicted power flows between the jurisdictions of 1,100 MW within the first ten years of operation. In the instance of the loss of the Tandragee – Louth interconnector this entire flow would be on the proposed interconnector.
45. The proposed interconnector is planned to have a capacity of 1500 MW for the following reasons:
- The power flows in the first ten years of service are predicted to reach 75% of this capacity; the interconnector will be in service for many years beyond the 2020 and 2030 years studied and it is good practice to allow a margin for growth;
 - In keeping with good design practice the capacity is matched to the 275 kV double circuit tower line of the existing Tandragee – Louth interconnector which has a nominal capacity of c.1500 MW, providing a sustainable approach; and
 - In keeping with good design practice the capacity is matched to the surrounding 275 kV double circuit tower lines in Northern Ireland to which the proposed interconnector will connect and which also have a nominal capacity of c.1500 MW.

46. Similar planned interconnectors in the 2016 Ten Year Network Development Plan, see Table in Appendix B, have been designed with additional nominal capacity. This provides capacity for the future development of the system. As a result the provision of additional capacity in the selection of a nominal capacity, i.e. 1500 MW, to match the nominal capacity of the Tandragee – Louth interconnector and the receiving double circuits in Northern Ireland, is in line with good industry practice to provide for the most sustainable development.
47. It is noted that the An Bord Pleanála Inspector's Report VA0017 (see section 5.2) concludes that the need for a capacity of 1500 MW has been “adequately and comprehensively demonstrated”.
48. Finally it is also noted that over fifty large and medium sized consumers of electricity in Northern Ireland as well as a significant number of organisations representing customers of all levels of consumption submitted letters of support for the project, as proposed by SONI.

2.11 Increasing Capacity of Moyle Interconnector, Louth and Restraining

49. In the SEAT statement of Case, Page 11, paragraph 47, it is stated:

“Such necessary transmission capacity could easily be accommodated by a number of measures such as increasing the capacity of the Moyle Interconnector by 350MW, installing new transformer capacity at Louth (in RoI) and restringing the existing interconnector with HTLS conductors (High Temperature Low Sag) with a resultant upscaling of 100% of capacity to, say 750MW.”

Response

50. The Moyle interconnector is owned and operated by Mutual Energy Limited. SONI is not aware of any publicly available plans by Mutual Energy Limited to increase the design capacity of this interconnector. An increase in capacity would also be subject to the need to assess the connection arrangements and consider the associated system reinforcement requirements.
51. In any case, increasing the capacity of the Moyle interconnector would not remove the inefficiency in the Single Electricity Market / I-SEM caused by the

risk of system separation, for the obvious reason that it connects Northern Ireland with Scotland and not the two parts of the island of Ireland. Thus the need for the interconnector to improve competition in the electricity market on the island of Ireland would not be met.

52. Similarly any solution that involves the current Tandragee - Louth interconnector, including the change of conductor to HTLS and additional transformer capacity would not address the need as there would still be only one high capacity interconnector between Northern Ireland and Ireland. Consequently the TSO's would still have to take account of its fault outage and limit the flows on the interconnector in exactly the same way as at present. Therefore the three drivers would remain as at present.
53. Finally it is noted that over 100 letters of support were received by the PAC for the taking forward of the project as proposed. Those letters did not propose or support any alternative to the proposed project in the SONI planning application.

2.12 Local Generation

54. In the SEAT statement of Case, Page 11, paragraph 47, it is stated:

“EirGrid revoking their control of 200MW North to South transmission on this interconnector etc. In addition local generation is a coming technology with numerous small, local generating stations (renewable and conventional), thus obviating the need for bulk power transmission.”

Response

55. It is not clear what SEAT is referring to in this first sentence. However, if the reference is in relation to security of supply and / or flows on the existing interconnector, it is the case that SONI and EirGrid manage interconnector flows prudently in order to ensure security of supply at all times. It is not the case that EirGrid has a 'control' on 200 MW of transfer between Ireland and Northern Ireland or vice versa. SONI and EirGrid work to maximise the amount of power that can flow safely and securely between both jurisdictions at any point in time.

56. The benefit assessment for the project as documented in Appendix 3.1 of the Consolidated ES Addendum included local and small scale generation in its assumptions and has shown that the need and the benefits of the project are robust. Small scale generation such as solar, wind and combined heat and power or biomass still need the transmission system to carry excess power away, and to provide supply at peak times when it is not sunny or windy. Projects such as the installed solar panels at the Linwoods facility (SEAT Statement of Case, Paragraph 169) would be facilitated by the proposed Tyrone – Cavan Interconnector.
57. In addition the connection of small scale non-synchronous generation, displacing conventional plant, will, over time, have the effect of further reducing system inertia², which will contribute to increased system instability during disturbances. This will make it more important to prevent the system separation event with the resultant risk of generation/supply imbalance referred to previously.
58. Finally it is noted that, in the over 100 letters of support for the project received by the PAC, there was no support for an argument that small scale generation would obviate the need for bulk power transmission. Importantly, many of those letters of support were submitted by electricity customers who would undoubtedly have generation installed on their premises and despite this, recognise the importance of a secure and economic supply from the electricity network.

2.13 Need for 1500MW Capacity

59. In the SEAT statement of Case, Page 11, paragraph 48, it is stated:

“The claim that the interconnector needs to be 1500MW capacity is contradicted by EirGrid itself on a number of occasions and in a number of statements, such as: The EirGrid submission to an Oireachtas Committee Report (February 2008) provides on page 12: “EirGrid is also developing a new high capacity transmission link to Northern Ireland which will facilitate greater access to generation in Northern Ireland and the UK (via Northern Ireland’s interconnector

² System inertia is a measure of the systems resistance to rapid changes in frequency. Low inertia reduces stability during disturbances,

to Scotland). Such enhanced links with Northern Ireland are likely to deliver a 200-300 MW capacity benefit, along with greater market integration and scope for integration of renewable generation”

Response

60. SEAT has misrepresented or at least misunderstood the EirGrid submission to an Oireachtas Committee Report. The 200-300 MW that is referenced here refers to the capacity benefit in terms of generation capacity to Security of Supply that the proposed interconnector provides to the island. At present the ability of each jurisdiction to support the other is limited as the flow on the single interconnector linking the jurisdictions has to be constrained. Each jurisdiction must ensure it has sufficient generation always available throughout the year to support its needs. As the available capacity to generate power is at its most hard pressed during peak demand periods the ‘capacity margin’ is a measure of the surplus generation that is available above that which is currently being supplied. It means that with the proposed interconnector removing the constraint between the jurisdictions, the island as a whole would be able to share their generation portfolio and thereby reduce its capacity margin by 200-300 MW. In other words, over the lifetime of the new interconnector, 200-300 MW less of new generation capacity will need to be built to meet all demand on the island. More recently, Appendix 3.1 to the Consolidated ES Addendum put this figure at 240 MW.
61. The 1,500 MW is the capacity of the proposed interconnector and is distinct from the generation capacity benefit that the proposed interconnector will provide to each jurisdiction.
62. The 1,500 MW capacity of the proposed interconnector is required to a) enable and secure the power transfer between the jurisdictions predicted in the first ten years of service of at least 1,100 MW, b) allow a reasonable margin for growth and c) as is good practice match the capacity of the receiving 275 kV double circuits in Northern Ireland and the nominal capacity of the Tandragee – Louth interconnector for which it will provide a parallel path.

63. Finally it is also noted that over 100 letters of support were received by the PAC for the taking forward of the project. Many of those letters were submitted by parties with significant expertise, and experience, in the electricity industry in Northern Ireland. Those letters did not propose or support any alternative to the 1500 MW capacity of the project as proposed by SONI in its planning application.

2.14 Storage of Energy

64. In the SEAT Statement of Case there is a number of points made about the role of energy storage.

65. Paragraph 66, stated:

“Storage of energy is a fast developing sector of the energy industry. The following sources of storage of energy are:

By 2020 the Larne compressed air site will be on line providing 100MW.

AES have 10MW storage and have plans to build 90MW more at Kilroot,

Evermore are constructing 50MW storage in Derry.”

