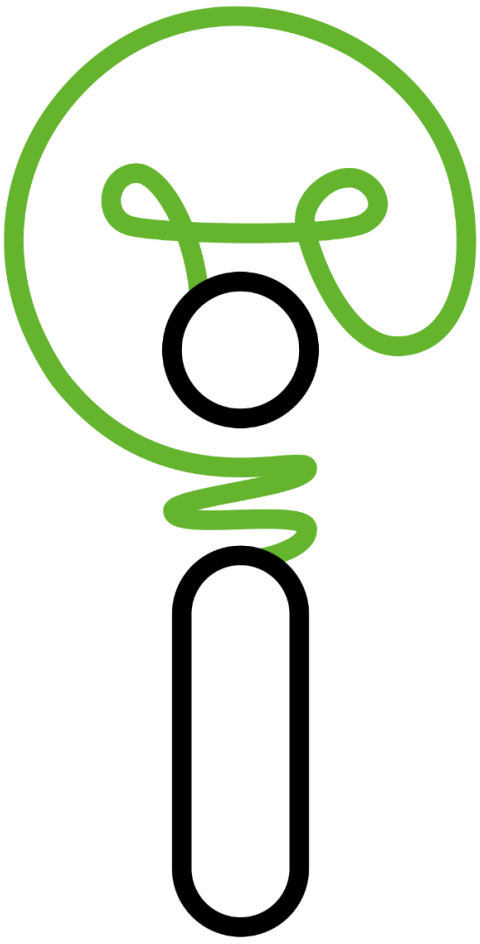
Annex F Evidence documents

EV001

Innogy project portfolio

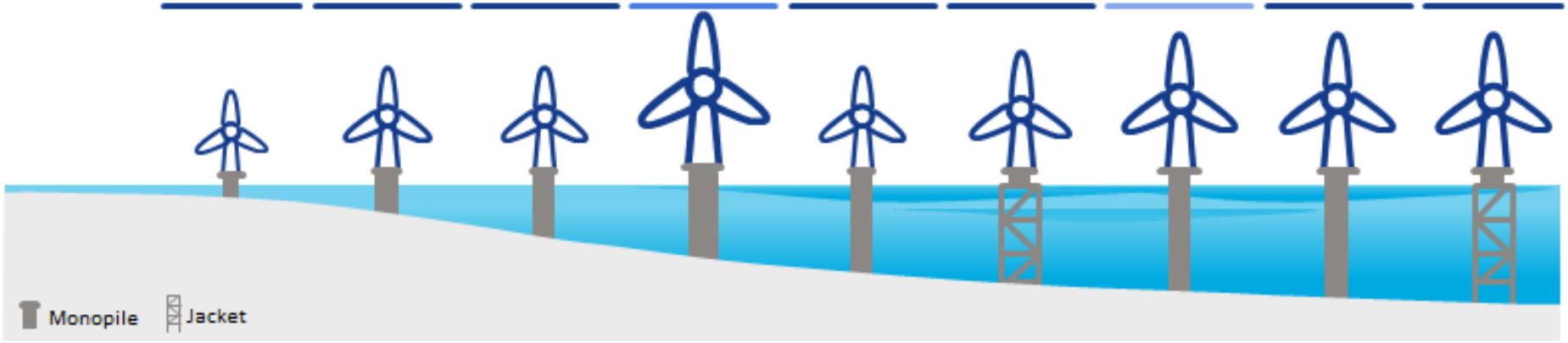
Not confidential



Sofia Offshore Wind Farm Limited

Track record of installing bigger turbines, farther from shore and in deeper waters

