

Sofia Offshore Wind Farm

Supply Chain Plan

Supporting Annexes

Table of contents

Annex A End notes.....	43
Annex B Guidance for readers and structure of statements.....	46
Annex C List of supply chain plan sub-criteria and identifiers	48
Annex D Summary of statements made in relation to BEIS criteria.....	50
Annex E List of evidence	52
Annex F Evidence documents.....	58
Annex G Triton Knoll interim Post Build Report.....	59

Annex A End notes

7.1 The end notes in Annex A provide references to online evidence sources used to support statements made within the supply chain plan and detail exchange rate assumptions used to convert expenditure figures into pounds sterling.

ⁱ <https://renews.biz/112261/granada-maintains-galloper-role/>

ⁱⁱ <https://www.gmh.co.uk/smolders-award-major-contract-to-granada-for-triton-knoll-offshore-wind-farm/>

ⁱⁱⁱ <http://www.jdrcables.com/case-studies/greater-gabbard-offshore-windfarm/>

^{iv} <http://www.mhivestasoffshore.com/mhi-vestas-launches-major-recruiting-effort-at-isle-of-wight/>

^v <https://www.innogy.com/web/cms/en/3904704/innogy-renewables-uk/sites/wind-offshore/supply-chain-registration/>

^{vi} <http://www.galloperwindfarm.com/working-with-us/>

^{vii} <http://tritonknoll.drivebysolutions.com/supply-chain/registration-of-interested-businesses/>

^{viii} <https://renews.biz/48697/innogy-portal-opens-sofia-supplier-doors/>

^{ix} http://www.tritonknoll.co.uk/wp-content/uploads/2016/10/TK_CHAINSUPPLY_A4_OCT2016_LOWRES.pdf

^x <https://www.businessupnorth.co.uk/innogy-announced-as-platinum-sponsor-of-offshore-wind-north-east-2018/>

^{xi} <http://www.tritonknoll.co.uk/supply-chain-event-31-january-2018/>

^{xii} <http://www.tritonknoll.co.uk/lincolnshire-firms-get-to-grips-with-triton-knoll-opportunities/>

^{xiii} <http://www.mhivestasoffshore.com/mhi-vestas-expands-uk-industrial-footprint/>

^{xiv} <https://www.offshorewind.biz/2018/09/03/triton-knoll-selects-grimsby-port-as-om-base/>

^{xv} The cost presented in EUR has been converted to GBP using an average exchange rate of 0.77 from 2012.

^{xvi} <https://www.carbontrust.com/news/2016/07/european-offshore-wind-developers-join-forces-with-the-carbon-trust-to-slash-costs-of-offshore-wind/>

^{xvii} <https://www.lowcarboncontracts.uk/cfds/triton-knoll-offshore-wind-farm-phase-1>

^{xviii} <https://news.innogy.com/innogy-successful-in-german-offshore-auction/>

^{xix} <http://flow-offshore.nl/page/home-en>

^{xx} <https://www.grow-offshorewind.nl/files/2017-11/160614-grow-public-summary.pdf>

^{xxi} <https://offshorewindinnovationhub.com/about-roadmaps/>

^{xxii} <https://www.carbontrust.com/news/2015/02/ground-breaking-trial-at-worlds-second-largest-offshore-wind-farm-concludes/>