66. Paragraph 67 stated:

“This is only the very start of the vital part storage will play both here in NI & ROI. Ireland has a backup of electricity supply that almost matches the peak need. On this basis the provision of an Interconnector providing 1500MW has not been thoroughly examined or convincingly made out.”

67. Paragraph 72 stated:

“In October 2016, Utility Regulator Jenny Pyper said:

“I readily accept that we need to think about doing much more around energy efficiency and more around exploring and utilizing energy storage initiatives”

The recent Carbon Trust Report highlights the opportunities for the deployment of energy storage. The same is attached to the appendices, and of particular note are pages 8, 9, 13 and 22 (Appendix SEAT10)”

68. SEAT attached Appendix 10 – This is a bulletin from Carbon Trust with a link to report entitled: “Can storage help reduce the cost of transmission a future UK electricity system?”

69. Paragraph 73 stated:

“Nor is this phenomenon new. It emerged in the United States, where there is an understanding of the next energy revolution less than five years away. (Appendix SEAT11-SEAT13)”

70. Paragraph 73 also included a footnote with a link to an Independent newspaper article entitled “A farewell to the carbon era as US believes next energy revolution is less than five years away”. This is also included in Appendix 11. There is also a reference to Appendix 12 with an article entitled “The new economics of energy storage”.

71. SEAT attached Appendix 13 – Energy Storage – A game changer for the energy market, which included the following presentations:

- CEDAGAZ, the International Association for Natural Gas: “Gas Storage in Europe Where are we now? Where are we going?”
- Schwungrad Energie: “Hybrid flywheel-battery in System Services Market”
- Renewable Energy Association: “Decentralised storage for the domestic and commercial markets, 15th November 2016”
- Utility Regulator: “Energy Storage Regulatory Considerations, November 2016”
- EirGrid Group: “Integrating energy storage projects into the Northern Ireland Grid, November 7th 2016”
- Advancion Energy Storage: “Advancion® and beyond: Large scale battery storage systems in practice”
- Gaelectric Energy Storage: “Capturing the benefits of compressed air energy storage (CAES) and CAES Larne project update”
- University of Ulster, Centre for Sustainable Technologies: “Removing barriers and unlocking resources: The SPIRE project”
- Island Magee Storage Gas Storage: “A key component of energy storage, November 2016”

Response

72. In regard to paragraph 66, the Consolidated ES Addendum section on technical and alternatives and the SONI SOC discusses the impacts of various potential alternative generation and storage projects. It was highlighted that increasing storage would not remove the inefficiency of SEM

/ I-SEM caused by the risk of system separation. Also the storage would not be able to fully access the electricity market in Ireland as it is located behind the same restriction in the SEM caused by the system separation risk. Thus the need for the interconnector to improve competition in the electricity market on the Island of Ireland would not be met. In regard to the compressed air project at Larne, SONI would point out that this project is at the consultation phase and is not considered by SONI as committed at this stage and therefore cannot be considered in the security of supply assessment.

73. The battery projects are relatively small scale, would have the similar limitations to those described above, and would not materially affect the security of supply driver for the proposed interconnector. Also they would not remove the constraint which leads to inefficiencies in the SEM, nor would they substantially impact on the issue of rapid frequency changes during a system separation event.
74. It is also noted that over 100 letters of support were received by the PAC for the taking forward of the project. Many of those letters were submitted by parties with significant expertise, and experience, in the electricity industry in Northern Ireland. Those letters did not propose or support a view that storage could obviate the need for the proposed interconnector.
75. In regard to paragraph 67, SEAT appear to be querying how an interconnector capacity of 1500 MW is necessary when Ireland has capacity to meet its own need with a limited degree of surplus. The reason for the capacity of the proposed interconnector was set out in the Consolidated ES Addendum, and the SOC. This is further explained in paragraph 45 of this document.
76. It is noted that the An Bord Pleanála Inspector's Report VA0017 (see section 5.2) concludes that the need for a capacity of 1500 MW has been "adequately and comprehensively demonstrated".
77. In regard to SEAT paragraph 72 and the attached Carbon Trust report (Appendix 10), SEAT has stated that storage is an emerging and fast paced developing technology that has not been adequately examined. SONI

recognises the current status and scale of proposed developers for storage projects and the drivers for the proposed interconnector. SONI has concluded that storage has a number of barriers, notably included in Appendix 10 of SEATs submission. As a result it has also concluded that, whilst storage will pay a part of the evolution of the power system in the island of Ireland, it does not provide a viable or realistic alternative to the proposed interconnector.

78. In response to SEAT paragraph 73, and Appendix 11 (same as footnote), SONI has reviewed the article entitled: “A farewell to the carbon era as US believes next energy revolution is less than five years away”. The claim that the revolution is “probably less than five years away” appears to be the author’s own opinion, not apparently attributed. SONI would point out that the items being discussed in this article are in research at this stage. There are no plans for battery projects in Northern Ireland that would have any material impact on the case of need for the proposed interconnector.
79. SONI has reviewed Appendix 12 entitled “The new economics of energy storage”. SONI agrees that storage has the potential to assist in smoothing between peaks and troughs in supply as well as ancillary services such as reactive power and reserve. However SONI would contend that the viability of storage in Northern Ireland would be enhanced if it can access surplus renewable generation from an unconstrained all island system.
80. SONI has reviewed all of the documents in Appendix 13 and for the same reasons as in the previous paragraphs none of the material offer any challenge to the rationale for the proposed interconnector.

2.15 Generation Alternatives and Distribution System Reinforcement

81. In the SEAT statement of Case, Page 15, paragraph 68, it is stated:

“The need gap could be filled by:-

- the 480MW Belfast harbour site gas generator proposed by Evermore and is planned to come on line in 2020, the same time as the proposed interconnector;*
- and*

- *investment of £300million in NI distribution grid would enable the current long list of renewable power suppliers to be taken onto the grid and increase our renewable use from 25% to 40%;*
- *AES has proposed that it would build another gas generator at Kilroot if the coal generator had to close down.”*

Response

82. SONI have considered generation alternatives in the CES, CES Addendum and supporting documents to the Statement of Case. It was found that there is no generation alternative that addresses the need for the project. Increasing conventional generation capacity in Northern Ireland would not remove the inefficiency in the Single Electricity Market & I-SEM caused by the risk of system separation. Also any new generator, along with all generators in Northern Ireland, would not be able to fully access the electricity market in Ireland as they are connected behind the same restriction in the SEM caused by the system separation risk.
83. SONI would point out that the proposed 480 MW generator in Belfast or any proposal to replace Kilroot are not committed projects at this stage. There is no certainty that these will be available to address the shortfall in capacity predicted from 2020.
84. In any case, they would not address the other two drivers, namely inefficiency in the SEM due to the constraint and the facilitation of renewables.
85. It is also noted from the SEAT SOC Appendix 14, that Carla Tully, President of AES UK and Ireland, gave evidence in support of the proposed interconnector to the Northern Ireland Affairs Committee on 6 July 2016 stated:
86. “Similar to what Paddy has said, we think the north-south interconnector is absolutely critical to the system. It makes imminent sense to further combine the financial grid and the physical grid more completely. It will reduce constraint costs, improve the environment overall and the efficiency of the grid, and it is certainly our expectation and hope that that will happen.”
87. There is no evidence of how SEAT has derived its assertion that an investment of £300m in the Northern Ireland distribution system will increase

renewable use from 25% to 40%. A review of the NIE Networks submission for RP6 does not make reference to any planned £300m investment in distribution. Indeed Northern Ireland Electricity Networks, who are responsible for the distribution network, made a submission to the PAC that supports the planned interconnector. That submission made no reference to any distribution works that could obviate the need for the project. In any case, investment in the distribution system will not remove the risk of the separation of the Northern Ireland transmission system from the Ireland transmission system. In SONI's view there are sufficient plans to connect enough renewable generation with the potential to reach the 40% target provided it can be operated safely and securely. SONI would contend that the proposed interconnector is required to help facilitate the target.

2.16 Decreased Demand from Large Businesses

88. On page 15 paragraph 69 SEAT stated:

"It is clear that more large businesses are going off grid. The most recent examples include Bombardier and Belfast International airport. There are 12,000 householders who have small scale home generation capacity (such as solar panels) with some of the power generated exported to the grid."

