ANALYSIS OF INTERCONNECTOR PROJECTS LISTED IN DOCUMENT ENTITLED: "ELECLINK: SHEDDING SOME LIGHT ON A KEY EUROPEAN PROJECT" (DECEMBER 2019) LINK AND ADDITIONAL PROJECTS LISTED AS PROJECT NUMBERS 15-17 IN THE TABLE BELOW AND ALSO INCLUDING THE THORPE MARSH GAS PIPELINE AS PROJECT NUMBER 20

Note to reader: some of the links built into this Appendix 20 may only open using "Chrome" Browser.

PROJECT NO.	PROJECT INFO	NSIP? (Yes / No)	NATIONAL ORDER: E.G. DCO / SI / OTHER	PLANNING PERMISSION RELATING TO CABLES?	CABLE-TYPE	WHETHER, & PURPOSE OF, TELECOMMUNICATIONS	NOTES & RESTRICTIONS ON PURPOSE/USE
1.	IFA RTE (French Developer) National Grid (GB Developer)	No	No. IFA constructed in 1980s.	Not found.	HVDC. 2 sets of 2 cables	No technical information identified relating to telecommunications.	Cable laid in 1986. Charging Methodology for IFA and IFA 2 Interconnectors (1 Dec 2019) makes no mention commercial telecoms sales. See p.8 of Link.
2.	<u>Moyle</u> Mutual Energy (UK)	No	No	Outline planning permission for convertor stations (1998) Reserved matters approval (2000)	HVDC / Fibre Optic	Article indicates "a fibre optics cable and communications has been integrated into the cables." No technical information identified relating to telecommunications.	
3.	Brit Ned TenneT (Dutch Developer) National Grid (GB Developer)	No	No	Not found.	HVDC	No technical information identified relating to telecommunications.	
4.	EWIC EirGrid Interconnector Limited (EIL) part of the EirGrid Group (Irish Developer) UK is the other relevant jurisdiction. Completed in 2012.	No	No	Plintshire County Council Decision Notice not found. Link to status of planning in Quarter 4 of 2009. Planning Permission was granted in 2009. An Board Pleanala (Irish equivalent to PINS) Granted permission for location and construction of a converter station on 14 Sep 2009 following application by Fingal County Council and Meath County Council. Ref: PL17.VA0002. Link to Order itself and link to website (showing all docs).	HVDC & Fibre Optic	See East West Interconnector Revenue Requirement Public Information Note dated 7 September 2012: Link. Revenue appears generated from commercial fibre optic 'hosting'. See pages. 3, "less revenue from received from other revenue streams such as ancillary services", 8 "income from hosting fee from fibre optics laid on top of the EWIC", 27, para 9 – "the operational costs of the fibre optic business is a matter for EirGrid and is not recovered through TUoS or under this submission. However, the fibre optic business is utilising the regulated asset." Para 9.1. Note: TUoS stands for "Transmission Use of System". See Add Board Pleanala - Strategic Infrastructure Development Order (Link to Order).	GB through the interconnector. Traders can buy into supplies. Irish Order terms indicate the purpose of the fibre is "primarily" to control operation of the interconnector (see links in Planning Permission column).

