Seagreen Offshore Wind Farm

Supply Chain Plan – Annexes

Document Reference Number:
LF000009-PMO-MA-PLN

Sea green WIND ENERGY

sse Renewables

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Annex 3.1

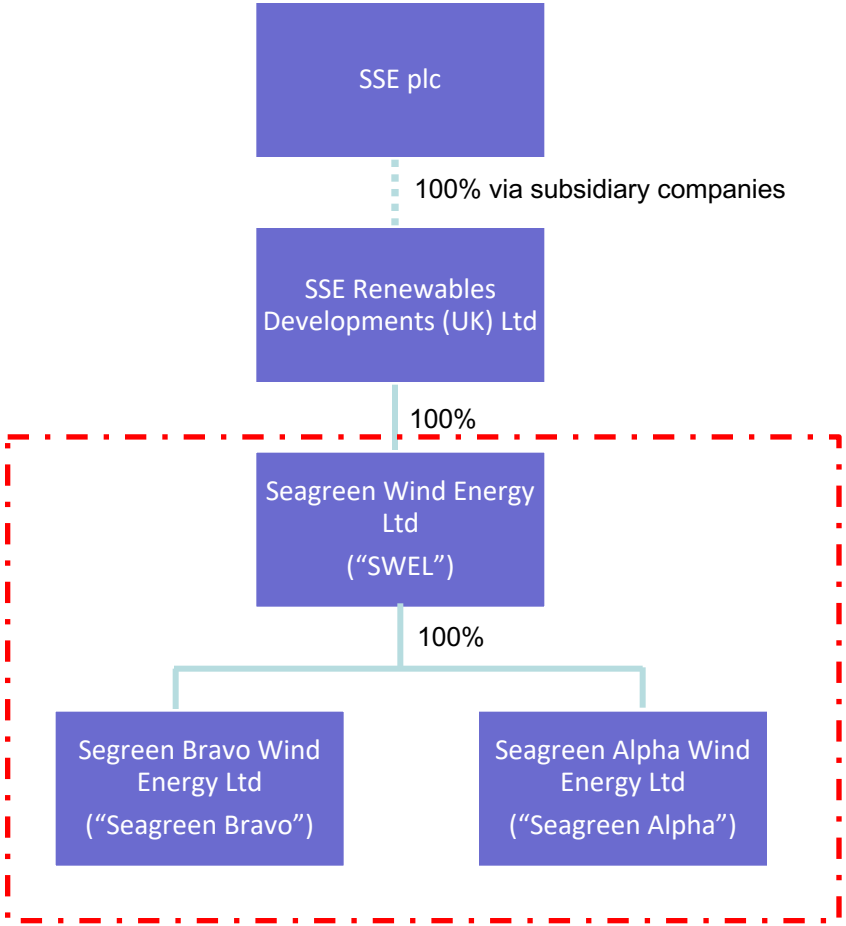
Criteria and sub criteria for the assessment of Supply Chain Plan

Annex 3.1: CRITERIA AND SUBCRITERIA FOR THE ASSESSMENT OF SUPPLY CHAIN PLANS

Criterion	Notation	Sub criteria
Competition	C1	Encourage broader supply chains by supporting new entrants to the sector, including identifying companies considered as potential Invitation to Tender (ITT) or pre-qualification candidates where appropriate.
	C2	Identify and remove barriers to entry for new supply chain companies, where these are within the scope of the project.
	C3	Share best practice and lessons learned.
	C4	Improve awareness of the commercial opportunities among both companies that currently supply to the relevant low carbon generation sector and those that have the capability to do so but have not yet entered the market.
	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	I1	R&D, including links to universities and any examples of testing and demonstration.
	I2	Technological development.
	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.
	I4	Innovative or new installation methods.
	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.
	I6	Examples where the Applicant has, or intends to, share best practice and lessons learned.
Skills	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.
	S2	An assessment of whether these skills are currently in place what, if any, gaps there are likely to be.
	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 educational institutions, colleges, institutions, local or regional authorities, universities, or public or private skills providers, in order to deliver skills that directly benefit the project.
	S4	Plans that the project intends to put in place to maintain and develop the skills necessary for the lifetime of the project.
	S5	Actions the project will take to engage apprentices.
	S6	Examples where the Applicant has, or intends to, share best practice and lessons learned.

Annex 3.2

Corporate structure



SWEL will be the applicant entity in the CFD auction and will be entity to construct & operate Seagreen.

The section 36 Consents and Marine Licenses for Seagreen are currently held by Seagreen Alpha & Seagreen Bravo. Both are wholly owned subsidiaries of SWEL.

Annex 3.3

About SSE

About SSE

SSE's offshore wind map

Greater Gabbard
Ownership: 50%
504MW capacity
140 turbines

Walney
Ownership: 25.1%
367MW capacity
102 turbines

Arklow Bank Wind Park
Ownership: 100%
Minimum 520MW capacity

Beatrice
Ownership: 40%
588MW capacity
84 turbines

Dogger Bank
Ownership: 50%
3.6GW capacity

Seagreen
Ownership: 100%
3.8GW capacity

Operational
In construction
In development

sse

SSE Offshore Wind Portfolio

	Location	Capacity	Status	SSE ownership %	SSE's MW Ownership	Operator
GREATER GABBARD	SE England	504MW	Operating	50%	252MW	SSE
WALNEY	NW England	367MW	Operating	25.1%	92MW	Orsted
BEATRICE	NE Scotland	588MW	Construction	40%	235MW	SSE
SEAGREEN PHASE 1	NE Scotland	1,500MW	Consented	100%	1500MW	SSE
GREATER GABBARD EXT	SE England	504MW	Development	50%	252MW	N/A
SEAGREEN PHASE 2	NE Scotland	1,400MW	Development	100%	1400MW	N/A
SEAGREEN PHASE 3	NE Scotland	900MW	Development	100%	900MW	N/A
DOGGERBANK CREYKE BECK A	NE England	1,200MW	Consented	50%	600MW	N/A
DOGGERBANK CREYKE BECK B	NE England	1,200MW	Consented	50%	600MW	N/A
DOGGERBANK TEESIDE A	NE England	1,200MW	Consented	50%	600MW	N/A
ARKLOW BANK	Dublin	520MW	Consented	100%	520MW	SSE
TOTALS		9,883MW			6,951MW	

sse

SSE – 15 years in offshore wind and counting…

2003 – SSE (Aitricity) co-developed Arklow Bank Phase 1

Summer 2007 - Beatrice demonstrator turbines developed to examine the feasibility of creating a commercial wind farm in deep water

December 2009 – SSE purchases 25.1% stake in Walney Offshore Wind Farm

February 2012 – Consent granted for Hunterston Offshore Wind Turbine Test Facility

September 2012 – Greater Gabbard Offshore Wind Farm completed

May 2016 – Beatrice Offshore Windfarm Limited reaches Final Investment Decision

June 2018 – Beatrice Offshore Windfarm Limited achieves first export of power to the National Grid

Summer 2018 – Hunterston Offshore Wind Turbine Test Facility completes testing and begins decommissioning

Spring 2019 – Beatrice Offshore Wind Farm to be completed

May 2019 – CfD allocation round…

SSE Renewables has;

- the largest consented offshore wind pipeline, some 3.3GW, of any UK company;
- around 3.7GW of renewable generation capacity (inc. pumped storage) across the UK and Ireland, with aims to increase to 4.2GW by 2020;
- invested nearly **£4bn** in low carbon electricity generation since 2008;
- increased onshore wind capacity three-fold over the past 10 years to over 1,900MW in the UK and Ireland, avoiding around 13.4m tonnes CO2e;
- **committed to invest over £4bn in renewables and electricity networks over the five years to 31 March 2023**, to support the low-carbon transition; and
- **provided over £23m in community funding** from its renewable energy portfolio since 2008.

sse

The SSE Group has;

- over **20,400 employees** across the UK and ROI;
- offices across the UK and Ireland including Dublin, Belfast, Glasgow, London, Reading and Cardiff with headquarters in Perth;
- set a target to reduce the carbon intensity of electricity generated by 75% by 2030, compared to 2006 levels.;
- been reaccredited with the prestigious **Fair Tax Mark for the fifth year in a row** – demonstrating its transparency and commitment to play fair on tax;
- been a **Living Wage employer for over five years**; and
- **issued two Green Bonds totalling €1.25bn** to finance renewable and electricity transmission projects.

SSE's historic contribution to the UK economy

		Direct	Indirect	Induced	Total*
UK	**GVA (£bn current prices)**				
	FY18	2.97	4.05	1.53	8.55
	FY17	3.59	4.26	1.59	9.45
	FY16	2.75	4.70	1.77	9.22
	FY15	2.80	4.71	1.66	9.17
	FY14	2.43	5.39	1.77	9.59
	FY13	2.50	5.60	1.73	9.82
	FY12	2.19	5.44	1.77	9.40
	Employment (number of jobs)				
	FY18	20,060	52,370	26,570	99,000
	FY17	20,450	55,150	28,120	103,720
	FY16	20,370	62,340	30,930	113,640
	FY15	19,150	57,800	29,370	106,320
	FY14	19,090	62,340	30,520	111,950
	FY13	19,170	63,730	29,330	112,230
	FY12	18,900	67,690	29,810	116,400

* Please note that due to rounding some of the figures may not sum to the number in the Total column. Employment figures are rounded to the nearest 10 jobs.

sse

A SUSTAINABILITY REPUTATION BASED ON SUBSTANCE

Fair Tax

FAIR TAX MARK ACCREDITED SINCE 2014

We are a Living Wage Employer

LIVING WAGE EMPLOYER SINCE 2013

CDP
DISCLOSURE INSIGHT ACTION

B RATING FOR ITS CLIMATE CHANGE PROGRAMME RESPONSE

equalapproach

CREATING AND IMPLEMENTING SSE'S INCLUSION STRATEGY WITH INCLUSION SPECIALISTS

THE GOOD ECONOMY

RANKED #1 IN THE FTSE350 FOR INCLUSIVE JOBS GROWTH

pwc

ANNUAL ECONOMIC CONTRIBUTION TO THE UK AND IRISH ECONOMIES CALCULATED SINCE 2012

bsi.

BRITISH STANDARD FOR INCLUSIVE SERVICE PROVISION ACHIEVED FOR SSE'S RETAIL AND NETWORKS BUSINESSES

BUSINESS WORKING RESPONSIBLY

CERTIFIED WITH THE ONLY ACCREDITATION FOR RESPONSIBLE BUSINESS PRACTICE IN IRELAND

MSCI

AAA (LEADER) RATING FROM MSCI ESG RESEARCH

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

COMMITTED TO MEETING THE TCFD RECCOMENDATIONS IN FULL BY 2021

2018 = Bloomberg Gender-Equality Index

ONE OF TWO ENERGY COMPANIES GLOBALLY ON THE BLOOMBERG 2018 GENDER-EQUALITY INDEX

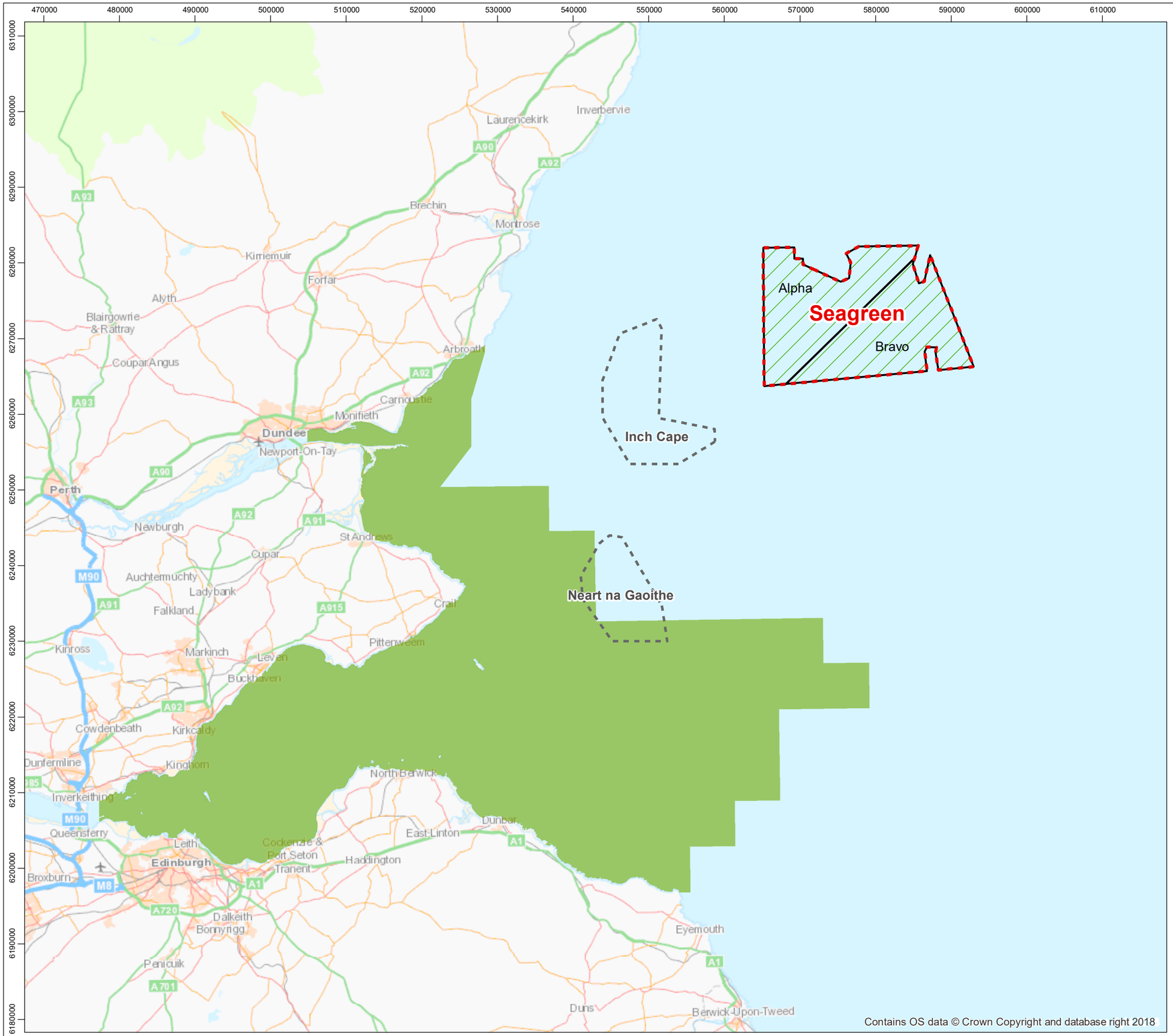
FTSE4Good

INCLUDED IN THE FTSE4GOOD INDEX SINCE 2014

sse

Annex 3.4

Seagreen site map



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Legend

- Seagreen Site Boundary
- Seagreen Alpha And Bravo Site Boundaries
- Scottish Terriorial Waters Sites
- Outer Firth of Forth and St Andrews Bay Complex pSPA

0 2.5 5 10 nm
0 5 10 20 km

N

SNH 2018

Project Name

SEAGREEN OFFSHORE WIND FARM

Drawing Title

SITE OVERVIEW

Rev	Date	Remarks	Drwn	Rqst	Chkd	Appd
R0	04/12/2018	First issue	CT	PA	-	-
R1	-	-	-	-	-	-
R2	-	-	-	-	-	-
R3	-	-	-	-	-	-

Drawing Number

SEA-M-DES-0016-01

Scale	Plot Size	Datum	Projection
1:500,000	A3	WGS84	UTM30N

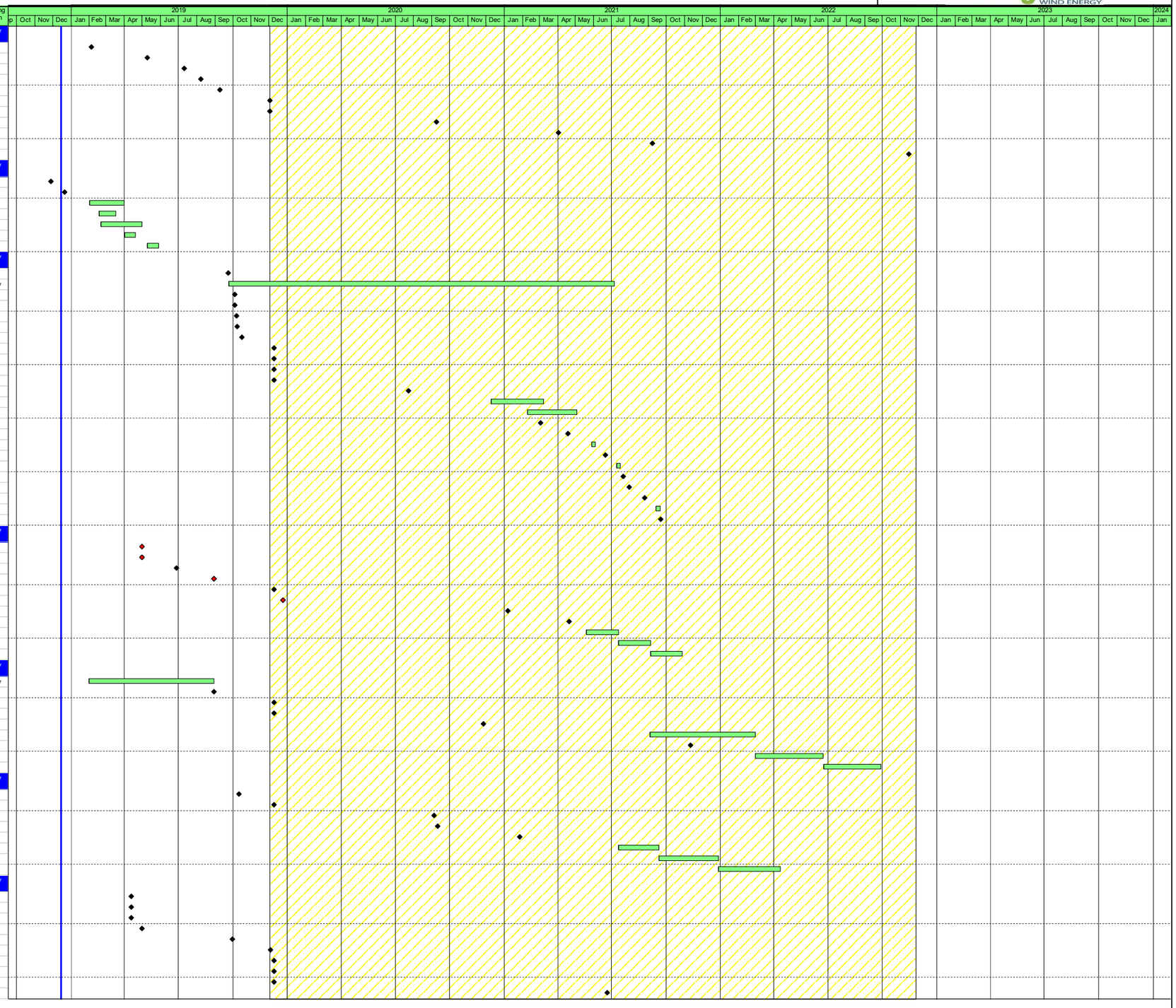
Annex 3.5

Gantt chart showing key project dates and procurement milestones

Seagreen Offshore Wind Farm

PROJECT SEAGREEN
SG - Procurement Plan

Activity ID	Activity Name	Start	Finish	Remaining Duration
Regulatory Dates		04-Feb-19	14-Nov-22	973.1dy
M1100	Supply Chain Plan Submission		04-Feb-19	0.0dy
M1005	CfD Application Submission		10-May-19	0.0dy
M2050	CfD Bid Submission		10-Jul-19	0.0dy
D1450	CfD - CfD Notification		08-Aug-19	0.0dy
D1460	CfD - Sign Contracts & Return to Low LCCC (10 Days)		09-Sep-19	0.0dy
M1015	Stage Gate 3 Decision Point (FID)		02-Dec-19	0.0dy
D17921	CfD - Financial Close		02-Dec-19	0.0dy
D1472	CfD - Milestone Delivery Date (12 months post CFD Contract Signed)		08-Sep-20	0.0dy
MPP1510	SHETL Grid Energised		02-Apr-21*	0.0dy
M1300	1st Export Power	08-Sep-21		0.0dy
M1315	Export Full Power		14-Nov-22	0.0dy
Geotech		28-Nov-18 A	29-May-19	102.3dy
D23341	Geotechnical Survey - ITT Issued		28-Nov-18 A	0.0dy
D31571	Suction Bucket Trials - ITT Issued		21-Dec-18	0.0dy
D23601	Geotechnical Survey - Complete Interim Phase Scope Sub Structures (LOT 1)	01-Feb-19	31-Mar-19	59.3dy
D31511	Suction Bucket Trials - Carry out Trials (24 Locations TBC)	17-Feb-19	17-Mar-19	28.0dy
D23641	Geotechnical Survey - Lab Testing Programme	20-Feb-19	30-Apr-19	71.0dy
D23621	Geotechnical Survey - Completeions Scope Sub Structures (LOT 2)	01-Apr-19	19-Apr-19	19.3dy
D31921	Geotechnical Survey - Completeions Scope Sub Structures (LOT 3 & 5)	09-May-19	29-May-19	20.0dy
GRID		23-Sep-19	21-Sep-21	514.8dy
E9722	Onshore Export Cables FEED Design Complete		23-Sep-19	0.0dy
MPP4550	Onshore GRID Construction	24-Sep-19	05-Jul-21	459.0dy
D24191	Onshore Export Cable - ITT Issued		04-Oct-19	0.0dy
D24341	Offshore Export Cable - ITT Issued		04-Oct-19	0.0dy
D24041	Onshore Substation Detailed Design - ITT Issued		07-Oct-19	0.0dy
D24491	OSP - ITT Issued		08-Oct-19	0.0dy
E9702	Onshore Substation FEED Design Complete		16-Oct-19	0.0dy
MPP3250	NTP - Contract Award - Onshore Substation - Execute Scope - Complete		09-Dec-19	0.0dy
MPP3270	NTP - Contract Award - Onshore Export Cable - Execute Scope - Complete		09-Dec-19	0.0dy
MPP3330	NTP - Contract Award - Offshore Export Cable- Execute Scope - Complete		09-Dec-19	0.0dy
MPP3380	NTP - Contract Award - Contract Award - OSP - Execute Scope - Complete		09-Dec-19	0.0dy
E9662	OSP Detail Design Complete	23-Jul-20		0.0dy
MPP1700	Onshore Export Cable - Cable Pulling	10-Dec-20	08-Mar-21	60.0dy
MPP4590	Onshore Export Cable - Cable Jointing	09-Feb-21	03-May-21	60.0dy
MPP3970	Lay & Joint Offshore Export Cable Circuit 1 - Start	03-Mar-21*		0.0dy
MPP3990	Lay & Joint Offshore Export Cable Circuit 2 - Start	18-Apr-21		0.0dy
MPP2200	Transit & Installaiton - OSP Topside 1	28-May-21	03-Jun-21	5.0dy
MPP3980	Lay & Joint Offshore Export Cable Circuit 1 - Complete		20-Jun-21	0.0dy
MPP2160	Transit & Installaiton - OSP Topside 2	10-Jul-21	16-Jul-21	5.0dy
MPP4540	Substation Full Power - Complete		20-Jul-21	0.0dy
MPP4000	Lay & Joint Offshore Export Cable Circuit 2 - Complete		31-Jul-21	0.0dy
MPP4010	Lay & Joint Offshore Export Cable Circuit 3 - Start	26-Aug-21		0.0dy
MPP2120	Transit & Installaiton - OSP Topside 3	14-Sep-21	21-Sep-21	5.0dy
MPP4020	Lay & Joint Offshore Export Cable Circuit 3 - Complete		21-Sep-21	0.0dy
Foundation		30-Apr-19	28-Oct-21	642.6dy
R5435	WTG Substructures & Foundations - FEED Design - Complete		30-Apr-19	0.0dy
R29841	Substructure Detail Design - Contract Award		30-Apr-19	0.0dy
R29891	Substructure EPCI - ITT Issued		27-Jun-19	0.0dy
R29751	WTG Substructures & Foundations - Detail Design - Complete		30-Aug-19	0.0dy
MPP3470	NTP - Contract Award - Foundations & Substructures - Execute Scope - Complete		09-Dec-19	0.0dy
R5445	WTG Substructures & Foundations - Produce AFC Drawings - Complete		24-Dec-19	0.0dy
MPP3480	Production Delivery Period - OSP Jacket 1 - Complete		06-Jan-21	0.0dy
MPP3530	Manufacture Period to 1st Supply - Suction Bucket Jackets - Complete		20-Apr-21	0.0dy
MPP2760	Suction Bucket Jacket Installation Sector X	19-May-21	12-Jul-21	55.0dy
MPP2740	Suction Bucket Jacket Installation Sector Y	12-Jul-21	04-Sep-21	55.0dy
MPP2720	Suction Bucket Jacket Installation Sector Z	04-Sep-21	28-Oct-21	55.0dy
WTG		31-Jan-19	29-Sep-22	944.0dy
R29981	WTG Supplier EPCI - Commence Final Negotiation	31-Jan-19	30-Aug-19	147.0dy
R29991	WTG Supplier EPCI - Review Complete		30-Aug-19	0.0dy
MPP3430	NTP - Contract Award - WTG - Execute Scope - Complete		09-Dec-19	0.0dy
MPP4390	NTP - Contract Award - WTG Installation - Execute Scope - Complete		09-Dec-19	0.0dy
MPP3440	Manufacture Period to 1st Supply - WTG - Compete		26-Nov-20	0.0dy
MPP1170	Sector 1 - WTG Installation	04-Sep-21	01-Mar-22	79.0dy
MPP3450	Production Delivery Period - WTG - Complete		11-Nov-21	0.0dy
MPP1150	Sector 2 - WTG Installation	01-Mar-22	23-Jun-22	79.0dy
MPP1130	Sector 3 - WTG Installation	24-Jun-22	29-Sep-22	79.0dy
Array Cabling		11-Oct-19	11-Apr-22	644.5dy
D24641	Array Cable - ITT Issued		11-Oct-19	0.0dy
MPP1390	NTP - Contract Award - Array Cable - Execute Scope - Complete		09-Dec-19	0.0dy
MPP3350	Array Cable Material Lead Time - 1st Supply Complete		04-Sep-20	0.0dy
E9682	Array Cable Detail Design Complete	10-Sep-20		0.0dy
MPP3360	Production Delivery Period - Array Cable - Complete		27-Jan-21	0.0dy
MPP1350	Sector 1 - Array Cable Installation	12-Jul-21	19-Sep-21	60.0dy
MPP1330	Sector 2 - Array Cable Installation	19-Sep-21	28-Dec-21	60.0dy
MPP1310	Sector 3 - Array Cable Installation	28-Dec-21	11-Apr-22	60.0dy
Ports		12-Apr-19	23-Jun-21	561.1dy
R28891	Substructure & Topside Installation - Detailed Design - Prepare & Issue ITT - Complete		12-Apr-19	0.0dy
R29391	WTG Marshalling Ports - Detailed Desig/Execute - Prepare & Issue ITT - Complete		12-Apr-19	0.0dy
R29631	Support Structure Marshalling / Assembly Ports - Detailed Desig/Execute - Prepare & Is		12-Apr-19	0.0dy
R29271	Continued Engagement Design - WTG Marshalling Ports - Complete		30-Apr-19	0.0dy
R29291	WTG Marshalling Port Engineering - WTG Marshalling Ports - Complete		30-Sep-19	0.0dy
D6080	Lease - Lease Signed	03-Dec-19		0.0dy
MPP4370	NTP - Contract Award - Substructure & Topside Installation - Execute Scope - Complete		09-Dec-19	0.0dy
MPP4410	NTP - Contract Award - Marshling Ports - Execute Scope - Complete		09-Dec-19	0.0dy
MPP4430	NTP - Contract Award - Support Structure Marshalling / Assembly Ports - Execute Scope		09-Dec-19	0.0dy
MPP1000	Available to Operations - O&M Building		23-Jun-21	0.0dy



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Data Date 15-Dec-18
Print Date 10-Jan-19

Actual Level of Effort
Remaining Work
Critical Milestone
Remaining Level of Effort
Critical Remaining Work
% Complete
Actual Work
Milestone

Date	Revision	Checked	Approved

Annex 3.6

List of abbreviations

Abbreviation	Description
AEP	Annual Energy Production
AR2	Contract for Difference Auction Round 2
BEIS	Department for Business Energy and Industrial Strategy
BOP	Balance of Plant
BOWL	Beatrice Offshore Wind Limited
CFD	Contract For Difference
CTV	Crew Transfer Vessel
DIT	Department for International Trade
EI	Energy Institute
EPCI	Engineering, Procurement, Construction & Installation
ESI	Electrical Systems Infrastructure
EU	European Union
GDP	Gross Domestic Product
GVA	Gross Value Added
GW	Giga Watt
GWO	Global Wind Organisation
HIE	Highlands and Islands Enterprise
HNC	High National Certificate
HSE	Health & Safety Executive
HV	High Voltage
HVAC	High Voltage Alternating Current
IEA	International Energy Agency
ITT	Invitation to Tender
IWEA	Irish Wind Energy Association
JIP	Joint Industry Project
LCOE	Levelised Cost of Energy
MDD	Milestone Delivery Date
MHI	Mitsubishi Heavy Industries
MVOW	MHI Vestas Offshore Wind
MIP	Marine Installation Package
MVAC	Medium Voltage Alternating Current
MW	Mega Watt
NOWTTF	National Offshore Wind Turbine Test Facility
O&M	Operations and Maintenance
O4B	Open4Business
OEM	Original Equipment Manufacturer
ONS	Onshore Substation
ORE	Offshore Renewable Energy
ORJIP	Offshore Renewables Joint Industry Programme
OSS	Off Shore Substation
OTM	Offshore Transformer Module
OWA	Offshore Wind Accelerator
OWIC	Offshore Wind Industry Council
OWIH	Offshore Wind Innovation Hub
OWIX	Offshore Wind Innovation Exchange
PCWG	Power Curve Working Group
POD	Platform for Operational Data
R&D	Research & Development

RSPB	Royal Society for the Protection of Birds
SCP	Supply Chain Plan
SE	Scottish Enterprise
SFP	Substructures and Foundations Package
SGRE	Siemens Gamesa Renewable Energy
SHL	Seaway Heavy Lifting
SMA	Service and Maintenance Agreement
SME	Small and Medium Enterprise
SOV	Service Operations Vessel
SPARTA	System Performance Availability & Reliability Trend Analysis
SSE	Scottish Southern Energy
STEM	Science Technology Engineering and Maths
SWEL	Seagreen Wind Energy Limited
SWEPT	Simulated Wake Effect Platform for Turbines
T&I	Transport & Installation
TIC	Technology and Innovation Centre
TSA	Turbine Supply Agreement
TST	Technical Skills Training
UAV	Unmanned Aerial Vehicle
UoS	University of Strathclyde
WTG	Wind Turbine Generator
WTS	Wind Towers Scotland

Annex 3.7

[redacted]

[redacted]

Seagreen Supply Chain Plan

Annex 3.8

List of actions

Notes

The table below has been created to summarise and quantify the past and future actions included in the main body of the SCP. If successful in the auction process Seagreen will use this information to create an SCP monitoring register that it will use to manage the implementation of the SCP and track progress against its future actions.