Response

89. At the Northern Ireland Energy Forum there was a presentation by the Energy Manufacturing Advisory Group (EMAG). EMAG is a body that was established to find a solution to combat energy costs within the manufacturing sector. The associated report³ included a note that there was a trend for large energy users (LEU) to go off grid. However it was explained that this was mainly due to the cost of electricity in Northern Ireland. The benefits of the proposed interconnector include potential savings in the cost of providing security of supply and in generation production costs. EMAG made a number of recommendations including Recommendation 5 *"The Executive should do everything it can to ensure that planning permission for*

³ <http://www.qpani.org/emaillers/documents/EMAGReportMarch2016-submittedtoDETI.pdf>

a second, over-ground North-South interconnector is granted and that the additional capacity is fully operational by 2020.”

90. As correctly stated in the SEAT application there are many homes with home generation capacity. However it should be recognised there is an important difference between householders or businesses producing electricity and exporting to the grid and any one going ‘off-grid’. Home generating capacity can provide energy to homes with often the surplus being exported into the electricity networks for use by other consumers. However at other periods of time when energy is not being produced these households and businesses are reliant on power supplied from non-intermittent sources.
91. Therefore as the primary sources of renewable power are wind and solar energy their power production is aligned with larger renewable generators in the region contributing in a similar way. They in effect add to one of the main drivers of the project supporting the integration of renewable generation.
92. The number of consumers that supply their own needs entirely throughout the year and are therefore not connected to the electrical network is currently very limited and is encapsulated in the present and future growth for demand predictions used to assess the need for the project.
93. Consequently the need assessment has included embedded and small scale generation and has shown that the need still remains robust. The proposed interconnector will exert downward pressure on electricity costs helping businesses and homeowners in Northern Ireland. Business organisations such as the Confederation of British Industry have strongly supported the need for the proposed interconnector.
94. There is growth in small scale generation in Northern Ireland. This type of generation is generally asynchronous, and consequently further reduces the level of inertia on the transmission system and increases the need to ensure that the risk of system separation described in the SONI Statement of Case is avoided. The proposed interconnector is designed to address the unacceptable risk of system separation.
95. It is worth noting that, in the over 100 letters of support for the project received by the PAC, there was no support for an argument that self-

generation by electricity customers would impact on the need for the planned interconnector. Importantly, many of those letters of support were submitted by electricity customers who would undoubtedly have generation installed on their premises and despite this recognise the importance of a secure and economic supply from the electricity network.

2.17 Emerging Alternative Energy Source

96. On page 15 paragraph 70, 71, 72 and 73 SEAT stated:

97. Paragraph 70:

“All of these elements have a mitigating impact. They have not been thoroughly explored and yet they already undermine the SONI assertions that that the proposed interconnector is vital and that it must provide 1500MW. The further assertion that if not installed in time the lights will go out represents scaremongering rather than an exploration of alternatives and the wider consequence of the proposal that undermines the emerging alternative energy source that will be available in the same building timescale as the interconnector.”

98. Paragraph 71:

“The relentless emergence of evidence of the fast developing alternative energy provider underscores the failure to have the issue examined, and SEAT regards that failure as representing a breach of the policy”

Response

99. In regard to paragraph 70, the need for the proposed interconnector has been robustly demonstrated in the Consolidated ES, its addendum, Appendix 3.1 to the addendum and the SOC. SONI have shown conclusively that there is no generation or storage alternative that will solve the need for this project. No generation alternative will be able to remove the inefficiency in the SEM / I-SEM caused by the restriction on power flows on the current interconnector due to the risk of system separation. The requirement for a line capacity of 1,500 MW has also been demonstrated.

100. The security of supply situation in Northern Ireland has been clearly set out in the CES addendum, Appendix 3.1, the Statement of Case and the relevant generation capacity statements. The situation in Northern Ireland is

clear. There will be a deficit in generation capacity in Northern Ireland by 2021. The only way to address this deficit, remove the inefficiencies in the SEM, and facilitate renewables is by constructing the proposed interconnector.

101. The requirement to address the risk to security of supply is a consistent theme of the over 100 letters of support for the proposed interconnector received by the PAC. By way of example the CBI, in their submission states:

“In recent years, the business community has viewed with alarm the steadily shrinking spare generation capacity in Northern Ireland”. They also state; “Any supply deficit scenario will have a negative impact on the regional economy. Failure to secure sufficient generation capacity will at best result in the system operator disconnecting portions of the electricity supply at times of peak demand and/or the Regulator seeking expensive short term additional generation capacity. At worst, a supply deficit could lead to blackouts, estimated to cost the local economy in the region of €155m/£132m per day. Any supply deficit would have a widespread impact on economic output and would be an extremely negative advertisement to the rest of the world”.

102. By way of conclusion the CBI submission states:

“However, to avoid the supply deficit scenarios outlined above, the interconnector must be constructed by 2020 at the latest. A positive planning decision on this scheme is required as soon as possible”.

2.18 Underutilisation of Moyle Interconnector

103. SEAT Page 16 paragraph 80 stated:

“At the House of Commons oral evidence on the 8th June 2016, Dr Keatley said: “My understanding is that the issue with Moyle will be resolved this year. That will be back to full capacity this year - full capacity in the sense that the interconnector itself will work in both directions - but beyond that there is constraint at the Scottish end of the interconnector.”

104. SEAT Page 16 paragraph 81 stated that during the House of Commons oral evidence on the 6th July 2016 Paddy Hayes said:

“Northern Ireland is already interconnected by an existing north-south interconnector and by the Moyle interconnector between Great Britain and Northern Ireland. The extent to which the capacity of those interconnectors has been factored into security of supply forecasts we think has been relatively conservative.”

105. SEAT Page 16 paragraph 82 stated:

“Carla Tully further stated the Moyle interconnector have a constraint to 80MW transmission (Appendix SEAT14)”

Response

106. In regard to Paragraph 80 of SEAT submission, SEAT appears to be implying that the full capacity of the Moyle Interconnector was not taken into account in the security of supply assessments. The Consolidated ES Addendum and the Statement of Case makes reference to the relevant Generation Capacity Statements where the return to full capacity of the Moyle Interconnector has been assumed in the assessments and that a deficit in generation capacity will still exist in Northern Ireland from 2020. In regard to the reference to the Moyle interconnector constraint at the Scottish end, SONI believes Dr Keatley is referring to the limit of 80 MW export to Scotland which would have no bearing on security of supply assessments for Northern Ireland.
107. In regard to Paragraph 81, it is not clear what point is being made here by SEAT, however it is SONI's interpretation that by including the quotation from Mr Paddy Hayes, SEAT are suggesting that the contributions from Moyle Interconnector and the Tandragee – Louth interconnector have not been properly taken into account in the security of supply assessments. SONI refute the view that the assessments are overly conservative. We also note that no evidence was provided to support this claim.
108. The CES Addendum and the Statement of Case make reference to the relevant, Utility Regulator approved, Generation Capacity Statement (GCS) where the repairs to the Moyle Interconnector have been assumed in security of supply assessments. In the 2016 - 2025 All island Generation Capacity Statement the average capacity from Moyle and EWIC is capped at 75% capacity to account for the uncertain availability of generation in Great Britain: see Section 4.2(a). However, where a deficit was forecast in Northern Ireland the Moyle capacity was increased to 100% and EWIC reduced correspondingly. There has been public information regarding potential shortfalls of generation capacity in Great Britain. It is also noted

that the Department for Economy Statement of Case (DfI Reference: O/2009/0792/F & O/2013/0214/F), made reference to caution in assuming capacity from Great Britain stated. Paragraph 22 stated:

“While the Moyle offers import and export opportunity between SEM and the British Electricity Trading and Transmission Arrangements market (BETTA – the GB wholesale electricity market), it is worth noting the GB market has itself taken actions to address security of supply concerns. In the event of both security of supply event in both Northern Ireland and the GB market available capacity for import to Northern Ireland could be affected.”