- ^{xxiii} <https://www.rwe.com/web/cms/en/113648/rwe/press-news/press-release/?pmid=4008381>
- ^{xxiv} <https://www.carbontrust.com/resources/reports/technology/bird-collision-avoidance/>
- ^{xxv} <https://www.carbontrust.com/news/2017/12/use-of-acoustic-deterrent-devices-to-safeguard-marine-mammals/>
- ^{xxvi} <https://www.iwes.fraunhofer.de/en/research-projects/current-projects/boulder-detection.html>
- ^{xxvii} <https://subseaworldnews.com/2015/06/08/forewind-hands-dogger-bank-core-samples-to-ngr-uk/>
- ^{xxviii} <http://www.tritonknoll.co.uk/1172-2/>
- ^{xxix} <https://www.offshorewind.biz/2017/12/07/the-carbon-trust-to-launch-wind-farm-control-trials-project/>
- ^{xxx} <https://ore.catapult.org.uk/stories/blade-leading-edge-erosion/>
- ^{xxxi} <https://www.carbontrust.com/offshore-wind/owa/demonstration/>
- ^{xxxii} <http://www.ewea.org/offshore2015/conference/allposters/PO081.pdf>
- ^{xxxiii} <https://www.sintef.no/projectweb/was-xl/>
- ^{xxxiv} <http://www.eng.ox.ac.uk/geotech/research/alpaca>
- ^{xxxv} The cost presented in EUR has been converted to GBP using an exchange rate of 0.87 from January 2019.
- ^{xxxvi} <https://www.carbontrust.com/media/588429/offshore-wind-accelerator-ad-hoc-aid-rwe-goal-jip.pdf>
- ^{xxxvii} <https://www.carbontrust.com/offshore-wind/owa/demonstration/>
- ^{xxxviii} <https://www.carbontrust.com/news/2015/11/positive-vibrations/>
- ^{xxxix} <https://www.carbontrust.com/media/622265/cable-burial-risk-assessment-guidance.pdf>
- ^{xl} <http://www.offshorewindindustry.com/news/intelligent-fender-system-monitors-push>
- ^{xli} <https://www.offshorewind.biz/2018/08/30/bibby-hydromap-tests-ixblues-ausv-at-gwynt-y-mor-owf/>
- ^{xlii} <https://ore.catapult.org.uk/stories/modus-seabed-intervention/>
- ^{xliiii} <https://www.offshorewind.biz/2018/03/23/eds-hv-wraps-up-cable-sentry-trials-at-gwynt-y-mor/>
- ^{xliiv} <https://www.carbontrust.com/about-us/tenders/owa-tender-reducing-emissions-fuel-consumption-offshore-wind-vessels/>
- ^{xlv} <https://www.carbontrust.com/offshore-wind/owa/demonstration/wfct/>
- ^{xlvi} <https://news.innogy.com/ucair--innogys-first-start-up-for-drone-flights/#>
- ^{xlvii} The cost presented in USD has been converted to GBP using an exchange rate of 0.77 from January 2019.
- ^{xlviii} https://www.offshorewind.biz/2018/10/02/innogy-and-shell-support-digital-twin-tech/?utm_source=emark&utm_medium=email&utm_campaign=daily-update-offshore-wind-2018-10-03&uid=71119

- ...
- ^{xlix} <https://ore.catapult.org.uk/stories/system-performance-availability-and-reliability-trend-analysis-sparta/>
- ^l <http://www.pfie.com/Uploads/2015/12/17/l/w/f/PFI-YB-Hon.pdf>
- ^{li} <https://www.globalcapital.com/article/wfrhkw5gn2pb/globalcapital-loans-awards-the-winners-announced>
- ^{lii} <https://ijglobal.com/articles/99744/ijglobal-awards-2015-europe-and-africa-winners>
- ^{liii} <https://teesvalley-ca.gov.uk/wp-content/uploads/2016/12/TVCA207-SEP-Documents-Full-WEB.pdf>
- ^{liv} <https://www.gllm.ac.uk/ie/>
- ^{lv} <https://www.ntfw.org/pioneer-mark-provides-wind-power-sector-with-skills-for-the-future/>
- ^{lvi} <https://www.ntfw.org/inspirational-success-stories-celebrated-at-apprenticeship-awards-cymru-ceremony/>
- ^{lvii} <http://www.galloperwindfarm.com/galloper-offshore-wind-farm-launches-east-coast-energy-internship/>
- ^{lviii} <http://www.galloperwindfarm.com/young-talent-breezes-through-galloper-for-summer-internship/>
- ^{lix} <http://www.galloperwindfarm.com/galloper-wind-farm-hosts-engineer-of-the-future-tour/>
- ^{lx} <https://www.tendringdc.gov.uk/jobsfair>
- ^{lxi} <https://iam.innogy.com/en/about-innogy/working-at-innogy/graduates/traineeprogrammes>
- ^{lxii} <https://events.renewableuk.com/gow18/event-champions>
- ^{lxiii} <https://www.renewableuk.com/page/Switch>
- ^{lxiv} <https://www.euskills.co.uk/about/the-group/national-skills-academy-power/nsap-membership/>