Project	North Hoyle[1]	Rhyl Flats	Gwynt y Môr	Triton Knoll	Greater Gabbard	Thornton Bank	Galloper	Nordsee One	Nordsee Ost
(Expected) CoD	2004	2010	2015	2021/22	2012	2009 – 2013	2018	2017	2015
Capacity	**60MW**	**90MW**	**576MW**	**855MW**	**504MW**	**325MW**	**353MW**	**332MW**	**295MW**
Turbines	30 × 2.0MW	25 × 3.6MW	160 × 3.6MW	90 × 9.5MW	140 × 3.6MW	54 × 5 – 6.15MW[2]	56 × 6.3MW	54 × 6.15MW	48 × 6.15MW
Water depth	7 – 11m depth	10 – 15m depth	12 – 28m depth	15 – 24m depth	24 – 34m depth	12 – 30m depth	27 – 36m depth	26 – 29m depth	22 – 26m depth
Distance to shore	7 km	8km	13km	32km	23km	28km	30km	45km	60km
Support scheme	1.0 ROC + WS	1.5 ROC + WS	2.0 ROC + WS	UK CfD[6]	2.0 ROC + WS	WS + Certificate[3]	1.8 ROC + WS[4]	EEG 2014[5]	EEG 2014[5]



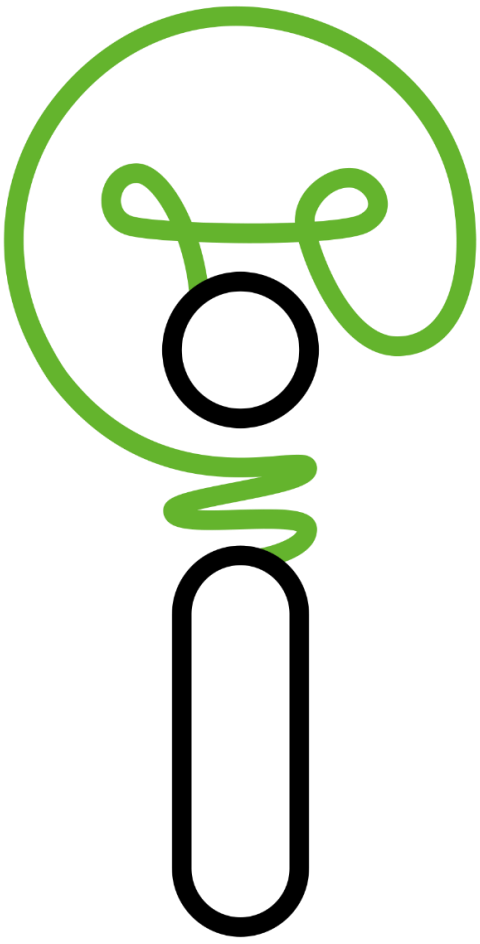
In operation — Under construction — FID planned Note: WS = Wholesale

[1] In July 2016 innogy SE sold its stakes in the Zephyr portfolio. innogy SE provides O&M services to North Hoyle offshore wind farm | [2] Including Thornton Bank 1 – 3: Thornton Bank 1: 6×5MW (gravity foundation), Thornton Bank 2: 30×6.15MW (jacket foundation), Thornton Bank 3: 18×6.15MW (jacket foundation) | [3] Minimum price for offshore wind certificates are 107 € per MWh for the first 216MW of generating capacity, and 90 € per MWh for capacity exceeding 216MW | [4] The level of support is granted for 20 years (subject to a backstop date in 31st Mar 2037) | [5] EEG compression model: 194 €/MWh; 154 €/MWh; 39 €/MWh | [6] Secured price of £74.75/MWh for a period of 15 years

EV002

Innogy involvement in industry organisations

Not confidential



Sofia Offshore Wind Farm Limited

Innogy and SOWFL industry groups

Supply chain

RenewableUK: Innogy has several representatives working with RenewableUK. Zoe Keeton is innogy's representative of innogy as an RenewableUK Board Member. Innogy is also represented on the following working groups:

Offshore CLG: Colin McAllister
Grid & Systems: Nicola Percival
Markets & Regulations: Josh Willison
Health and Safety: Tim Hillsdon
Cymry Jeremy Smith
Aviation: Mike Coleman and Zoe Keeton
Operational Safety Rules Group: Nick Radforth