109. The current Generator Capacity Statement assumes that Kilroot will be able to run 1500 hours per year from 2020 until 2023. However in the oral evidence to the Northern Ireland Affairs Committee, Carla Tully suggested that there may not be a business model for Kilroot running 1500 hours per year from July 2020. Consequently, based on this evidence, the shortfall may be greater than that predicted in the current Generation Capacity Statement.

110. SONI also note that, during the House of Commons oral evidence on 6th July 2016, both witnesses Paddy Hayes of ESB, and Carla Tully of AES, emphasised the need for the North South Interconnector project. Carla Tully, stated:

“Similar to what Paddy has said, we think the north-south interconnector is absolutely critical to the system. It makes imminent sense to further combine the financial grid and the physical grid more completely. It will reduce constraint costs, improve the environment overall and the efficiency of the grid, and it is certainly our expectation and hope that that will happen.”

111. It is also worth noting the letter of support for the project submitted by Mutual Energy, the owner/operator of Moyle. In their submission they consider that the proposed Tyrone - Cavan interconnector will exert downward pressure on electricity process, is required to sustain the driver for renewable power generation and is urgently required to improve security of electricity supply in Northern Ireland.

2.19 Impact of Brexit

112. The SOC's from Ms Drew and Boyd Eagleson stated:

"Other concerns regarding the proposals include:

the impact of the UK decision to leave the European Union on an All Ireland arrangement for energy production."

113. The submission from Mr McNally also states that:

"The Brexit negotiations may have a significant impact on the fluency of services between EU and Non EU States, surely prudent management of the Planning Process would dictate that a planning process on a significant EU sponsored capital project of this nature should be postponed and deferred until negotiations conclude on Brexit and the future of energy requirements within NI and the UK can be determined with certainty in a post Brexit scenario."

Response

114. The potential implications of the UK leaving the European Union were fully dealt with in SONI Technical Report on Need (TR1). That Report provided evidence of commitment to the continuance of the Single Electricity Market and the introduction of the Integrated Single Electricity Market (ISEM) from the Prime Minister, the Northern Ireland First Minister, the Northern Ireland Deputy First Minister and the Northern Ireland Utility Regulator. This commitment would support strongly the continuation of the planning process, particularly since any deferral would result in the continuing burden of costs to electricity customers in Northern Ireland and Ireland.

115. It is also worth noting the statements made by Simon Hamilton MLA, Minister for the Economy to the Northern Ireland Affairs Committee on 7 December 2016 relating to the Electricity sector in Northern Ireland, HC51. Oral Evidence: When asked about the potential impact that Brexit would have on energy in Northern Ireland (Q636) he stated that:

*"I reiterate the fact, as is the case on a range of different issues, that those most directly affected, including the UK Government, the Northern Ireland Executive and also the Irish Government, are of a very similar mind of wanting an integrated single electricity market **and wanting an interconnector to be in place**. It is helpful going into those negotiations that you do not have a divergence of views in respect of it, and I hope that would help to get a successful outcome for us."*
(Emphasis added to the above statements.)

116. In response to a question on the perfect or ideal outcome (Q637) Mr Hamilton also stated:

*“You have to go back to first principles, and the first principle on the market in Northern Ireland is, as I was saying before, that the market is too small. It is not as efficient as we would want it to be. When you integrate it with a bigger market in the south, you get a much more efficient market. That, for me, is not the end game in respect of integrating markets. That is the first step to allow Northern Ireland and the Republic of Ireland to better integrate with the Great Britain market, which has a lot of challenges in respect of electricity as well. You create a much bigger and much more efficient British Isles model. For me, it is not just about what happens on a cross-border basis. It is actually what happens across the Irish Sea and integrating much better the whole of the British Isles. Continuing down the road of integrating the markets and having the **infrastructure in place to do that so, yes, the north-south interconnector** but also better integration on an east-west basis as well is what we would like to see happening as we move forward.” (Emphasis added to the above statements.)*

117. TR1 also considers the unlikely event of there being the establishment of separate electricity markets in Northern Ireland and Ireland. It explains that the proposed interconnector would still allow similar benefits as applied for the Single Market through bilateral arrangements enabling Northern Ireland to purchase cheaper energy from Ireland. TR1 also explains that the existing Tandragee to Louth interconnector was planned and built when separate markets existed and brought benefit prior to the introduction of the SEM in 2007.
118. In the event that the political decision is made and enacted to leave the European Union, the precise timeline to undertake both agreement and enact such an agreement is unknown but will take some years. Moreover the terms with which the UK leaves the EU are not yet known and therefore it cannot be assumed that they will impact negatively on the SEM or I-SEM. Therefore SONI does not believe there is any policy basis for parking the planning process and in particular the determination of this application because of considerations like Brexit.
119. The benefits of interconnection between the jurisdictions on the island of Ireland were recognised in the construction of the existing Tandragee - Louth 275kV double circuit line and other interconnectors across Europe before the formation of the modern European Union. This recognition has persisted, been endorsed and strengthened by the governments and the energy regulators of both jurisdictions in the intervening years through policy and legislation.

120. The development of the transmission system requires projects of scale, which by their very nature occur slowly, often over periods greater than 10 years. Consequently developments have spanned periods of uncertainty and policy change, but have continued and realised benefits to society that would have been lost without their development.
121. Best practice analytical techniques used for this project are, by their very nature, designed to mitigate underlying concerns by looking at, for example, production cost modelling of power generation, and varying economic development to ensure decisions are robust.
122. Consequently regardless of the final decision and agreement on Brexit, SONI believes the need for the proposed interconnector project will remain robust and essential for the long term security, reliability and efficiency of the Northern Ireland transmission network.
123. There is nothing in the opposing SOC's that would justify refusal of planning permission in respect of the need issue. SONI also believes there is no policy basis for postponing the planning process and in particular the determination of our application because of considerations like Brexit. In fact postponement would result in the shortfall in capacity from 2020 with a possible costly intervention, continued high cost of electricity due to inefficiencies in the SEM and barriers to the facilitation of renewables.
124. It is also worth noting that within the wide range of submissions to the PAC that supported the need for the planned Tyrone - Cavan interconnector there were no concerns expressed over the potential impact of the United Kingdom's withdrawal from the European Union. Supportive submissions were received from politicians, local businesses, Business organisations, Councils and academia, all of which groupings would be particularly sensitive to the implications of withdrawal.

2.20 Submission by Mr Jim Lennon

125. SONI has reviewed the content of the letter from Mr Jim Lennon, included in Appendix 18 of the SEAT Statement of Case, and finds no material that would undermine the case of need for the proposed interconnector.

Moreover, energy policy is a matter for the respective governments. The monitoring of competition with the Single Electricity Market is a matter for the respective regulatory authorities.

2.21 Conclusions

126. In conclusion, nothing in the objectors' Statements of Case and representations serves to undermine the conclusions set out in the SONI Statement of Case and supporting Technical Reports. As stated in SONI's Main Rebuttal Document, the proposed Tyrone - Cavan Interconnector remains clearly acceptable in planning terms.

Appendix A: Policy relating to Project Need (Updates)

Introduction

The need for the proposed Tyrone – Cavan Interconnector project is clearly set out at domestic, national and European level. Since publication of the Consolidated Environmental Statement Addendum in 2015, the need for the Tyrone – Cavan Interconnector project, as well as the need for greater European electricity interconnection, has been repeatedly emphasised as reflected in the below quotations.