Competition

Number	Action	Impact	Type	Reference
1	Implement Sector deal	SSE is leading the development of Scottish cluster	Future	4.4
2	Appoint IV Oil and Gas as design engineers	Support a new entrant to the offshore wind sector	Past	4.11
3	Equity investment support	Bifab & WTS – Investment in facilities	Past	4.13
4	Dedicated SCP resource	A SCP manager will be responsible for monitoring and delivering commitments in SCP	Future	4.15
5	Engagement with Government	Maximise opportunity to promote tendering opportunities to new suppliers	Both	4.17
6	Engagement with Chambers of Commerce	Improve local visibility of supplier opportunities	Both	4.18
7	O4B portal	Improve local visibility of supplier opportunities	Both	4.19
8	Contractor engagement on barriers to entry	Improved understanding of UK capabilities and/or barriers to entry	Both	4.21
9	Personnel transition	Embed key experience from previous Beatrice project in Seagreen team	Past	4.23
10	Contractor lessons learned	Evidence of SSE proactively seeking to learn lessons on previous project	Past	4.23

11	Contribution to industry forums	Platforms to share lessons learned with supply chain	Past	4.25
12	Meet the buyer events	Visibility of opportunities	Past	4.27
13	Targeted meet the buyer event	Seagreen will work with Scottish Enterprise to target potential new suppliers	Future	4.28
14	New project website	Better transparency of supplier opportunities	Future	4.29
15	Scottish Enterprise list of new suppliers	Contact details for publishing new tendering opportunities	Past	4.30
16	Project finance	Attract banks new to the offshore wind sector	Future	4.31
17	Responsible procurement charter	SSE works in partnership with its suppliers	Past	4.33
18	Structured and open procurement processes	Commitment to run open and competitive procurement processes	Future	4.34
19	Supply chain plan contract obligation	Successful suppliers will be required to deliver on SCP commitments	Future	4.39
20	Multi contract procurement strategy	Promotes competition in supply chain	Future	4.40
21	UK content target	All bidders required to indicate the UK content of their offers	Both	4.41
22	SSE has a history of introducing new turbine platforms	Increases competition	Past	4.43
23	Open tender considering new turbine models	Increases competition	Future	4.44

24	Multi-lot approach	Enables entry of various sizes of potential suppliers	Future	4.57
25	Challenging default O&M suppliers	Supports new entrants	Future	4.67
26	New O&M port	Will bring O&M facilities to East coast of Scotland	Future	4.72
27	UK staging port	East coast UK ports are being considered and would trigger investment	Future	4.73

Innovation

Number	Action	Impact	Type	Reference
28	SSE Invests in innovation	c£12m invested in innovation as a group	Past	5.2
29	Implement sector deal	SSE will support all innovation ideas in final deal	Future	5.4
30	First time deployment of technologies at Greater Gabbard & Beatrice	Commercialisation of new technology	Past	5.5
31	Hunterston MHI demo	World first turbine concept demonstration at full scale	Past	5.8
32	Hunterston Siemens demo	UK first Siemens 6MW demo, secured future orders	Past	5.9
33	Beatrice demo	First 5MW offshore turbines, secured future orders	Past	5.10
34	Innovative approaches in new WTG platform	Advanced turbines (for example control) will be brought to market	Future	5.12
35	Ancillary services	Additional revenue streams for project, enables lower strike price bid	Future	5.14

36	First ever OTM	Reduces CAPEX cost, supports innovation which is subsequently used on other projects	Past	5.16
37	Commitment to use OTM	Reduces CAPEX cost	Future	5.18
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
39	Jacket foundation early adopter	Enabled UK supplier to win work on subsequent projects	Past	5.20
40	Suction bucket jacket foundations	First volume order, builds industry confidence in technology	Future	5.21
41	SPARTA member	Enables benchmarking of operational performance	Both	5.24
42	First to use helicopter for O&M	Well informed O&M strategy, supported development of UK supply chain	Past	5.26
43	Research into advanced control strategies	Contributes to industry body of knowledge	Both	5.27
44	Research into turbine O&M	Contributes to industry body of knowledge, enables well informed O&M strategy	Both	5.28
45	Data pilots	Contributes to industry body of knowledge	Past	5.29
46	Virtual seagreen – data sharing	Makes operational data available to academic researchers	Future	5.32
47	Virtual seagreen – structural monitoring	Improved asset management, contributes to industry body of knowledge	Future	5.33
48	Virtual seagreen – remote inspection	Improves O&M, contributes to industry body of knowledge, builds industry confidence in new solutions	Future	5.34

49	Autonomous seabed survey	Reduces cost and risk	Future	5.35
50	Active blade management	Well informed O&M strategy, supported development of UK supply chain	Future	5.36
51	SOV	One of the first Scottish projects to use SOV, develops industry confidence in new approach, increased availability	Future	5.37
52	Innovation investment targets	Compel suppliers to invest in innovation	Future	5.40
53	Contract optimisation	Reduce costs and risks, improve delivery	Future	5.41
54	Innovation challenges	Provide industry needs to potential innovators and SMEs	Future	5.42 & 5.43
55	Blue pilot project	Improved pile installation technique, supporting cross industry development	Past	5.47
56	ORJIP	Join industry study of environmental risks	Past	5.48, 5.55
57	Installation logistics research	Build on academic work to optimise installation logistics planning for reduced duration and costs	Past	5.51
58	New build installation vessels	Order from Seagreen could trigger suppliers to commission new build installation vessels	Future	5.53
59	OWA	Cross industry initiative to reduce costs	Past	5.53
60	University of Strathclyde	Support for academic research to support offshore wind	Both	5.54

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
62	Floating lidar	Reduces costs in balance with risks and uncertainties	Past	5.58
63	Digital twin	Supports UKR&D for improved O&M	Future	5.59
64	Wake modelling research	Contributes to industry wake modelling tools and capability	Past	5.60
65	O&M forum	SSE contributes to this operational knowledge sharing	Past	5.63
66	G+ offshore wind	SSE contributes to this safety best practice group	Past	5.63
67	Power curve working group	SSE contributes to this operational knowledge sharing	Past	5.63
68	IEA task 32	SSE contributes to this operational knowledge sharing	Past	5.63
69	Aviation industry working group	SSE contributes to this operational knowledge sharing	Past	5.63
70	MIT and Imperial college academic link	Contribute to understanding of the future of energy	Past	5.63
71	O&M case studies	Sharing of industry knowledge	Past	5.64
72	BLEEP JIP	Developing knowledge collaboratively	Past	5.65
73	Supply chain lessons learned	Seagreen will conduct lessons learned with each Tier 1 supplier	Future	5.66
74	Hunterston knowledge sharing	Improved knowledge of renewable technologies of Ayshire college students	Past	5.67

75	O&M innovation open day	Visibility of opportunities to new suppliers & Platform for innovators to present new ideas	Future	5.70

Skills

Number	Action	Impact	Type	Reference
76	Implement sector deal	SSE will support the delivery of the sector deal including skills connected actions	Future	6.5
77	Monitor and evaluate socio-economic impact	Published evidence on impact of project	Future	6.8
78	Published EU Skills group study	Contributes to understanding offshore wind skills requirements	Past	6.13
79	Seagreen skills strategy	Assess roles required and identify ability of locals to supply	Future	6.15
80	Suppliers skills plans	Seagreen will require contractors to create skills plans	Future	6.17
81	Development of skills accord	Mitigation of future energy sector skills gaps	Future	6.18
82	Local O&M staff	Encourage Tier 1 WTG supplier to source O&M staff from local area	Future	6.19
83	O&M apprenticeship scheme	Repeats successful Greater Gabbard approach	Future	6.20
84	Inclusion strategy	SSE has a strategy to increase diversity	Past	6.22
85	Flagship partner for women in STEM	Increase visibility of energy sector careers to schools	Past	6.24
86	Graduate recruitment programme	Helps to address future skills gap	Both	6.25

87	Career ready programme	Provides pathways to work for low income households	Past	6.26
88	Barnados works programme	Increased opportunities for young people to join the workforce	Past	6.27
89	Trainee engineers programme	Develops competent engineers	Past	6.28
90	STEM in schools	Seagreen will help to promote STEM in local schools	Future	6.30
91	Multi Skilled O&M Staff	More flexible and dynamic workforce for future projects	Future	6.29
92	Greater gabbard apprenticeship scheme	Develops future workforce	Past	6.33
93	Seagreen apprenticeship scheme	Development of future workforce in locality of Seagreen	Future	6.34
94	Community benefit fund	Helping young people access employment	Both	6.36
95	STEM skills fund	Provides bursaries for local colleges	Future	6.37
96	Sharing knowledge	Seagreen will present lessons learned at several public events	Future	6.39
97	Education and skills bodies collaboration	Helps to develop and deliver fit for purpose training opportunities	Past	6.41
98	Tier 1 suppliers skills platform	In some cases an order from Seagreen would trigger supply chain investment in skills	Future	6.43

Totals:

Past: 41 (+both) = 52

Future: 46 (+both) = 57

Both: 11

Annex 4.1

Open4Business Portal (O4B) Case Study

Seagreen Supply Chain Plan

Open4Business Portal – Case Study

Historically one of the largest barriers to entry for potential suppliers has been having access to the right customer with the right opportunities at the right time. SSE recognised this issue and in 2012 invested over £1m to create the Open4Business ("O4B") portal (https://www.sseopen4business-highlands.com/) in collaboration with Highlands and Islands Enterprise (HIE), an online procurement portal that offered Highland organisations the opportunity to do business with SSE and it's principal contractors. The portal was inspired by the London 2012 CompeteFor website which attracted over £2bn of Olympics-related contracts to local SMEs. SSE engaged with BIP Solutions (the architects of CompeteFor) to share learning from London 2012 and support the design of the O4B platform. [C2,C3,C4]

The portal improves visibility of the SSE Procurement process and provides opportunities for local businesses to express an interest in contracts for free. Some headlines of the O4B platform include:

- 2,234 Registered suppliers
- Over 750 contract opportunities posted
- 465 Contracts awarded, with a contract value of over £174m, around £85m of which was awarded to Scottish Based suppliers

Although O4B was originally developed for use for SSE's onshore wind portfolio, SSE's Beatrice Offshore Windfarm also made use of this platform to post opportunities either directly or via its main tier 1 contractors.

In total 40 opportunities were posted, 28 of which were posted by SSE and its Contractors including RJ Mcleod, Siemens and Seaway Heavy Lift. These opportunities resulted in several local companies being invited to bid on these tenders.

SSE has also previously used O4B to drive buyer engagement days and to inform a programme of 121 supplier meetings. This allowed SSE to understand capabilities and help identify the right customer level for the local supply chain. The O4B platform has helped create a more open and transparent procurement campaigns and has worked well for all involved.

SSE is currently working with HIE and plans to re-launch the O4B website in Q1 2019. Seagreen will benefit from the investment made by SSE in this platform and the learning from Beatrice to adopt this website to promote opportunities via its subcontractors using the tool. [C3,C4, C5]

Annex 4.2

[redacted]

Seagreen Supply Chain Plan

Annex 4.3

Scottish Enterprise Letter of Support

Seagreen Supply Chain Plan

Mr Mark Timmons
Seagreen Wind Energy Ltd
SSE
1 Waterloo Street
Glasgow
G2 6AY

13th December 2018

Dear Mark,

Letter of Support

I am writing on behalf of Scottish Enterprise to express and outline our support for SSE plc (SSE) and its aim to utilize and develop the supply chain in Scotland in relation to the Seagreen (SG) project.

Scottish Enterprise (SE) understands the importance of having a competitive, innovative and proactive supply chain with the ability to meet the opportunities that the Low Carbon Economy presents. These companies will be vital to meet the Scottish Government's ambitious 2020 targets on carbon reduction, energy efficiency and renewable technologies. In supporting the wider energy sector our ambition is to support a supply chain that is aligned with the future industry growth, addressing anticipated challenges in the UK and Internationally.

SG has a long-standing relationship with SE through its parent organization SSE. SSE and SE (and its sister organization HIE) have a long history of collaborating successfully on several initiatives which have benefitted the Scottish Economy.

SG is a huge opportunity for the Scottish supply chain. SE fully support the work of SG & SSE to engage with the Scottish supply chain. To support SSE's ongoing work, SE & SG will work together to complete the actions below connected to BEIS's Supply Chain Plan criteria:

Scottish Enterprise
Atrium Court
20 Waterloo Street
Glasgow, G2 6HA

www.scottish-enterprise.com

Competition

- SG has engaged with SE on a regular basis to discuss the status of the Project and consider opportunities for Scottish companies and new offshore wind market entrants to secure tendering opportunities. SG will continue to engage with SE as the project develops
- SG will look at Scottish and wider UK alternatives at for each of its major tenders and will feedback (where permitted under tender confidentiality obligations) when the alternative supplier is not competitive, allowing SE to work with the company to become competitive or encourage new investment into Scotland
- Competitive tendering will be utilized by SG & its major Tier 1 contractors. This will ensure opportunities are open to new entrants that neither SG or SE are aware of
- SE & SG will work with Tier 1 contractors and below to ensure local companies are aware of opportunities and SG will provide feedback if not selected
- SE will work with the industry to raise awareness of opportunities within SG and to demonstrate the capabilities of the Scottish supply chain
- SE & SG will work together to identify gaps and barriers to entry in the supply chain and increase companies' capabilities to fill these gaps & access opportunity
- SG recognizes the expertise and experience of SE in supporting supply chain events. The parties will collaborate to maximize the impact and value of the future Meet the Buyer or similar industry engagements planned for Seagreen in 2019 & 2020

Innovation

- SG is exploring the prospect of holding an Innovation event during 2019 or 2020 to identify companies developing innovative technologies to reduce the O&M costs of future offshore wind projects. SG will engage with SE to identify potential companies known to be active in this area that could participate

Skills

- SE, where practical, will support SG to assess industry wide skills gaps concerns and propose initiatives & actions to help mitigate these challenges that could be implemented by the parties or SG

SE will meet SG on a quarterly basis to discuss progress on the above. Based on its engagement with SG to date, SE is satisfied that SG is taking steps to deliver the desired outcomes of the BEIS Supply Chain Plan guidance.
SE is happy to provide its support to SG and looks forward to aiding the implementation of the SG Supply Chain Plan in 2019.

Your sincerly,

Isla Robb

Offshore Wind Lead Specialist
Scottish Enterprise

Scottish Enterprise
Atrium Court
20 Waterloo Street
Glasgow, G2 6HA

www.scottish-enterprise.com

Annex 4.4

ORE Catapult letter of support

ORE Catapult
Inovo
121 George Street
Glasgow, G1 1RD

T +44 (0)330 222 0335
F +44 (0)330 004 1399
info@ore.catapult.org.uk

ore.catapult.org.uk
@ORECatapult

Mark Timmons
Seagreen Wind Energy Ltd
1 Waterloo St
Glasgow
G2 6AY

19 December 2018

Dear Mark,

Seagreen Wind Energy Ltd support to the "Fit for Offshore Renewables" Scottish Supply Chain engagement workshops.

I wanted to personally thank the team at Seagreen Wind Energy Ltd (SWEL) for the support and endorsement of ORE Catapults' Fit for Offshore Renewables (F4OR) Supply Chain initiative in Scotland.

As you know, F4OR aims to support UK supply chain companies get ready to bid for work in the offshore renewable energy sector, using the successful business excellence framework delivered in the Fit for Nuclear programme. The key objectives of the programme are to:

- Increase competitiveness to support continued cost reduction in offshore renewables.
- To help secure long-term economic benefits in the UK.

The F4OR Pilot in Scotland has secured funding to support 20 Scottish manufacturing/service-based companies through the programme and increase their chances of success within the offshore wind market. To promote the initiative and encourage participation, ORE Catapult hosted a series of workshops in Inverness, Aberdeen and Edinburgh; attended by approximately 100 Scottish companies. These workshops successfully engaged over 20 companies who have since expressed interest in the programme and are in the early stages of their F4OR journey.

I wanted to express my thanks to John Kane as Senior Procurement and Contracts Manager for SWEL who attended the Edinburgh workshop and presented the exciting opportunities for Scottish Supply Chain on the Seagreen Project. John actively engaged with the audience; encouraging open discussions and answering project-specific questions. The engagement and support from SSE/Seagreen during these events has been instrumental in attracting companies to participate in the programme.

CATAPULT
Offshore Renewable Energy

Active endorsement and support from developers like SSE add tremendous value and credibility to the F4OR initiative; raising awareness of the scale of the offshore wind opportunity in Scotland and ensuring industry needs can be met by Scottish suppliers.

Yours sincerely

Chris Hill

Director, Operational Performance

Annex 4.5

Global Offshore Wind Conference presentation – Manchester June 2018

Seagreen Supply Chain Plan

Seagreen Offshore Wind Farm Development
Global Offshore Wind – Share Fair

Allan Ralston, Project Director

19th June 2018

Seagreen Wind Energy Ltd – Supply Chain

- Delivery of the Seagreen project will require multi billion pounds of investment, creating significant opportunities for the supply chain
- Seagreen has an overall objective to enhance competition and maximise UK content where practical
- Seagreen is considering both EPC and multi-contracting strategies across the project
- Open / Competitive / Efficient Supply Chain Management
- Contracts awarded by Seagreen will offer local opportunities in both the construction and operational phases

Seagreen Wind Energy Ltd – Contract Packages

- Wind Turbines Package (WTP)
- Substructures & Foundations Package (SFP)
- Transport & Installation Package (TIP)
- Electrical Systems Infrastructure Package (ESIP)
- Operations and Maintenance Package (OMP)

Seagreen Wind Energy Ltd – How can you Support?

- Excellent HSE Performance and Culture
- Innovation and technology development
- Lean work processes and high productivity
- Understanding of client needs and challenge cost drivers
- Skilled workforce with the right mindset and commitment
- Open / Competitive / Efficient Supply Chain Management

Seagreen Wind Energy Ltd – Contact Details

- Please contact www.seagreenwindenergy.com
- Click on “Suppliers” and complete the form

Annex 4.6

Meet the Buyer - Fit 4 Offshore Conference, August 2018

Seagreen Offshore Wind Farm Development
F4OR - Edinburgh

John Kane,
Senior Procurement & Contracts Manager

21st September 2018

Contract Packages from Phase 1 Outline

Contract Packages

- Wind Turbines Package (WTP)
- Substructures & Foundations Package (SFP)
- Transport & Installation Package (TIP)
- Electrical Systems Infrastructure Package (ESIP)
- Operations and Maintenance Package (OMP)

Timing of Key Supplier Decisions

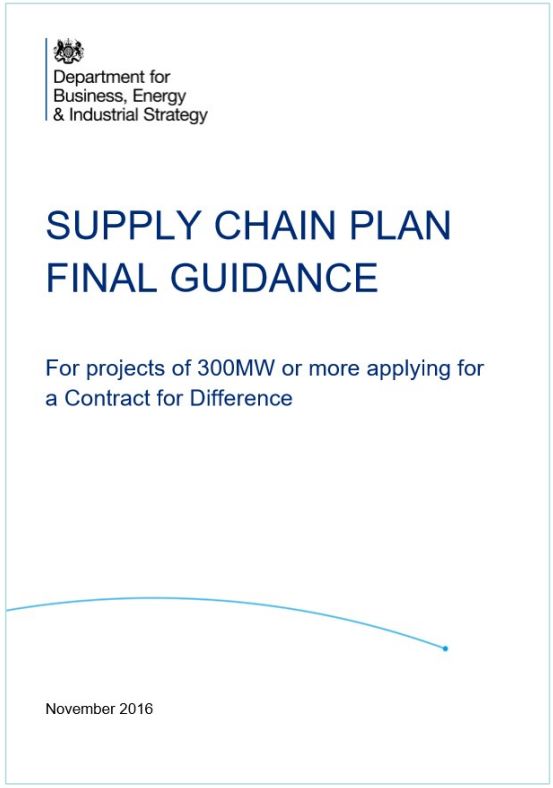
CfD Timeline / Key Decisions

- Through to December 2018 Seagreen are engaged with a range of Tier One suppliers to evolve and decide upon their technical solution and package structure to achieve LCOE.
- Prior to CfD Bid (May 2019) Seagreen may engage on an individual Contract Package at a Preferred Supplier status if the LCOE business case is sufficiently compelling.
- If not compelling, Seagreen may choose to retain competitiveness on the individual Contract Packages until post CFD Award (Sept 2019) when a BAFO process would decide.
- A key impact of these decisions is to define the point when Seagreen can facilitate Lower Tier suppliers contact with the successful Tier One supplier.

CfD Process Requirements

- In order to submit a CfD bid in AR3 Seagreen is required to hold:-

  A certified Supply Chain Plan
- The SCP is scored by BEIS and is approved by the Secretary of State. This is evidenced by a certificate of approval which must accompany a pre qualification application.
- The SCP is assessed against three key criteria:
  - Competition
  - Innovation
  - Skills

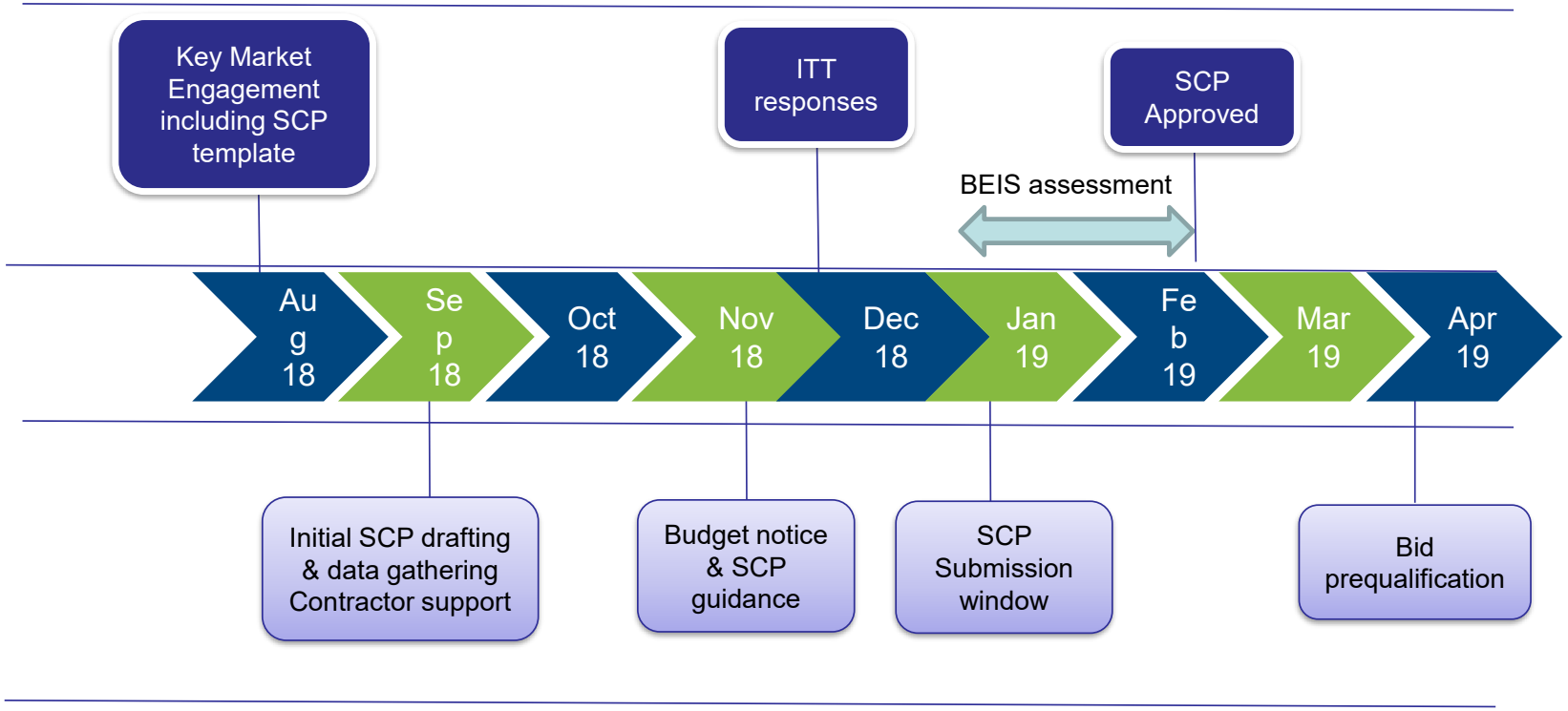

Department for
Business, Energy
& Industrial Strategy

SUPPLY CHAIN PLAN
FINAL GUIDANCE

For projects of 300MW or more applying for a Contract for Difference

November 2016

Project Bid SCP Timeline



Challenges from the Market

Key Challenges of CFD

- Highly competitive AR3 pending
- Increase in CfD size and frequency presents potential for Supply Chain capacity constraints / conflicts
- Increased WTG size / deeper water presenting technical challenges
- Achieving UK content

LCOE Optimisation

Supplier Cost Reduction has been effective and this is now about :-

- Standardisation
- Innovation
- Intelligent sharing of interface risk
- Improved Logistics / Installation
- Reduced O&M lifecycle costs

Supply Chain Approach

- Delivery of the Seagreen project will require multi billion pounds of investment, creating significant opportunities for the supply chain
- Seagreen has an overall objective to enhance competition and maximise UK content where practical
- Seagreen is considering both EPC and multi-contracting strategies across the project
- Open / Competitive / Efficient Supply Chain Management
- Contracts awarded by Seagreen will offer local opportunities in both the construction and operational phases

Our Commitments to the Supply Chain

- Engagement with excellent HSE Performance and Culture
- Good communication throughout the process
- Open / Competitive / Efficient Supply Chain Management
- Support innovation and technology development by producing a Supply Chain Plan that can deliver
- To facilitate the Lower Tier suppliers engagement with Tier One suppliers at the earliest practical opportunity to influence their selection

What should you as a Supplier do now ?

- Engage with the Seagreen project, by registering your interest through the Seagreen website. www.seagreenwindenergy.com
- Seagreen want you to check the box(es) covering what you actually do as your core business and not aspirational scope.
- Be aware of the services that Seagreen and the Tier One Suppliers may already do for themselves ie project management / HSE / risk management
- Understand the timelines (Q3 2019 or Q3 2020)
  - Seagreen will get you in touch with the right Suppliers when they have decided who is doing what
  - Those Suppliers will be fully engaged to interact with you when they are under contract and at the right time for their scope and program

Seagreen Wind Energy Ltd – Contact Details

- Please e-mail info@seagreenwindenergy.com
- Seagreen will forward a form for you to complete expressing the scope that is of interest and for you to return.