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						"PROPOSED DEVELOPMENTthird duct containing a fibre optic cable primarily to control the operation of the interconnector."	
5.	NEMO National Grid (GB Developer) Elia (Belgian Developer)	No	No	Thanet District Council F/TH/13/0760 R/TH/16/0128 - Link Dover District Council DOV/13/00759 Link	HVDC / HVAC / Fibre Optic	ES Update Reserved Matters for R/TH/16/0128 at para 1.4 – "National Grid Nemo Link Limited obtain consent on 19 th December 2013 for a hybrid proposal comprising HDVC, HVAC and fibre optic cables – all matters provided." Ofgem Con report indicates fibre optic cables "exclusively for the operation of the interconnector" – para 10.1 Link.	
6.	ElecLink ElecLink (Wholly owned subsidiary of GetLink company which owns the Channel Tunnel) EU Project of Common Interest	No	No	Shepway District Council now known as Folkestone & Hythe District Council granted Planning Permission for Converter Station alone: Link. Planning Permission for Cable Route Statutory undertakers Elec Link granted permitted development rights for cable route from National Grid to converter. And see notes re Wayleave. See Planning Section of Elec Link info sheet - p. 5&6. Link.	HVDC	No technical information identified relating to telecommunications.	Wayleave From Converter Station to France, Elec Link entered into Wayleave Agreement with Eurotunnel. No express terms permit use of fibre optic cables for commercial telecommunications.
7.	IFA2 RTE (French Developer) National Grid (GB Developer)	No	No	Fareham Borough Council: Outline Planning Permission – P16/055/OA – granted 23 Jan 2017. Reserved Matters ("RM") – P/17/0835/RM – detailed designs of IFA2 converter. RM – P/17/0834/RM – area of public open space around converter.	Polyethylene (XLPE) or Mass Impregnated Non Draining (MIND) HVDC cables or XLPE HVAC cables.	HRA refers to Fibre Optic installation 1.4.12 & 1.4.13 (p.88 of PDF).	Decision Notices relevant to the specification of the cable are not identifiable on Fareham BC's website. Approved planning conditions not relate to fibre optic cables. See: P/16/0557/DP/A - Condition 10: Scheme of external lighting to the converter station - Condition 11: Audible and Noise Assessment

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				FPP – P/16/0557/DP/A granted 25 Sep 2017 subject to conditions (see notes). FPP – P/16/0557/DP/B granted 25 Sept 2017 subject to conditions (see notes).			 Condition 12: Audible and Noise Assessment Condition 14: Radio and Telecoms Interference and Electro Magnetic Fields from the Converter Station plan Condition 22: Construction Traffic Management Plan P/16/0557/DP/B Condition 9a and 9b Converter Station Drainage Condition 28a and 28b TV and Radio Reception HRA refers to Fibre Optic cable but unable to find any indication it's used for commercial purposes (see link in Telecommunications column).
8.	NSL Statnett (Norwegian Developer) National Grid North Sea Limited (UK Developer)	No	CPO authorised by Secretary of State: "The National Grid North Sea Link Limited (East Sleekburn) Compulsory Purchase Order 2016".	All docs consolidated on to one page with links: https://northsealink.com/en/documents/ Northumberland County Council: Non Material Amendments approval - 16/01588/NONMAT 13/03524/OUTES	HVDC subsea and onshore. HVAC underground from converter to Gas Insulated Switchgear (GIS).	in association with each marine cable for	No express terms in Orders permitting use of fibre optic cabling for commercial telecommunications purposes (nor description of same in ES (see link to ES in Telecommunications column). CPO Link CPO terms: Para 3(a) gives "the acquiring authority" rights "necessary to construct and place new electricity interconnector infrastructure" Para 3(h) gives the same authority the right to carry out any "activities ancillary or incidental thereto".
9.	Greenlink Greenlink Interconnector Limited (Irish Developer) UK is the other jurisdiction we are concerned with.	No	CPO authorised by Secretary of State: "Greenlink Interconnector Limited (Greenlink, Pembroke) Compulsory Purchase Order 2020."	Pembrokeshire County Council Outline Planning Permission – Ref: 20/0041/PA: Link. Planning Permission - Ref: 20/0044/PA - Link – for fibre optic cables.	HVDC, HVAC and Fibre Optic	p.5 - Para 1.2.3 of ES – ""The ES, to which this NTS relates covers the Welsh Onshore components of Greenlink to the connection with the National Grid substation, located within the Pembroke Power Station in Pembrokeshire.	fibre optic cabling for commercial telecommunications purposes (nor description of same in ES (see link to ES in Telecommunications column). CPO terms:

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						See para 2 on p10 of ES re Fibre Optic Cables "for control and communication purposes, laid underground with the HVDC and HVAC cables" Design Access Statement DAS Link see p.55&56 particularly para 4.5.39 – "the fibre optic cable system would be used for the following applications: • Communications and control; and • Monitoring temperatures of the cable system along the route"	construction, use and maintenance of an electricity interconnector comprising underground cables, converter station and associated development to facilitate the transfer of electrical power between the UK and the ROI." S3 – "new rights authorised to be purchased compulsorily are described in the Schedule" The Schedule defines "Electricity Interconnector Infrastructure" as including "fibre optic cables and other communication cables and other underground or over ground works associated with or ancillary to such cables" Para 1 of the Schedule gives the right to use the Electricity Interconnector Infrastructure Para 9 of the Schedule gives the right to carry out "any activities ancillary or incidental hereto"
10.	FABLink RTE (French Developer) FAB Link Limited (UK Developer) EU Project of Common Interest Construction due to begin 2021.	No	CPO authorised by Secretary of State: has been made – <u>Link</u> .	East Devon District Council An application for a Certificate of Lawful Development for a proposed use or development was made under S192 of TCPA 1990 (as amended), Town and Country Planning (Development Management Procedure)(England) Order 2015. No mention of Fibre Optic / Telecommunication on CLEUD application.	XLPE or MIND plus Fibre Optic Cables	UK cable route environmental risk assessment report Link 2-9 & 2-10 para 2.31 - "Fibre Optic cables will also be laid for control signalling purposes associated with the operation of the interconnector." A website link provides information at: https://www.fablink.net/faq/ See question: "What are the benefits of the FAB Link Project for Alderney": "The electricity cables also utilise fibre optic cables for the control systems of the FAB Link Project – there will be significant spare capacity in the system which will be made available to the operators on the Island by ARE. This will provide existing and future generations with the opportunity to access significantly improved infrastructure necessary to attract e-commerce	

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						business in accordance with the aims of the Land Use Plan".	FABLink website in Telecommunications column).
11.	NeuConnect NeuConnect (German Developer) UK is the other jurisdiction we are concerned with.	No	No	Medway Council Link to application docs MC/19/3015. Planning application submitted 14 Nov 2019 (undetermined).	Offshore with be x 2 HVDC plus <u>Fibre</u> Optic Cables		Fibre optics will be laid but not for commercial telecoms purposes (see link to Public Information Leaflet and ES in Telecommunications column).
12.	NorthConnect JV between 4 publicly owned Scandinavian Companies. Jurisdictions we are concerned with are UK and Norway.	No	No	Aberdeenshire Council Full Planning Permission relating to landing of cables – APP/2018/1831 (no mention of fibre optic cables). Planning Permission relating to Converter Station and HVAC cable connecting to Peterhead Power station APP/2015/1121 & substation ENG/2014/2818. Marine Scotland Link to decision notice for marine licence where para 1.3 refers to fibre optic cable.	X 2 HVDC plus a fibre optic cable	Link Para 2.4.1 – "A fibre optic cable will be installed along with two HVDC cables, so there can be instant communication between the two converter stations in Scotland and Norway The fibre optic cable will connect into the wider Norwegian fibre optic network". Environment Impact Report Link P24-4, Chapter 24: Resource Usage and Waste. Repeats the cable is for communication between converter stations.	
13.	Atlantic Super Connection Relevant jurisdictions are Iceland and UK.	No	No	Not found/no.	HVDC	No technical information identified relating to telecommunications.	Atlantic Super Connection is currently undertaking an assessment of the ports in the NE of England to find the best potential sites for the facility. Appears the project remaining an intention. Technical information not identified.
14.	IceLink Relevant jurisdictions are Iceland and UK.	No	No	No. Still at feasibility stage.	HVDC.	No technical information identified relating to telecommunications.	Appears the project remaining an intention. Technical information not identified.