Section A) National and Regional

Opportunity for Excellence: The Report on the Committee's Inquiry into Growing the Economy and Creating Jobs with Lower Corporation Tax – 30th June 2015

- The Committee for Enterprise, Trade and Investment⁴ conducted an inquiry into 'Growing the Economy and Creating Jobs with Lower Corporation Tax' and published a report in relation to same in June 2015. As part of the inquiry, the Committee considered the Electricity Network in Northern Ireland and heard evidence from various parties, including the Utility Regulator.
- In Volume 1 of the report, under the heading 'Electricity Network' (at page 38), it states, *inter alia*, as follows:

"The FSB, IoD and CBI all highlighted the need to build the North-South Interconnector. FSB considers it a priority to ensure security of supply in the future, the IoD highlighted the high cost to consumers from not having the Interconnector and the CBI considered the North-South Interconnector and the restoration of the Moyle Interconnector to be priority projects to help electricity costs for businesses. The Utility Regulator also emphasised the cost of not having the North-South Interconnector, stating that it is fundamental for the long term." (para 104) [emphasis added]

- Jo Aston, on behalf of the Utility Regulator, is recorded in the Minutes of Evidence dated 28th April 2015 (Appendix 2 of Volume 1 of report) to have said, *inter alia*, as follows in relation to the proposed Tyrone-Cavan Interconnector project:
 - i. *"The North/South interconnector is really where we have to go. We have to try to make sure that it is delivered as soon as possible for security of supply; to drive down prices for consumers in the current SEM and in the I-SEM; to deliver the EU demand for interconnection, which is important for our new market; and to ensure that Northern Ireland can benefit from the wind generation that we, and ROI, are putting on the system to reduce the wholesale costs of energy, which contribute between 60% and 70% of the bill." (page 249, at para 1324)*
 - ii. *"We have a short-term fix for a critical issue for all of us around the table and, indeed, for Northern Ireland. It is about making sure that we have a secure supply of electricity. We have done this as a short-term patch, but it is still a problem. We need to focus on making sure that the North/South interconnector happens, and we are very focused on that. We get regular updates from the System Operator. Our current timeline indicates that the Northern Ireland consents will be cleared by Q4 2016. Energisation may not happen until Q4 2019, so will we need this*

⁴ Now the Department for the Economy.

contract beyond the three years that we have contracted to? What is the situation if we do not get this up and running by 2021, when Kilroot is in danger of going out? We still have a real problem with security of supply. We need to focus on making sure that we get the right answer now and in the long term. This also feeds through to efficiency and the costs that consumers have to pay. It feeds through to the efficiency of the wholesale market. I really want to focus on trying to get that basic infrastructure of the North/South interconnector up and running". (at page 258, para 1436) [emphasis added]

DETI Corporate / Business Plan 2015 / 2016 – July 2015

- In July 2015, the Department of Enterprise, Trade and Investment compiled its 'Business Plan 2015 – 2016'. One of the key objectives included therein states as follows:

"Work with relevant stakeholders to deliver security of supply and investment in energy infrastructure." (page 17)

- Under the heading '2015/2016 Activities' reference is made to the proposed Tyrone – Interconnector project:

"Support delivery of grid development including the North/South Interconnector." (page 17)

Northern Ireland Assembly Question - AQT 3224/11-16 (Official Report (Hansard) Tuesday 1st December 2015, Volume 110, No 1)

- On 1st December 2015, energy costs were discussed in the Northern Ireland Assembly. In response to a question by Raymond McCartney MLA, the Minister of Enterprise, Trade and Investment stated, *inter alia*, as follows:

"The first thing that I have been doing — the Member will be aware of this — is pressing to get our North/South interconnector through its planning stages and fully operational. That is the first quick win because there is €20 million automatically there." (page 39)

Minister for Department of Enterprise, Trade and Investment – 9th December 2015

- The Enterprise, Trade and Investment Minister met with SONI on 9th December 2015. A press release from the Department of Enterprise, Trade and Investment states that the Minister said as follows:

"The requirement for this project is irrefutable as it is critical to long term security of supply for Northern Ireland. It can deliver savings on bills for consumers and will support the Executive's renewable targets but the importance of the project goes beyond these considerations. European energy policy is about harmonised and integrated trading across Member States markets. This is only possible with appropriate levels of interconnection."

The Minister added: "On 19 November the Commission set out its work programme commitments for 2016 in its 'State of the Energy Union 2015' paper. On infrastructure projects the Commission stated that in 2016 all actors need to step up their work to facilitate delivery."

“Turning specifically to those projects which it has designated as critical to European energy policy, ‘Projects of Common Interest’, it further stated that they require “urgent political push” with too many facing delay due to permitting and consenting procedures which are taking too long to be effective. Today I’m giving that push and I call on others to do so.”

“I understand and accept that there are concerns about large infrastructure projects and their possible impacts on communities. The appropriate environment for consideration of these issues is through the respective planning hearings and it is therefore imperative that dates are set for the planning hearings as soon as possible.”

DETI – ‘Energy in Northern Ireland 2016’ – 10th March 2016

- The Department of Enterprise, Trade and Investment published a paper on the 10th March 2016 entitled ‘Energy in Northern Ireland 2016’. In relation to the proposed Tyrone-Cavan Interconnector project, the paper notes (at page 33):

“The existing connections are proposed to be enhanced by a new North-South transmission connection (Tyrone-Cavan Interconnector) which should enable greater flexibility in the flows of electricity”.

Northern Ireland Assembly Question – AQT 3643/11-16 (Official Report (Hansard) Monday 14th March 2016 Volume 113, No 4)

- On 14th March 2016, the proposed Tyrone-Cavan Interconnector project was discussed in the Northern Ireland Assembly. Gordon Dunne, MLA, asked the Minister for Enterprise, Trade and Investment, “...for an update on the campaign to promote the North/South interconnector and to state how great a priority the interconnector is.” In response, the Minister, stated:

“It is a key priority. In fact, for Northern Ireland, failure is not an option on it. We need it, and we need it now... Over a period, you could be looking at a saving of somewhere in the region of £20 million. It is critical. I have been joined by many of the other bodies. I have said this wherever I have gone, from SONI to all the different bodies that I speak to in terms of energy: it is time that this issue was addressed. It is critical to our long-term security of supply, and it can deliver savings and do so quickly. For Members, including from my area, who are coming to me with very justifiable concerns regarding the costs of electricity for manufacturing, I refer them to the North/South interconnector as the key means of achieving savings and strengthening Northern Ireland’s long-term security of supply.” (page 27 – 28) [emphasis added]

Europe 2020: UK Reform Programme 2016 – 24th March 2016

- In March 2016 the UK Government published an updated version of the National Reform Programme for 2016 which states, *inter alia*, as follows:

“Additional interconnection is essential to support reform of the Single Electricity Market in Ireland to meet EU plans for an integrated European electricity market by 2017. This work is being led by the Northern Ireland Authority for Utility Regulation working with its counterpart in the Republic of Ireland.” (para 4.207)

Northern Ireland's Affairs Committee Inquiry into the Electricity Sector in Northern Ireland

- On the 27th April 2016 the Northern Ireland's Affairs Committee announced it would carry out an inquiry into Electricity Sector in Northern Ireland. In relation to the scope of the inquiry, the Committee stated that:

"Northern Ireland's electricity sector faces a number of challenges in the coming years. It has an ambitious target to achieve 40 per cent renewables by 2020, against a backdrop of reductions in the subsidies for onshore wind."

There are concerns regarding security of supply in the coming years because of constraints on the interconnectors with the GB and Republic of Ireland markets, and implementation of the EU Emissions Directive. And there are long-standing concerns over the cost of electricity, and the impact this has on both domestic and business consumers."

Responding to these challenges within the context of trying to make UK policy work in an all-island market places Northern Ireland in a unique position."

House of Commons Oral Answers to Questions - North/South Interconnector – 20th July 2016 (Hansard, 20th July 2016, Volume 613)

- On 20th July 2016, the North-South Interconnector was discussed in the House of Commons. MPs questioned the Secretary of State for Northern Ireland on the North South Interconnector.

David Simpson (Upper Bann) (DUP) asked the Secretary of State *"what discussions he has had with System Operator Northern Ireland on the completion of the north-south electricity interconnector."* The Secretary of State for Northern Ireland (James Brokenshire) answered, *inter alia*, as follows:

"I understand that the previous Minister, my hon. Friend the Member for Wyre and Preston North (Mr Wallace), met EirGrid, the electricity system operator across the island of Ireland, to discuss the proposals for a new interconnector. I hope that proposals to deliver a stronger, more secure and more competitive network in Northern Ireland can be progressed quickly."