Scottish Renewables: Nicki Percival (Policy & Regulations Manager) sits on the Scottish Renewables Board. Innogy is also actively involved in Scottish Renewables working groups:

- Economics & Markets/CfD issues – Josh Willison
- Grid & Systems (general) – Nicki Percival
- Grid: Distribution – Andrew Logie
- Hydro – Mary Drury
- Onshore wind – Tanya/Zoe Keeton

Energy UK Committees: Innogy sits on the following committees:

- Generation- Josh Willison
- Renewables- Zoe Keeton
- Electricity markets - Josh Willison
- Climate Change Working Group - Zoe Keeton
- Networks and charging- Nicki Percival
- Capacity Market - Zoe Keeton
- Future power market design - Zoe Keeton
- Brexit and Public Affairs - Zoe Keeton
- Scottish and Planning work groups- Karen Fox

Offshore Wind Programme Board: The Board brings together senior representatives from industry (including developers and supply chain), UK and Scottish government, The Crown Estate and Statutory Nature Conservation Bodies. The Board's objective will be to implement the Task Force's recommendations to drive cost reduction, to treat the UK's offshore wind sector as one business by assessing risks and barriers and tackle these by helping to find and implement solutions in partnership with the wider industry. Richard Sandford (Head of Investment and Asset Management) represents innogy.

https://s3-eu-west-1.amazonaws.com/media.newore.catapult/app/uploads/2018/04/23173832/OWPB-Members.pdf

Offshore Wind Industry Council: The Offshore Wind Industry Council (OWIC) is a senior Government and industry forum established in May 2013 to drive the development of the world-leading offshore wind sector in the UK. The OWIC is responsible for overseeing implementation of the Offshore Wind Industrial Strategy and is the sponsoring body of the Offshore Wind Programme Board. Paul Cowling (Director of Offshore Wind) represents innogy.

https://ore.catapult.org.uk/app/uploads/2018/02/OWIC08-FINAL-Minutes-OWIC-Approved.pdf

Sector Deal and OWIC Clusters Development Group: Innogy is the industry champion for the Wales and North West cluster and a supporter of the North East cluster. Innogy provided an industry expert (one of five from industry) to support the Martin Whitmarsh review of the UK supply chain as part of its vision for 2030.

https://www.renewableuk.com/news/396292/UK-offshore-wind-industry-announces-Supply-Chain-Review-led-by-former-McLaren-Group-CEO-.htm

NOF Strategic Partner: NOF Energy Limited provides business development and support services for the oil, gas, nuclear, and offshore renewables sectors. It offers member to member business, networking and events, international business support, marketing and media, and industry intelligence services. Innogy became a strategic partner in 2018 and was the platinum sponsor for the NOF Offshore Wind North East Event in November 2018. Energi Coast is a dedicated working group of NOF which promotes the capabilities of regional companies in servicing the off shore renewables markets in the UK, Europe and internationally and the benefits of investing in North East England to aid the growth of the region's offshore renewables supply chain. SOWFL has attended a Energi Coast meeting in 2018 and plans to attend regular meetings in 2019.

https://www.nofenergy.co.uk/wp-content/uploads/2018/10/Client-List-Updated-October-2018.pdf

North East of England Process Industry Cluster (NEPIC): NEPIC is a membership organisation working with the chemical-using industries in the North East of England. It works to support our member companies to become successful and sustainable organisations in a collaborative business environment that helps them to grow. SOWFL attended the NEPIC meet the buyers event in 2018 and has engaged with them through their role as part of Innovate Tees Valley. Innogy has also blogged about opportunities for SOWFL as a benefit of being a member to NEPIC.

https://www.nepic.co.uk/company-profile/2392/

https://www.nepic.co.uk/blog/memberposts/supplier-opportunities-with-innogys-sofia-offshore-wind-farm/

East of England Energy Group: EEEGR is a not-for-profit trade body to represent the energy sector and its supply chain in the East of England. Innogy is a member of EEEGR.