Annex 4.7

Meet the Buyer events - Beatrice
All Energy 2016

Seagreen Supply Chain Plan

Beatrice Supply Chain Update

Steven Wilson
Senior Project Manager
Beatrice Offshore Windfarm

All Energy Conference – 4th May 2016

How to become a Siemens' supplier – a checklist

Understand the market

- Consider the size of Siemens' global supply chain and possibilities for 2nd or 3rd tier supply
- Acknowledge the different nature of business in Siemens Windpower and Energy Management

Understand your value

- Risk mitigation
- Logistics advantage (local / national / global footprint)
- Innovation

Take the next steps

- Register as potential Siemens Supplier
- Contact the responsible Strategic Procurement Department to discuss further

Siemens Energy Management: Onshore & Offshore Design and Installation

Supplier approach	Supply categories
Tier 1 to Siemens	▪ Main offshore platform fabrication
	▪ LVAC distribution board (design, supply and installation)
	▪ Fibre optics (design, supply and Installation)
	▪ Marine cable systems (design, supply and installation)
	▪ Offshore fast response and support vessels
	▪ Heavy lift offshore vessels
	▪ Onshore steel structures
	▪ Onshore civils design and civil works (local)
	▪ DC battery system (design, supply and installation)
	▪ Onshore directional drilling
Tier 1 to Siemens or Main Offshore Platform fabricator	▪ HVAC distribution board (design, supply and installation)
	▪ Steel containers/enclosure design and build

Siemens Energy Management: Opportunities Design and Installation

Supplier approach	Supply categories
Tier 1 to Siemens	▪ 132kV Cable Onshore
	▪ Standby Generators, Maintenance
	▪ Radio Frequency Interference (RFI) Testing
	▪ Fire Systems & Equipment, Inspection & Maintenance
	▪ 48V and 100V Battery Charger Maintenance
	▪ Heating, Ventilation, Air Conditioning (HVAC)
	▪ Plant & Tool Hire

Siemens Wind - turbine package

SIEMENS
Siemens Wind Power

Scope Summary

- Supply of up to 84 x Siemens 7MW Wind Turbines
- North Eastern Logistics Base to be confirmed (for WTG Storage)
- Logistics base to be managed by BOWL and SWP

Service Phase

- Potential Supply of Service technicians to maintain WTG
- Supply of spare parts / labour / repair services as required throughout lifetime of the wind farm dependent on BOWL / Siemens Service agreement.

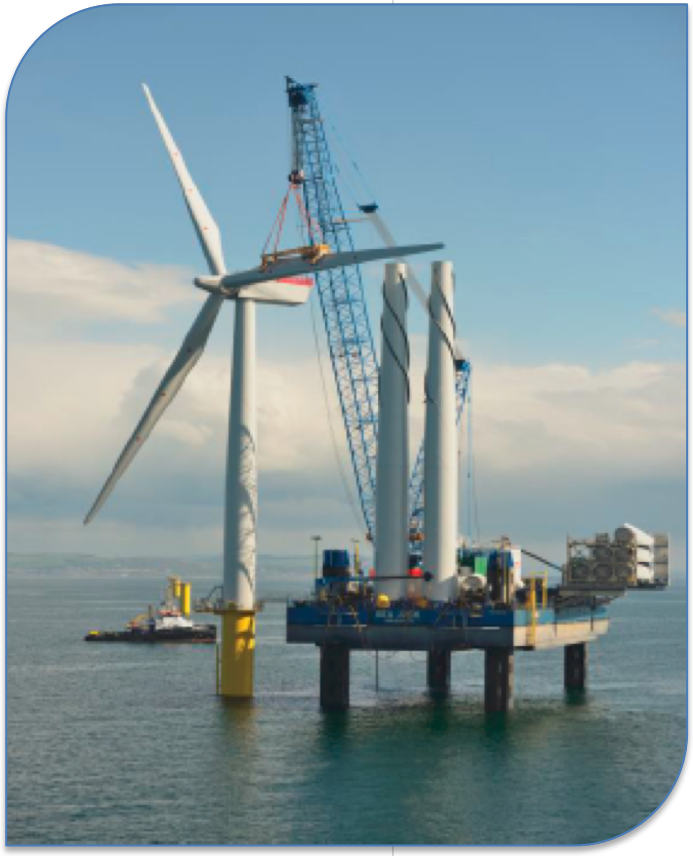
sse

Siemens Windpower's operation offers opportunities for local businesses

Examples of contracts for Siemens Windpower: Installation and Service (from 29.04.2018)	
CTVs	framework
Cranes	framework
Cherry picker / forklift	open
Fuel and Bunkering	open
Blade Rack Fabrication	open
Local Steel Work and NDT	open
Office Supplies	framework / open
Temporary Power	open
Local transportation	open
Local accommodation	Open
Security	open
Tools: hand-tools, safety equipment etc.	open
Temporary Storage Tents	open

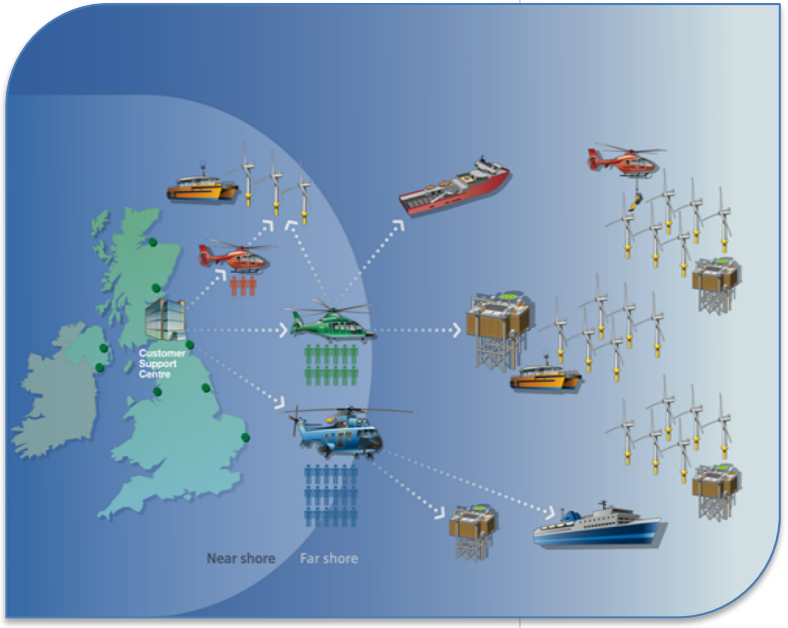
Services required – site construction phase

- Logistics / transport suppliers
- Safety & EHS equipment
- Spare parts
- Consumables
- Crew transfer vessels
- Helicopter service operation
- Port Services
- Accommodation for staff
- Construction support services:
  - ***Site cabins***
  - ***Generators***
  - ***Fuel Suppliers etc***



Services required – service operations phase

- Logistics / transport suppliers
- Safety & EHS equipment
- Crew transfer vessels (CTV)
- Helicopter service operation
- Port services / airport services
- Accommodation for staff
- Spare parts
- Consumables
- Service tools



Annex 4.8

SCP ITT requirements schedule

Project Title	Seagreen Offshore Wind Farm
Document Reference Number	LF000009- PRO-MA-PLN-0001

Supply Chain Plan ITT Requirements

Rev	Date	Reason for Issue	Originator	Checker	Approver
01	31.7.18	For Information	Mark Timmons	Mark Timmons	Allan Ralston
02	12.10.2018	For Information	Malcolm Grant	Mark Timmons	Mark Timmons

Table of Contents

1. Supply Chain Plan ITT Requirements

Background

Seagreen Wind Energy Limited ("SWEL"), a wholly owned subsidiary of SSE Renewables Developments (UK) Limited, has the exclusive development rights from Crown Estate Scotland for the Firth of Forth Zone of the UK's Round 3 offshore wind farm development programme.

The Zone is located approximately 25km east of Fife and covers an area of 2,852 km^2 in the outer Firths of Forth & Tay. The Zone has a potential installed capacity of 2.45GW.

Phase 1 to the north of the Zone has an installed capacity of up to 1.5GW and comprises an area of approximately 391 km^2 located to the east of Scalp Bank. It is split into two projects - Alpha and Bravo offshore wind farms - each with a separate consent held in the name of Seagreen Alpha Wind Energy Limited (Alpha) and Seagreen Bravo Wind Energy Limited, respectively (Alpha, Bravo and SWEL together "**Seagreen**").

Seagreen intends to bid Phase 1 into the UK Contracts for Difference ("CFD") auction expected in Spring 2019.

Requirements

Seagreen requires it's Contractors to achieve the desired outcomes set by the Department of Business Energy and Industrial Strategy ("BEIS") to (I) promote competition, (ii) foster Innovation and (iii) develop skills in the Offshore Wind Supply Chain (SCP Link). The Supply Chain Plan will be drafted in 2018.

Each prospective Contractor is required to complete the template overleaf which sets out the actions it has taken to date and will take in the future to achieve the desired competition, innovation and skills outcomes should the Contractor be successfully awarded a contract with Seagreen.

The template must also be signed and dated on behalf of the Contractor where indicated on the final page.

2. Contractor Supply Chain Plan Template

Contractors should populate the tables shown below in each of the four headings. Please limit the combined response to six pages in total. Additional rows or columns can be added to the tables if necessary.

Contractor name:

Work package:

Date:

1. Competition

Please highlight the actions taken or to be taken by the Contractor to promote competition in the Supply Chain. These actions should show how the contractor will encourage broader supply chains, remove barriers to entry for new companies, share best practice and lessons learned and will Improve awareness of commercial opportunities among established companies and new entrants. Please also explain the expected impact of these actions using the table below.

Action taken/ to be taken	Outcome of action/ expected outcome

2. Innovation

Please describe the actions that have and will be taken by Contractor to foster innovation in the Offshore Wind Supply Chain. This should include any innovation inherent in the services offered by Contractor, any Research & Development links to universities and any examples of testing/ demonstrating new installation or manufacturing methods, examples of sharing best practice & lessons learned, and any other practice that is justified as innovative.

Action taken/ to be taken	Outcome of action/ expected outcome

3. Skills

Please highlight any potential skills gaps and set out the actions that have or will be taken by the Contractor to develop skills in the offshore wind sector to mitigate skills shortages. This could be through internal training or working in partnership with education institutions, local or regional authorities and skills providers. Please also set out any intentions to employ apprentices and share best practice.

Action taken/ to be taken	Outcome of action/ expected outcome

Please provide a summary of the number of full time equivalent employees ("FTE's") expected to be utilised to deliver the proposed scope of works in the table below:

FTE Type/ Role	Role location	Yr1 FTEs	Yr2 FTEs	Yr3 FTEs

4. UK Content

Seagreen will track the UK content delivered by the Project. Please indicate any expected investment in new infrastructure that is planned in the UK or elsewhere that will be triggered by an order from Seagreen.

Please provide an estimate of the UK content of the scope of works in accordance with the industry standard UK content guidance found here

Please provide a breakdown of this assessment in tabular format with an explanation to describe the main sub-contractor assumptions and projected UK content levels.

5. Disclosure

By its execution hereof, the Contractor consents to the disclosure of the contents of this document by Seagreen to BEIS as part of it's Supply Chain Plan and no such disclosure shall constitute a breach of the confidentiality/non-disclosure agreement between the Contractor and Seagreen.

The Contractor acknowledges that in the event that Seagreen secures a contract for difference BEIS may make public the information contained herein and the Contractor irrevocably consents to such disclosure.

…… Authorised Signatory

…….. Name of Contractor

…….. Date

Annex 4.9

SCP Contract Clause

Supply Chain Plan - Contract Template Clause

The Contractor has responded to Employer's Supply Chain Plan tender schedule to indicate the actions it has taken or will take to promote Competition, Innovation and Skills and UK Content.

Based on this information the Contractor has the following Supply Chain Plan Commitments that it will deliver. The Contractor will:

Competition

- Secure an estimated UK Content of [x% note: to reflect UK content of final offer] for the Works (calculated using the Industry UK Content Methodology published by RenewableUK), by sourcing the following products and services from UK suppliers [explanation of areas that provide UK content]
- Work with Employer to ensure that sub contracting opportunities are promoted and made available to a wide pool of existing and potential new market entrants. This will entail advertising sub contracting opportunities on Employer or Contractor websites as well as taking part in Meet the Buyer events
- Provide consideration to Employer's list of registered suppliers and others suggested by Employer for subcontracting opportunities

Innovation

- Work collaboratively with Employer to examine further technical and commercial innovations and initiatives to reduce the cost of future offshore wind projects
- Aim to invest at least [x% of offshore wind annual turnover] or [£GBP/EUR] in research and development schemes during [2020 – 2023] that foster innovation in the offshore wind industry
- Share lessons learned with Employer to optimise the execution and decrease the overall levelized cost of energy of the Project
- [WTG provider – Support an Offshore Innovation Day proposal being considered by Employer in 2020 to review innovative new O&M products and services developed by the supply chain]

Skills

- Maintain a record of Contractor direct and indirect employment created or sustained by the Works
- Create a Skills Plan within 12 months following contract award which indicates the actions the Contractor is taking to avoid skills gaps and develop its workforce to deliver for future offshore windfarm projects
- Make staff available at its own cost to support initiatives to promote engineering and offshore wind as a career of choice by taking part in career talks at schools and colleges
- [WTG provider – Seek to recruit technicians and support staff in the locality of the project and work collaboratively with the Employer to explore the creation of a WTG technician apprenticeship scheme with local education providers]

Contractor will report on the Supply Chain Plan Commitments at regular intervals over the duration of the Works. [reporting obligation to be reflected in the payment terms]. Once the Works are concluded Contractor shall produce a short report which summarises the actions taken related to this clause and their impact. The Contractor shall implement the Supply Chain Plan Commitments in good faith.

Annex 4.10

Meet the Buyer - Beatrice Elgin 2015

Seagreen Supply Chain Plan

Presentation extracts only for purposes of Seagreen SCP

Beatrice Project Update

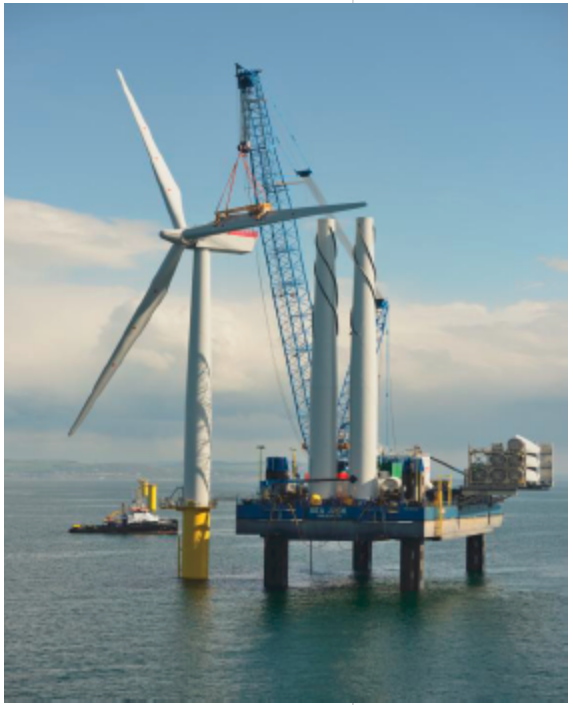
Séamus Mc Cabe

Commercial Manager - Beatrice Offshore Windfarm

Supply Chain Engagement – Elgin – 8th September 2015

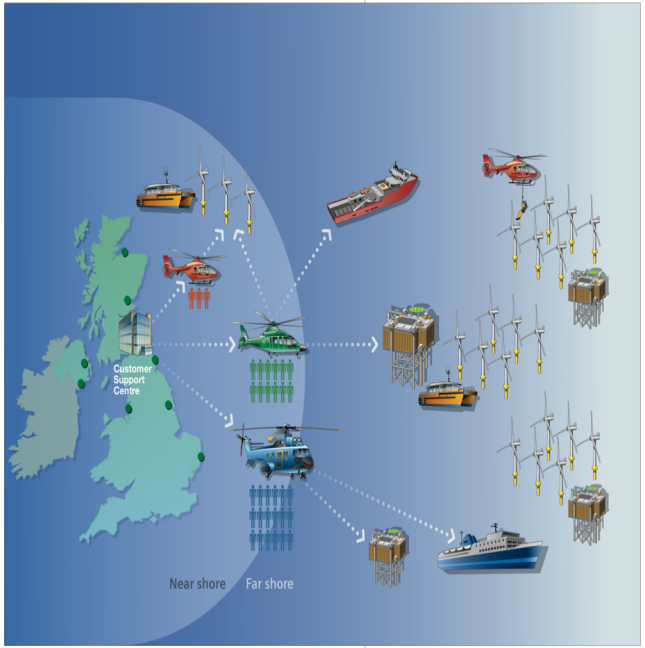
Services Required – Site Construction Phase

- Logistics / transport Suppliers
- Safety &EHS Equipment
- Spare Parts
- Consumables
- Crew transfer Vessels (CTV)
- Helicopter service operation
- Port Services
- Accommodation for staff
- Construction support Services – i.e. Site Cabins / Generators / fuel Suppliers etc



Services Required – Service Operations Phase

- Logistics / transport Suppliers
- Safety &EHS Equipment
- Crew transfer Vessels (CTV)
- Helicopter service operation
- Port Services / Airport Services
- Accommodation for staff
- Spare Parts
- Consumables
- Service Tools



Annex 4.11

Beatrice local supplier awards illustration

Scottish supply chain overview

The development and delivery of the £2.6bn Beatrice offshore wind farm has provided significant supply chain opportunities across a broad range of supply chain providers.

The map shows some of the Scottish companies who have provided vital goods and services.

Beatrice
Offshore Windfarm Ltd

GMR Henderson, Wick
O&M base renovation contractors

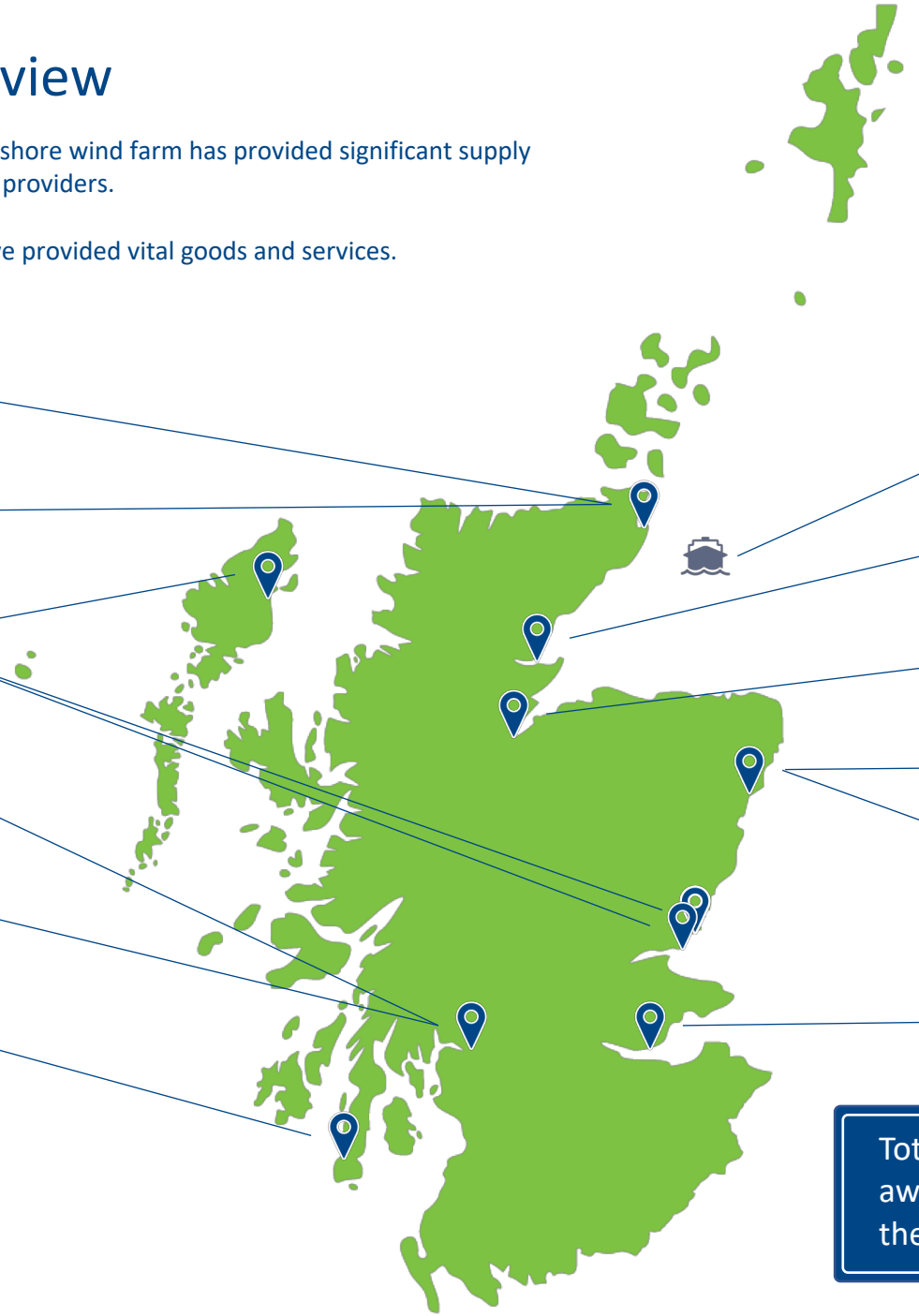
Simpsons, Wick
Provision of cranage and fuels

BiFab, Fife and Isle of Lewis
Manufacturers of piles and jackets

Atkins, Glasgow
Turbine foundation designers

BAM Nuttal, Glasgow
Principal Contractors at Wick

CS Wind, Machrahanish
Manufacturer of 12 turbine towers



Guard vessel services
Provision of guard vessels

Global Energy, Nigg
Operator of marshalling yard

HRI Architects, Inverness
Architects for Wick O&M base

Seaway Heavy Lifting, Aberdeen
Installation of piles and jackets

University of Aberdeen
Marine mammal monitoring

Babcock, Rosyth
Manufacturer of OTM topsides

Total of contract awards made to these companies c £240m

Annex 4.12

Contractors Supply Chain Plans

Note: In many cases only extracts of the full Contractor Supply Chain Plan submissions have been included to demonstrate commitment to deliver the BEIS outcomes regarding Competition, Innovation & Skills

Annex 4.12
Contractors Supply Chain Plan

[redacted]

4.12.2 MVOW SCP ITT requirements

[redacted]

4.12.13 Linxon SCP ITT requirements

[redacted]

Annex 4.12.2

MVOW SCP ITT requirements

Seagreen Supply Chain Plan

2. Contractor Supply Chain Plan Template

Contractors should populate the tables shown below in each of the four headings. Please limit the combined response to six pages in total. Additional rows or columns can be added to the tables if necessary.

Contractor name: MHI Vestas Offshore Wind

Work package: WTG Supplier

Date: 14th December 2018

1. Competition

Please highlight the actions taken or to be taken by the Contractor to promote competition in the Supply Chain. These actions should show how the contractor will encourage broader supply chains, remove barriers to entry for new companies, share best practice and lessons learned and will Improve awareness of commercial opportunities among established companies and new entrants. Please also explain the expected impact of these actions using the table below.

In addition to health & safety, all activities and actions contained within the below are subject to:

1. An MVOW customer winning a CFD in Auction Round 2019 (AR3) (and for the avoidance of doubt MVOW must be the contracted wind turbine supplier for the winning project(s)). The winning project(s) must be executed within the AR3 timeline.

2. MVOW quality requirements

3. Availability of supply within MVOW's project programme

4. Competitive price (total cost including any logistics savings)

MVOW believes that a competitive supplier is not only competitive on cost but also delivers a strong offering on safety, delivery and quality. All are central to MVOW's supplier selection and on-boarding process.

Action taken/ to be taken	Outcome of action/ expected outcome
MVOW will work with Government, national and local stakeholders including LEPs and local authorities, and our customers to realise our ambition to create a UK Offshore Wind Industrial Cluster comparable in scale to Esbjerg in Denmark or Cuxhaven in Germany [redacted]	This additional capacity is driven by and will be required to serve the UK's long-term market of 2GW+ per year in the 2020s and the predicted growth in the European and global markets – it is a commitment for CfD3 projects and the long-term growth of the UK industry.

centre and sites for supply chain businesses to co-locate with manufacturing and assembly. In the longer term, blade manufacturing, blade recycling and turbine test facilities will also form part of the Cluster. Our intention is to deliver projects successful in CfD3 from the Industrial Cluster.	Preliminary estimates indicate the total number of direct jobs for MHI Vestas and our supply chain partners to be in the order of 1500 jobs, doubling to 3,000 when considering indirect jobs and adjacent businesses. Conditional on MVOW achieving sufficient volume in CfD3 including an order from Seagreen
MVOW will establish a UK based procurement resource in 2019 to support the delivery of our mission to increase our UK footprint and deliver our Industrial Cluster vision.	Increased support and engagement with UK suppliers delivering increased UK content of the WTG
[redacted]	[redacted]
MVOW will continue to work with CS Wind, following a successful qualification batch and additional orders to Moray Firth East and Triton Knoll, to identify and remove barriers to supplying increased quantities of the top and middle tower sections for projects successful in CfD3. [redacted]	UK towers supplied for Seagreen, conditional on supplier competitiveness, capacity, quality and health & safety meeting MVOW standards [redacted]

[redacted]	[redacted]
[redacted]	[redacted]
MVOW has established and will continue to develop collaboration with DIT and other appropriate inward investment agencies to identify and support potential new entrants to our supply chain, UK or inward investment. MVOW will work with ORE Catapult's Fit For Offshore program and the Offshore Wind Growth Partnership to understand the opportunities to co-ordinate our activities.	Growing UK supply chain and delivery of Sector Deal ambitions
MVOW will continue to support the Martin Whitmarsh Review and his activity to engage with the new and existing supply chain. This activity will address barriers to entry for new supply chain companies (C1), working with the proposed Offshore Wind Growth Partnership. MVOW will support successful, long term delivery of the Offshore Wind Growth Partnership (OWGP) outcomes as outlined in the industry's Sector Deal proposal	Developing UK supply chain and export capabilities, increasing UK content for Seagreen
MVOW will continue active industry participation to share best practice and lessons learned in supply chain engagement and improve awareness of commercial opportunities where appropriate. MVOW will continue to participate in national and local events in partnership with RUK . Scottish Renewables, Scottish Enterprise, as a strategic partner with NOF Energy and with other organisations as appropriate to engage suppliers, share best practice and promote commercial	Improved awareness of commercial opportunities on Seagreen and sharing of best practice Support development of UK industry and export capabilities of the supply chain

opportunities, particularly in coastal communities hosting successful CfD3 projects MVOW will participate in relevant Supplier Days and other supplier engagement activity for projects successful in CfD3, including Seagreen, in collaboration with the customer. This will improve awareness of commercial opportunities and support new entrants to the supply chain	
MVOW will continue to develop its sourcing process to drive competitive tendering. MVOW will continue to improve understanding of our sourcing process with UK suppliers through continued industry engagement	Widest pool of UK suppliers bidding for Seagreen, driving down costs Continued cost reduction and development of UK supply chain
MVOW will continue the Collaborative Approach for projects where MVOW has been selected as Preferred Supplier. MVOW expects this approach to deliver continued cost optimisation and opportunities for UK suppliers.[1]	Widest pool of UK suppliers bidding for Seagreen, driving down costs Continued cost reduction and development of UK supply chain

[1] MVOW Collaborative Approach

2. Innovation

Please describe the actions that have and will be taken by Contractor to foster innovation in the Offshore Wind Supply Chain. This should include any innovation inherent in the services offered by Contractor, any Research & Development links to universities and any examples of testing/ demonstrating new installation or manufacturing methods, examples of sharing best practice & lessons learned, and any other practice that is justified as innovative.