- The Secretary of State also stated that *"given the significant potential to help reduce energy costs for Northern Ireland businesses"* he *"would hope to see the project move forward as quickly as possible."*

Northern Ireland Affairs Committee – Oral Evidence - 6th September 2016

- On 6th September 2016 the Northern Ireland Affairs Committee continued their inquiry into the electricity sector in Northern Ireland. The Committee received evidence from the Utility Regulator. In relation to the proposed Tyrone-Cavan Interconnector project, Jenny Pyper, on behalf of the Utility Regulator stated, *inter alia*, that:
 - "Interconnectors right across Europe are recognised as being valuable ways of allowing electricity to flow and giving access to bigger markets. That, again, creates downward pressure. It is important for the market. It is also important from a security of supply point of view."*

Northern Ireland Assembly – Committee for the Economy, visit to SONI HQ – 16th November 2016

- The Committee for the Economy visited SONI headquarters on the 16th November 2016. The following quotes were made by Utility Regulator Chief Executive Jenny Pyper in relation to the proposed Tyrone – Cavan Interconnector project:
 - i. *“Key function of the Utility Regulator to create a more effective and efficient market, so what we’ve been doing for the past couple of years is trying to improve the existing wholesale market. Make it more efficient. Make it more integrated so that it operates on the same basis as the GB market. And the GB market, which is known as BETA, the GB market is integrated and operates on the same basis as all the key markets elsewhere in Europe. That means that with interconnection, and GB’s interconnected to France and Belgium; we’re interconnected to Scotland; and Ireland is interconnected to Wales, that means with improved interconnection with markets all operating in broadly the same way you should get downward pressure on prices, you get efficient interconnector flows, you get a levelling of prices or an evening out of prices right across the market. So interconnection and integration of markets is a way of expanding the markets. So we’re moving from a position where Northern Ireland had its own little small market, to one where it had an all-island market, to one where we are moving towards a market of these islands, because we’re operating on the same basis as GB, which in turn is operating in an integrated fashion with the rest of Europe and that is seen as best practice and also the best way to get a more competitive, a more liquid, and a more efficient market.”*
 - ii. *“There is plenty of generating capacity on the island and I’m quite sure Robin will talk about this, but Northern Ireland can’t avail of all of that capacity because there are limits on the existing North South Interconnector in terms of how much electricity traffic it can take. We need that second North South Interconnector to get the electricity flowing around the island. If we don’t have it there is no means for new investors to see how they will sell their electricity into the wider market. They will only have the small market in Northern Ireland. That has only one consequence and that is to push up the cost of that electricity. The other consequence is that new generators knowing that we need that additional capacity in Northern Ireland because AES Kilroot, the coal fired power station, will have to close to meet European emissions requirements; it’ll have to close. We know we need new investment, but potential investors in that scenario if they haven’t got a route to the all-island market are much more likely to sit and wait to see whether or not government will offer a contract – something that will underpin their investment. The best example I can give you of that is Hinkley Point, where in GB the need for new, significant generating capacity in GB was such that government had to let a contract for new nuclear investment, and I’m simplifying slightly, but there is a government-underpinned investment in a Hinkley Point nuclear power station. And the cost of electricity coming out of Hinkley Point is estimated to be at least three times more expensive than other generators. And that’s because the market in GB wasn’t sending signals for new investment and government had to call for a contract and let a contract. Now, if our priority is about keeping electricity prices down for all consumers, then the best way to do that is to have an efficient market – the ISEM – and a route to market – the North South Interconnector. And because we have a timing pressure, we know that Kilroot will have to close in 2021, we know that we need a lead in time for a new power station to be built: the only option in terms of the North South Interconnector is the one that is in planning at the moment. It is the only one that has the potential to be there on time to facilitate that market. So from my perspective as the Regulator, that’s what I want to see. I want to see prices*

coming down, I want to see a more competitive market, and the best way to get that is the ISEM and the Interconnector. Those aren't our only choices, but all other options, all other choices will add cost; they will be less efficient; they will not represent good value for money in that sense and consumers in Northern Ireland will have to pay more. For me that would be a backwards step. That would be back to the post-privatisation scenario where the market is too small to sustain the investment on its own and it needs underpinned by government.

- iii. *"The best way to get the new investment is through the market"*
- iv. *"I think there are options and alternatives out there, there is nothing that comes even remotely close to being as efficient or as value for money as the ISEM and the Interconnector. Everything else is going to be of a significant magnitude more expensive."*
- v. *"...if we don't have the second North South Interconnector, any generating capacity in northern Ireland is going to be needed for Northern Ireland, and those export opportunities will not be there, or they will be very severely curtailed."*
- vi. *"Interconnection is the route to market: I just think of it like transport infrastructure, it's how you get your products to market and we want to be able to export, we want to be able to see new investment that can be exported along the Moyle, North South, across the East West interconnector – but we need the infrastructure there to facilitate it."*

Northern Ireland Affairs Committee – Oral Evidence – 7th December 2016

- The Minister for the Economy, Simon Hamilton MLA, gave oral evidence to the Northern Ireland Affairs Committee at the House of Commons on 7th December 2016 (Oral evidence: The electricity sector in Northern Ireland, HC 51, Questions 616 – 659). In relation to the Tyrone-Cavan interconnector, the Minister stated, *inter alia*, as follows:

"... Finally there is in terms of security of supply, which is the final leg of the trilemma. This in my mind is perhaps the most important issue. That is not to downgrade any of the others, but it is probably the most important issue in terms of the electricity sector in Northern Ireland. As things sit at this moment in time I have no concerns about security of supply up to 2020. Our conventional power stations are in place. The Moyle interconnector is back up to full speed with its 450 megawatts of capacity. There is also a reserve contract which SONI have in place with AES, which is worth about 250 megawatts. Yes, there is an issue with Kilroot and the coal power station there post-2020 potentially, but as things currently stand I have no concerns up to 2020. There is an issue potentially beyond 2020 if nothing is done.

If nothing happens, and I stress if, there are a few things working their way through the system like the north-south interconnector, which is a key piece of energy infrastructure. It makes the proposed integrated and single electricity market work. It sends a clear signal to investors in generation capacity.

I am working very closely with the Utility Regulator and with SONI, the system operator, to make sure that we secure our energy and electricity supply moving

forward. I am deliberately not being alarmist as some have sort to be around this issue. What I can say and what I will do is take whatever further actions are required to secure our electricity supply. There are a lot of options there, which are working their way through the system, and believe that if all of those materialise in the way that we hope that they will then there will not issues with security of supply post-2020.

Finally, the new draft programme for government had an indicator, which is that we want to have a secure, sustainable and cost efficient energy supply. That illustrates the Executive's commitment to having exactly that, and dealing as best we can with all those issues around affordability, maintaining stability and maintaining security of supply..." (Q616) [emphasis added]

- In response to a further question from the Chairman, the Minister stated, as follows:

"Obviously SONI is charged with taken forward the north-south interconnector. It is, as I have said already and repeatedly, perhaps the key piece of new energy infrastructure in Northern Ireland. I do view it very seriously. It is beneficial. As you know, Northern Ireland's electricity market is small and not as efficient as we would like it to be. We need a much more efficient market. We have had integration of that market to a degree with the Irish Republic for coming close to 10 years now.

The integrated single electricity market has been proposed to take that forward in a wider context, and to help us to better integrate with Great Britain as well. The interconnector is important to ensure security of supply. It also helps to make integrated single electricity market work. If you have the I-SEM and the interconnector in place then you send very clear signals to the market in terms of potential investment and new generation capacity, and you are already seeing that happen.

I am mindful of course that the interconnector has to go through a planning process. There is a hearing due. It is already running through its process in the Irish Republic, and the potential decision is imminent on their leg of it. The hearing is due in February in Northern Ireland through the Planning Appeals Commission. It obviously has to run through all of that, and anything I say in terms of support for it does not take way from the fact that it has to go through the proper process, but it is a key piece of energy infrastructure for all of the reasons that I have outlined. I do agree with SONI to the extent that it is critical for future security of supply." (Q617) [emphasis added]

- Lady Hermon asked the Minister if he accepted that the new north-south interconnector coming into play was absolutely critical for the Northern Ireland economy, and that nothing must be allowed to delay its introduction. In response to this question, the Minister said:

"I am sure you would agree with me that a piece of infrastructure of that scale and magnitude has to go through due process in terms of planning... I would not wish to say that anything absolutely has to happen. It has to go through its due process. I would say that it is an absolutely critical piece of energy infrastructure for the reasons that I outlined previously. It helps to make the integrated single electricity market work. It sends a clear signal to investors, which will then have a beneficial impact on generation capacity and therefore secure supply. This will also help to reduce cost within the market, and there are a range of different estimates as to what cost could be taken out as a result of the I-SEM and the interconnector.