https://www.eeegr.com/members-directory/innogy-se/

Innovation

G+ Global Offshore Wind Health and Safety Organisation: Innogy is a member, with Paul Cowling the Chair of Board of Directors. Darren Tape (Head of HS&E for innogy Renewables Offshore) sits on

the focal group every month. The founder member companies of the G+ are: Centrica, DONG Energy, E.ON, RWE Innogy, Scottish Power Renewables, SSE, Statkraft, Statoil and Vattenfall.

https://www.gplusoffshorewind.com/about

WFOF: WOFF is a wind farm operators forum sharing technical issues on operational assets. Alan Henderson is the Head of Technical Asset Management and represents innogy. Alan lead a panel discussion at the 2nd Wind Farm Operators Forum in March 2018.

https://wfof.eu/#about

Southern North Sea Offshore Wind Forum and Offshore Wind Strategic Monitoring and Research Forum: SNSOWF is a group made up of representatives from the three Round 3 Wind Farm zones located within the Southern North Sea; Dogger Bank (zone 3), Hornsea (zone 4) and East Anglia (zone 5). SNSOWF and OWSMRF are working groups of developers sharing knowledge on wind farm development and consenting. Innogy regularly has representatives from SOWFL and TKOWFL attend these forums.

https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010021/EN010021-001343-Forewind%20-%20Appendix%2047.pdf

The Carbon Trust: TCT works closely with government, developers, supply chain, and innovators to inform policy, support technology designers, identify opportunities to reduce the cost of energy, and deliver innovation programmes to achieve cost reduction. As part of the Carbon Trust, innogy is involved in the following industry groups:

- Offshore Renewables Joint Industry Project
- Offshore Maintenance joint industry project II
- Floating Wind Joint Industry Project
- Offshore Wind Accelerator

Offshore Renewables Joint Industry Project: ORJIP is a UK-wide collaborative programme of environmental research with the aim of reducing consenting risks for offshore wind and marine energy projects. The programmes bring together industry, regulators, SNCBs and academia to work together on key environmental and consenting issues that the respective sectors are facing.

https://www.carbontrust.com/offshore-wind/orjip/

Offshore Maintenance joint industry project II: The offshore maintenance JIP's aim is to determine operational criteria for offshore maintenance and apply these criteria to select the most suitable maintenance logistics for each wind farm and maintenance activity. Daniel James has been contributing for innogy on the Human Factors element and liaising with TNO in regular meetings.

Floating Wind Joint Industry Project: The Floating Wind Joint Industry Project is a collaborative R&D initiative between The Carbon Trust and twelve leading international offshore wind developers: EnBW, ENGIE, Eolfi, E.ON, Equinor, Iberdrola, innogy, Kyuden Mirai Energy, Ørsted, Shell, Vattenfall, and Wpd. Supported by the Scottish Government, the JIP aims to investigate the challenges and opportunities of developing commercial-scale floating wind farms.

https://www.carbontrust.com/offshore-wind/floating/floating-wind-jip/

Offshore Wind Accelerator: The Offshore Wind Accelerator (OWA) programme aims to reduce the cost of offshore wind, overcome market barriers, develop industry best practice and trigger the development of new industry standards. Innogy has been involved in several projects as part of OWA (for example PISA, VIBRO, GOAL, BeaCON, FFLIDAR). Innogy is currently in year 3 of OWA Stage III and have a commitment for a minimum of four years in total (in Stage III).

https://www.carbontrust.com/offshore-wind/owa/

Skills

RenewableUK Skill working group: Innogy was a founding member of the skills working group. Innogy supported research into employment trends, an apprenticeship framework and associated qualifications, and helped in the production of an industry careers guides.

National Skills Academy for Power: Innogy's parent company is a member of the National Skills Academy for Power. The National Skills Academy for Power adds value by increasing capacity, capability and connectivity nationally across the power industry. Part of Energy & Utility Skills, NSAP is raising the profile of the UK power industry as it becomes the global leader in power skills development, maximising the benefits for businesses.