Action taken/ to be taken	Outcome of action/ expected outcome
MVOW will continue to participate in ORE Catapult's Offshore Wind Innovation Hub and contribute to the development of strategic innovation opportunities for the UK	Access and guidance to development of potentially relevant innovations Continued development of strategic innovation opportunities for the UK
MVOW will continue dialogue with ORE Catapult through Vestas as a sub-contractor to explore future opportunities for UK rotor blade testing.	Development of potentially appropriate rotor testing Development of UK testing capabilities
MVOW will work with the National Composites Centre to explore collaboration opportunities on future composite challenges.	Innovation in blades drives cost reductions
MVOW will continue to drive test and certification programmes for innovations installed at Blyth and Aberdeen Bay in collaboration with the customer and ORE Catapult.	MVOW will continue to develop these innovations to optimise business cases and drive continued cost reduction for projects successful in CfD3
MVOW will continue to utilise our turbine design to enable product optimisation in incremental steps, building on the world-leading V164-10.0MW	Optimised business cases for projects successful in CfD3. Continued cost reduction, increased competition and value for the UK consumer
MVOW will continue to innovate in blades optimising our energy capture and power production, expanding Isle of Wight facility with the addition of a second mould	Optimising Seagreen's business case and reducing cost to the consumer. MVOW will supply a significant proportion of blades to Seagreen from IoW

MVOW designed and will continue to develop the SMART Turbine products to contribute to the optimisation of the business case. E.g. SMART Fast Data sets the scene for digitalisation advancements and use of big data. MVOW will continue to ensure with the MAX Performance portfolio a maximised return on investment for the customer and optimal performance of the turbines.	Enhanced design assessments, turbine monitoring and real-time decision making to optimize production throughout Seagreen's project lifecycle
MVOW will continue with our Collaborative Approach with customers selected as Preferred Supplier for CfD3 and anticipate continued optimisation.	MVOW collaborates with customers following appointment as Preferred Supplier to deliver cost optimisation. This has delivered in successful bids for our customers in UK, NL, BE and DK.
MVOW will continue to explore innovative inspection methods	Working with UK companies like PDG Helicopters has resulted in significant savings, reduced risk and increased AEP. Continued cost savings and reduced risk, opportunities for UK suppliers to develop capabilities
MVOW will implement an Execution Model tool to improve service optimisation in 2019.	Gathers all data related to service planning activity to calculate the optimum time to undertake service tasks. Sofa will benefit from this tool and the data from MVOW's current service operations

3. Skills

Please highlight any potential skills gaps and set out the actions that have or will be taken by the Contractor to develop skills in the offshore wind sector to mitigate skills shortages. This could be through internal training or working in partnership with education institutions, local or regional authorities and skills providers. Please also set out any intentions to employ apprentices and share best practice.

Action taken/ to be taken	Outcome of action/ expected outcome
MVOW has undertaken an assessment of the future skills requirement to fulfil the requirements of the installation of the second mould. MVOW anticipates the structure will follow and replicate that which supports the first mould. MVOW will continue to actively monitor the future skills requirement during the ramp up of the second mould. MVOW will continuously undertake assessments of whether the necessary competencies are in place to deliver technology requirements at West Medina Mills, MVOW's leading blade facility.	Continued excellence at the world leading blades facility, delivering competitive turbines for projects successful in CfD3 as the 80m V164 blade is developed and enhanced in the UK. MVOW will directly employ over 700 people at the Isle Of Wight facility by end 2020 with a further 700+ jobs created in the indirect/induced supply chain Development of UK skills base and a south coast composites cluster
MVOW will utilise our in-house structured training to ensure the right skills are in place at all levels to continue to deliver world class service to our customers. Depending on customer requirements and length of service contract, MVOW expects projects successful in CfD3 to follow a similar service set up to CfD2 projects at the appropriate scale. MVOW's Training Review Board: Service will continue to evaluate required training requirements and whether these will be conducted internally or externally. Local training providers will be used for external training where possible.	MVOW expects to continue to recruit locally for service roles for projects successful in CfD3. Developing long term skilled jobs, often in coastal communities where they are needed to most, contributing to Sector Deal ambitions Ongoing skills assessment and capacity building in manufacturing and service ensures MVOW can deliver high quality for customers, anticipating gaps before they arise Develop Scottish skills base and cluster building on Aberdeen and Moray Firth East to serve Seagreen
MVOW will continue to develop its in-house accredited training program based at the Centre for Composites, Advanced Manufacturing and	Ensure successful CfD3 projects benefit from a highly skilled workforce and therefore a high quality product.

Marine (CECAMM on the Isle of Wight, investing c.£1m to date. MVOW will deliver Core Skills Training for all future IoW employees at CECAMM, investing in a new training mould. As part of this program, MVOW will continue to put blade technicians through the NVQ Level 3 in Composites. CECAMM is a partnership with the Isle of Wight College, Solent LEP and local businesses including MVOW.	Develop composite skills base learning from adjacent industries in the region, such as aerospace. Contributing to an additional £42m p.a. local economic benefit created by MVOW in the Solent region
MVOW will continue to develop and deliver structured training for service technicians, delivering increased AEP and business case optimisation.	Develop Scottish skills base and cluster to serve Seagreen
MVOW will continue to utilise the Apprenticeship Levy to invest in the skills and training required as IoW and our Service team expands and the Apprenticeship Levy continues to develop	MVOW Blades are utilising the Apprenticeship Levy to fund NVQ 2 and 3 in leadership & management at Isle of Wight colleges. For Service, MVOW is exploring funding HNCs in Electrical and Mechanical Engineers and Team Leader and Management qualifications. Seagreen can expect to benefit from these skills Development of Isle of Wight skills base and position as a world-leading composites cluster Development of Scottish clusters and skills base resulting in increase in local productivity
MVOW's future skills assessment has identified that the installation of the second mould at WMM will create additional demand for UK management skills and is using the Apprenticeship Levy to support this training	Development of Isle of Wight skills base and position as a world-leading composites cluster
MVOW will continue to make all reasonable efforts to increase gender diversity in its UK manufacturing and service workforce. MVOW will introduce a Code of Conduct, including diversity, in 2018. MVOW will establish a company-wide	Seagreen to benefit from a more diverse MVOW workforce

working group to develop a strategy to increase workforce diversity. MVOW will continue to actively participate in UK industry initiatives to increase diversity, for example, MVOW will continue to be a member of RUK's Switch List Service: MVOW will continue to assess need and promote from within where we believe the skills are present or can be developed through appropriate leadership training.	This activity will increase the pool of available talent able to service Seagreen Contribute to increased overall industry diversity and sector deal ambitions
MVOW will continue to support IoW Council, IoW College, local schools and CECAMM to highlight opportunities to potential students. MVOW anticipates these efforts to increase as our IoW footprint expands and the pipeline of talent required increases MVOW will continue to offer IoW college students work experience within PE and Quality departments if suitable applications are received and operational requirements allow	Increased pipeline of talent to produce high quality product for Seagreen and development of South Coast composites cluster
MVOW will work with our customers to run school and community events to build engagement with our future workforce on these projects to ensure a pipeline of local technicians. MVOW's strong local links through the Service organisation will drive this engagement. MVOW will continue engagement with English and Scottish colleges and higher education institutions for projects successful in CfD3. MVOW is committed to exploring the development of apprentices at Moray Firth East and Triton Knoll and will do so for projects successful in CfD3 in collaboration with the customer and according to project need.	Increased pipeline of local skills for Seagreen, increasing UK content and improving local economic productivity

Please provide a summary of the number of full time equivalent employees ("FTE's") expected to be utilised to deliver the proposed scope of works in the table below:

FTE Type/ Role	Role location	Yr1 FTEs	Yr2 FTEs	Yr3 FTEs

4. UK Content

Seagreen will track the UK content delivered by the Project. Please indicate any expected investment in new infrastructure that is planned in the UK or elsewhere that will be triggered by an order from Seagreen.

Please provide an estimate of the UK content of the scope of works in accordance with the industry standard UK content guidance found here

Please provide a breakdown of this assessment in tabular format with an explanation to describe the main sub-contractor assumptions and projected UK content levels.

5. Disclosure

By its execution hereof, subject to the Contractor being able to redact certain portions of this docucment and the supply chain plan to be provided the Contractor consents to the disclosure of the contents of this document by Seagreen to BEIS as part of it's Supply Chain Plan and no such disclosure shall constitute a breach of the confidentiality/non-disclosure agreement between the Contractor and Seagreen.

The Contractor acknowledges that in the event that Seagreen secures a Contract For Difference BEIS may wish to make public the information contained herein. The Contractor will work with Seagreen to promote the activities contained within the Supply Chain Plan whilst preserving the confidentiality of initiatives of a commercially sensitive nature.

..... Authorised Signatory

MHI VESTAS Name of Contractor

19th December 2018 Date

MHI VESTAS OFFSHORE WIND

UK **Supply Chain**

Plan Report.

January 2019

Seagreen Note: Only extracts of full plan provided by MVOW included as part of Seagreen SCP Submission

DISCLAIMER

The information contained herein is provided in good faith and is accurate to the best knowledge of MHI Vestas Offshore Wind ("MVOW"). This supply chain plan report 2019 ("SCPR2019") was approved by MVOW's executive management in December 2018.

In addition to health and safety ("H&S"), all activities and actions contained within SCPR2019 are subject to:

1. An MVOW customer winning a CfD in auction round 2019 ("AR3") (and for the avoidance of doubt MVOW must be the contracted wind turbine supplier for the winning project(s)). The winning project(s) must be executed within the AR3 timeline;

2. MVOW's quality requirements;

3. Availability of supply within MVOW's project programme; and

4. Competitive price (total cost including any logistics savings)

This document is provided for information purposes only, and MVOW makes no warranty or representation and shall have no liability to any party who may seek to use its content in respect of any decision or course of action.

MVOW's Industrialisation Strategy

Commitment Summary

Commitment	Impact
Work with the UK government, national and local stakeholders including Local Enterprise Partnerships and local authorities, and our customers to realise our ambition to create a UK offshore wind industrial cluster ("Cluster") comparable in scale to Esbjerg in Denmark or Cuxhaven in Germany. Contingent on volume achieved in CfD AR3, the Cluster would be operational for projects successful in CfD AR3.	This additional capacity is driven by and will be required to serve the UK's long-term market of 2GW+ per year in the 2020s and the predicted growth in the European and global markets. The Cluster is a commitment for CfD AR3 projects and the long-term growth of the UK offshore wind industry. Preliminary estimates indicate the total number of direct jobs for MVOW and our supply chain partners to be in the order of 1,500 jobs, doubling to 3,000 when considering indirect jobs and adjacent businesses.
Deliver UK content of 24% for projects successful in CfD3, depending of the length of service agreement with MVOW and overall project set up. This commitment is conditional on MVOW achieving sufficient capacity in AR3 to deliver the Industrial Cluster. This assessment will use the recognised BVG Associates methodology.	Increased WTG contribution to overall UK content and increased opportunities for the UK supply chain where it is competitive.
In a lower volume scenario, MVOW will establish a PCM Assembly facility in addition to existing commitments.	c.100 jobs and opportunities for the supply chain, particularly power electronics, to co-locate with the facility. This could deliver c.200 jobs in total. MVOW established a PCM assembly facility at the Port of Esbjerg in 2017 to meet the strong demand for the V164 platform. This followed expansion of MVOW's pre-assembly facility at the Port of Esbjerg. MVOW would expect to utilise our experience to establish a UK facility.

Add a second blade mould on the Isle of Wight ("IOW") to be operational by Q1 2019.	Doubling manufacturing capacity, creating over 300 direct jobs, over 700 in the indirect supply chain and an additional £42 million per year gross value added ("GVA") benefit to the local economy once operational.
MVOW will continue to work with CS Wind, following a successful qualification batch and additional orders to Moray Firth East and Triton Knoll, to identify and remove barriers to supplying increased quantities of the top and middle tower sections for projects successful in CfD AR3.	Increase supply of competitive UK towers for UK projects and for exports, safeguarding existing jobs and creating new.
MVOW, with UK government and inward investment agencies, will work with potential inward investors, customers and associated supply chain to identify and remove barriers to new tower manufacturers locating in the UK. This would be additional capacity to CS Wind at Machrihanrish.	This co-location will drive opportunities for the supply chain as well as efficiencies in manufacturing and logistics, contributing to continued reductions in the cost of energy.
Continued expansion of our operation and maintenance capability, building on the UK's position as the global centre of expertise for the V164 platform.	Skilled, long-term UK jobs in coastal communities supporting the proposed Sector Deal targets of 27,000 UK offshore wind jobs by 2030 and an uplift in regional productivity.
Continue working with new and existing suppliers to the offshore wind industry to understand barriers to entry and growth in collaboration with our customers, Government and industry bodies.	

Continue to be a vocal and active participant in the UK offshore wind industry through trade associations, business development organisations and implementation of the proposed Offshore Wind Sector Deal.	

The UK represents over 50% of MVOW's business today and we fully anticipate this to grow. The opportunity is now for the UK to capitalise on the world's leading market to deliver a supply chain to match and the economic benefit to the UK promised by the industry. MVOW's market-leading turbine and our commitment to significantly growing our UK industrial footprint will ensure that our customers will stay ahead of the competition in CfD AR3. We are ambitious and determined to seize this opportunity in partnership with our customers.

MVOW is and will remain strongly committed to growing our UK industrial footprint: manufacturing facilities, supply chain and service operations. Our future growth is closely linked to continued support from the UK government for offshore wind through the CfD and wider policy framework including the Clean Growth Strategy and Industrialisation Strategy, including an Offshore Wind Sector Deal. The UK government's commitment in July 2018 to a pipeline of CfD auctions around every two years and continued budget support is fundamental to encouraging supply cain investment, deployment and cost reduction for the consumer. A pipeline of at least 2GW a year is required to deliver MVOW's ambitions and to deliver a world-leading industry in the UK.

Offshore Wind Industrial Cluster

MVOW will work with the UK government, national and local stakeholders including LEPs and local authorities, and our customers to realise our ambition to create a UK offshore wind industrial cluster ("Cluster") comparable in scale to Esbjerg in Denmark or Cuxhaven in Germany. Our intention is to deliver projects successful in CfD AR3 from such a Cluster.

The Cluster will create significant opportunities for new and existing supply chains, particularly in towers and PCM components, attracting inward investment and driving the development of existing capabilities to create an export ready UK supply chain. The Cluster approach provides site capacity for component manufacturers to co-locate with factories and larger components – for example, PCM assembly to locate next to tower manufacturing or a switchgear manufacturer next to PCM assembly. As well as being commercially attractive, co-location drives out logistics costs contributing to continued cost reduction.

MVOW's vision[1] includes:

- A permanent pre-assembly harbour that will create permanent construction jobs
- A PCM assembly
- A tower manufacturer
- A new UK offshore logistics centre
- Sites for supply chain businesses to co-locate with manufacturing and assembly

In the longer term, blade manufacturing, blade recycling and turbine test facilities will also form part of the Cluster. MVOW would expect there to be significant opportunities for suppliers to the tower manufacturer and the PCM assembly to co-locate at the Cluster to supply projects successful in CfD AR3. These could be UK suppliers or new inward investment. There is also capacity to site training and research and development ("R&D") facilities in the Cluster.

The Cluster will be additional capacity to that which exists today. For MVOW, this would be blade manufacturing additional to the IOW, PCM assembly additional to MVOW's facility at Esbjerg and additional pre-assembly. We would expect the Cluster to attract additional tower manufacturing capacity to CS Wind in Machrihanish. This additional capacity is driven by and will be required to serve the UK's long-term market of 2GW+ per year in the 2020s and the predicted growth in the European and global markets. The Cluster is a commitment for CfD AR3 projects and the long-term growth of the UK industry. The Cluster will provide the basis and the site for the UK supply chain to serve UK projects and export globally, driving the fivefold increase in export value to £2.6 billion per year from globally competitive companies by 2030 and 27,000 skilled jobs outlined in the offshore wind industry's Sector Deal proposal.

MVOW's preliminary estimates indicate the total number of direct jobs for MVOW and our supply chain partners to be in the order of 1,500 jobs, doubling to 3,000 when considering indirect jobs and adjacent businesses. BVG Associates assess that MVOW will create £130 million GVA annually by 2021, rising to £160 million by 2030. Realising the Cluster would generate additional £20 million GVA annually by 2030[2]. This would realise and exceed MVOW's previous industrialisation strategy ambition outlined in earlier Supply Chain Plans of 800 jobs and £200 million investment by 2030. Beyond that, the Cluster is a commitment and a necessary enabler for the long-term growth of the UK industry and maintaining the UK's position as a world leader in offshore wind.

1 Cluster Infographic
2 BVG Economic Impact Assessment

MVOW will work with the UK government, local stakeholders and our customers to develop our Cluster vision in the next 12-18 months. We anticipate moving forward with our vision following the announcement of our customers winning sufficient volume in the CfD AR3 results in Q4 2019. This timeline would align with turbine, component and pre-assembly delivery from the Cluster for projects successful in CfD AR3.

MVOW is proud to pursue this vision but we cannot realise it alone. We will work with the UK government, national and local stakeholders including Local Enterprise Partnerships and local authorities, and our customers to realise our Cluster ambition. Support from the UK government will be required to bring together these stakeholders to realise the scale of land and quayside and public/private investment required.

MVOW industrialisation today

The Cluster is an ambitious vision that will require collaboration to deliver. To complement our ambition and to continue delivery of our growth and industrialisation ambitions today, MVOW will implement the following:

- Blade Manufacture: Addition of a second mould at IOW, creating 380 new direct jobs at the facility. This investment is confirmed and the second mould will be operational in Q1 2019[3]. This increased capacity will create over 700 additional jobs in the regional supply chain. We expect our investment to deliver an additional GVA benefit to the local economy of £42 million annually between 2021-2030. MVOW will supply a significant proportion of blades from IOW to UK projects in CfD AR3.
- Tower Fabrication: Award a qualification batch of top, middle and bottom tower sections from CS Wind for Moray Firth East and Triton Knoll. Following a successful qualification, MVOW will target an additional production batch of top and/or middle tower sections to CS Wind.
- PCM assembly: If successful with sufficient volume in CfD AR3, MVOW will establish a PCM assembly facility in the UK. This will support new supply chain entrants, particularly for the UK's experienced power electronics, transformers and switchgear suppliers and inward investors. MVOW will work closely with the UK government, Scottish government, local bodies such as NOF Energy and EEEGR and our customers to understand barriers to entry for these suppliers.

3 http://www.mhivestasoffshore.com/new-blade-mould-arrives-at-mhi-vestas-factory/

- Build on our success to date with new and existing suppliers to the offshore wind industry to understand barriers to entry and growth in collaboration with our customers, Government and industry bodies.
- Continued expansion of our operation and maintenance capability: MVOW's service team is world-leading, delivering optimised projects for our customers as well as attracting new entrants to the supply chain, innovating in service and driving down costs, and developing a sustainable and exportable skills base for the UK. MVOW's service team also collaborates with our customers to train their technicians as required.

UK Content

MVOW has grown the UK content of its V164 projects consistently since the establishment of the joint venture in 2014. Using the established BVG Methodology for measuring the UK content of UK offshore wind farms (2015) as a basis for our forecast, MVOW is on course to deliver our Supply Chain Plan 2016 ambition of approximately 21% UK content for CfD projects successful in the 2016/17 CfD auction (AR2). Our success is a result of increased UK activity in blades, towers, service and ongoing engagement with the supply chain.

To build on this track record, MVOW expects the overall UK content for projects successful in CfD3 to increase to approximately 24%, depending on the length of service agreement and project set up. This level of UK content is conditional on MVOW achieving sufficient capacity to deliver the Industrial Cluster. The benefits of delivering the Cluster go far beyond a percentage figure for projects successful in CfD AR3. It will attract the investment required for the UK supply chain to serve UK projects and export globally to 2030 and beyond, supporting the delivery of the Sector Deal ambitions of £2.6 billion in exports p.a., 27,000 skilled jobs and a GVA uplift of up to 2% by 2030.

Strong track record of delivering our commitments

The commitments made in this Supply Chain Plan builds on our track record of delivery of our Supply Chain Plan 2016 commitments:

Commitment in SCP16	Actions to deliver since 2016	Outcome
MVOW expects local content to increase to c21% from 18% for AR2 projects.	MVOW on target to deliver this ambition for projects successful in CfD2.	Delivered
MVOW expects to export significantly in 2017.	Significant 2017 output and all WMM 2018 output for export.	Delivered
MVOW will open a blade painting facility in the UK in 2017.	Ground broken 2017, Fawley operational.	Delivered
MVOW expects to be able to procure competitive UK fabricated towers.	MVOW will pre-qualify a batch of 12 towers (3 sections) for Moray Firth East and Triton Knoll. A decision in a future larger batch order is under consideration.	In Progress
MVOW is a positive and active participant in the development of the UK industry.	Active in OWIC, Sector Deal, OWIG, OWW, engagement in regional partnerships.	Delivered
MVOW will trial an e-tendering tool in Q4 2016 which will be rolled out in 2017 if successful.	Tool rolled out and in active use.	Delivered
MVOW supports new entrants and new suppliers of a particular scope.	Good track record of introducing new suppliers in to the turbine Bill of Material and indirect scope.	Delivered
All MVOW CfD projects will employ staff with the latest, most appropriate qualifications.	Continued investment in skills in manufacturing (CECAMM) and operations.	Delivered
MVOW supports the development of apprentices.	Using the Apprenticeship Levy and planning to explore for Moray Firth East/Triton Knoll.	In Progress

Economic benefit to the UK of realising our vision[4]

MVOW is fully committed to growing our UK industrial footprint. The installation of the second blade mould on the Isle of Wight is the most recent stage of this growth and will create 1,100 direct, indirect and induced jobs worth £42 million additional value add per year to the regional economy once the mould is fully operational.

This picture will significantly change in 2023. In a lower volume scenario where MVOW invests in a PCM Assembly but the Cluster is not able to be realised, there is a significant increase in MVOW-associated jobs. These PCM jobs are not only created on the site of the facility but also in the supply of components, including some electrical equipment, an area in which the UK has a strong specialism, particularly in the West Midlands and the North West. In this scenario MVOW's success in winning orders throughout the 2020s is associated with a major increase in the O&M jobs associated with MVOW. About 1,000 direct, indirect and induced O&M jobs are created between 2021 and 2030. In 2030, MVOW will employ directly about 1,900 people in the UK, making it one of the largest UK employers in offshore wind. Most of these jobs are created from demand from UK wind farms, but those supported by export of blades will be significant too.

If MVOW achieves sufficient volume to deliver the Cluster for CfD AR3 projects, the first phase would create a location on the East Coast with 1,100 direct and indirect workers, of which 500 would be new UK jobs. There would also be additional UK jobs from electrical and component supply, where the UK has long standing strengths in the West Midlands and North West England. When phase I of the cluster is operational, MVOW would support 5,900 direct, indirect and induced UK jobs, including c.1,900 direct jobs by 2030. Of the additional 800 jobs created by the Cluster, 700 are associated with tower and tower internals production.

The Cluster will generate an additional £20 million annually in GVA in an East Coast location.

Phase II of the Cluster would bring a new blade production plant, a turbine test facility and a blade recycling facility. The plans for these facilities are at an early stage and their economic impacts have therefore not yet been modelled here in detail. The new blade production facility would take over the functions of the Isle of Wight facility, enabling it to revert to its previous R&D role, but the new factory would be at larger scale. It would most likely employ more than 1,000 people with as many again indirect jobs in the supply chain. If the Vestas R&D function on the Isle of Wight is a guide then a turbine test facility would probably employ about 200 people with an additional indirect

4 BVG Economic Impact Report

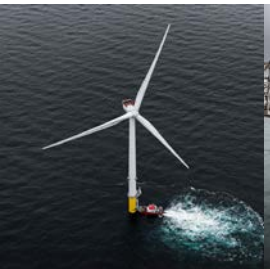
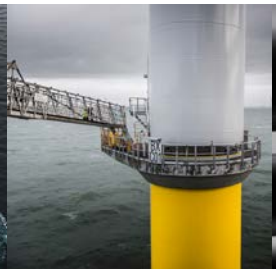
100 in the supply chain. A blade recycling facility is likely to grow incrementally. In the first instance, there are likely to be relatively few blades from decommissioned wind farms, perhaps handling 100 blades per year. This would be expected to grow and to offer research opportunities as this process develops. A facility that supplied glass and carbon rovings to its neighbouring production plant could, in the first instance, employ about 200 people with another 50 in the UK supply chain. Overall, phase II of the Industrial Cluster could involve over 2,500 jobs associated with MVOW, of which 1,500 would be new to the UK. There is potential for many more jobs created by third party investors.

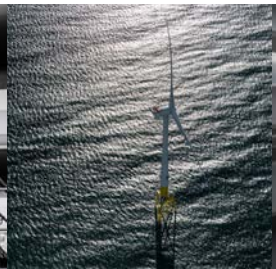
Competition

Commitment Summary

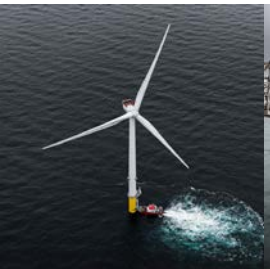
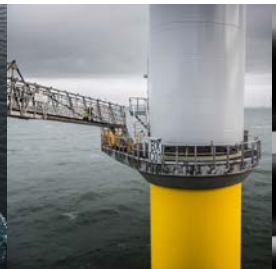
Criteria	Commitment	Impact
C1: Support new entrants to the sector.	• MVOW will establish a UK based procurement resource in 2019 to support the delivery of our mission to increase our UK footprint and deliver our Cluster vision.	Increased support and engagement with UK suppliers, particularly in increasing awareness of commercial opportunities and support new entrants to MVOW's supply chain.
	• • MVOW will continue to build on our strong track record of introducing new suppliers to our supply chain where it is competitive to do so. MVOW's Cluster concept and the establishment of MVOW's PCM assembly in the event of a lower volume outcome in CfD AR3, will create opportunities for UK suppliers to co-locate with these facilities, improving their competitiveness particularly through lower logistics costs and developing their capabilities ready for export and to service CfD AR3 projects.	Attract new entrants and investors to the UK market as well as develop existing capabilities to supply MVOW and increase the UK content of MVOW's WTG, contributing to MVOW's UK content ambition and the overall industry ambition in the Sector Deal proposal of 60% TOTEX UK content, by 2030. MVOW expects to support over 3,000 jobs, 1,100 directly employed by MVOW, by 2021. C.1,500 of the 3,000+ jobs will be in the Solent area. This can rise to 5,000, including 3,800 direct and indirect jobs, in 2023 in a scenario where MVOW achieves a lower volume in CfD AR3, investing in a PCM assembly for CfD AR3 projects with associated UK supply chain opportunities. Between 2021 and 2030, MVOW will deliver £1.5bn GVA to the UK economy in this scenario.

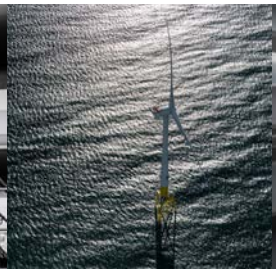
		If MVOW achieves sufficient volume to deliver the Cluster for CfD AR3 projects, the first phase would create a location on the East Coast with 1,100 direct and indirect workers, of which 500 would be new UK jobs. There would also be additional UK jobs from electrical and component supply, where the UK has long standing strengths in the West Midlands and North West England. When phase 1 of the cluster is operational, MVOW would support 5,900 direct, indirect and induced UK jobs, including c.1,900 direct jobs by 2030. Of the additional 800 jobs created by the Cluster, 700 are associated with tower and tower internals production. The Cluster will generate an additional £20 million annually in GVA.
	• • •	
	1.1) MVOW has established and will continue to develop collaboration with the Department for International Trade (DIT) and other appropriate inward investment agencies to identify and support potential new entrants to our supply chain, UK or inward investment. This activity is ongoing and will support the Cluster vision and the significant opportunities for tower manufacturers and PCM assembly and associated indirect supply chain to co-locate.	MVOW is currently working with DIT on weldments and electricals in the UK and would expect this scope to widen.




	1.2)	MVOW will source a significant proportion of blades for projects successful in CfD AR3 from IOW, supporting potential new entrants to the sector to serve the growing market. MVOW will continue to support new UK entrants to the blade supply chain to serve the expanded IOW and Fawley facility where it is competitive to do so through increased UK procurement resource, continuing UK industry activity, Composites UK and engagement through the Catapult network and the National Composites Centre.	When fully operational in 2020, installing the second blade mould on IoW will support over 700 jobs in the regional supply chain. MVOW will create over 300 direct jobs on the IOW with the second blade mould. The second mould investment will create an additional regional value added of £42 million per annum. Create opportunities for new market entrants, particularly from the adjacent composites and aerospace industries based in the Solent region.
	1.3)	MVOW will continue to support the Martin Whitmarsh Review and his activity to engage with the new and existing supply chain. The Review will support new entrants and identify barriers to entry for UK suppliers.	Create opportunities for new and existing supply chain, particularly innovative SMEs.
	1.4)	MVOW will continue to work with NOF Energy as a Strategic Partner and Scottish Enterprise to engage with their supplier database, particularly focused on the East Coast and in categories including cranes, labour hire, tools and site development.	
	1.5)	MVOW will continue to work with CS Wind, following a successful qualification batch and additional orders to Moray Firth East and Triton Knoll, to identify and remove barriers to supplying increased quantities of the top and middle tower sections for projects successful in CfD AR3.	Supporting UK tower manufacturers to develop capabilities and safeguarding CS Wind jobs.