As I was saying before, there is not a lot that I can personally do as a Minister or any Minister can do to reduce cost given the way that electricity prices are constructed. However, getting a much more efficient market is the best thing that we can do to keep a downward pressure on prices. Clearly, the interconnector is a key part of doing that." (Q631) [emphasis added]

Section B) European

Communication from the Commission to the European Parliament and the Council – ‘Achieving the 10% electricity interconnection target Making Europe's electricity grid fit for 2020’ - COM (2015) 82 final - 25th February 2015

- On 25th February 2015, the European Commission published its Communication on **‘Achieving the 10% electricity interconnection target Making Europe's electricity grid fit for 2020’**. The paper noted, *inter alia*, as follows:
 - i. *“An interconnected European energy grid is vital for Europe's energy security, for more competition on the internal market resulting in more competitive prices as well as for better achieving the decarbonisation and climate policy targets which the European Union has committed to. An interconnected grid will help deliver the ultimate goal of the Energy Union, i.e. to ensure affordable, secure and sustainable energy, and also growth and jobs across the EU.” (page 2)*
 - ii. *“There are missing interconnection links between several countries. Building these interconnections will require the mobilisation of all efforts at all levels, as a matter of urgency, to achieve the common objective of a fully functioning and connected internal energy market.” (page 2)*
 - iii. *“Electricity interconnections will increase Europe’s security of supply. They will improve the reliability of the electricity system, thus increase the quality of service and reduce power interruptions and productivity losses in the commercial and industrial sectors. Ambitious levels of electricity interconnection will help reduce Europe’s dependency, due to the optimisation of the system leading to a reduction of fuel imports, generating more opportunities for Europe in terms of investments, growth and jobs. In addition, interconnections facilitate instantaneous help between Transmission System Operators (TSO) providing greater cooperation and solidarity between them.” (page 3)*
 - iv. *“An interconnected grid allows for more affordable prices in the internal market, through more competition and greater efficiency, in addition to a better and more cost-effective use of available resources. Interconnections imply greater integration of the European Market, provide for a larger market size and higher competition levels, as well as higher market efficiency. The figure below shows that cross-border exchanges have increased markedly since the end of the 1990's, the start of the market opening process.” (page 3)*
 - v. *“A more integrated market through interconnections also reduces the need for investment in peak generation capacity and storage because the plants that each country has would not be needed at the same time. This would result in substantial economic and political benefits in Member States due to reduced capital investments as well as to the reduction of the environmental impact due to*

- the plants that would not be necessary to be built. Increasing the exchanges of the system balancing services also reduces the system short term operation costs. Lower generation costs and/or lower investments in generation and avoided fuel costs through the interconnection of electricity grids translate into more competitive electricity prices to businesses and households. An adequately interconnected European energy grid brings the benefits of the market closer to European citizens, as consumers could save EUR 12-40 billion annually by 2030.” (page 3)*
- vi. *“A well interconnected grid is crucial for sustainable development and decarbonising the energy mix as it enables the grid to accommodate increasing levels of variable renewables in a more secure and cost-efficient way. Relying on renewable sources for a greater part of the generation mix contributes to meeting the EU climate goals, by reducing CO2 emissions, and moreover increasing security of supply. Higher interconnections are also essential to meet the EU ambition to be world leader in renewable energy, which is not only a matter of a responsible climate change policy but also an industrial policy imperative. Europe's renewable energy and technology firms have emerged as major industrial players employing around 1.2 million people in 2012, creating stable jobs at regional and local level as well as sustainable growth.” (page 4)*
- vii. *“In sum, more interconnections will contribute to more affordable electricity prices in the long term due to the higher market efficiency, higher electricity supply security, reliability and quality, which are essential for social and economic activities, while ensuring a high standard of environmental protection. These developments will also help reduce our energy dependency, due to the reduction in the consumption of imported fuels and facilitate new investments in Europe due to the more competitive prices of electricity and the improvement in the competition levels of the European industries. More electricity interconnections will also lower environmental impact due to the non-built power plants and the reduction of CO2 emissions and will increase the capacity of integrating renewable energy, unleashing a higher potential of growth for the European renewable energy industry and ensuring world leadership of the European renewable industry and, therefore, higher job creation capacity of this industry in Europe with a net job creation in Europe.” (page 4)*
- viii. *“For these reasons, the interconnection of the electricity markets must be a political priority for the European Union at all levels in the years to come.” (page 4)*
- ix. Interconnection levels for electricity in 2014 are included within a table on page 5 of the paper. Member States below 10% interconnection include: IE - 9% and UK - 6%..
- x. *“As underlined by the European Council, the interconnection target should mainly be reached through implementation of the Projects of Common Interest.” (page 6)*
- xi. *“Thanks to PCIs in the United Kingdom, comprising internal lines and ensuring interconnections with Belgium, France, Ireland and Norway, the United Kingdom would reach the 10% target and its interconnections would be less congested.” (page 8)*
- xii. *“Ireland could also substantially increase its interconnection capacity thanks to the several PCIs included in the first list. Ireland's interconnection level was 3%*

in 2011; it increased to 7% in 2013 thanks to an EEPR funded project connecting Ireland with the United Kingdom, and its interconnectivity would even exceed 15% in 2020 when the planned PCIs connecting further with the United Kingdom (Northern Ireland and Great Britain) and possibly France would be constructed.” (page 9)

- xiii. *“The European Union needs to bring its electricity interconnection level to 10% by 2020 on its way to create a resilient Energy Union with a forward looking climate policy. It is clear that Europe needs to redouble its efforts to respond to the energy and climate policy challenges.” (page 15)*

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions ‘Launching the public consultation process on a new energy market design’ COM(2015) 340 final – 15th July 2015

- The European Commission published its communication on ‘Launching the public consultation process on a new energy market design’ on 15th July 2015. Within this paper it states, *inter alia*, as follows:

“1. A VISION FOR THE TRANSITION OF THE ELECTRICITY SYSTEM...

- i. *... A fully functioning European market should allow electricity to move freely to where it is most needed, wanted and valued, reap maximum benefits from cross-border competition and provide the right signals and incentives to drive the right investments. Further, it should ensure that electricity is only dispatched based on market signals. Today, this is not always the case. While market coupling where it is applied has resulted in an increasing correlation between wholesale prices, absolute price levels, even in adjacent markets differ significantly and price spreads are not shrinking. Further efforts are also needed to ensure that sufficient interconnection between the grids become a reality and to promote long-term stability for investments in the energy sector as a whole.” (page 3)*
- ii. ***“2.1.3. Infrastructure for a functioning market***
A well interconnected European energy grid is vital for Europe's energy security, for more competition in the internal market resulting in more competitive prices and for providing the right signals to drive investments towards the decarbonisation energy and climate policy targets to which the European Union has committed. Completing the infrastructure links still missing for a truly integrated internal market, and enabling the necessary investment for this to come forward, is therefore one of the key priorities in implementing the Energy Union strategy. The projects of common interest (PCIs) are the principal instrument to physically integrate the national electricity markets and to diversify their energy sources. Many of the proposed infrastructure links will play a key role in coping with the variability of renewables sources between countries like Norway and the United Kingdom, France and Spain, or Norway, the Netherlands and Germany. The European Fund for Strategic Investment, complementing the existing funding available from the Connecting Europe Facility, would also support energy projects, including energy infrastructure. In addition, the European Investment

Advisory Hub will provide expertise and technical assistance to public and private promoters to design and structure financially good investment projects.” (page 6)

iii. *“3.2. Improving interconnections*

Given the clear benefits of better interconnection, the Commission, as part of the Energy Union package, presented a detailed strategy how to bridge the gap to the 10% interconnection target and intends to come forward in 2016 with a communication on how to fulfil the further reaching objective of an interconnection level of 15% as called for by the European Council.

Interconnection capacity between several countries is still fairly low and insufficient for the expected power flows. The projects of common interest introduced by the Regulation on guidelines for trans-European energy infrastructure are fundamental to physically integrating the national electricity markets and to diversify their energy sources...