Annex B Guidance for readers and structure of statements

Guidance for readers

- 8.1 Text underlined with a dotted line is confidential at CfD award but anticipated not to be confidential at the Milestone Delivery Date (MDD). Text underlined with a solid line is anticipated to remain confidential at MDD, although a review by innogy will be required before publication. For Figures and tables, if the caption is underlined, the Figure or table itself is also confidential.
- 8.2 This document is formed from a number of statements, which include an action completed, an action continuing or commitment made by innogy, SOWFL or its potential suppliers. It also states the impact of that action, both on SOWF and the wider industry, and (where relevant) the evidence to support the action and its impact.
- 8.3 BEIS's 2018 guidance document presents sub-criteria for competition, innovation and skills. To avoid repetition, an superscripted identifier shows which sub-criteria are being addressed and these are cross-referenced (see list of subcriteria and identifiers in Annex C).
- 8.4 Each item of evidence is referenced by way of superscript for example "^[EV001]". If the relevant information refers to a specific part of the evidence document, then the reference will be written by way of superscript "^[EV001(X)]" where X is the page (from the first page of the document and not necessarily the page number) of the evidence document.

Structure of statements

- 8.5 An example statement is:

4.1 The UK is a core market for innogy. *It built the UK's first offshore wind farm commissioned in 2003. Since then, it has developed a pipeline of over 1.5 GW of operational offshore wind projects, 857 MW in construction, 1.2 GW in development and over a further 1 GW in accepted extension applications. Innogy has significant experience, providing valuable lessons to SOWFL on how to build large projects on time and cost-effectively.* ^{[C3] [EV001, EV133]}

Below, the components of the paragraph are separated out and the function of each explained.

- The supply chain plan paragraph number is: [4.1].
- The statement made by SOWFL, innogy or its bidders (main point highlighted in bold), a brief description of the statement and the impact is: [**The UK is a core market for innogy.** *It built the UK's first offshore wind farm commissioned in 2003. Since then, it has developed a pipeline of over 1.5 GW of operational offshore wind projects, 857 MW in construction, 1.2 GW in development and over a further 1 GW in accepted extension applications. Innogy has significant experience, providing valuable lessons to SOWFL on how to build large projects on time and cost-effectively.*].

- The reference to the evidence listed in Annex E and included in Annex F, is: *[EV001, EV133]*
- The reference to the sub-criterion addressed in Annex C, is: *[C3]*.

Annex C List of supply chain plan sub-criteria and identifiers

9.1 BEIS's 2018 guidance document presents sub-criteria for competition, innovation and skills. To avoid repetition, an superscripted identifier shows which sub-criteria are being addressed. The sub-criteria and their identifier are detailed below.

Competition

- 9.2 [C1]: Encourage broader supply chains by supporting new entrants to the sector, including identifying companies considered as potential Invitation to Tender (ITT) or prequalification candidates where appropriate
- 9.3 [C2]: Identify and remove barriers to entry for new supply chain companies, where these are within the scope of the project
- 9.4 [C3]: Share best practice and lessons learned
- 9.5 [C4]: Improve awareness of the commercial opportunities among both companies that currently supply to relevant low carbon generation sector and those that have the capability to do so, but have not yet entered the market.
- 9.6 [C5]: Encourage competitive procurement processes and more open competition across the supply chain to ensure that the widest pool of candidates are able to bid for, and win, contracts

Innovation

- 9.7 [I1]: Research and development, including links to universities and any examples of testing and demonstration
- 9.8 [I2]: Technological development
- 9.9 [I3]: Innovative procurement or contracting practices – for example allowing less established products or processes to win part of a contract or co-investments in the supply chain which will reduce or manage the allocation of risk in such a way that it supports new entrants or less established suppliers
- 9.10 [I4]: Innovative or new installation methods
- 9.11 [I5]: Any other practice that is justified as innovative by the project (and its supply chain) or that would boost innovation in the sector – for example, in the build/installation process, the technology used or the way the project is operated
- 9.12 [I6]: Examples where the Applicant has, or intends to, share best practice and lessons learned