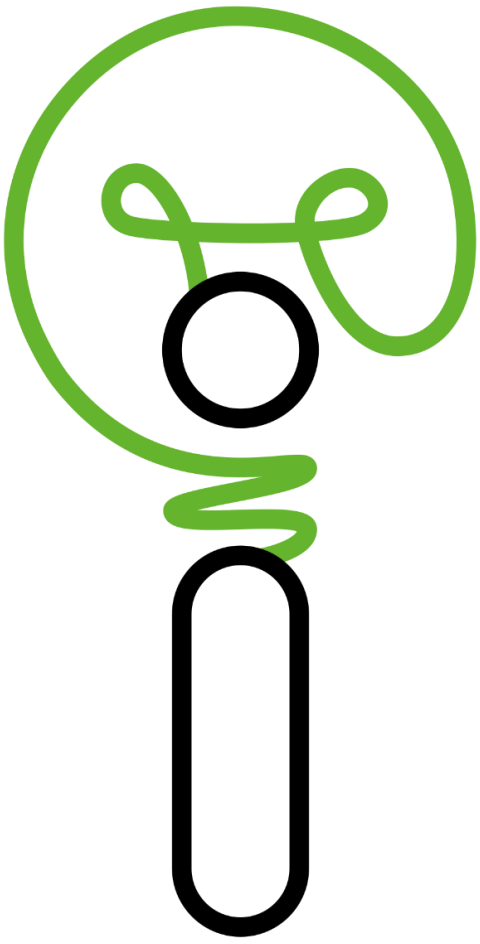
https://www.euskills.co.uk/membership/our-members/

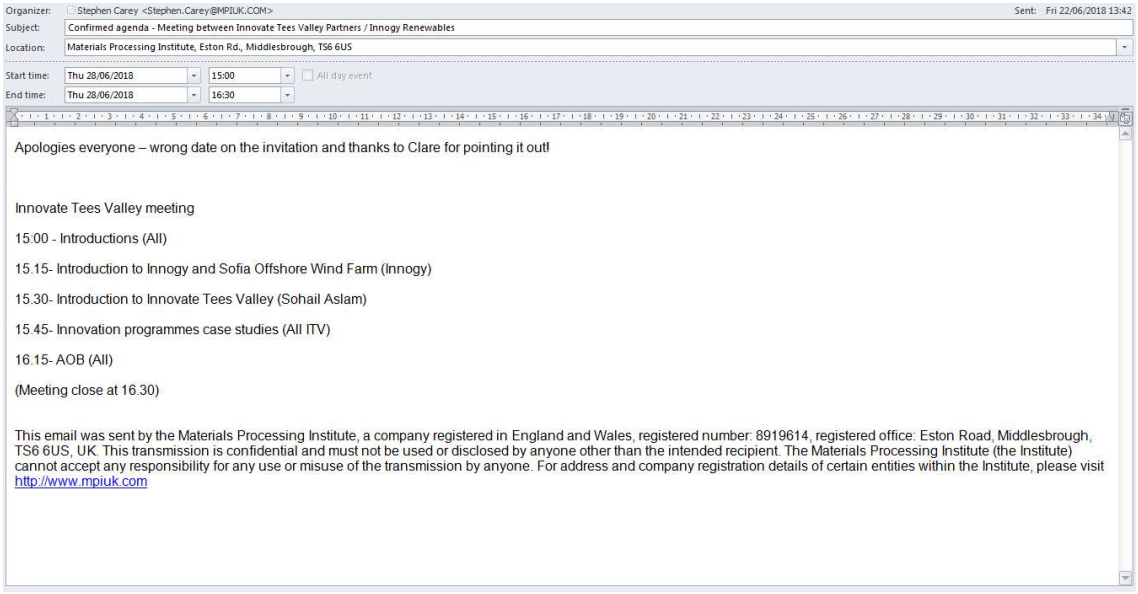
Sector Deal and OWIC Skills Working Group: whose priority is to secure 27,000 skilled jobs, introduce a new accreditation framework for apprentices and workers and increase diversity and inclusion in the workforce. Innogy will be a leading active member of the forthcoming Sector Deal People and Skills Group which it has requested to join when established. It provided input into the baseline OWIC skills survey and attended the Apprentice event in November 2018.Innogy attended the Supply Chain and Apprentice event in November 2018.