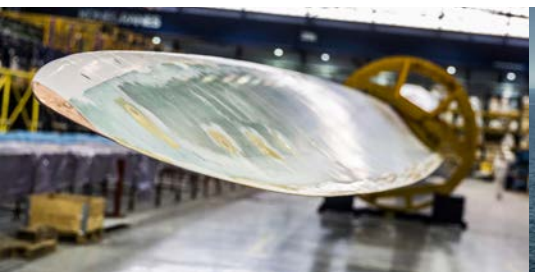
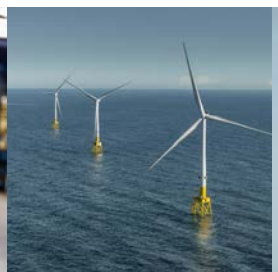

		MVOW, with UK Government and inward investment agencies, will work with potential inward investors, customers and associated supply chain to identify and remove barriers to new tower manufacturers locating in the UK. This would be additional capacity to CS Wind at Machrihanish.	The Cluster will create a suitable site for existing and new tower manufacturers to co-locate with other facilities and suppliers. This co-location will deliver improved efficiencies in manufacturing and logistics, contributing to continued reductions in the cost of energy.
C2: Identify and remove barriers to entry.	2.1)	MVOW will support new suppliers identified in SCP16 and others where appropriate to develop their competencies and address their barriers to growth, enabling them to export their expertise to support MVOW in other markets. MVOW will continue to support Boston, All NRG and 3Sun as suppliers to MVOW pre-assembly at the Port of Vlissingen. This work is addressing barriers to entry for these companies to European markets.	Building the UK supply chain to deliver industry's ambitions of 27,000 jobs and £2.6 billion per year in exports by 2030.
	2.2)	MVOW will co-fund and actively participate in the implementation of the Offshore Wind Growth Partnership as outlined in the industry's sector deal proposal.	
C3: Has or intends to share best practice.	3.1)	Collaboration in safe operations (see also innovation section). See C4.	
C4: Improve awareness of the commercial opportunities.	4.1)	MVOW will continue to participate in national and local events in partnership with RUK, Scottish Renewables, Scottish Enterprise, ORE Catapult, as a strategic partner with NOF Energy and with other organisations as appropriate to engage suppliers, share best practice and improve awareness of commercial opportunities, particularly in coastal communities hosting successful CfD AR3 projects.	Increase awareness of commercial opportunities and support new entrants to MVOW's supply chain where they are competitive and in regions relevant to CfD AR3 projects, the East Coast and Scotland

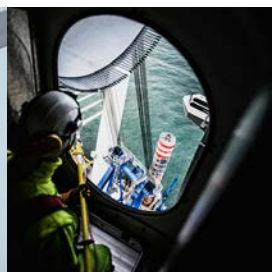
	4.2)	MVOW will participate in relevant supplier days and other supplier engagement activity for projects successful in CfD AR3, in collaboration with the customer.	
	4.3)	MVOW will work with the customer and other UK organisations, including DIT, Scottish Enterprise and RUK, local authorities and the LEPs, to enhance the use of the e-sourcing tool in the UK and for projects successful in CfD AR3.	
C5: Encourage competitive procurement processes and more open competition.	5.1)	MVOW will continue to develop its sourcing process to drive competitive tendering and improve understanding of our sourcing process with UK suppliers through continued industry engagement and increased UK procurement resource.	Building a globally competitive UK supply chain.
	5.2)	MVOW will continue the Open Book Approach for future turbine development. MVOW will continue the Collaborative Approach for projects where MVOW has been selected as Preferred Supplier.	

Innovation

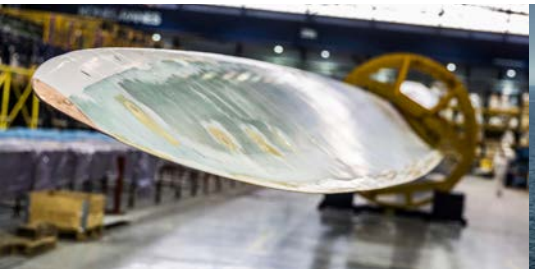
Commitment Summary

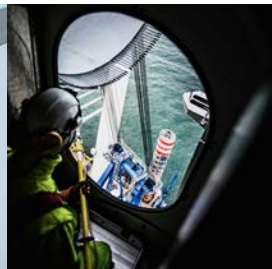
Criteria	Commitment	Impact
I1: R&D including links to universities and R&D.	1.1) MVOW will continue to participate in ORE Catapult's Offshore Wind Innovation Hub and contribute to the development of strategic innovation opportunities for the UK in collaboration with ORE Catapult and other organisations. 1.2) MVOW will continue dialogue with ORE Catapult through Vestas as a sub-contractor to explore future opportunities for UK rotor blade testing. 1.3) MVOW will work with the National Composites Centre to explore collaboration opportunities on future composite challenges. MVOW will continue to work with the Centre for Composites and Advanced Manufacturing on the Isle of Wight to explore future collaboration with relevant universities to deliver university-level courses. 1.4) MVOW will continue to drive test and certification programmes for innovations installed at Blyth and Aberdeen Bay in collaboration with the customer and ORE Catapult. 1.5) MVOW will work closely together with relevant customers to mature floating offshore wind technology for future application.	Developing these innovations will continue to optimise business cases and drive continued cost reduction for projects successful in CfD AR3.

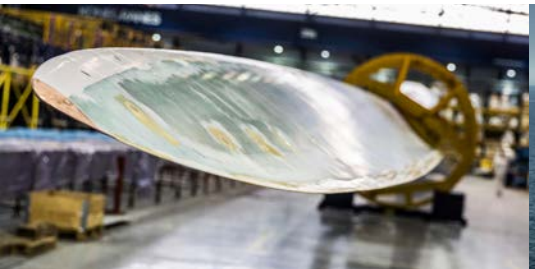


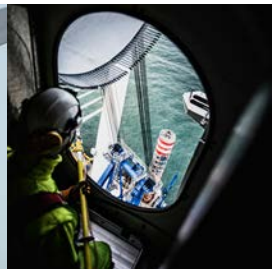
I2: Technological Development.	2.1)	MVOW will continue to utilise our turbine design to enable product optimisation in incremental steps, keeping ahead of the competition for projects successful in CfD3. MVOW will publicly introduce the V174-9.1 MW and the V174-9.5 MW variants, as part of the 9 MW Platform in Q1 2019, ready for installation in 2021.	Continued technological development potentially providing lessons for future projects in deeper waters and higher wind speeds. Potential opportunity for UK supply chain to export capabilities to emerging US and Asian markets.
	2.2)	MVOW will begin manufacturing the V164-9.5 MW turbine with a 60Hz and typhoon configuration in end 2020. The V174-9.1 MW and V174-9.5 MW will be available with a 60 Hz variant and with a Class IB and T (typhoon) certification. This innovation will support MVOW expansion into the US and Asian markets.	
	2.3)	MVOW will continue to innovate in blades, optimising our energy capture and power production, optimising our customer's business case and reducing cost to the customers. MVOW will introduce an 85 m blade for the V174, which is a tip extended version of the 80 m blade, optimising the structural design.	Improved project optimisation throughout the lifecycle resulting in lower cost to consumers.
	2.4)	MVOW will install an optimised version of the medium speed drivetrain in the V164-9.5MW building on the thorough analysis of gearbox failure frequency and modes, which already removed high contribution failure modes in the V164-8.0MW design.	
	2.5)	MVOW will use a newly developed 66kV switchgear with three circuit breakers ("66kV SG 3 CB") for projects successful in CfD AR3. This innovative use of 66kV switchgears has been driven primarily by the increase in turbine MW rated capacity and by CfD AR3 projects.	
	2.6)	MVOW designed and will continue to develop the SMART Turbine products to contribute to the optimisation of the business case. E.g. SMART Fast Data sets the scene for digitalisation advancements and use of big data. MVOW will continue to ensure with the MAX Performance portfolio a maximised return on investment for the customer and optimal performance of the turbines.	



I3: Innovative procurement or contracting practices.	3.1) 3.2)	MVOW will continue the Open Book approach in the development of future turbine technology. MVOW will continue with our Collaborative Approach with customers selected as Preferred Supplier for CfD3 and anticipate continued optimisation.	Improved project optimisation throughout the lifecycle resulting in lower cost to consumers.
I4: Innovation or new installation methods.	4.1)	MHI Vestas will establish permanent pre-assembly as part of the Industrial Cluster site, if successful with sufficient volume in CfD3. MHI Vestas will establish a full scale turbine pre-assembly operation at Able UK's Seaton Port in Teeside for Triton Knoll, from enabling works to loadout.	Permanent jobs in UK pre-assembly and increased opportunities for the UK supply chain, contributing to the 1,100 direct and indirect jobs MVOW expects the Cluster to support at an East Coast location.
I5: Innovative or new O&M methods.	5.1) 5.2) 5.3)	MVOW will continue to drive and develop the MVOW Safety Organisation ensuring safety continues to be at the heart of our business. MVOW will continue to focus on the 'human factor', instigating a number of local and area targeted HSE campaigns to ensure the entire organisation remains focused. MVOW will continue to explore new innovative inspection methods based on our positive outcomes with PDG Helicopters. MVOW will continue to innovate in Service and will implement the Execution Model tool in 2019.	Continued industry leadership in safety. Continued industry leadership in O&M: maximising availability, optimising production and reducing cost to the consumer.

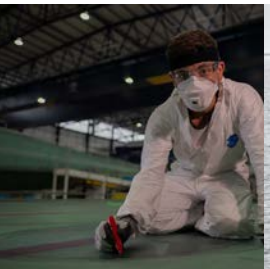


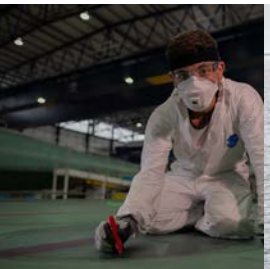
Skills

Commitment Summary

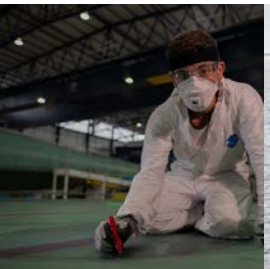
Criteria	Commitment	Impact
S1: Assessment of future skills requirement.	1.1) MVOW has undertaken an assessment of the future skills requirement to fulfil the requirements of the second mould. MVOW anticipates the structure will follow and replicate that which supports the first mould. MVOW will continue to actively monitor the future skills requirement during the ramp up of the second mould. 1.2) MVOW will utilise our in-house structured training to ensure the right skills are in place at all levels to continue to deliver world-class service to our customers. Depending on customer requirements and length of service contract, MVOW expects projects successful in CfD3 to follow a similar service set up to CfD2 projects at the appropriate scale.	Developing long-term, skilled jobs, often in coastal communities where they are needed most, contributing to Sector Deal ambitions.
S2: Assessment to determine whether the necessary skills are in place.	2.1) MVOW's Manufacturing Training Board will continue to meet quarterly to monitor and manage future training provision and make arrangements to develop those who work in MVOW Manufacturing. The Manufacturing Training Board will ensure that training provision meets and exceeds the requirements of the IOW expansion and MVOW's ambition to create an Industrial Cluster. 2.2) MVOW's Training Review Board: Service will continue to evaluate required training requirements and whether these will be conducted internally or externally. Local training providers will be used for external training where possible. 2.3) MVOW will build on these innovative recruitment processes in recruiting for projects successful in CfD3.	




S3: Actions that will provide investment in skills and training.	3.1)	MVOW will continue to develop its in-house accredited training programme based at CECAMM to ensure successful CfD3 projects benefit from a highly skilled workforce. MVOW will deliver Core Skills Training for all future IOW employees at CECAMM. MVOW will invest in a new training mould at CECAMM.	Developing a composites skills base learning from adjacent industries in the Solent region, such as aerospace.
	3.2)	MVOW will continue to put blade technicians through the NVQ Level 3 in Composites. MVOW will continue to work with our customers to maximise local recruitment in Service and build on the innovative practices at Rampion and BBE and those being developed at Moray Firth East and Triton Knoll. MVOW will continue to develop and deliver structured training for service technicians, delivering increased AEP and business case optimisation.	Contributing to an additional £42 million p.a. local economic benefit created by MVOW in the Solent region.
	3.3)	MVOW will continue to utilise the Apprenticeship Levy to invest in the skills and training required as IOW and our Service team expands and the Apprenticeship Levy continues to develop.	Developing a skills base to service CfD3 projects supporting the development of clusters and increasing local economic productivity.
	3.4)	MVOW will work with UK organisations, eg RUK, to ensure the offshore wind MBA is widely understood in the UK.	




S4: Plans the project will put into place to maintain and develop skills.	4.1)	MVOW's future skills assessment has identified that the installation of the second mould at WMM will create significant additional demand for UK management skills. MVOW will continue to offer Management training to fill these positions internally as appropriate and determined by need.	Development of Isle of Wight skills base and position as a world-leading composites cluster. CfD AR3 projects to benefit from a more diverse workforce.
	4.2)	MVOW will continue to make all reasonable efforts to increase gender diversity in its UK manufacturing and service workforce.	
	4.3)	MVOW's will train all UK commissioning and service technicians on the Multi-Software Training.	
S5: Actions the project will take to engage apprentices.	5.1)	MVOW will continue to support IOW Council, IOW College, local schools and CECAMM to highlight opportunities to potential students.	Increasing pipeline of local skills and talent for CfD AR3 projects increasing UK content and improving local productivity.
	5.2)	MVOW will work with our customers to run school and community events to build engagement with our future workforce on these projects to ensure a pipeline of local technicians.	




Annex 4.12.13

Linxon SCP ITT requirements

Seagreen Supply Chain Plan

2. Contractor Supply Chain Plan Template

Contractors should populate the tables shown below in each of the four headings. Please limit the combined response to six pages in total. Additional rows or columns can be added to the tables if necessary.

Contractor name: Linxon UK Ltd

Work package: Onshore Substation, Offshore Substation (c/o Petrofac) and potential wrap of HV cable scope (c/o Petrofac)

Date: 23/11/18

1. Competition

Please highlight the actions taken or to be taken by the Contractor to promote competition in the Supply Chain. These actions should show how the contractor will encourage broader supply chains, remove barriers to entry for new companies, share best practice and lessons learned and will improve awareness of commercial opportunities among established companies and new entrants. Please also explain the expected impact of these actions using the table below.

Action taken/ to be taken	Outcome of action/ expected outcome
Supply Chain Identification process – Identification of/engagement with current and potential supply chain partners for key packages (e.g. Civils and HVM&E installation). This has already commenced with Linxon's supply chain team engaging with suppliers who have experience of delivering the required works for complex substation projects. Where possible, we will select suppliers / subcontractors with local (Scottish) operations. We are also actively considering and assessing the disaggregation of work packages where there may be both supply chain risk management and commercial benefits for both Linxon and Seagreen (e.g. access roads, landscaping etc.). This would encourage a broader supply chain and remove barriers to entry that could result from a need for experience of work within a substation environment. Therefore, we are starting to engage with a wider group of suppliers.	The establishment of a broader supply chain with barriers to entry reduced where it is appropriate to do so and will not compromise project health & safety, quality or performance. Active Linxon Supply Chain team engagement will improve the awareness commercial opportunities among established companies and new entrants rather than depending upon portals or messages that are often restrictive by nature.

All suppliers / subcontractors would need to satisfy the established Linxon supplier approval process to ensure a sufficient level of financial strength and quality / SHESQ performance.	
Linxon has a defined process for gathering and assessing the lessons learned during the project lifecycle. Our monthly project review, risk sessions and our final project close-out meetings include a clear agenda item requiring our project team and senior management to capture lessons learned. These lessons will be reviewed and aggregated by the country operations team before being communicated across the business. Both our supply chain team and operational staff working on our tenders are included on this distribution and our tender review (governance) process includes steps requiring tender teams to evidence the implementation of lessons learned.	The structured and ongoing capture of best practice and lessons learned to be shared with Linxon staff and supply chain partners.
As part of our standard supply chain engagement approach for all tenders, we will undertake launch meetings with all key supply chain partners. Our existing supply chain partners are aware of our best practice requirements, working procedures, policies and standards from many years of working with us. However, these will be reiterated during tender launch meetings with recent best practice and lessons learned shared. Any new entrant suppliers will need to satisfy the Linxon Supplier Approval Process which underlines the best practice requirements, working procedures, policies and standards. In addition, the tender stage meetings are an opportunity to highlight any particularly useful best practice and lessons learned relating to the specific project requirements.	The structured and ongoing sharing of best practice and lessons learned with existing and new entrant supply chain partners.

2. Innovation

Please describe the actions that have and will be taken by Contractor to foster innovation in the Offshore Wind Supply Chain. This should include any innovation inherent in the services offered by Contractor, any Research & Development links to universities and any examples of testing/ demonstrating new installation or manufacturing methods, examples of sharing best practice & lessons learned, and any other practice that is justified as innovative.

Action taken/ to be taken	Outcome of action/ expected outcome
As ABB's contracting entity for major substation/ power projects, Linxon works with the wider ABB organisation to identify project opportunities and provide regular feedback regarding industry requirements. This includes specific challenges faced by the offshore wind sector e.g. reactive compensation and load balancing for transmission grid connections. ABB has a global R&D team with seven research centres across the globe, more than 8,000 technologists, and an annual investment of $1.5bn. Many of ABB's R&D specialists also pursue academic careers, lecturing or working as professors at universities and publishing research, whilst actively contributing their theoretical expertise to Linxon projects. Master's and PHD students join ABB to work on theses and the R&D team maintain strong relations with leading academic institutions, through regular study visits and lectures. For more information relating to ABB's R&D activity, please use the below link: https://new.abb.com/careers/opportunities/where-do-i-fit-in/r-d)	Ensuring that ABB research and development activity is focussed upon the grid connection equipment required by the global and UK offshore wind sector.
Recent ABB technology innovations relevant to the offshore wind sector include: • ABB's Hybrid SVC Light® Dynamic Reactive Compensation (DRC) plant which provides up to 425MVAR in a single converter. This is unmatched by competitors who can only offer up to 200MVAR. This technology	Solving grid scale power transmission issues via technology applied as part of an offshore wind farm grid connection substation solution. This results in greater security of supply and a lower electricity costs per MW delivered by the respective offshore wind farm.

mitigates grid weaknesses caused by voltage fluctuations from renewable energy intermittency. • ABB's Hybrid Synchronous Compensator (H-SC) used for power network planning and integrating a high penetration of renewable energy systems e.g. in Scotland, UK.	
In addition to engaging with ABB to ensure applicable equipment/technology development, our operations and supply chain team regularly engage with our top 10 partners to consider the application of wider construction industry best practice within a substation construction environment. Recent innovation applications/investigations have included: • alternate access road solutions (temporary and permanent) • modular buildings • value engineering of permanent craneage solutions • Substation footprint reduction via equipment layout and system engineering studies (also offering a carbon footprint reduction) • Logistics technology for equipment delivery routing (also enabling carbon emissions monitoring)	Linxon's EPC focus alongside its equipment knowledge can be utilised to effectively implement wider construction innovation whilst maintaining a safe substation construction working environment and a high quality output.

3. Skills

Please highlight any potential skills gaps and set out the actions that have or will be taken by the Contractor to develop skills in the offshore wind sector to mitigate skills shortages. This could be through internal training or working in partnership with education institutions, local or regional authorities and skills providers. Please also set out any intentions to employ apprentices and share best practice.

Action taken/ to be taken	Outcome of action/ expected outcome
Following the incorporation of Linxon (an ABB & SNC-Lavalin company) in September 2018 and the establishment of a sustainable growth strategy that has Offshore Wind at its core; our global HR team is currently undertaking resourcing and skills assessment workshops with each of the regional hub and local country delivery units. Following an initial assessment, we have confirmed that we have the required resources and skills/competencies to deliver our current pipeline of opportunities across each sector, including offshore wind. However, as these pipelines continue to grow and we secure orders, we will face the challenge of both developing competency internally and recruiting both established and developing staff for the delivery of projects within specific sectors. There will also be the need to provide key staff with experience across sectors to ensure the transfer of best practice. With a number of major UK tenders across all sectors on the horizon for 2019/20, our global HR team is due to undertake further strategic resource planning sessions with the UK delivery unit during Q4 2018 and Q1/2 2019.	Ensuring the early identification of skills shortages based upon future demand/order book forecasts.
It is our current intention to use the Seagreen Firth of Forth tender and project to provide Project Management, Engineering, HSE, Quality and Project Controls staff (amongst other functions) with an opportunity to work alongside those with experience of offshore wind applications/projects and to engage with the supply chain on a strategic	A sustainable pool of locally based resources with offshore wind tender/project experience that can be leveraged for UK projects (as a primary driver) but also gain experience and exposure to best practice across Linxon's European and other global hubs.

partnering basis to ensure the Project CSF's are maximised. This will be undertaken in a planned and structured manner with project organisation charts and resource loaded programmes already having been drafted for the tender phase. This ensures that developing staff from all functions receive the required guidance throughout the process.	
Both Linxon and ABB, who will supply the majority of the equipment within Linxon's Seagreen FoF solution, take on Apprentices on an annual basis across each of our functional disciplines as part of our resource planning strategy.	An established process for the sourcing, on-boarding and continuous development of Apprentices to ensure that we have the required capability and capacity to support our customers and the wider offshore wind sector.

Please provide a summary of the number of full time equivalent employees ("FTE's") expected to be utilised to deliver the proposed scope of works in the table below:

FTE Type/ Role	Role location	Yr1 FTEs	Yr2 FTEs	Yr3 FTEs
Project Leadership (Project Director, Project Management, Interface Management)	UK	3.0	2.2	0.3
Project Operations (Contract Manager, Quantity Surveyor, Planner, Financial, Supply Chain)	UK	3.7	2.8	0.1
Quality, Health, Safety and Environmental	UK	0.6	0.5	0
Engineering Leadership	UK	2.8	2.0	0.5
Engineering Team	UK	5.3	3.7	0.3
Site Leadership (Site Management, Electrical and Civil Supervision)	UK	2.5	2.3	0

Site Delivery Team (Site based Contract Management, Health and Safety, Quality, Commissioning)	UK	3.8	5.5	0.7

4. UK Content

Seagreen will track the UK content delivered by the Project. Please indicate any expected investment in new infrastructure that is planned in the UK or elsewhere that will be triggered by an order from Seagreen.

Please provide an estimate of the UK content of the scope of works in accordance with the industry standard UK content guidance found here

Please provide a breakdown of this assessment in tabular format with an explanation to describe the main sub-contractor assumptions and projected UK content levels.

Please find a breakdown of our indicative assessment included in tabular format below:

Work Package	Potential UK Content?	% Linxon Base Cost	% UK Content	UK Content as % of overall Linxon Base Cost
GIS Supply	Limited	19.6%	10%	2.0%
Transformers Supply	Limited	12.8%	10%	1.3%
Harmonic Filters	Limited	5.1%	10%	0.5%
Dynamic Reactive Compensation [DRC's]	Limited	22.5%	10%	2.3%
Shunt Reactors	Limited	5.9%	10%	0.6%
Ancillary Equipment Supply	Yes	10.2%	80%	8.2%
Protection & Control	Yes	6.0%	70%	4.2%
Civil Design	Yes	0.4%	100%	0.4%
Civils – Enabling Works	Yes	1.3%	100%	1.3%
Civils - Substation	Yes	4.9%	100%	4.9%
HV M&E (Installation)	Yes	4.0%	100%	4.0%

Commissioning	Yes	2.6%	100%	2.6%
Linxon Project Management and Engineering	Yes	4.7%	90%	4.2%
Potential UK Content (Total)				36.5%

5. Disclosure

By its execution hereof, the Contractor consents to the disclosure of the contents of this document by Seagreen to BEIS as part of its Supply Chain Plan and no such disclosure shall constitute a breach of the confidentiality/non-disclosure agreement between the Contractor and Seagreen.

The Contractor acknowledges that in the event that Seagreen secures a contract for difference BEIS may make public the information contained herein and the Contractor irrevocably consents to such disclosure.

Linxon would respectfully request the opportunity to review and approve any figures relating to our works that Seagreen intend to be submit to BEIS to ensure that they are reflective of our final technical solution/design and commercial offer.

Linxon accepts no responsibility for the accuracy of the figures contained within this document as they are indicative / estimated figures provided in good faith. The figures are based upon historic project information and an early concept design which is likely to evolve during the Seagreen FoF Substation Tender process which has not yet commenced with limited project information provided by Seagreen at this stage.

Authorised Signatory

Stephen Mould (Director of Projects)

Linxon UK Ltd Name of Contractor

23rd November 2018 Date

Annex 4.13

Liberty Steel - UK capability

Seagreen Supply Chain Plan

Value chain to OW supply chain

LIBERTY STEEL

Only
steel manufacturer
in **Scotland**

LIBERTY
currently supports
over **5000**
jobs in the UK

Offshore Capabilities

- The mill at Dalzell and Clydebridge has a long-established track record of supplying offshore steels to the energy markets across the globe.
- Plates made at Liberty Steel Dalzell are made to the highest industry standards, and can be supplied with technical and weldability data in line with national documents such as EN 10225 for all rolling methods.
- Our material has 3.1 certificates
- Our data packs are approved by Lloyds register and DNV GL

Dalzell Plate Mill

Key Grades & Dimensions

- We can offer the following grades
  - S355 G7 - G10+N to 120mm
  - S355 G7 - G10+M to 60mm

- With Clydebridge on-line we can offer
  - S420 G1 – G2 + QT
  - S460 G1 – G2 + QT both to 83mm

*All of the above come with option 18 data pack

- We can offer API 2H and API 2W by request.
- Width ranges from 1500mm – 3950mm
- Length ranges from 5000mm – 18300mm

*Available dimensions are dependent on thickness and grade

Dalzell Plate mill capability; Structural

EN10225: Weldable structural steels for fixed offshore structures							
Offshore Grade	Gauge Range & Default Supply Condition (SC)						
	TMCR (Thermo-mechanically control rolled)			Normalised			
	Min (mm)	Max (mm)	SC	Min (mm)	Default Max (mm)	If 4:1 ratio is waived (mm)	SC
S355G3+N	-	-	-	12.5	40.0	-	N
S355G7+N	-	-	-	12.5	76.0	100.0	N
S355G8+N	-	-	-	12.5	76.0	100.0	N
S355G9+N	-	-	-	12.5	76.0	100.0	N
S355G10+N	-	-	-	12.5	76.0	100.0	N
S355G7+M	12.5	50.0	TMCR	-	-	-	-
S355G8+M	12.5	50.0	TMCR	-	-	-	-
S355G9+M	12.5	50.0	TMCR	-	-	-	-
S355G10+M	12.5	50.0	TMCR	-	-	-	-
S420G1+M	12.5	40.0	TMCR	-	-	-	-
S420G2+M	12.5	40.0	TMCR	-	-	-	-

- Default Tolerances: EN10163 A Surface, EN10029-N Flatness & EN 10029-A Gauge
- 4:1 reduction ratio: Customer approval is required for plates over 76mm thick.
- Grades G7 & G9 shall have mandatory ultrasonic testing to EN10160 S0 E1, and grades G8 & G10 to EN10160 S1 E2.

- The tables attached show details of structural steel capability from Dalzell Plate Mill against European Structural Steel Standards. Other international equivalents are available on request.
- Plates from 5m to 18.3m long, and from 1500 to 3750mm wide (3400mm for furnace normalised).
- Minimum grouped length of 12m for TMCR orders.
- Minimum item weight is 3.7Tonnes.

EN10025 - Parts 2, 3 4 & 5 : Hot rolled products of structural steels						
Grade	Gauge Range & Default Supply Condition (SC)					
	A/R, N/R & TMCR			Normalised		
EN10025 Part (#)	Min (mm)	Max (mm)	SC	Min (mm)	Max (mm)	SC
S235JR (2)	10.0	125.0	A/R	125.1	150.0	N
S235J0 (2)	10.0	125.0	A/R	125.1	150.0	N
S235J2 (2)	10.0	60.0	N/R	60.1	150.0	N
S275JR (2)	10.0	125.0	A/R	125.1	150.0	N
S275JO (2)	10.0	125.0	A/R	125.1	150.0	N
S275J2 (2)	10.0	60.0	N/R	60.1	150.0	N
S355JR (2)	10.0	60.0	N/R	60.1	150.0	N
S355J0 (2)	10.0	60.0	N/R	60.1	150.0	N
S355J2 (2)	10.0	60.0	N/R	60.1	150.0	N
S355K2 (2)	10.0	60.0	N/R	60.1	150.0	N
S275N (3)	12.5	50.0	N/R	50.1	150.0	N
S275NL (3)	-	-	-	12.5	150.0	N
S355N (3)	12.5	50.0	N/R	50.1	150.0	N
S355NL (3)	-	-	-	12.5	150.0	N
S355M (4)	12.5	50.0	TMCR	-	-	-
S355ML (4)	12.5	50.0	TMCR	-	-	-
S355J0W (5)	12.5	65.0	N/R	65.1	80.0	N
S355J2W (5)	12.5	65.0	N/R	65.1	80.0	N
S355K2W (5)	12.5	65.0	N/R	65.1	80.0	N

Default Tolerances: EN10163 A Surface, EN10029-N Flatness & EN 10029-A Gauge.
A/R: As-rolled, **N/R**: Normalise rolled, **N**: Normalised & **TMCR**: Thermo-mechanically control rolled.