Skills

- 9.13 [S1]: An assessment of the future skills requirements at each stage of the project: design, construction (including the major supply chain components), and operation and maintenance for the life of the project
- 9.14 [S2]: An assessment of whether these skills are currently in place and what, if any, gaps there are likely to be
- 9.15 [S3]: A set of actions that will provide investment in skills and training in order to meet the future needs of the project – as estimated at each stage set out above. For example this could be through internal training or working in partnership with education institutions, colleges, institutions, local or regional authorities, universities, or public or private skills providers, in order to deliver skills that directly benefit the project.
- 9.16 [S4]: Plans that the project intends to put in place to maintain and develop the skills necessary for the lifetime of the project
- 9.17 [S5]: Actions the project will take to engage apprentices.
- 9.18 [S6]: Examples where the Applicant has, or intends to, share best practice and lessons learned.

Annex D Summary of statements made in relation to BEIS criteria

10.1 This SCP includes 178 actions or commitments made by SOWFL, innogy and its potential suppliers, of which 60 relate to the competition criterion, 76 to the innovation criterion, and 42 to the skills criterion (See Figure 3).

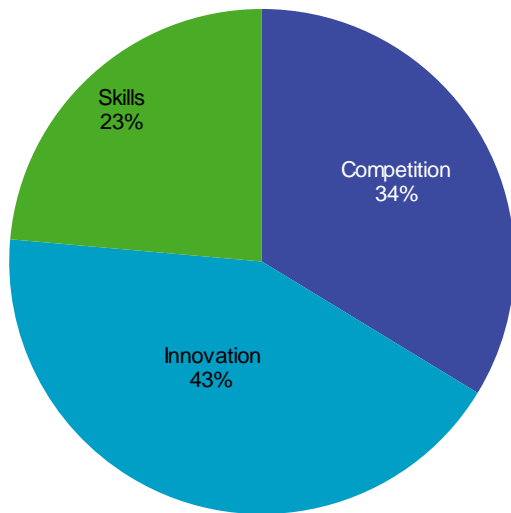


Figure 3 Summary of actions or commitments for each criterion.

10.2 Figure 4 shows the data by sub-criterion. Note that the balance between the criteria is different because a significant number of competition or skills actions address multiple sub-criteria.

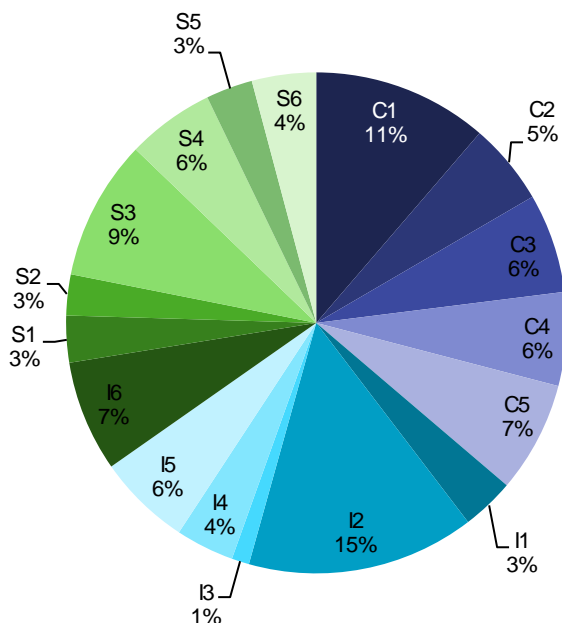


Figure 4 Summary of actions or commitments for each sub-criterion

10.3 Figure 5 shows that a significant proportion of commitments are overarching statements on behalf of Innogy of SOWFL. This reflects the procurement status of the project and a significant

number of commitments are focused on the requirements that SOWFL will place contractually on its suppliers.

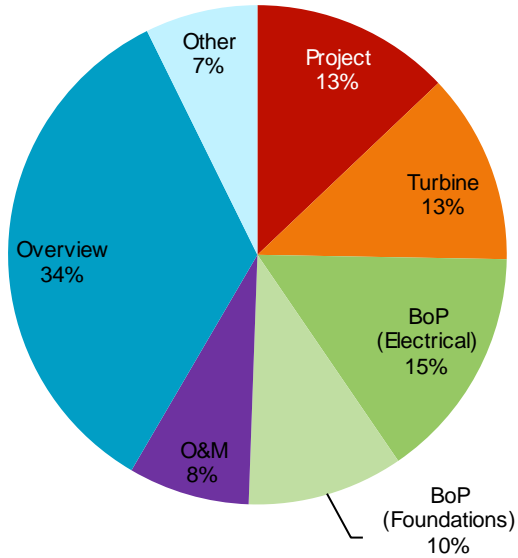


Figure 5 Actions or commitments by origin.