EV003

Example meetings with Teesside Organisations

Not confidential





Organizer: Stephen Carey <Stephen.Carey@MPIUK.COM> Sent: Fri 22/06/2018 13:42

Subject: Confirmed agenda - Meeting between Innovate Tees Valley Partners / Innogy Renewables

Location: Materials Processing Institute, Eston Rd., Middlesbrough, TS6 6US

Start time: Thu 28/06/2018 15:00 All day event

End time: Thu 28/06/2018 16:30

Apologies everyone – wrong date on the invitation and thanks to Clare for pointing it out!

Innovate Tees Valley meeting

15:00 - Introductions (All)

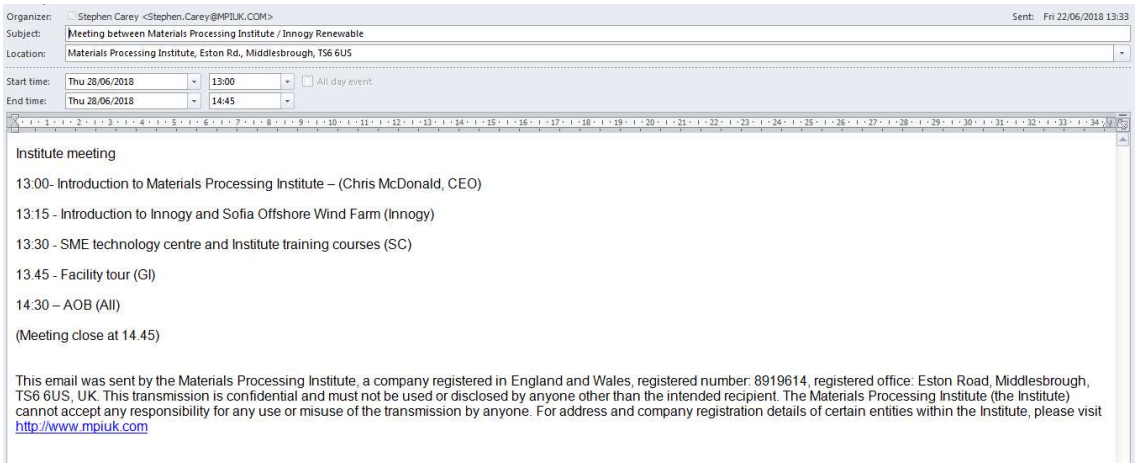
15.15- Introduction to Innogy and Sofia Offshore Wind Farm (Innogy)

15.30- Introduction to Innovate Tees Valley (Sohail Aslam)

15.45- Innovation programmes case studies (All ITV)

16.15- AOB (All)

(Meeting close at 16.30)



Organizer: Stephen Carey <Stephen.Carey@MPIUK.COM> Sent: Fri 22/06/2018 13:33

Subject: Meeting between Materials Processing Institute / Innogy Renewable

Location: Materials Processing Institute, Eston Rd., Middlesbrough, TS6 6US

Start time: Thu 28/06/2018 13:00 All day event

End time: Thu 28/06/2018 14:45

Institute meeting

13:00- Introduction to Materials Processing Institute – (Chris McDonald, CEO)