Liberty Steel Hartlepool SAW Mill

- The SAW Mills at Hartlepool comprise:
  - The 42” LSAW Pipe Mill;
  - The 84” LSAW Pipe Mill: and
  - A 50:50 JV Coating facility
- The 42” SAW Mill is the main asset and was commissioned in 1993
- The 42” SAW Mill employ 135 people and has a capacity of 250kt pa
- It has the world’s most powerful C,U & O Press combination and state-of-the-art welding capability
- The strength of the equipment is balanced with modern technology that enables the mill to produce the most demanding of t/D pipe sizes to exacting dimensional tolerances with the consistency expected in the Oil & Gas sector.
- Accredited to ISO 9001,14001, 29001, 3834 and OHSAS 18001
- Extensive track record onshore and offshore
- Feedstock is from Non-Tata facilities in Europe

Key Characteristics

- Extensive investment:
  - Extremely tight tolerances for large diameter pipe
  - Laser measuring capability
  - Full modelling of forming process
- Plate supply partnerships:
  - Cleaner steels
  - Tight tolerances
- Extensive sour service experience
- Thick wall & Deepwater capability

Targeting and positioning

LIBERTY STEEL

Scotland has over **25%** of **Europe's** total offshore wind resource

Scottish Government has a **target** of generating the equivalent of **100%** of electricity consumption from **renewable sources** by **2020**

4 GW of consented **offshore wind generation** to be installed

Over **£500 million** **capex spend** on **NnG project** in Scotland

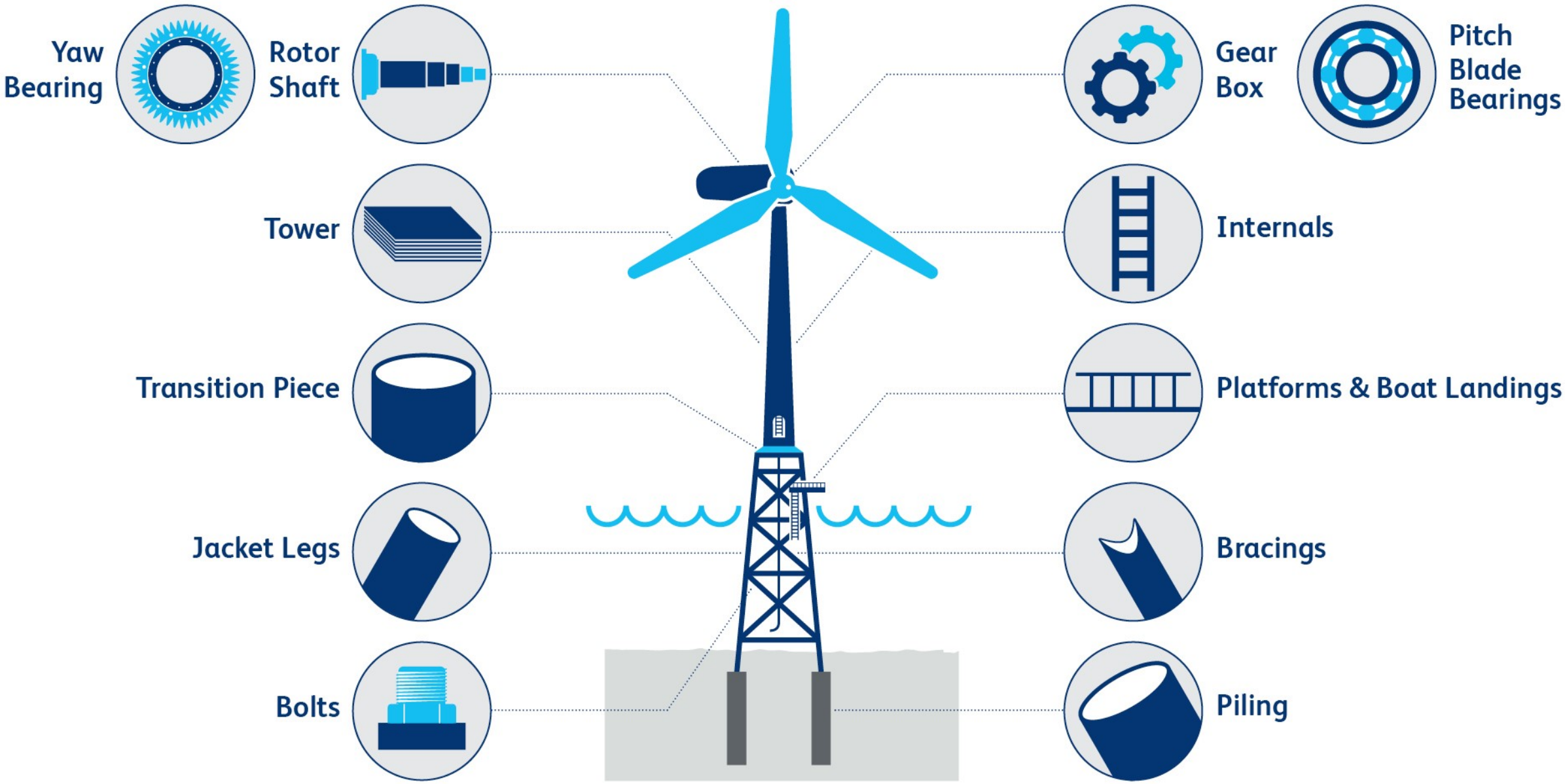
84% of a wind turbine is **steel weight**

UK to have a **total capacity** of **30 GW** of **offshore wind** by **2030**

The cost of **new offshore wind** has fallen by nearly since **50%** since **2015**

In the **next four years**, the industry **will invest** over **£17.5bn** in projects

Have a clear value proposition

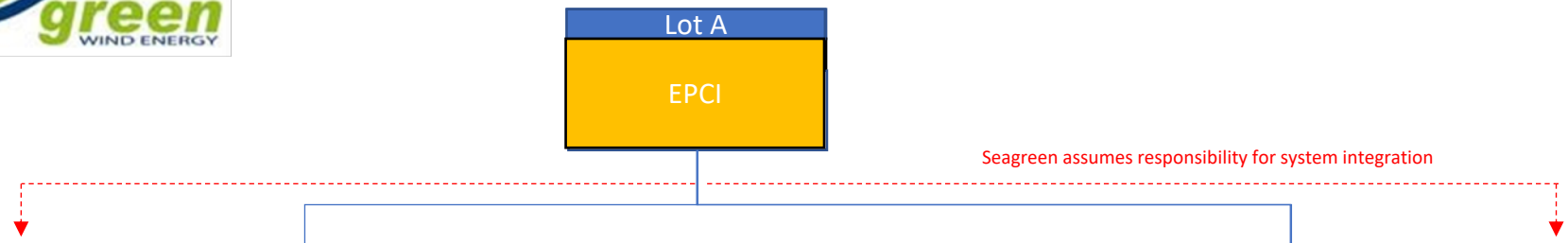


Annex 4.14

ESI Contractor Strategy

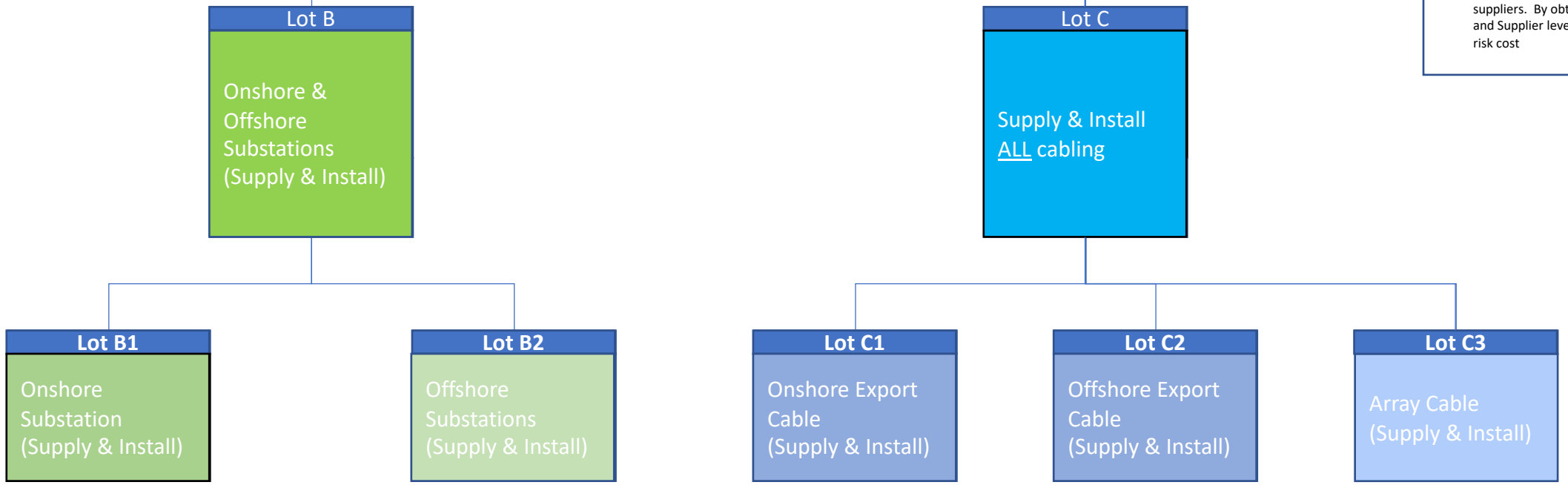
Seagreen Supply Chain Plan

ESI – Contracting Strategy for ITT



Notes :

1. One Overall ESI ITT will be issued, with Optional LOTS applicable for each supplier. Supplier can quote for individual or multiple LOTS
2. 275 Kv Limits number of potential cable suppliers
3. EPCI will utilise one of the 275 Kv cable suppliers. By obtaining pricing both at EPCI and Supplier level will enable assessment of risk cost



Annex 4.15

[redacted]

Seagreen Supply Chain Plan

Annex 5.1

Innovation themes

Optimise the Core business

1. Winning New Build Generation Bids – This theme includes innovations which generate earlier return on large investments, subsidy response, subsidy free onshore, offshore design, reducing the cost of offshore wind and those which help restructure long-term SA's for our asset base.

2. Increased Earnings from Existing Assets - This theme includes innovations that repurpose existing plants for new markets, balancing services and ideas that increase availability, efficiency or flexibility of existing assets, also includes forecasting and speed of response.

3. Network asset management – Improving the efficiency and effectiveness of Networks and preparing for the adoption of low carbon technologies. Includes deriving value from sensors and monitors and leveraging of networks data sets.

4. Operational efficiency and Customer Service - This theme is focussed on resource optimisation, automating manual processes, staff development and enhancing customer experience primarily through better communications and speed of delivery. It also includes algorithm development for trading, forecasting and modelling capabilities to reduce cost.

5. Risk Management – This theme is focussed on innovations that specifically reduce risk primarily in areas of Information Security, Cyber Security and Human Safety.

Enhance the Core business

6. Preparation and de-risking the transition to DSO – Designing building and testing the systems, relationships and commercial arrangements necessary to undertake role of DSO as we transition into ED2. This theme includes innovations to optimise grid connections through co-locating with other assets, islanded new connections, off-grid connectors, demand side response, demand side aggregation.

7. Preparation and de-risking of the uptake of Electric Vehicles – Innovations that increase the ability of the networks to absorb EV demand at low cost.

8. Leveraging Generation and Network flexibility – Creating products for new markets as they evolve to deliver increases in flexibility. Includes new technologies to enhance access to balancing services, DSR and aggregation services.

9. Complementary Energy Resources – This theme includes innovations that enable future value from low carbon generation and storage and ROI's will change as economics and technologies develop. May include floating wind, solar, micro-nuclear, tidal, storage and ideas like satellites for offshore transmission.

10. Accelerating growth of revenue from Telecoms - Ideas that enable faster growth of telecoms infrastructure through technology or partnering.

11. Accelerating growth of revenue from Transport – Ideas that enable us to generate value from decarbonisation of transport – particularly Rail and Bus.

12. Revenue from Electric Vehicle charging Market – Innovations around infrastructure, connections as well as tariffs and business model innovation.

13. B2B Energy Services - Energy management services, aggregation, energy efficiency, embedded energy reduction, emission reduction, consumption as well as broader services from renewables.

Disrupt the Core business

14. Hydrogen Economy – Primarily innovations to explore Hydrogen for transport and storage. Including later opportunities within the group for heat.

15. Heat – Innovations to drive revenue from heat solutions and de-carbonisation.

16. Electric Vehicles – Innovations that bring new revenues from markets' move to EVs – includes vehicle to grid opportunities.

17. Decentralised Energy systems – including ideas that drive revenue from moves towards Smart Cities, Community Energy schemes, Micro-generation, Peer to Peer trading and iDNO.

18. Smarter uses of data – Platforms to share data for JVs and services, re-use of smart meter and sensor data.

19. Proposition Innovation – Business model innovation that changes commercial product offerings.

Annex 5.2

Hunterston National Offshore Wind Turbine Test Facility (NOWTTF)

Seagreen Supply Chain Plan

SEAGREEN SUPPLY CHAIN PLAN

Annex 5.2 – Hunterston Test Site

1. Introduction

SSE invested around £20m to develop the Hunterston National Offshore Wind Turbine Test Facility (NOWTTF) in March 2013. The test site has been instrumental in securing Scotland's place as an international leader in offshore wind energy research and development.

The site has enabled the demonstration of two new offshore wind turbine platforms at full scale in a representative environment.

2. MHI Sea Angel demonstration

The 7MW Mitsubishi Heavy Industries (MHI) Sea Angel turbine (above left) features an innovative hydraulic drivetrain concept. The Hunterston test site enabled the first deployment of this technology at full scale anywhere in the world.

The Digital Displacement Transmission (DDT) technology was initially developed by Artemis intelligent power, an Edinburgh based company.

The blades for this turbine were the second longest in the world at the time of installation. The turbine featured a hybrid blade design which included carbon fibre reinforcements in sections which was a

significant innovation, one of the first of this kind of blade concepts to be put into operation anywhere in the world.

Although this WTG model has not been deployed further at mass scale, this example demonstrates SSE's support for innovation and a willingness to diversify the turbine supply chain by supporting new entrants.

3. Siemens 6MW DD demonstration

NOWTTF made it possible to conduct onshore testing of a direct drive 6MW Siemens turbine at this site (above right).

This deployment was key for SSE in building confidence for the turbines based on this design concept which were subsequently selected for the Beatrice project.

As well as developing the SSE business case to deploy this new turbine type it was also an invaluable testing opportunity for the turbine manufacturer who gained significant benefit from testing made possible on this turbine.

This turbine was valuable in supporting the launch of this machine to the wider market and building industry confidence prior to UK offshore applications which followed, for example at Westernmost Rough.

Significant structural monitoring of this turbine was undertaken and data from these systems will continue to contribute to deeper understanding of the relationship between wind conditions and turbine loading for contemporary large offshore wind turbines.

The turbine is due to be decommissioned in the near future, repurposing opportunities for this hardware are being investigated. These include:

- Repurposing as an offshore demonstrator or research platform.
- Enabling research based on the study of individual components after 5 years of operation life.
- Use as a quayside training tool as part of a future Seagreen O&M base.

4. Impact

4.1 Competition

- The Hunterston test facility was key in supporting the technology development of a potential new entrant to the offshore turbine supply market; MHI.
- SSE as a site developer and owner operator was unique in making this level of commitment to facilitating the test of new turbine platforms in this way. The number of other test facilities in the UK is very small and no other developer contributions are as significant as SSE.
- The Hunterston test facility unlocked large orders of a new turbine platform (Siemens 6MW direct drive) by building an operational track record. This included orders for UK offshore wind projects by other developers. This helped to stimulate the offshore turbine supply market and contributed to competition inherent in the current generation of commercial offshore turbine platforms.

4.2 Innovation

- This facility made it possible for MHI to test the prototype Digital Displacement Transmission (DDT) technology at full scale in an operational offshore wind turbine.
- The technology at the heart of this innovative drivetrain concept was developed in the UK by Artemis Intelligent Power, and the Hunterston test facility was crucial in securing investment of Mitsubishi Heavy Industries into this UK company.
- This facility was one of the first installations of the Siemens 6MW direct drive platform anywhere in the world. The ability to operate this innovative technology in an easy to access representative environment was key in building confidence in this technology.

4.3 Skills

- A key deliverable of the Hunterston test site, see Annex 5.2 was the sharing of information and lessons learned, for example through conference presentation on the installation and operational experience of the turbines and through submissions to DECC.
- In partnership with Ayrshire College, SSE also hosted the Wind Turbine Technicians Course for site visits. This included presentations on topics including Safety, Civils, Electrical and Wind Resource Assessment.
- Delegates from Ayrshire College were taken on escorted visits to the Siemens turbine with a qualified technician who would talk about the machine and answer questions. SSE worked with Ayrshire College including delivery of a range of presentations at the College itself as a follow up to these site visits

5. Community Impact

Since the project's community fund began in 2013, £238,000 has been invested in grant payments across 102 local projects. The fund has been welcomed by a broad variety of local clubs, groups, festivals and schools to run events, buy new equipment and improve facilities. To date the Hunterston project has injected £32.4m into the Scottish economy with £4.1m of this in North Ayrshire.

Annex 5.3

Beatrice Demonstrator Turbines

Seagreen Supply Chain Plan

1. Introduction

SSE was a leading member of the consortium who developed and installed the Beatrice demonstrator turbines in the Moray Firth off Caithness. These turbines were among the first to be installed on jacket foundations and some of the deepest waters (around 45m) attempted by offshore wind projects at the time (2006). The deployment of 5MW turbines was also a first and helped the turbine manufacturer (Repower) subsequently secure orders to supply their offshore turbines to other projects in the UK and Europe. In particular the Thornton Bank (2008) and Ormonde (2011) projects followed and used similar Repower 5MW machines.

2. Installation method

The installation concept used at this demonstrator site was highly innovative, and at the time ground breaking. Turbines were fully assembled in port then connected with foundations in a single lift from a floating crane barge.

3. Other demonstrator sites

SSE subsequently invested in the Hunterston test site in south west Scotland, see Annex 5.2 for more information.

SSE was also involved in the 25.2MW Arklow Bank Phase 1, which is owned and operated by GE Energy, and was co-developed by SSE group company Airtricity and GE Energy. This project remains the first and only operational offshore wind farm in Ireland.

4. Impact

The test site enabled the first demonstration of deep water jacket foundation structures and also large scale 5MW WTGs. The installation in 2006 was pioneering at the time and enabled SSE and the supply chain (WTG & Foundation providers) to gain valuable experience which in turn has resulted in the subsequent use of these technologies at subsequently built offshore wind farms (Re power & Bi-Fab – Jackets Ormonde).

Since the Beatrice demonstrator turbines entered operation they have provided a significant amount (around 30%) of the energy requirements of the adjacent Beatrice oil platforms. Decommissioning of the turbines is currently scheduled to coincide with the decommission of the oil platforms in the period 2024 – 2027.

5. Links

http://www.hi-energy.org.uk/HI-energy-Explore/talisman-beatrice-project.htm

https://ore.catapult.org.uk/app/uploads/2017/12/A-novel-offshore-wind-transfer-technique.-Experiences-from-the-Beatrice-Demonstration-Site.pdf

Annex 5.4

University of Strathclyde Technology and Innovation Centre

Seagreen Supply Chain Plan

1. Introduction

The University of Strathclyde is a multi-award winning UK university located in Glasgow city centre. It has substantial track record in the fields of engineering and renewable energy.

2. Supporting research

SSE is an industry partner of the University's Technology and Innovation Centre (TIC) and provides input and guidance to a programme of Research and Development (R&D) activities focussed on wind energy.

SSE provides £300k per year of funding for R&D to the TIC. SSE supports the TIC in collaboration with SPR who provide equal funding.

Alongside providing funding for research, SSE also share information and data from operational wind farms, and the expertise of their own personnel to assist in shaping projects and providing technical guidance and feedback. This commitment enables a significant contribution to the UK renewables research community and helps to link researchers, students and graduates to industry. SSE has hired graduates whose research was supported by their funding of the TIC. This link between academia and industry is an invaluable way to provide development opportunities for the next generation of wind energy professionals.

This commitment enables a significant contribution to the UK renewables research community and helps to link researchers, students and graduates to industry. SSE has hired graduates whose research was supported by their funding of the TIC. This link between academia and industry is an invaluable way to provide development opportunities for the next generation of graduates.

3. Projects

PROJECT	DESCRIPTION	BENEFIT/ IMPACT
WIND-01 WIND TURBINE FATIGUE LIFE ASSESSMENT AND MODELLING	Model built to estimate stresses imparted on wind turbine structures due to changes in wind conditions. Structural monitoring data from	Analysis of data will be used to validate the model and identify turbines that have experienced the highest fatigue life. This information can be used to target inspections and for

	Griffin wind farm being delivered to UoS.	life extension decision making.
WIND-03B COMMERCIAL FREQUENCY RESPONSE FROM WIND	Assessment of grid support markets that wind turbines could contribute to, the value of these markets, growth prospects and routes to access.	Conclusions and evidence from this study were used in discussions with National Grid on the topic of access for wind farms in frequency response markets. National Grid have now developed a service that will potentially be accessible to wind farms in future.
WIND-04 ENHANCED SIMULATION AND LOGISTICS OF OFFSHORE WIND FARM INSTALLATION	Model developed to optimise the schedule for vessel transports during wind farm installation. Tool validated against industry information with encouraging results.	Potentially large savings to be made due to large costs of vessel hire. Plan to utilise the tool on SSE projects including Seagreen.
WP2X IMPACT OF FREQUENCY RESPONSE ON ASSET HEALTH	Linked to WIND-03b. Assessing damage to asset when providing frequency response.	Optimising frequency response strategy.
AM06B WIND TURBINE FOUNDATION RESEARCH AND STRUCTURAL HEALTH MONITORING	Monitoring of strain in wind turbine foundations to aid in estimated asset health and life extension decision making. Data gathering and assessment ongoing at partner wind farm.	Limited direct application of results to Seagreen project.
WIND-05 WIND TURBINE PERFORMANCE BENCHMARKING USING COPULA MODELS	Tool developed to filter wind turbine power curve data to analyse performance degradation.	Will aid in O&M phase. Currently being tested by the Engineering Centre.

WIND-06 AUTOMATED POWER SYSTEM ASSET DATA QUALITY IMPROVEMENT	Non-standard format of maintenance records makes assessment of this data challenging. Tool developed to automatically assess all wind turbine maintenance records.	Tool will assess reliability issues and help improve maintenance practices.

4. Impact

Project specific impacts have been outlined in the table above.

Since SSE began supporting the TIC in 2013, a total of £5m has been provided to support research activities. Four academic researchers have been directly supported by SSE.

5. Links

https://pureportal.strath.ac.uk/en/projects/wind-01-wind-turbine-fatigue-life-assessment-and-modelling-valida

https://pureportal.strath.ac.uk/en/projects/tic-lcpe-enhanced-simulation-and-logistics-of-offshore-wind-farm-

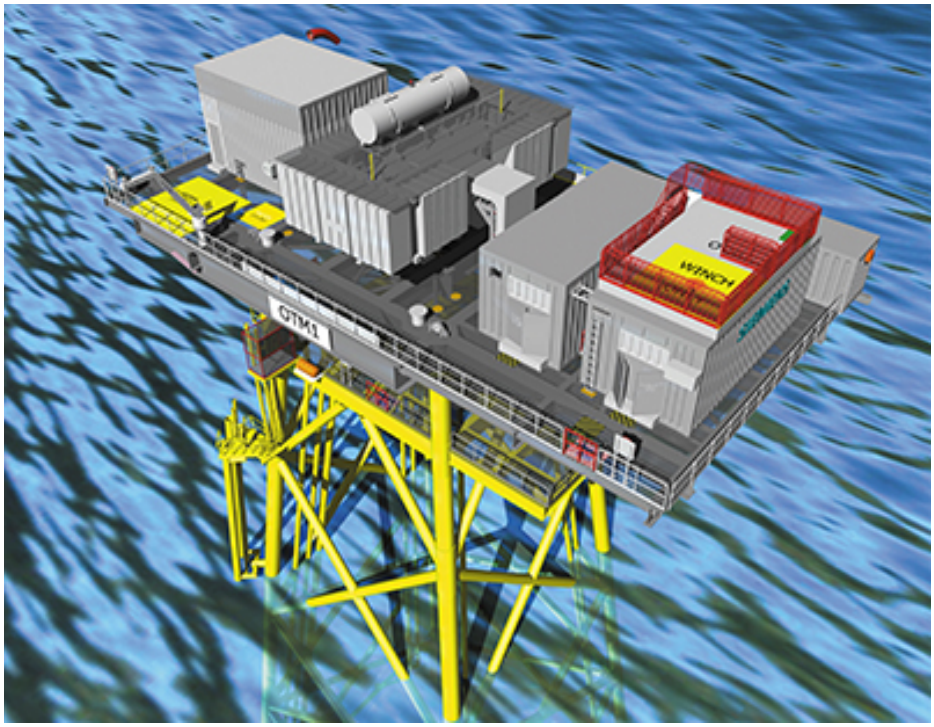
Annex 5.5

Offshore Transformer Module (OTM) Substations

Seagreen Supply Chain Plan

1. Introduction

Transmission infrastructure can represent 10 to 20% of the capital expenditure for an offshore wind farm. A significant component of these costs are incurred in the design, manufacturing, transportation and installation of offshore substation platforms. There is enormous potential for cost reduction in paring the offshore substation down to its bare essentials and striving to reduce the size and, principally, weight of offshore substations. This not only reduces materials and fabrication costs but can remove the requirement for specialised heavy lift vessels which are usually contracted to install substructures and topsides separate from other installation contracts. If weight is reduced to around 1,000t then topsides can be installed by the same vessel used for turbine installation and can be installed on foundations substantially the same as those used for turbines.



2. Offshore Transformer Module (OTM)

The OTM concept seeks to reduce substation size and weight to unlock the potential for simplified offshore installation and lower cost substructures by removing the requirement for a specialised heavy lift installation vessel. This substation concept was deployed successfully for the first time at the Beatrice offshore wind farm and is likely to be a key part of the electrical design concept for Seagreen.

3. Impact

3.1 Competition

- The Beatrice project contributed to the development of UK supply chain by using UK fabrication facilities for the OTM substations, In Rosyth.
- Design and project management work was conducted from Siemens UK offices which contributed significant local benefits associated with using this substation concept.

3.2 Innovation

- The OTM concept is innovative in approaching offshore substation platform design from an alternative point of view.
- This concept focusses on maximising the value for money by reducing the size and weight and providing only the essential elements of an offshore substation in a considerably lighter weight package than a conventional offshore wind farm substation.
- By designing a substation topside with a mass of around 1000t it is possible to displace the requirement for specialist heavy lift vessels which are traditionally associated with the installation of offshore substations.
- Design of a lighter weight substation solution also influences substructure design, with further cost reduction offered by adopting a substructure design which is substantially similar, or the same as that used to support wind turbines, unlocking savings associated with volume manufacturing and sharing substructure design costs.

3.3 Skills

- Submissions from potential suppliers indicate that they have invested heavily in graduates and apprentices to support innovative offshore transmission system development and design.
- This has included graduate programmes and exchange programmes where UK staff have worked internationally in order to bring experience back to the UK to support future offshore projects.
- See Annex 4.12.40 for more information.

4. Track record

SSE has been an industry leader in supporting the development and first commercial demonstration of this technology, unlocking the potential for cost reductions across the industry. It plans to contribute to the track record by deployment at the Seagreen project. Other projects, for example Triton Knoll, have been able to benefit from the OTM solution thanks to the pioneering support of SSE.

Ongoing evolution is anticipated to continue to optimise this technology for reduced costs and risk. Incorporating lessons learned will be key to future optimisation.