10.4 Table 2 shows the percentage of statements within the three criteria and their status of completion.

Table 2 Spread of past, present and future statements within competition, innovation and skills.

	Competition	Innovation	Skills
Past	26%	30%	26%
Present	46%	50%	39%
Future	29%	20%	35%

Annex E List of evidence

10.5 Numbers are not sequential because some non-essential evidence has been omitted.

10.6 Some documents have had some personal information redacted. The title of the evidence document has the same level of confidentiality as the document itself.

Evidence number	Document title	Confidentiality
EV001	Innogy project portfolio	Not confidential
EV002	Innogy involvement in industry organisations	Not confidential
EV003	Example meetings with Teesside Organisations	Not confidential
EV004	Apprentices at innogy climbing the ladder of opportunity	Not confidential
EV005	[REDACTED]	Confidential at MDD
EV007	Champions for Wind FS	Not confidential
EV008	[REDACTED]	Confidential at MDD
EV009	Triton Knoll offshore wind farm newsletter	Not confidential
EV010	[REDACTED]	Confidential at MDD
EV011	[REDACTED]	Confidential at MDD
EV012	[REDACTED]	Confidential at MDD
EV013	[REDACTED]	Confidential at MDD
EV015	RenewableUK Supply chain and people event	Not confidential
EV016	[REDACTED]	Confidential at CfD award
EV017	Examples of supply chain engagement days	Not confidential
EV018	FLOW projects	Not confidential
EV019	[REDACTED]	Confidential at MDD
EV020	[REDACTED]	Confidential at MDD
EV022	[REDACTED]	Confidential at MDD
EV023	[REDACTED]	Confidential at MDD
EV024	[REDACTED]	Confidential at MDD

Evidence number	Document title	Confidentiality
EV025	██████████	Confidential at MDD
EV027	Welsh apprenticeship scheme	Not confidential
EV028	NEPIC promotions	Not confidential
EV029	██████████	Confidential at MDD
EV030	██████████████████	Confidential at MDD
EV031	██████████████████████████████	Confidential at MDD
EV032	██████████████████████████████████	Confidential at MDD
EV034	██████████	Confidential at MDD
EV035	██████████████████	Confidential at MDD
EV037	European offshore wind industry joint declaration on cost reduction	Not confidential
EV038	██████████████████	Confidential at MDD
EV040	██████████	Confidential at MDD
EV043	██████████	Confidential at MDD
EV044	Triton Knoll Humber Skills Strategy	Not confidential
EV045	ES Chapter 22 Socio-economics	Not confidential
EV046	██████████████████████████████	Confidential at MDD
EV048	NEPIC new members newsletter	Not confidential
EV049	██████████████████████████████	Confidential at MDD
EV051	Innogy NOF Energy supplier engagement	Not confidential
EV052	██████████████████	Confidential at MDD
EV054	Champions for Wind evaluation	Not confidential
EV056	Engagement with ORE Catapult	Not confidential
EV057	██████████████████████████████████	Confidential at MDD
EV058	Engagement with Green Port Growth	Not confidential
EV059	██████████	Confidential at CfD

Evidence number	Document title	Confidentiality
		award
EV061	[REDACTED]	Confidential at MDD
EV063	Forewind spotlight on Teesside report	Not confidential
EV064	G+ Innogy presentation	Not confidential
EV066	Case study Hereema	Not confidential
EV067	Case study JDR	Not confidential
EV070	[REDACTED]	Confidential at MDD
EV072	[REDACTED]	Confidential at MDD
EV076	Galloper internship summer booklet	Not confidential
EV079	Innogy innovation case studies	Not confidential
EV082	[REDACTED]	Confidential at MDD
EV083	[REDACTED]	Confidential at MDD
EV084	Steisdal	Not confidential
EV085	Unconference 2018	Not confidential
EV087	Supply chain brochure	Not confidential
EV094	Easter Daily Press Greater Gabbard 19 th May 2018	Not confidential
EV095	NOF Strategic partner confirmation	Not confidential
EV096	[REDACTED]	Confidential at MDD
EV098	[REDACTED]	Confidential at MDD
EV099	Dogger Bank economic impact analysis (2014)	Not confidential
EV100	[REDACTED]	Confidential at MDD
EV101	[REDACTED]	Confidential at MDD
EV102	[REDACTED]	Confidential at MDD
EV103	[REDACTED]	Confidential at MDD
EV107	[REDACTED]	Confidential at MDD