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15.	Nautilus Relevant jurisdictions are Belgium and UK.	Yes – pre app stage	No. (Pre app stage. Application for DCO expected 2022).	No.	HVDC / HVAC	Preliminary Environmental Information Report not published. Environmental Statement to be published.	Technical information not identified.
16.	COBRA TenneT (Dutch Developer) Energinet.dk (Danish Developer) EU Project of Common Interest Operational since 2019.	N/A	N/A	Rasmus Helveg Petersen, Danish Minister for Climate Energy and Building approved plans for the cable in 2014 Link.	HVDC / HVAC / Fibre	According to Energinet, "In addition to power transmission, the submarine cable also provides a brand new low latency and high capacity connection for data traffic between the Nordics and Western Europe" "The cable has been primarily installed to control the interconnection with Danish company, Energinet, and Dutch company, Relined Fiver Network, being responsible for leasing out the extra capacity for commercial purposes." "Norwegian infrastructure company Tampnet, which owns and operates the world's largest offshore high capacity communication optical fibre network, is the first company to make use of this new connection." 7 November 2019 Link "In order to exchange the necessary data information about the COBRAcable, a fibre-optic data link will be installed alongside the interconnector itself. The purpose of this data cable is to facilitate communications between the two converter stations in the Netherlands and Denmark. It can also be used for a number of technical purposes, such as possible failure location and possible vessel identification (in case of damage to the cable) and registering the temperature of the COBRAcable. In future, this fibre-optic link can also be used to connect offshore wind farms to the telecommunications network. The data cable's remaining capacity will be made available to the market."	Technical information not identified. Energinet's Website describes that the excess capacity in the fibre optic cable is being used by commercial customers (see links in Telecommunications column).
17.	Celtic Interconnector	N/A	N/A	No.	HVDC / Fibre	Project Website – "The Celtic Interconnector will bring many benefits for France, Ireland and the EU if built. It will:	Project remains an intention.

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	EIRGRID – Irish Developer (State Owned) Reseu de Transport (RTE) – French Developer			Planning process intended to begin at the end of 2020.		Allow 700MW (megawatts) of electricity to move between the countries Provide a direct telecommunications fibre optic link between Ireland and France" Cable Brochure , diagrams on p6 show "Communication Cable Ducts"	Developer appears to be currently deciding where the Interconnector should be built. Planning process intended to begin at the end of 2020 and continue until 2022. Project Website indicates the interconnector will also provide telecoms (see link in Telecommunications column).
18.	Viking Energinet (Danish Developer) National Grid (GB Developer) Project of Common Interest	No	CPO authorised by Secretary of State: "National Grid Viking Link Limited (Viking Link Interconnector) Compulsory) Purchase Order 2019. Link to Order.	Yes. (1) Boston Borough Council (Ref: B/17/0340) Link (2) North Keveston DC (Ref: 17/1200/FUL) Link — permits "installation of fibre-optic cable(s) with the high voltage AC and DC cables" (3) Holland DC (Ref: H04-0823-17) - Link — permits "installation of fibre-optic cable(s) with the high voltage AC and DC cables" (4) East Lydney DC Planning Appeal Decision (Ref: APP/D2510/W/18/3208088) - Link — appeal allowed and development permitted for work including "the installation of fibre-optic cables with DC cables"	HVDC / HVAC / Fibre	UK Onshore ES Link P.3 para 1.3.1 — "installation of fibre-optic cable(s) with high voltage AC and DC cables for the purpose of monitoring cable performance." P.7 para 2.3.2 — "from TJP up to three fibre optic cables (two for monitoring the performance of the DC cables and one for communications between the proposed converter stations in Great Britain and Denmark" P.44 para 2.4.14 — "two trenches within which AC and fibre optic cables will be installed."	Fibre optic cables will be laid but not for commercial telecoms purposes (see links to Planning Permissions (2) – (4) and the ES). S.1 of the CPO terms entitle: "carrying on the activities authorised by its licence under the 1989 Act, and more particularly for the purpose of a high voltage direct current electrical interconnector, including a converter station at North Ing Drove, and a high voltage alternating current connection to the National Grid Electricity Transmission Plc substation at Bicker Fen, and associated works, to facilitate the transfer of electrical power between the United Kingdom and Denmark."
19.	GridLink Gridlink Interconnector Ltd (UK) France is the other relevant jurisdiction. Project of Common Interest	No	No	No. Non-Technical Summary of Environmental Statement refers to applications for Development Consents, para 1.4 (p.4) Link. Development Consent applications were to be submitted in October 2020. Applications appear not submitted as at November 2020. Article written 8 September 2020 suggests application for planning permission will be made to Medway Council (instead of for a DCO). Link.	HDVC / HVAC / Fibre	Non-Technical Summary – p.18 Link "A smaller fibre-optic cable will be included with the bundled HVDC cables for monitoring and control purposes". Marine Environment Appraisal Link p.8 para 2.4 "A smaller fibre-optic cable will be included with the bundled HVDC cables for monitoring and control purposes". Gridlink Website – Subsea and Onshore HVDC Cable Design Link – "A smaller fibre-optic cable will be included with the bundled HVDC cables for monitoring and control purposes."	fibre optic cables will be laid but not for