5. Links

Study of the benefits of this solution has been conducted by the Offshore Wind Programme Board (OWPB) and the Offshore Wind Accelerator (OWA).

https://ore.catapult.org.uk/app/uploads/2018/02/Lightweight-Offshore-Substation-Designs.pdf

https://www.carbontrust.com/media/675874/dp-otm_gber-annex-ii-ad-hoc-aid-notice-bowl.pdf

Annex 5.6

Value Opportunities Schedule

Seagreen Supply Chain Plan

Project Title	Seagreen Offshore Wind Farm
Document Reference Number	LF000009-PRO-MA-REG-0002

Value Opportunities ITT Requirements

Rev	Date	Reason for Issue	Originator	Checker	Approver
01	17.09.18	Information	John Kane	Mark Timmons	Allan Ralston

Table of Contents

1. Value Opportunities ITT Requirements (for LCOE Offer Optimisation)

1.1 Background

Seagreen Wind Energy Limited ("SWEL"), a 50/50 joint venture partnership between SSE Renewables Developments (UK) Limited and Fluor Limited, has the exclusive development rights from Crown Estate Scotland for the Firth of Forth Zone of the UK's Round 3 offshore wind farm development programme.

The Zone is located approximately 25km east of Fife and covers an area of 2,852 km^2 in the outer Firths of Forth & Tay. The Zone has a potential installed capacity of 2.45GW.

Phase 1 to the north of the Zone has a consented installed capacity of 1,050MW and comprises an area of approximately 391 km^2 located to the east of Scalp Bank. It is split into two projects - Alpha and Bravo offshore wind farms - each with a separate consent held in the name of Seagreen Alpha Wind Energy Limited (Alpha) and Seagreen Bravo Wind Energy Limited, respectively (Alpha, Bravo and SWEL together "Seagreen") The Phase 1 consents are being varied to increase the installed capacity up to 1.5GW.

Seagreen intends to bid Phase 1 into the UK Contracts for Difference ("CFD") auction expected in Spring 2019.

1.2 Requirements

There will be a high level of competition to secure a CFD in the next auction in Spring 2019.

The Employer recognises that Contractor may have alternative innovative technical, programme or commercial solutions that can be offered that would benefit the economics of the Project and help the Employer to submit a lower strike price than their current base case offer.

The Employer welcomes and encourages such alternative proposals (to be categorised as Value Opportunities) being provided by the Contractor as part of their tender return.

Such Value Opportunities could include, but are not limited to, suggested improvements that:

- Reduce the upfront cost of the works
- Accelerate completion of the works
- Reduce the cost of the works during the operation phase of the Project
- Reduce the cost of manufacturing or installing other key components of the windfarm
- Change the allocation of key contract risks such as currency, delivery, design, weather etc
- Scope movement / alignment proposals with the other packages to optimise performance and / or reduce interface risk
- Reduce the overall levelized cost of energy of the project

The Contractor should set out such Value Opportunities, in the Data format provided in this document, and submit within the Supplier's Tender return. The Contractor should clearly identify the projected saving and/or benefit of such items, any barriers to implementation and any material changes to the terms and

conditions and delivery terms that would apply in the event that such modifications were realised on the Project.

The project will use the Value Opportunities responses to this part of the tender as a key influence on the Employer's scoring of the Contractor in the tender process and forms an integral element of assessing the bid on the optimal LCOE criteria.

For the evaluation process (for this ITT) the Value Opportunities will be assessed by the project and may be adjusted to reflect the project perception of the Value Opportunity and then such amended values used in the normalisation process for each Contractor's bids.

The Contractor should note that these evaluated outputs will determine any future decision to move to a Preferred Supplier status on the relevant package.

2. Contract Value Opportunities Template

Contractors should populate the tables in the spreadsheet below in each of the headings. Additional rows or columns can be added to the tables if necessary.

Contractor Name:.....

Work Package:.....

Date:.....

The Contractor acknowledges that Seagreen may utilise the data provided in the Value Opportunities identified to assess realistic impact and probability with key interfaces both on the project and in the Supply Chain.

..... Authorised Signatory

..... Name of Contractor

..... Date

Annex 5.7

Offshore Wind Accelerator

Seagreen Supply Chain Plan

1. Introduction

SSE is a founding member of the Offshore Wind Accelerator (OWA). This programme was established with a vision of average cost of energy from offshore wind below £100/MWh by 2020 and has contributed significantly to the integration of innovative technologies with offshore wind. SSE have contributed around £1.8m in funding to the core work programme of the OWA over the last 10 years. In addition SSE has also contributed around £400k per year in financial and in kind contributions to support discretionary projects additional to the core work programme. OWA initiatives to which SSE has contributed funding, expertise and resources such as data are described below.

2. Projects

PROJECT	DESCRIPTION	BENEFIT
BLUE PILOT **(DISCRETIONARY PROJECT)**	Establishing a new, cost-effective installation method that can drive monopiles with reduced driving noise and less fatigue	- Simpler and safer monopile installation process. - Potentially to reduce environmental noise impact - Savings on secondary noise mitigation measures - Increase allowable foundation life span or reducing steel and cost for similar life time - Potential LCOE reduction of 0.9-1.2 €/MWh
WIND FARM CONTROL TRIALS (WFCT) **(DISCRETIONARY PROJECT)**	Validating control strategies at a wind farm – reduction in the cost of offshore wind energy through optimising the control of the wind farm	- Expected 0.5-3.5% increase in energy yield and hence overall reduced LCOE - Possible load reductions up to 50% for components, reducing fatigue and hence maintenance.

OFFSHORE TRANSFORMER MODEL (OTM) **(DISCRETIONARY PROJECT)**	Innovative grid access solution consisting of substantially smaller and simpler skid mounted step-up transformer circuits attached to a WTG substructure	- Developed for use on Beatrice - Capex reduction of transmission system approx. £20m - Reduction in lifecycle costs for maintenance - Reduction in component lead time by approx. 6 months - Potential for earlier generation

3. Other OWA projects

The OWA has conducted a wide variety of projects which have contributed to reducing the cost of offshore wind, overcome market barriers, develop industry best practice and trigger the development of new industry standards. Areas in which the OWA have been active include:

- Access systems: Including an access innovation competition to identify and support a new generation of access technology which has supported the entry of new vessel concepts to commercial operation in offshore wind. It has also developed a new performance evaluation methodology for vessels used in offshore wind and has supported sea trials of novel vessel concepts.
- Wake effects and wind resource: Including the development of a roadmap and trials of floating lidar technology to aid the commercial acceptance of this technology. Onshore and offshore measurement campaigns to improve the understanding of wind conditions and wake effects. They have also supported review of lidar uncertainty and demonstrations of scanning lidar technology.
- Offshore foundations: Including foundation innovation competition and offshore demonstrations of novel foundation technologies such as suction buckets. More recently expanded to include underwater inspection methods for operational structures.
- Electrical systems: Including 66kV array cable development and qualification, investigation of DC arrays, lightweight modular substations (as describe above) and optimisation of 50Hz offshore networks.
- Cable installation: Including Cable burial risk assessment methodology and cable condition monitoring competition.

4. Partners

The Offshore Wind Accelerator is part funded by the Scottish Government with the remaining funding coming from industry. The Carbon Trust's OWA industrial partners are nine international energy companies including SSE.

5. Impact

The joint initiative was set up in 2008 and has contributed to cost reduction through innovation in a wide variety of areas of the offshore wind industry. Cost reduction is achieved through innovation. Technology challenges have been identified and prioritised by the OWA partners based on the likely savings and the potential for the OWA to influence the outcomes. Projects have been carried out to address these challenges, often using international competitions to inspire innovation and identify the best new ideas. The most promising concepts have been developed, de-risked and commercialised as the OWA works closely with innovators and the supply chain throughout the process. SSE has played an integral role in the success of the OWA as a founding member of the organisation and has contributed financial and personnel resources to support the successful innovation initiatives undertaken by this body.

Annex 6.1

Letter of Support from Dundee & Angus College

Mark Timmons
Offshore Bid Manager
Seagreen Wind Energy Ltd
1 Waterloo Street
Glasgow
G2 6AY

DUNDEE AND ANGUS COLLEGE

Leading Learning, Inspiring Success

Principal Grant Ritchie Chair Angela McCusker

15 January 2019

Dear Mark,

Letter of Support for Seagreen Offshore Wind Farms

Many thanks for taking the time to come along and meet with Dundee & Angus (D&A) College recently to update us on the status of the Seagreen projects. We found the meeting very informative and are looking forward to working together to build a strong relationship with Seagreen as your projects progress.

D&A College operate on a regional, national and international basis. As discussed the College plays a key role regionally in supporting business growth by ensuring our learners experience a high quality learning and teaching experience in state of the art facilities allowing them to develop skills that meet the needs of the local, regional and national workforce. We welcome working in partnership with employers and other stakeholders to provide opportunities which meet demand in key industry sectors and develop high quality skills for the local economy.

It is great to be more informed about the wind farm development following our meeting and to recognise the enormous opportunities that the project will give rise to in terms of future jobs and skills development in the area. We want to capitalise on this and work together with you to seek to maximise the skills legacy of the project and use it as a means to attract more students into the renewables industry and to engineering disciplines through various activities including collaboration at future Skills, Careers and Business Events.

D&A College welcomes the opportunity to collaborate with Seagreen as you develop your skills strategy during 2019 and we are happy to provide this letter of support as evidence for your Supply Chain Plan that is being created as part of the Contract for Difference process.

Yours sincerely

Kevin Murphy
Director of Curriculum and Attainment
Dundee and Angus College

EUROPE & SCOTLAND
European Social Fund
Investing in your Future

Certain projects managed by Dundee and Angus College are supported by European Funding.
Dundee and Angus College is a charity registered in Scotland: No. SC021188.

Annex 6.2

[redacted]

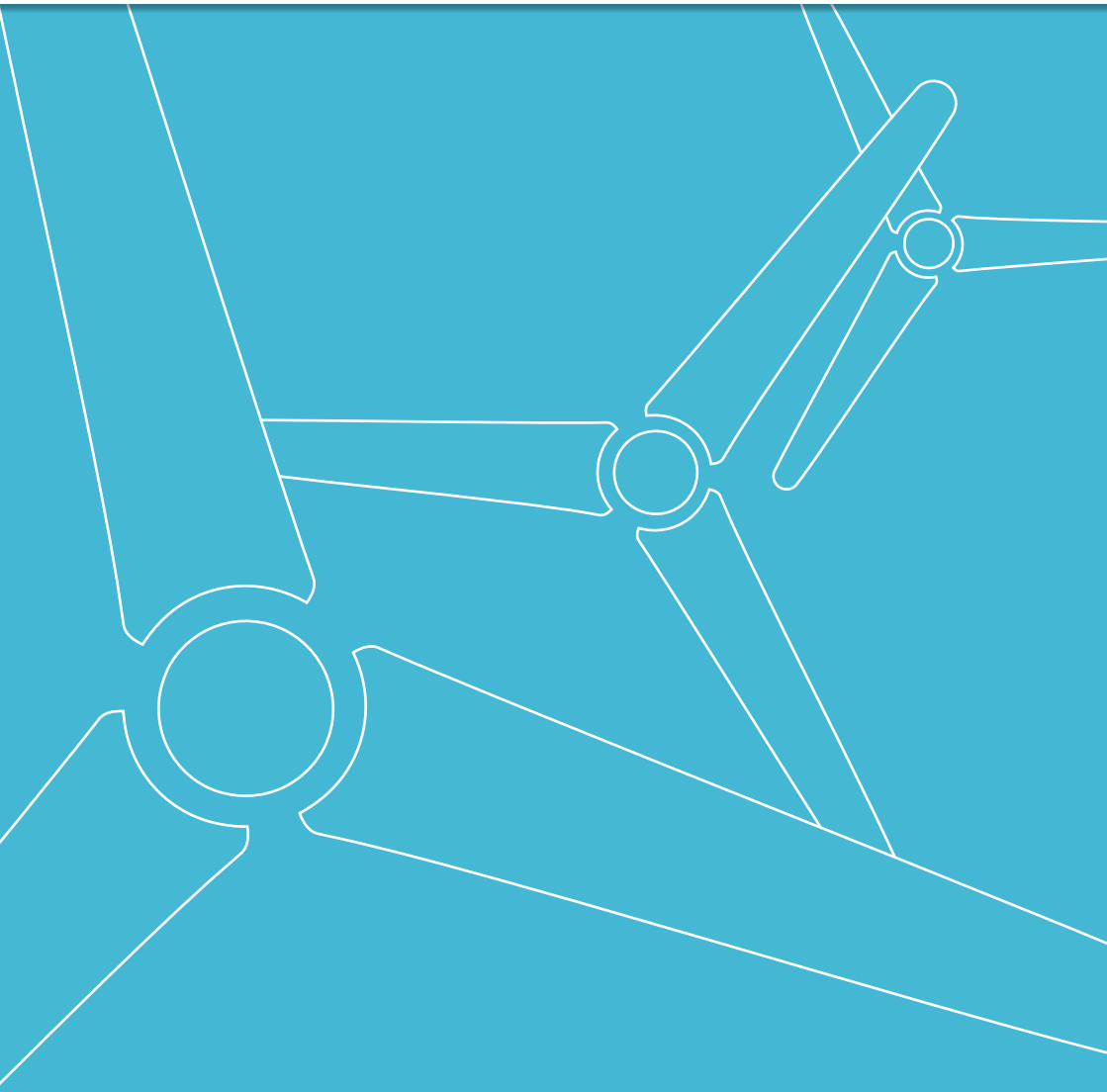
Seagreen Supply Chain Plan

Annex 6.3

Beatrice economic impact study

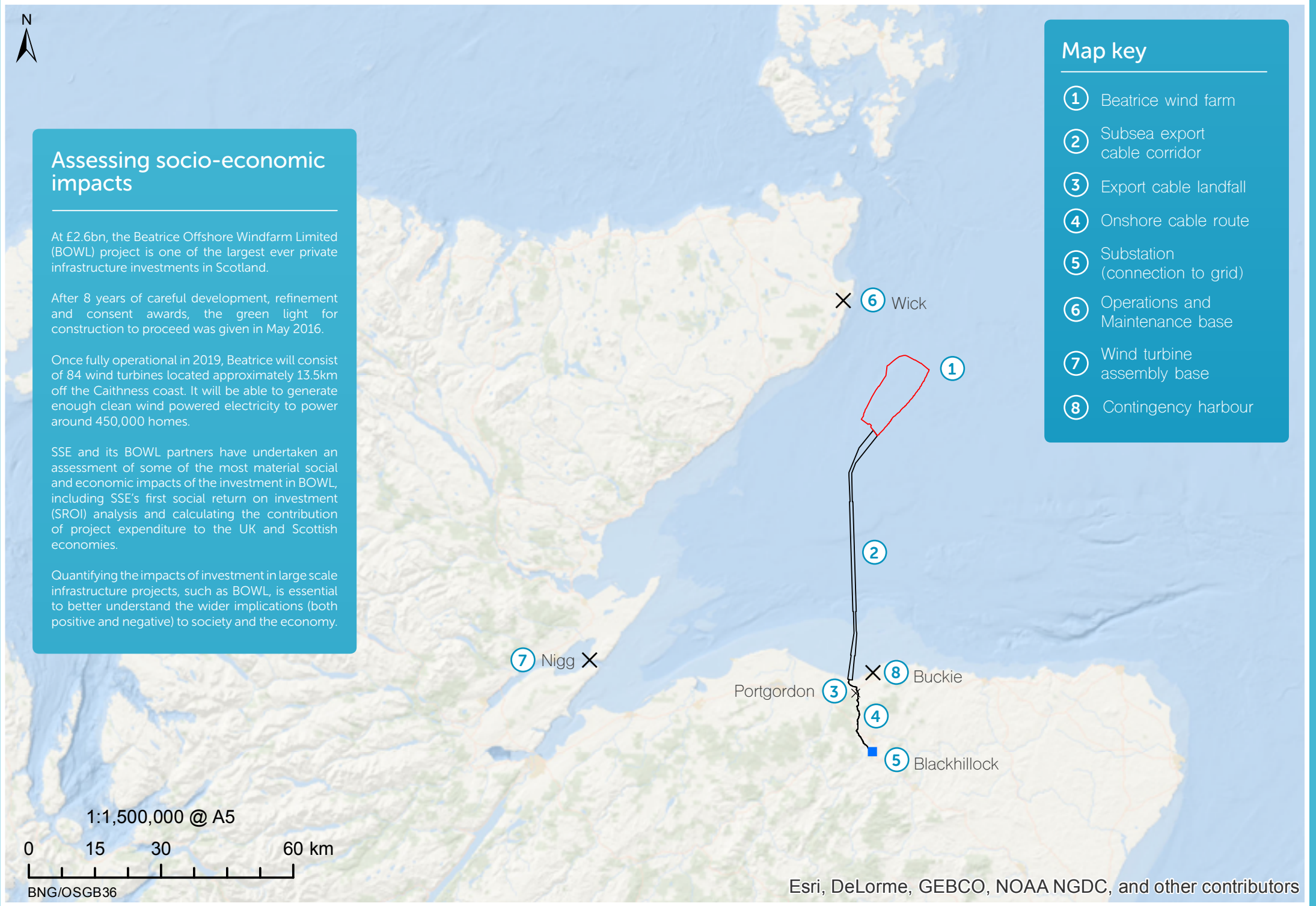
Seagreen Supply Chain Plan

Beatrice
Offshore Windfarm Ltd



Beatrice Offshore Windfarm Limited project

Socio-economic impact report, July 2017


N
Assessing socio-economic impacts
At £2.6bn, the Beatrice Offshore Windfarm Limited (BOWL) project is one of the largest ever private infrastructure investments in Scotland.
After 8 years of careful development, refinement and consent awards, the green light for construction to proceed was given in May 2016.
Once fully operational in 2019, Beatrice will consist of 84 wind turbines located approximately 13.5km off the Caithness coast. It will be able to generate enough clean wind powered electricity to power around 450,000 homes.
SSE and its BOWL partners have undertaken an assessment of some of the most material social and economic impacts of the investment in BOWL, including SSE's first social return on investment (SROI) analysis and calculating the contribution of project expenditure to the UK and Scottish economies.
Quantifying the impacts of investment in large scale infrastructure projects, such as BOWL, is essential to better understand the wider implications (both positive and negative) to society and the economy.
Map key
1 Beatrice wind farm
2 Subsea export cable corridor
3 Export cable landfall
4 Onshore cable route
5 Substation (connection to grid)
6 Operations and Maintenance base
7 Wind turbine assembly base
8 Contingency harbour
6 Wick
1
2
7 Nigg
8 Buckie
Portgordon
3
4
5 Blackhillock
1:1,500,000 @ A5
0 15 30 60 km
BNG/OSGB36
Esri, DeLorme, GEBCO, NOAA NGDC, and other contributors

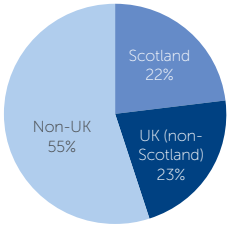
Economic impacts

When complete, BOWL will be one of the largest ever private infrastructure investments in Scotland. SSE, supported by NEF Consulting, has calculated the expected impact to the Scottish and UK economies from this project expenditure.

Contributing to the UK and Scottish economies

The total expenditure on BOWL will be approximately £2.6bn, with around 45% of this investment expected to be within the UK. Much of the non-UK expenditure will be spent on the procurement of goods that the UK does not currently manufacture.

Total BOWL investment = £2.6bn



Adding value to GDP

It has been estimated that the construction of the project could add approximately £1.13bn of value to UK GDP, of which around £530m would be contributed to the Scottish economy.

Each £ sign represents £100m of value added to the UK economy, with the symbols in blue representing the contribution to the Scottish economy.

Supporting jobs

The impact on UK and Scottish jobs is also substantial, with BOWL construction investment supporting more than 18,100 years of full-time employment in the UK, of which around 5,800 would be in Scotland.

Each person represents 1,000 years of full-time employment in the UK, with the blue people representing the years of employment supported in Scotland.

Case study: Wick habour

Wick harbour has been chosen as the operational base for Beatrice. Two historic derelict Thomas Telford buildings on Wick's harbour front have been purchased by BOWL for restoration and development into the operational headquarters.

The approximate £10m investment will transform the buildings and see them returned to maritime use. Around 90 employees will be based in the buildings once complete.

The image shows the condition of the buildings ahead of commencement of work.

Case study: Burntisland Fabrications

Burntisland Fabrications (BiFab), based in Scotland, was awarded a £100m contract to manufacture 26 wind turbine jackets by Beatrice Tier 1 contractor Seaway Heavy Lifting. Fabrication is being undertaken at all three BiFab sites: Burntisland, Methil and Arnish on the Isle of Lewis.

The contract award has protected around 200 jobs and requires in the region of 22,500 tonnes of steel fabrication.

The image shows preparations for upending the first complete jacket in June 2017.

Calculating the value of the BOWL project

The Input-Output (I-O) economic model was used to calculate this economic impact from project expenditure. The I-O model calculates the direct impact from project expenditure, as well as the ripple effect across the economy from supplier expenditure and employee wage spending throughout the supply chain. The model generates the economic impact through two key indicators – contribution to GDP and years of full-time employment supported. The full methodology for the calculation can be found online at www.sse.com/beingresponsible/reporting-and-policy/.

Social impacts

The investment in BOWL will result in many social benefits, including providing employment opportunities and community funding for local projects. This report focuses on the results of a Social Return on Investment (SROI) analysis for the Beatrice Partnership Fund, which SSE undertook with the assistance of NEF Consulting.

Community funds

The Beatrice Community Benefit Fund is worth a total of £34m over the lifetime of the wind farm. The largest proportion of the fund, £28m, will be distributed through the Coastal Communities Fund – a UK Government programme designed to support the economic development of coastal communities by promoting sustainable economic growth and jobs. The remaining £6m is being administered by SSE's Community Investment Team over a five-year period.

The £6m fund will be split between communities in Highland (£4m) and Moray (£2m). These will both then be divided equally between a local fund, for community council areas close to where project work is taking place, and a Partnership Fund, for communities in the wider region.

In December 2016, SSE launched the regional element of the Beatrice Fund, the Beatrice Partnership Fund. Worth a total of £3m over a five-year period, the Partnership Fund for Highland will cover the communities on the east coast of Caithness and Sutherland. In Moray, it will include all coastal communities and the four local communities, namely Buckie and District, Strathisla, Lennox and Keith. For more information please visit: www.sse.com/BeatricePartnershipFund.

Case study: Covesea Lighthouse

June 2017 saw the announcement of the first round of grant awards from the £3m Partnership Fund element of the Beatrice Fund.

Awards totalling £378,000 were made to 14 different projects across the north of Scotland, including £40,000 to the community-owned Covesea Lighthouse in Moray. The grant award will enable the community company to complete an Education and Heritage Centre, ensuring that future generations have the chance to enjoy learning about the heritage of this iconic landmark.

Social Return on Investment

With the assistance of NEF Consulting, SSE undertook a forecast Social Return on Investment (SROI) analysis for projects that applied to the first round of grant funding from the Beatrice Partnership Fund in 2017.

NEF Consulting and SSE found that for every £1 to be spent by the Beatrice Partnership Fund, the community projects are expected to generate £3.21 in wider value. The £6m Beatrice Fund could create nearly £20m of social value when fully distributed.

Social Return on Investment: £3.21 of wider value created for the local community for every £1 invested.

What is SROI?

SROI is a methodology that lets you understand the wider value created as a result of investing money. It considers the social, economic and environmental impacts of an investment. Critically, all impacts are valued in monetary terms, enabling a direct comparison between impacts and investment. The approach considers the value created for all stakeholders impacted by an investment, not only the intended beneficiaries.

As this is the first SROI SSE has undertaken, it worked closely with local stakeholders to create the framework which informed the SROI calculation. For more information on the methodology used for this assessment, please refer to the methodology document on www.sse.com/beingresponsible/reporting-and-policy/.

Calculating the SROI of the Beatrice Partnership Fund is important as it provides a new qualitative and quantitative way of looking at the value of the funds, aiming to maximise the impacts and outcomes in the future.

Project overview

Beatrice Offshore Windfarm Limited (BOWL) is a joint venture partnership between SSE Renewables (40%), Copenhagen Infrastructure Partners (35%) and SDIC Power (25%).

Partners

SSE is one of the UK's leading energy companies, involved in the generation, distribution and supply of electricity and the extraction, storage, distribution and supply of gas. Its core purpose is to provide the energy people need in a reliable and sustainable way. It supplies energy to around 8 million customers throughout Great Britain and Ireland and is one of the UK's leading generators of electricity from renewable sources.

Copenhagen Infrastructure Partners (CIP) is a fund management company founded in 2012 by 5 partners with extensive experience from energy projects, including offshore wind projects. Copenhagen Infrastructure Partners currently manages three funds of approx. 3.5 billion Euros in total. Copenhagen Infrastructure Partners focuses on long term investments in energy and infrastructure assets, primarily in Northern and Western Europe and North America.

Red Rock Power is the UK subsidiary of SDIC Power Holdings Co. a power generation company listed on the Shanghai Stock Exchange. SDIC Power is primarily engaged in the investment, development, construction, operation and management of power projects. The company owns a total installed capacity of 33.1GW, and more than 60% of the portfolio is renewable energy capacities, including hydro power stations and wind farms.

Development timeline

2009
Development begins

2012
Consent application submitted

2014
UK Government awards planning consents

2016
Green light to start construction

2017
Offshore construction begins

2018
First generation of power

2019
Fully operational

Annex 6.4

SSE Graduate programme information

SSE Graduate Opportunities

We offer graduate development programmes across the following business areas. Click on each to take you to the page:-

- Networks – Transmission
- Networks – Distribution
- Enterprise – Energy Solutions Group
- Enterprise – Rail
- Enterprise – Contracting
- Enterprise – Utilities
- Enterprise – Telecoms
- Wholesale – Generation
- Wholesale – Renewables
- IT & Technology
- SSE Airtricity

Please do read through each section, as our businesses all offer different career progression and development opportunities, and require different degree disciplines. Please also view the job adverts for full details.

Power Graduate of the Year and D&I Initiative of the Year 2017

Why choose SSE?

Women's Engineering Society Company Partner

Read about our full benefits package

Energy Networks – Transmission

What do we do?

Our Transmission business is SSE's fastest-changing business, where the core activity for the next few years will be to build a transmission network for the future, in a way that is consistent with all safety and environmental requirements.

Requirements

BEng in Electrical, Mechanical or a Project Engineering discipline. These roles will be based from Perth or Glasgow.

Find out more?

Visit the SSEN website to find out more about our Transmission Business.

Laurence Kibblewhite

Graduate Engineer – Transmission

"I looked at the scale of past Transmission projects, such as Beauly Denny, and knew this is what I wanted to do.

The nature of the projects in Transmission is that they are all different, not just depending on the electrical requirements but also the installation environment. Parts of the network are very remote and are located in challenging terrain, I wanted to work on challenging large scale projects."

Read more here.

Energy Networks - Distribution

What do we do?

We are responsible for maintaining the electricity networks supplying over 3.7 millions homes and businesses in the UK. We open and operate two electricity distribution networks, comprising 106,000 substations and over 130,000 km of overhead lines and underground cables.

Requirements

BEng in Electrical, Mechanical or Project Engineering discipline. We may also consider candidates with an economics, physics or mathematical degree for our Networks Trading business. These roles could be based from Perth, Aberdeen, Inverness, Aldershot, Portsmouth, Reading, Melksham or Slough.

Find out more?

Visit the SSEN website to find out more about our Distribution Business.

Alan Brown

Graduate Engineer – Distribution

"One of the most appealing aspects of the distribution graduate scheme for me was the opportunity to see a project all the way through planning, design and construction.

Many of these projects are vital to the compliance of our licence agreements with Ofgem and other parties. Being part of such projects will prove valuable in pushing for my chartered engineer status in future."

Read more here.

Wholesale – Generation

What do we do?

Our Generation business is responsible for the operation and maintenance of our generation assets and for ensuring the plant is available for use by Energy Portfolio Management.

The Generation division's principal objective is to safely, efficiently and reliably maintain and operate a diverse generation portfolio, which includes a significant amount of renewable energy capacity, across the UK and Ireland

Requirements

MEng in Electrical, Mechanical, Civil, Materials or Control and Instrumentation degree. These roles can be based from Glasgow or Ferrybridge.

Find out more?

Visit the SSE Wholesale website for more information

Caroline Carslaw
Graduate Engineer – Generation

"The real selling point of the Graduate Scheme for me is the fact that Generation Graduates can, within reason, choose their placements to allow them to get as much or as little exposure to different business areas as they would like.

This has been great for me, as I would like to experience as much of the generation business as I can over the 2 year programme. SSE is also very keen for graduates to become chartered with their respective institutions within 4-5 years of starting with the company, so a lot of support is available to help with this". Read more here.

Wholesale – Renewables

What do we do?

SSE is maintaining and investing in a diverse and sustainable portfolio of thermal and renewable generation plant.