Evidence number	Document title	Confidentiality
EV108	Sofia ground model developed by NGI	Not confidential
EV109	[REDACTED]	Confidential at MDD
EV111	GOW2018 innogy presentation	Not confidential
EV112	[REDACTED]	Confidential at MDD
EV113	[REDACTED]	Confidential at MDD
EV114	[REDACTED]	Confidential at MDD
EV119	[REDACTED]	Confidential at MDD
EV121	[REDACTED]	Confidential at MDD
EV122	[REDACTED]	Confidential at MDD
EV123	[REDACTED]	Confidential at MDD
EV124	Dedicated emergency response units	Not confidential
EV126	[REDACTED]	Confidential at MDD
EV129	[REDACTED]	Confidential at MDD
EV132	[REDACTED]	Confidential at MDD
EV133	[REDACTED]	Confidential at MDD
EV134	[REDACTED]	Confidential at MDD
EV135	[REDACTED]	Confidential at MDD
EV136	[REDACTED]	Confidential at MDD
EV137	[REDACTED]	Confidential at MDD
EV140	CS0016-Multi-Skilling-Control-Room-Staff-at-Gwynt-y-Mor	Not confidential
EV144	Triton Knoll opportunities for local suppliers flyer	Not confidential
EV146	Triton Knoll supports Humber UTC open day	Not confidential
EV147	[REDACTED]	Confidential at MDD
EV148	Lincolnshire business and skills plan	Not confidential
EV149	NwoW Skills development	Not confidential

Evidence number	Document title	Confidentiality
EV150	GyM and Galloper extensions	Not confidential
EV151	OWIH Supply Chain Working Group	Not confidential
EV152	████████████████████	Confidential at MDD
EV154	Galloper lessons learned 2018	Not confidential
EV156	████████████████████	Confidential at MDD
EV158	Lunch n Learn	Not confidential
EV159	NwoW assessment	Not confidential
EV160	██████	Confidential at MDD
EV161	████████████████████	Confidential at MDD
EV162	██	Confidential at MDD
EV163	██████	Confidential at MDD
EV164	████████████████████	Confidential at MDD
EV165	██████████	Confidential at MDD
EV166	██████████	Confidential at MDD
EV167	Institute of Civil Engineers	Not confidential
EV168	████████████████████	Confidential at MDD
EV169	Innogy trainee programme skills	Not confidential
EV170	██ ██████	Confidential at CfD
EV171	FROG students	Not confidential
EV172	Nordsee One lessons learned	Not confidential
EV173	Energy Cluster Learning Event	Not confidential
EV174	██	Confidential at MDD
EV175	██████████	Confidential at MDD
EV179	██	Confidential at MDD
EV182	████████████████████	Confidential at MDD

Evidence number	Document title	Confidentiality
EV183	██████████	Confidential at MDD
EV185	██████████████████	Confidential at MDD
EV186	██████████████████	Confidential at MDD
EV187	██████████████████	Confidential at MDD
EV188	Innogy and SOWFL supply chain events 2018	Not confidential
EV189	██████████████████	Confidential at MDD
EV190	Networking innovations	Not confidential
EV191	██████████████████████████████	Confidential at MDD
EV192	████████████████████	Confidential at MDD
EV193	██████████████████████████████████████	Confidential at MDD
EV194	██████████████████	Confidential at MDD
EV195	████████████████████	Confidential at MDD
EV196	██████████████████	Confidential at MDD
EV198	████████████████████	Confidential at MDD
EV199	Innogy Diversity and Inclusion Policy	Not confidential
EV200	██████████████████	Confidential at MDD