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						Onshore HVAC Cable Design – Drawing shows fibre optic cable - Link. No onshore available ES yet published.	
20	Thorpe Marsh Gas Pipeline Order 2016 (SI 2016, No. 297) Undertaker: Thorpe Marsh Power Limited (UK Developer)	Yes	DCO - Link		Gas pipe-line and above ground Telecommunication	"authorised Development" means the development and associated development described in Part 1 of Schedule 1 (authorised development) and any other development authorised by this Order, which is development within the meaning of section 32 of the 2008 Act;" A.3: "Subject to the provisions of this Order and to the Requirements in Part 2 of Schedule 1, the undertaker is granted development consent for the authorised development in Part 1 of Schedule 1 to be carried out within the Order limits, and Schedule 1 has effect for that purpose." Schedule 1: "The authorised development is a nationally significant infrastructure project as defined in sections 14 and 21 of the 2008 Act comprising the construction of an up to 24 inch (609.6 millimetre) external diameter cross-country gas pipeline (to be known as the Thorpe Marsh Gas Pipeline) for the conveyance of gas and covering a distance of approximately 19.1 kilometres starting from the National Transmission System approximately 1.5 kilometres west of Camblesforth in the District of Selby in the County of North Yorkshire and ending at the proposed Thorpe Marsh Power Station to be constructed at Barnby Dun in the Metropolitan Borough of Doncaster. It includes the laying, placing, use, inspection, maintenance and diversion of the Thorpe Marsh Gas Pipeline and	A.2(1) defines: "undertaker" means Thorpe Marsh Power Limited (company registration number 06637894); A.4: The undertaker may at any time operate and use the authorised development except to the extent that this Order or an agreement made under this Order provides otherwise. Telecommunications "for" monitoring purposes in Schedule 1 and not expressly used as "commercial" nor as a source of income (see link to Associated Development Report). No compulsory acquisition powers "for commercial" telecommunications". "Commercial" appears in A.19(1) and in Schedule 9, Part 1, paragraph 10(6) and not otherwise.

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						the works numbered and described below – Work No. 5 – A permanent secure compound housing equipment for the monitoring and control of gas (comprising an approximate area of 522 square metres and all with a maximum height of 3.2 metres except Work No. 5(j) with a maximum height of 4.0 metres) as shown indicatively on the AGI plan to be sited within the AGI site	
						Work No. 7 – Facilities for the benefit of Work No. 5 and Work No. 6 including access roadway, car parking and hard standing, perimeter landscaping and the planting of trees and shrubs, mains power and telecommunication cables (suspended from a wooden pole with a maximum height of 6.0 metres), freestanding electrical meter cabinet and transformer unit serving Work No. 5 and Work No. 6;	
						Work No. 9 – A high pressure gas pipeline up to 24 inches (609.6 millimetres) in external diameter laid underground in a generally southerly direction from Work No. 7 and Work No. 8 to Work No. 10;	
						Associated Development Report – Thorpe Marsh Gas Pipeline November 2017 - Link – p. 2	
						"(iii) Development should not be treated as associated development if it is only necessary as a source of additional revenue for the applicant, in order to cross-subside the cost of the principal development.	
						2.4 None of the associated development generates income, nor does it assist in funding the development."	
						Associated Development Work Number 7 – p.4	
						"Facilities for the benefit of Work No. 5 and Work No. 6 including access roadway, car parking and hard standing, perimeter landscaping and the planting of trees and shrubs, mains power and telecommunication cables (suspended from wooden poles with a maximum height of 6.0 metres), freestanding electrical meter cabinet	

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						and transformer unit service Work No.5 and Work No.6."	
						Justification:	
						"These permanent works are essential to the	
						<u>functioning</u> of the principal development as	
						component parts of the AGI. They are <u>not</u> ,	
						however, integral to the pipeline."	