In moving towards a lower carbon generation mix, SSE will, by the end of the decade, transition its generation assets from a portfolio weighted towards gas and coal, towards one more weighted towards gas and renewables

Requirements

MEng in Electrical, Mechanical, Civil, Materials or Control and Instrumentation degree. These roles will be based from Glasgow or Ferrybridge.

Find out more?

Visit our SSE Wholesale website for more information

James Williamson
Graduate Engineer - Renewables

"After leaving university I knew that I wanted to work in an environment that would not only support my development towards becoming a chartered engineer but would also allow me to be passionate about my work.

I've been fortunate to grow up during an exciting time in the energy sector, with the rise of renewable technology and a shift in focus towards greener alternatives. This was something I always wanted to be a part of.

SSE stood out to me as a forward thinking company who saw the potential for these new technologies, which was a significant factor in my decision to join the graduate scheme." Read more here.

IT & Technology

What do we do?

Our business is highly competitive, and needs to rely on an IT estate that is flexible, resilient and scalable to meet the market and industry demands.

Technology is constantly changing to meet business needs, and SSE is investing both financially and in terms of our resources to grow our capabilities in new and emerging technologies.

Requirements

Ideal candidates will have a degree in an IT or Technology related subject, but we will also consider candidates with a STEM or business-related degree. These roles will be based from Reading, Havant or Perth.

Aadil Patel
Graduate – Group IT Projects

"I chose SSE to begin my career within IT as working in the energy industry allows me to work in a place where technology is at the forefront of the industry – smart metering, electric vehicles and connected homes for example.

It is reaching a point where competition is spiking and the companies which adapt fastest to changing technologies are the ones who are able to carry on running efficiently." Read more here.

Annex 6.5

List of skills events supported in 2017/18 related to diversity & inclusion

Partner	Name	Info	Date
Glasgow Science Centre	Meet the expert' stand at the Glasgow Science Centre	6 of our engineers (5 female, 1 male) ran 'meet the expert' sessions at the Glasgow Science Centre over 3 days in February school holidays where up to 1,500 people were expected each day.	Feb-2017
Equate Scotland	International Women's Day - Modern Apprenticeship Event	Presentation and apprentice Q & A with female students at the City of Glasgow College and Equate Scotland	Mar-2017
MCR Pathways	YGT & SSE - The energy and engineering Taster	Young Glasgow Talent (YGT) is MCR Pathways' project which ensures young people take the next steps on the path to a fulfilling life. YGT inspires and supports disadvantaged teenagers as they unlock their potential and find their talents. We held an interactive workshop on wiring a plug and electrical circuit as well as a manual dexterity test. Recruitment provided interview tips and showcased the different career pathways available. Motivational Q & A with Vic Stirling.	Mar-2017
N/A	Apprenticeship week and Careers Week	Reach of 300,000 on social media for our apprenticeship week and careers week campaign. Female role models promoted during the campaign.	Mar-2017
Princes Trust	Princes Trust Session	Our apprentices celebrated Apprenticeship Week and Careers week by doing a careers talk to a group of young people from the Princes Trust Session at the Glasgow Science Centre	Mar-2017
Equate Scotland	Equate Scotland Interview	http://www.equatescotland.org.uk/charlene-cotter-sse-making-diversity-a-priority/	Apr-2017
Skills Development Scotland	Apprenticeship Event for Care Experienced Young People	We attended this event in Edinburgh to promote our apprenticeship and trainee opportunities to young people from a care experienced background	Apr-17
Equate Scotland	Interconnect Student Conference	Annual conference which brings together female STEM students from across Scotland. 2 of our female graduates attended to network with the students.	May-2017
Equate Scotland	Positive Language Training	Equate Scotland attended our team meeting to provide positive language training to the recruitment team (circa 20 people)	May-2017
N/A	The Guardian UK300	SSE jumped 30 places to come 176th in The Guardian UK300 list of the most popular graduate employers for 2017/18. Their analysis is based on a survey of over 17,000 students conducted via the UK's university careers services. It's the largest and most representative survey of its kind.	Jun-2017
N/A	RateMyApprenticeship's Top 100 Employers Table for 2017 – 18	For the first time SSE has appeared in the top 100 employers table (ranked 48th) which is based on real reviews from our own apprentices. The website receives 52,000 views a month and we will be included in their School Leavers Guide to Careers Options (17/18) with 40,000 copies being sent to schools and colleges across the UK	Jun-2017
N/A	The National Skills Academy for Power Awards 2017	winner of Diversity & Inclusion Initiative of the Year	Jun-2017
N/A	International Women in Engineering Day	Launched our Women in Engineering video - social media campaign had a reach of 20,000 on @ssejobs Twitter Feed. The video tackles the myths about women in engineering.	Jun-17
Equate Scotland	MA Connect: Networking and Career Development Event for female apprentices	Part of the Equate Modern Apprenticeship Mentoring Project. The purpose of the event will be to provide female STEM apprentices (from various employers) with the opportunity to network, participate in career development workshops and to consider becoming STEM Ambassadors. http://www.equatescotland.org.uk/event/ma-connect-networking-and-career-development-event/	Jul-2017
N/A	Women in Engineering Event at Sutton Coldfield Grammar School for Girls	Attended by Andrew Roper (Director of Engineering) and Caitlin MacGill (graduate engineer)	Jul-2017
N/A	BBC News Interview	Karis McColl (Networks Apprentices) was interviewed by BBC Scotland News around the Apprentice Programme we offer and the opportunities it presents.	Aug-17
Gradcracker	Gradcracker Takeover Week	Sponsorship of National Inclusion Week - resulted in an 18% growth in female applications for engineering and 35% for IT. The campaign had a reach of 14,000 on Gradcracker social media channels.	Sep-2017
Gradcracker	National Inclusion Week email	Email to all of our graduate applicants to promote what we are doing in this space. Gradcracker also emailed all of our hub followers (circa 1200).	Sep-17
N/A	IT Graduates - entrance criteria	We have reduced our entrance criteria so that we now accept a 2:2 degree classification which will hopefully encourage more diverse applications.	Sep-2017
Equate Scotland	SSE & Interconnect Society Undergraduate Networking event	SSE networking event for female STEM students from across Scotland. Opportunity to promote our engineering graduate programme and create a pipeline of female students which we will continue to engage with. 20 students attended. 1 of the students has accepted an offer to join the programme. 3 have applied to our summer placement scheme. http://www.equatescotland.org.uk/event/interconnect-industry-insights-with-sse/	Oct-17
N/A	The Graduate Engineer Show/The Apprentice Engineer Show in Derby	SSE female graduate engineer provided a talk at this event and showed our Women in Engineering video. 1500 engineering university students attended from over 50 universities - 28% were female last year. This was the first time we attended this event.	Oct-2017

Partner	Name	Info	Date
Equal Approach	Graduate Interview Questions	Review of graduate Interview Questions with Equal Approach. We adjusted our interview questions to include strengths based interview questions as well as competency interview questions.	Nov-17
Teach First	Teach First Open Careers Fair	300 people attended in London. SSE had a stand	Dec-17
Teach First	Teach First Big Class Challenge	4 SSE staff took part in the Big Class Challenge, providing a talk at their local school	Dec-17
My Kinda Future	My Kinda Future	We welcomed 60 students from Berkshire, Hampshire, Oxfordshire and Surrey to our training centre in Thatcham, where our current and former apprentices highlighted the opportunities available to school leavers through our craft apprentice and trainee engineer schemes.	Jan-18
Talent Source	Talent Source Case Study	Case study with Emma Mackay - https://www.talentsourcenetwork.co.uk/your-career/apprenticeships/my-apprenticeship-has-boosted-my-confidence	Feb-18
DYW	Developing Young Workforce	We attended 3 events in March in the Highlands and Islands over apprenticeship week	Mar-18
N/A	TARGETcareers The Top 200 Employers for School Leavers voted for by 12,000 students.	Featured for the first time - ranking confirmed on Nov 4th but we know we are between 110 and 130. We will feature in their annual 'most popular employers for school leavers' publication which is the largest employer ranking product aimed at school and FE college students - sent to 6,000 schools/colleges. 50,000 free copies circulated.	Mar-2018
N/A	Apprenticeship News Article	We have featured two of our female apprentices in an apprenticeship news article: 'Women in STEM - insights from the new generation of apprentices' http://www.apprenticeshipsnews.co.uk/success-stories/catching-up-with-the-future-women-in-stem	Mar-18
N/A	The Independent Newspaper	Featured in the Apprenticeship News magazine within the Independent Newspaper during apprenticeship week. Female imagery used - https://issuu.com/mediaplanetuk/docs/apprenticeships_2018	Mar-18
Skills Development Scotland	SDS Case Studies	We have worked with SDS to promote 5 of our apprentices through case studies which have been promoted over apprentice week on social media and the local press. 2 female, 2 from a BAME background and 2 of the apprentices started their career with SSE on our employability scheme.	Mar-18
Teach First	Teach First - Slough Careers Event	5 SSEN staff to do a talk to 50 students (yr 12 and 13) in Slough, about apprenticeships and career pathways in the energy industry.	Mar-18
N/A	EEE Networks Event - Reading	We are working with SSEN and IT Reading based graduates to put on an event similar to our Interconnect event for EEE and IT students. The event is being organised and led by 2 of our female graduates.	Apr-18
Equal Engineers	Online Engineering & Technology Careers Fair Summer 2018	Equal engineers week-long online Apprentice and Graduate careers fair to co-inside with International Women in Engineering Day during w/c 25th June 2018. They connect inclusive employers with diverse talent in engineering and technology.	Jun-18
N/A	Offer management	Went above and beyond to secure two strong female candidates - offered both a relocation package to relocate from Spain and Italy.	Dec-18
Gradcracker	Gradcracker Toolkit	Sponsorship of EEE and IT courses in the Gradcracker toolkit which is circulated to 100,000 students across the UK. Female images included	Sep 17 - Sep 18
Gradcracker	Gradcracker 12 month package	Extended our package from 2 months to 12 months which allows students to follow and engage with us year round. 37% of registered users (all STEM) are female	Sep 17 - Sep 18
Equate Scotland	Female Engineering Students Wind Farm Project	FemEng (Glasgow University Female Engineering Society) and Strathclyde's Interconnect Society are organising a collaborative, educational project on the topic of energy which SSE have offered our female engineers to mentor the students throughout the project. We have also offered to host the presentation and judging day as well as covering the cost of catering.	Spring 18
N/A	TARGETjobs National Graduate Recruitment Awards	Shortlisted for the most popular graduate recruiter in energy and utilities award 2017 at the TARGETjobs National Graduate Recruitment Awards	Summer 17
EBP	East Berkshire Partnership	We have attended 4 events in Hampshire with the EBP, including an event where we are helping to do mock interviews with young people who have behavioural issues. We also have 3 SSE staff members volunteering to provide 6 week long mentoring in Havant from April. This will be for students who are classed as being vulnerable or having behavioural issues.	Various
Learning to Work	Learning to Work	We have attended 3 events with this company in Slough reaching circa 1000 young people. The events took place in Dec, March and June	Various
UTC	UTC Reading	Lisa Hales has provided a talk in apprenticeship week about our trainee opportunities. She also conducted an Interview Skills Session in November and a Presentation Skills Workshop in January.	Various

Annex 6.6

Greater Gabbard Apprentice Case Study

Seagreen Supply Chain Plan

In 2014 after identifying weaknesses within the supply chain, SSE helped to proactively create and implement a 'fit for purpose' offshore wind apprenticeship programme at Greater Gabbard. To date Greater Gabbard Offshore Winds Ltd / SSE has invested over £500,000 in offshore wind specific training and development including taking on 6 apprentices at its Lowestoft operations base.

	**Kyle Pickering**, former apprentice at Greater Gabbard and Apprentice of the Year 2015, said: "My experience of working at Greater Gabbard has been excellent. The training I received though-out my apprenticeship was fantastic, allowing me to attend a number of courses, ranging from turbine maintenance to electrical engineering. "I've been as a full-time member of the team since September 2017 and now work as an Electrical Operations Engineer at the site. Since I was young I've been interested in offshore wind and it's great to have the opportunity to develop my career in this growing industry and I'm really looking forward to seeing the opportunities the extension to the site brings."

Year 1 - 2014 Apprenticeship programme roll out

The first apprentices were placed on a three-year bespoke Wind Turbine Generator (WTG) course apprenticeship, cultivated by SSE through research and engagement with colleges across the country and then developed by SSE in connection with HETA Technical Training College in Grimsby who were already providing a course that fitted well with the criteria required.

Initially, four young men between 16 and 20 years of age were enrolled onto a City & Guilds L3 Diploma in Electrical Power Engineering Wind Turbine Operations & Maintenance course. The course is modular and in conjunction with HETA modules were selected which SSE felt best suited the learning requirements for the apprentices. This is referred to as a "Modern Apprenticeship" in that it is candidate driven.

The apprentices spent a year in Grimsby completing both theory & practical training elements, followed by time at the Lowestoft Operations base with SSE's Offshore Operations Technicians learning basic and valuable skills associated with being in an offshore environment. Following this, the apprentices were then seconded to the WTG provider (Siemens) for specific training. With the candidates having the responsibility to carryout tasks they were then required to meet the relevant criteria of each dedicated module, then assemble the evidence and witness testimony to prove their ability to perform and repeat tasks unassisted. Candidates were then to submit their finished portfolio for three levels of assessment. All four apprentices passed and were subsequently employed by SSE as trainee WTG technicians.

In summary the course was well thought out and designed and met the required training needs. Lessons were learned in terms of logistics and the challenges of having apprentices doing extensive travelling this resulted in this training taking place at a more local venue for the next apprentice cohort taken on in 2015.

Year 2 onwards – 2015 - Apprenticeship programme

In 2015, SSE employed a further two apprentices who were placed on a four-year apprenticeship at the local Lowestoft college of further education, enrolling them on a City & Guilds NVQ L3 Extended Diploma in Engineering Maintenance (Electrical). Again, this was a Modular based Modern Apprenticeship but not WTG specific, as such SSE plan to place the candidates on a WTG specific course to give them the skills necessary to continue in the offshore industry.

The programme is supported through funding from SSE and the apprentices progress is tracked quarterly under the guidance of the Apprentice Programme Manager. SSE also has engineers within the business who have trained to become assessors to support the programme, thereby further developing the skills of employees already within the business.

To date all six apprentices have successfully completed their development and been placed in secure full-time employment at our wind farm in a variety of positions ranging from embedded technicians with the OEMS to a trainee electrical engineer now undertaking further education at HNC level.

The intention is to take a further two apprentices on in 2019, whom SSE will enrol at the East Coast College (formerly Lowestoft College) and based on lessons learned shall look to have them complete specific WTG training earlier in their training period.

Additional Information

- Over 90% of the operations staff at Greater Gabbard were recruited locally from various industrial backgrounds and required offshore specific training mostly sourced from local suppliers such as Lowestoft College and Petans.
- As a further example of SSE's commitment as lead operator at Greater Gabbard we are also leading the employer engagement on a pioneering industry-led training project to build a pipeline of skilled workers for the offshore wind industry. The new East of England Offshore Wind Skills Centre will be based at East Coast College Great Yarmouth and had a 'soft launch' at EEEGR's SNS2018 at the

Norfolk Showground with some of the key offshore wind industry supply chain companies. The training is designed to build an increasing pool of skilled technicians for the planned projects off the East Coast. Greater Gabbard has been highly supportive of the college and has provided hydraulic testing equipment to the college for use as a practical teaching aid.

Seagreen Position

Seagreen shall seek to utilise the knowledge gained from the delivery of the Greater Gabbard apprenticeship scheme to replicate a similar arrangement with a local education provider (Dundee, Angus and Fife colleges). Seagreen will pro-actively work with its chosen WTG supplier to find a means to recruit and train WTG technicians from the local area. Work to progress this proposal and define a plan to deliver this scheme will commence during 2019 once contracts are in place for the WTG supply and an agreement has been reached on the local port to be utilised for windfarm operations and maintenance.

Impact summary

The actions taken by Greater Gabbard have had the following impact:

- Creation of a fit for purpose offshore WTG technician programme at both Grimsby and the East Coast College. These courses increase the availability of offshore wind technical learning and will grow the pool of capability which is benefitting the wider offshore wind sector
- The direct recruitment of 6 employees into the offshore wind sector adding to SSE's capability in East Anglia
- Knowledge generation to inform the design of future offshore wind apprentice programmes being considered for pipeline projects such as Seagreen.

Seagreen's actions will have the impact of transferring this learning to develop a localised offshore wind apprentice training capability on the East Coast of Scotland. In collaboration with its chosen WTG supplier Seagreen expects to generate significant local training and employment opportunities consistent with that seen on Greater Gabbard.

Annex 6.7

Examples of skills related projects funded

Overview

SSE has 29 renewable energy funds in operation which invested £5.1m in 2017/18[1] to support community projects. Of this total investment, £1.2m was allocated to skills and employment to projects which increase people's life chances – particularly fitting as 2018 is the 'year of the young person'. Some examples of the projects funded have been set out below. These actions have broad impact of helping young people access employment as well as helping promote SSE and the energy sector as a future career of choice**.** SG also plans to create its own community benefit fund following the outcome of the CFD auction.

Examples of Projects Funded by SSE in 2017/18

The Gordonbush Project (Highland)

The Gordonbush Project was awarded £36,000 in 2017/18 through SSE's Gordonbush Community Fund. The Gordonbush Project was established by the community fund panel members due to real concerns that young people are leaving the local communities to live and work in locations further south, resulting in an aging local demographic. Through a business consultation and close links with the local High School, it became evident that there was a real interest in delivering a programme which would support both the young people and the smaller businesses within the area. The Gordonbush Community Fund has dedicated £36,000 per year for the last three years from their local fund to support young people from their isolated rural communities to access apprenticeships with local businesses. To date 21 apprenticeships have been offered, with three completed, 14 currently ongoing and a further two who are looking for suitable apprentices and two who failed to complete their apprenticeship. The group have also been awarded funding from the regional Highland Sustainable Development Fund and had the local community fund contribution matched for two years. By the end of 2017/18, a total of over £200,000 had been awarded to The Gordonbush Project since 2015 through both SSE's local Gordonbush Community Fund and its regional Highland Sustainable Development Fund. The project is a good example of the longer term relationships SSE has with the communities it operates in.

The Kyle of Sutherland Apprenticeship Scheme (Highland)

The Kyle of Sutherland Apprenticeship Scheme (KoSAS) was established by local panel members from SSE's Achany Community Fund. The apprenticeship scheme which operates in these communities offers local young people the opportunity to work for local businesses. They look to support skills within their communities by offering three-year apprenticeships with local businesses, delivering quality training in 2017/18, the KoSAS was awarded £19,000 through SSE's Achany Community Fund, and to date 18 young people have secured positions with a variety of businesses within these communities, ranging from a horse stud farm to the more typical joiners and also local game butchers. By the end of 2017/18, the KoSAS had been awarded a total of £125,000 since 2015 through both SSE's local Achany Community Fund and its regional Highland Sustainable Development Fund. The project is another good example of the longer term relationships SSE has with the communities it operates in.

Routes to Work South (South Lanarkshire)

Routes to Work South (RTWS) is a social enterprise dedicated to the alleviation of poverty in South Lanarkshire by providing a range of employability, skills and business services that support economic growth and link opportunity and need. RTWS targets key unemployed and workless priority groups including Lone Parents, young people/adults with multiple complex barriers and unemployed people with a disability, in

[1] http://sse.com/newsandviews/allarticles/2018/08/sse-wind-farm-funds-create-over-51m-in-opportunity-for-communities/

disadvantaged communities in the region. In 2017/18, SSE granted a total of £360,000 to RTWS from its local Clyde South Lanarkshire community fund and regional South Lanarkshire Sustainable Development Fund, to deliver customised skills and employability programmes in rural areas. One element of this, the Respect, Innovation, Skills, and Employment (RISE) Programme which was funded by SSE's regional fund, is targeted at excluded and disadvantaged secondary school pupils and aims to improve school leaver destinations, increase youth employment and support young people to make more informed lifestyle choices. A total of 80 young people will benefit from the RISE Programme, which is delivered over a 12-week period in an 'out of school' environment and is structured around a mixed curriculum consisting of group activities through which the individuals learn about key areas, including personal and social skills development and health and wellbeing, to prepare them for the workplace.

Career Ready (Perthshire)
In 2017/18, SSE awarded £40,000 to Career Ready, through the Perth and Kinross Sustainable Development Fund. Career Ready links employers with schools to open the world of work to young people, aged 15 to 18, from lower income families. The programme matches each student to a mentor volunteer from 30 local employers, which includes SSE, who can offer advice and support. To increase understanding of the workplace each student undertakes a four-week paid summer internship, participates in six employability masterclasses and attends employer-hosted workplace visits. The project aims to have a transformational impact on the life chances of 120 young people helping to increase their awareness of career pathways and improve social mobility.

In addition the SSE Group also has a separate partnership with Career Ready. SSE has taken part in this programme for the last 5 years, which matches young people with mentors from SSE who help guide them through the difficult decisions they have to make as they enter the next stage of their lives. As part of the mentoring programme, each intern is also offered a month paid placement within the company.

Impact summary
The examples above underline the importance SSE places of investing in the communities in which it operates. The actions above have supported the development of skills and have also helped disadvantaged people find a route into work. SSE's role in supporting these programmes will raise awareness of the company and it's role in the energy sector which could result in attracting future recruits.

Annex 6.8

SGRE Apprenticeship Flyer

Seagreen Supply Chain Plan

Siemens Gamesa Wind Turbine Maintenance Technician Apprenticeship

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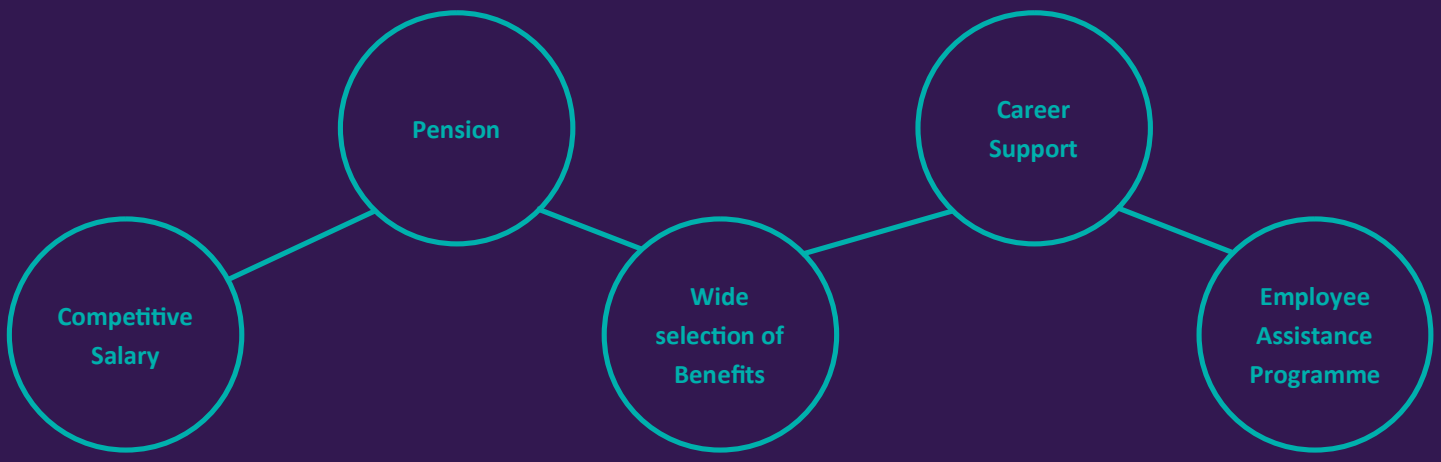
RENEWABLE ENERGY

Our Wind Turbine Technician apprentices work at both onshore and offshore windfarm sites and undertake an advanced apprenticeship in Mechatronics (Mechatronics Maintenance Technician) which is part of the Engineering Technician suite of qualifications and takes between 36 and 48 months to complete. The role requires a special calibre of individual as living and working away from home may be required. In addition, do you have a head for heights, can you swim and are you a good team player?

You will complete the first 18 months of your apprenticeship at college where you will study a Level 2 Diploma to develop Advanced Foundation Engineering competence and a Level 3 Diploma covering Advanced Manufacturing Engineering where you further develop Technical Knowledge. The unit criteria within each is carefully selected to ensure alignment with wind turbine technology, health and safety and environmental issues. In addition to success in these areas you will also complete a Gateway Assessment, this is a "mid-point" assessment which measures professional behaviours along with technical competence and success allows progress to year 3.

When you move to site in year 3 you will continue to work hard to achieve an additional Level 3 Diploma which develops competence, this part can take up to two years to complete and is continually assessed. At the end of all that you will complete an end point assessment where a panel of your peers will question you to ensure the high level of competence that the qualification and Siemens Gamesa demands. The panel will consist of representatives from the awarding body, Siemens Gamesa and currently, the Institution of Mechanical Engineers. Success means that you will receive certification as a Mechatronics Maintenance Technician and as this is recognised by professional institutions you can apply for membership and EngTech status straight away.

Information around the recruitment cycle, recruitment processes and other apprenticeship opportunities with Siemens Gamesa can be found here https://www.siemens.com/uk/en/home/company/jobs/search-careers/apprenticeships.html



If you have any additional questions please contact our Operations Apprentice Manager, Danny O'Rourke:

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RENEWABLE ENERGY

Annex 6.9

Graduate event tracker

Seagreen Supply Chain Plan

Graduate Support Event Tracker

Notes: The table below shows the list of events used by SSE in 2017/18 to promote careers in the energy sector and it's graduate & apprenticeship programmes.

Month / Date	Event	Organiser	Location	Who / Graduate	Support Provided (activity / task)	
October 2017						
17th	SSE & Interconnect Society – Networks event	Resourcing –	Glasgow Offices, Waterloo Street			
25th	The Graduate and Apprentice Engineer Show	Resourcing –	Derby		No	
8 & 9	STEM careers/pathways for S2/3	Glasgow City Council Education Services / Developing Young Workforce	Glasgow Science Centre		All attended – stalls in Science Centre. Answered questions.	
4, 5 & 6th	2018 Graduate Assessment Centres		SSE premises, 1 Waterloo Street, Glasgow		Mingle at break-out area of assessment centres with candidates. Q&A session.	
11th & 12th	2018 Graduate Assessment Centres		Forbury Place, Reading		Mingle at break-out area of assessment centres with candidates. Q&A session.	
February 2018						
Monday 19th	Langside Primary School visit	L&D	Glasgow		Q&A + Talk with pupils re STEM	
March 2018						
5th – 9th	National Apprenticeship Week (North)	L&D	Perth Training Centre			

5th – 9th	National Apprenticeship Week (South)	L&D	Thatcham Training Centre			
June 2018						
12th	Big Bang Scotland Fair, Perth	ESP (External)	Perth College		Man stand Presentations	
October 2018						
24 & 25	EU Skills Event	Sam Mitchell / Resourcing	Glasgow		Man stand / stall	
November 2018						
TBC	Careers Talk at Strathallan School	Direct from School	Strathallan, Perth		Talk	
21 & 22 November	Glasgow STEM Festival – Employer's Marketplace	Glasgow City Council – Mark Irwon	Glasgow Science Centre		Employer's marketplace stall	
8	Speed Networking event	Elaine Finnie – Perth Grammar	Perth Grammar			

Annex 6.10

List of relevant external bodies that SWEL/ SSE is part of

SSE is a member of the organisations below. SSE's membership as part of these groups provides an effective platform to share knowledge and industry insights with other developers and relevant stakeholders. SSE's contribution at these groups helps to shape the agenda and inform the initiatives that are deployed.

- Offshore Wind Industry Council
- Offshore Wind Industry Group (Scottish Developer and Supply Chain Group)
- Sector Deal Industry Advisory Group
- Sector Deal - Forth and Tay Cluster Group (Soon to be Forth and Tay Offshore) – SSE is guiding the formation, structure of how this body should proceed
- Sector Deal - North Cluster Group (As above)
- Sector Deal - Scottish Cluster Steering Group
- Energy UK Sub Committee
- Forth and Tay Regional Advisory Group
- Offshore Renewables Joint Industry Programme
- Offshore Wind Accelerator
- ORE Catapult O&M Forum
- G+ Global Offshore Wind Health and Safety Organisation
- SafetyOn: Alliance for Onshore Wind Health and Safety (New Onshore Safety Group)
- Global Wind Organisation
- Catapult SPARTA (Renewable Operations specific) see 5.23.
- The Irish Wind Energy Association
- The Energy Institute
- Scottish Renewables
- Strathclyde TIC
- Renewable UK
- Dundee Chamber of Commerce
- FTRAG Ornithology Sub Group
- FTRAG Marine Mammals Sub Group
- Forth & Tay Commercial Fisheries Working Group
- Moray Firth Commercial Fisheries Working Group