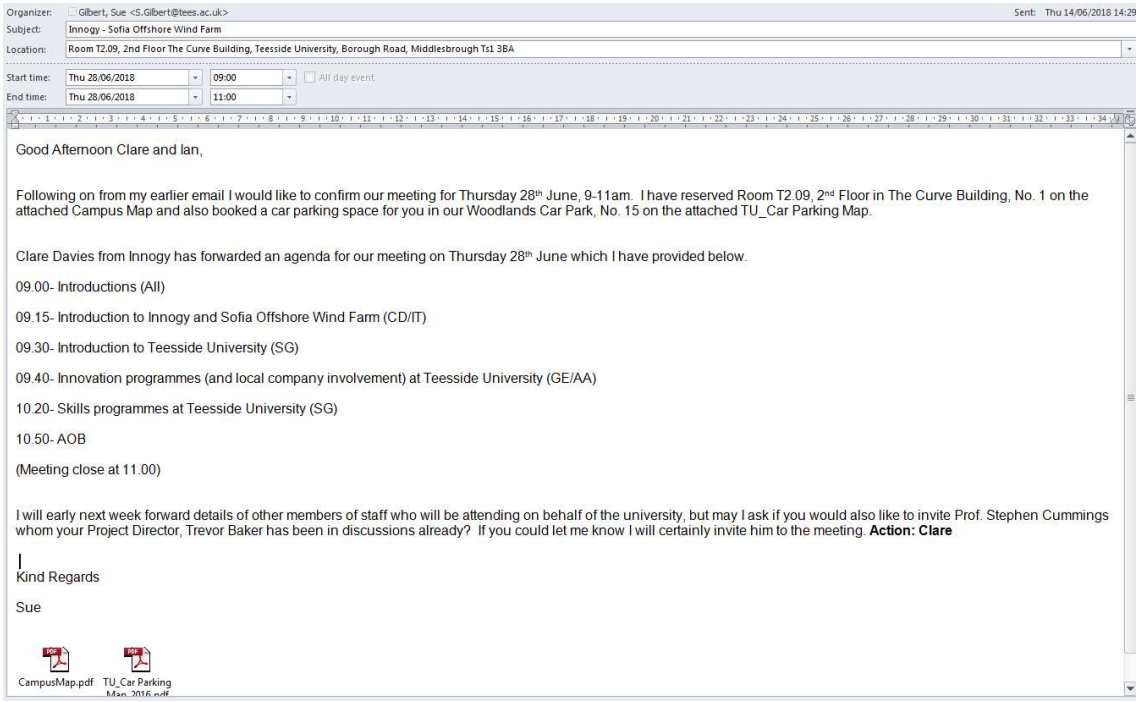
13:15 - Introduction to Innogy and Sofia Offshore Wind Farm (Innogy)

13:30 - SME technology centre and Institute training courses (SC)

13.45 - Facility tour (GI)

14:30 – AOB (All)

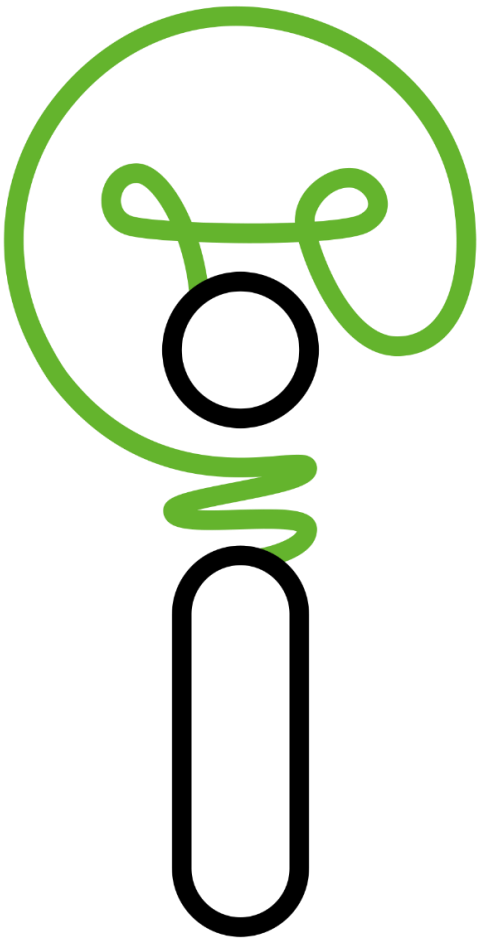
(Meeting close at 14.45)