Managing the system and identifying where new interconnections are needed requires that transmission system operators can rely on the price formation on spot and wholesale markets. Currently, income from congestion charges – revenues stemming from transporting electricity from low-price areas to areas where prices are higher – is often substantial but rarely used for building or reinforcing interconnections. This should change and these funds could be put to effective use in building Europe's electricity system.” (page 10 - 11)

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank - ‘State of the Energy Union 2015’ – COM (2015) 572 final – 18th November 2015

- On 18th November 2015, the European Commission published its communication on the ‘State of the Energy Union 2015’. This paper states that this first State of the Energy Union looks at progress over the last nine months (since the European Commission’s Framework Strategy for a Resilient Energy Union with a Forward Looking Climate Change Policy (COM(2015)80)) and identifies issues that require specific political attention in 2016, a key year for the implementation of the Energy Union.
- The Communication (at page 6) considers the progress made towards achieving a fully-integrated internal energy market. It states (at page 7), *inter alia*, that “A fully integrated internal energy market should first and foremost bring tangible benefits to consumers.”
- Under the heading “Way Forward”, it states that “Projects of Common Interest (PCIs need an urgent political push.” (page 7)
- “The second list of Projects of Common Interest, adopted alongside this Communication, sets out those projects that are urgently needed to achieve our energy policy goals.” (page 8) [emphasis added]

- Policy conclusions at Member State, regional and EU levels include, *inter alia*, as follows (page 9 – 10):
 - i. *“With regard to electricity infrastructure, 22 Member States are on track to reach or have already reached the 10% electricity interconnection capacity target for 2020. The eight Member States currently remaining below the 2020 interconnection target are Cyprus, Ireland, Italy, Poland, Portugal, Romania, Spain and the United Kingdom.”*[emphasis added]
 - ii. *“Interconnections are still needed to further deepen the internal electricity market (e.g. in South Western Europe) as well as between several Member States in Northern and Eastern Europe (e.g. Germany, Poland and the Czech Republic), or further connecting Member States (Ireland and the United Kingdom) with the rest of North Western Europe.”* (page 9) [emphasis added]

Commission Staff Working Document - Country Factsheet United Kingdom - Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank - State of the Energy Union – SWD(2015) 242 final – 18th November 2015

- In this paper, under the heading ‘A fully-integrated internal energy market’, it states (at page 3 - 4), *inter alia*, as follows:

“INTERCONNECTIONS

The level of electricity interconnection was 6% in 2014 for the UK which, although low by EU standards, reflects the particular challenges facing island markets. As a consequence of this level of interconnection and the structural price difference with the continent, the existing interconnections are highly congested. To address this, a number of electricity infrastructure Projects of Common Interest (PCIs) involving the UK were selected, which will improve interconnection with Belgium, France, Ireland and Norway. If all are implemented according to schedule, they will allow the UK to achieve the 10% interconnection target for 2020. Further efforts would be needed to achieve the 2030 target of 15%; however the need for this objective will be established on a case-by case basis and considered alongside costs and the potential for commercial exchanges.”[emphasis added]

European Parliament resolution of 15 December 2015 on Towards a European Energy Union (2015/2113(INI))

- On 15th December 2015 the European Parliament adopted a resolution ‘Towards the Energy Union’. Under the heading ‘A fully integrated European energy market’ the papers states, *inter alia*, that the European Parliament:
 - i. *“Believes that the future Energy Union must establish a free flow of energy across EU and Energy Community countries;”* (para 47)
 - ii. *“Stresses that the backbone of the future Energy Union must be a fully functioning, interconnected internal energy market that delivers safe, secure, fairly distributed, socially and environmentally responsible, efficient, competitive, affordable and sustainable energy over fully functioning, secure and resilient transmission grids as well as energy demand reduction, in order to enable EU companies and consumers to access gas, electricity, and heating and cooling in the most sustainable, efficient, democratic and cost-effective way possible; considers, therefore, that the further expansion of existing market areas should be pursued; considers it fundamental to favour the integration of prosumers in the EU market and network; highlights the substantial deficiencies experienced within*

rural communities across the EU as a result of poor energy connectivity;” (para 48)

- iii. *“Recognises that there is currently no single market for energy in Europe, and that the resulting fragmentation within the EU’s energy markets is deeply harmful to Europe’s competitiveness and energy security;” (para 49)*
- iv. *“Welcomes its resolution of 15 December 2015 on achieving the 10 % electricity interconnection target – Making Europe’s electricity grid fit for 2020;” (para 62)*
- v. *“Reiterates its commitment to achieve the 10 % interconnectivity target in order to complete the Internal Energy Market in EU, and welcomes the European Council’s proposal for a minimum level of electricity interconnection between Member States of 15 % by 2030; acknowledges the importance of achieving a quantitative target of interconnectivity by ensuring the availability of existing national and cross-border infrastructure in order to ensure effective use of European energy sources and increased security of supply;” (para 63)*
- vi. *“Believes that all EU consumers should benefit in equal measure from a single gas and electricity market; underlines, in this sense, that the current price differentials between national markets resulting from the lack of market integration and interconnections must no longer be tolerated; urges the Commission to quickly propose measures to achieve greater price convergence and market integration across the Union;” (para 87)*

European Parliament resolution of 15 December 2015 on achieving the 10 % electricity interconnection target – Making Europe’s electricity grid fit for 2020 (2015/2108(INI))

- In this document, under the heading ‘Benefits for Interconnection’, it states, *inter alia*, that the European Parliament:
 - i. *“Recognises that electricity interconnection is one of the key preconditions for completing an integrated internal electricity market, which, if well designed, will help to achieve our climate objectives, including the EU’s aim to be the leader in renewables, and improve the EU’s geopolitical position through greater energy security and independence, as well as reduce energy isolation and the possibility of perturbations in the energy system; stresses that the electricity interconnectors also need to be addressed, planned and constructed through strong, coordinated regional cooperation that respects the competences of national authorities to determine the energy mix while respecting the EU’s long-term climate and energy goals...” (para 3)*
 - ii. *“Stresses that a fully integrated internal electricity market would facilitate the electricity trading and balancing services, and increase security and lower the volatility of electricity prices to the benefit of citizens and the competitiveness of Europe’s industry and business in a global economy, as it is estimated that EUR 12-40 billion could be saved annually by European consumers by 2030...” (para 6)*

Appendix B: Sample of 380/400kV interconnector projects from Ten Year Network Development Plan (2016)

Sample of 380/400kV interconnector projects from TYNDP 2016

TYNPD Border⁵	From	To	Technology	Length	Total increase in GTC (MW)⁶	Increase in GTC contribution %	Increase in GTC (MW)⁷	Nominal Rating of circuit⁸	GTC increase /Rating %
Austria – Germany (47)	Isar (DE)	St. Peter (AT)	380kV HVAC OHL	110 km	2,900	75-85%	2,320	4,100	57%
	St. Peter (AT)	Tauern (AT)	380kV HVAC OHL	174 km		55-75%	1,885	4,800	39%
Austria – Italy (26)	Lienz (AT)	Veneto region (IT)	400kV HVAC OHL	150 km	1,100	70-80%	825	1,500	55%
	Obersielach (AT)	Lienz (AT)	380kV HVAC OHL	190 km		20-30%	275	3,000	9%
Denmark – Germany (183)	Endrup (DK)	Niebull (DE)	380kV HVAC OHL	280 km	500	100%	500	3,000	17%
Germany – Netherlands (113)	Niederrhein (DE)	Doetinchem (NL)	380kV HVAC D/C OHL	60 km	1,500 – 1,800	100%	1,650	4,720	35%
Croatia – Hungary – Slovenia (141)	Cirkovce (SI)	Heviz (HU) Zeriavenec (HR)	400kV HVAC D/C OHL	80km	1,650	100%	1,650	2,660	62%

⁵ Project number in brackets⁶ Max directional capacity used where not bi-directional, highest figures from 2020 / 2030⁷ Midpoint where a range is given⁸ Obtained from PCI website <https://ec.europa.eu/energy/en/topics/infrastructure/projects-common-interest>