Organizer: Gilbert, Sue <S.Gilbert@tees.ac.uk>
Sent: Thu 14/06/2018 14:29
Subject: Innogy - Sofia Offshore Wind Farm
Location: Room T2.09, 2nd Floor The Curve Building, Teesside University, Borough Road, Middlesbrough Ts1 3BA
Start time: Thu 28/06/2018 09:00 All day event
End time: Thu 28/06/2018 11:00
Good Afternoon Clare and Ian,
Following on from my earlier email I would like to confirm our meeting for Thursday 28th June, 9-11am. I have reserved Room T2.09, 2nd Floor in The Curve Building, No. 1 on the attached Campus Map and also booked a car parking space for you in our Woodlands Car Park, No. 15 on the attached TU_Car Parking Map.
Clare Davies from Innogy has forwarded an agenda for our meeting on Thursday 28th June which I have provided below.
09.00- Introductions (All)
09.15- Introduction to Innogy and Sofia Offshore Wind Farm (CD/IT)
09.30- Introduction to Teesside University (SG)
09.40- Innovation programmes (and local company involvement) at Teesside University (GE/AA)
10.20- Skills programmes at Teesside University (SG)
10.50- AOB
(Meeting close at 11.00)
I will early next week forward details of other members of staff who will be attending on behalf of the university, but may I ask if you would also like to invite Prof. Stephen Cummings whom your Project Director, Trevor Baker has been in discussions already? If you could let me know I will certainly invite him to the meeting. Action: Clare
Kind Regards
Sue
CampusMap.pdf
TU_Car Parking Map_2016.pdf

EV004

Apprentices at innogy climbing the ladder of opportunity

Not confidential



Press Release

Apprentices at innogy climbing the ladder of opportunity

- **Students in Powys given opportunity to find out more about careers within the renewable energy sector during National Apprenticeship Week**
- **To date, 26 apprentices have enrolled on innogy's award winning apprenticeship scheme**

Mid Wales, March 2017

During this year's National Apprenticeship Week, innogy Renewables UK Ltd's apprenticeship is certainly not one to miss. This bespoke, award-winning Wind Turbine Technician Apprenticeship is designed to address the future needs of the wind industry. The programme is not only prestigious but also versatile, with the recruitment of its first hydro apprentice taking place in 2015.

innogy will be attending the Interactive Careers and Skills Festival at The Royal Welsh Show Ground in Powys on Wednesday 8th March to further promote the rewarding careers available in the renewable energy industry. This is a great chance for students to find out more about how an apprenticeship with innogy can lead from climbing turbines to climbing the ladder of opportunity.

Based in North Wales, the programme takes three years to complete and was launched in partnership with Grŵp Llandrillo Menai in 2012. The first two years are primarily based at Coleg Llandrillo before the third and final year gets really hands on with apprentices being based on site and at innogy's wind farms.

The scheme is not only a great alternative for those who feel the university route is not for them, but the project has generated real local employment opportunities for young people, who are often able to remain living and working in their local communities, in high skilled jobs, retaining spend and investment within their local economies.

Nathan Jones, an apprentice currently in his second year on the scheme, said:
"I live in Llandudno, have a real passion for engineering and see the wind farms off our coast every day. To be able to say "That's my office, I'm making a positive impact on the world" would be a life goal."

The training is proven to generate high quality award winning candidates who complete the programme as highly employable individuals. Ross Kenyon, one of the first apprentices to join the programme in 2012, was voted Apprentice of the Year by RenewableUK in 2014. He received some of the excellent training provided by Grŵp Llandrillo Menai college which was voted winner of the Wales Green Energy Awards in 2015, in the category of Contribution to Skills & Training.

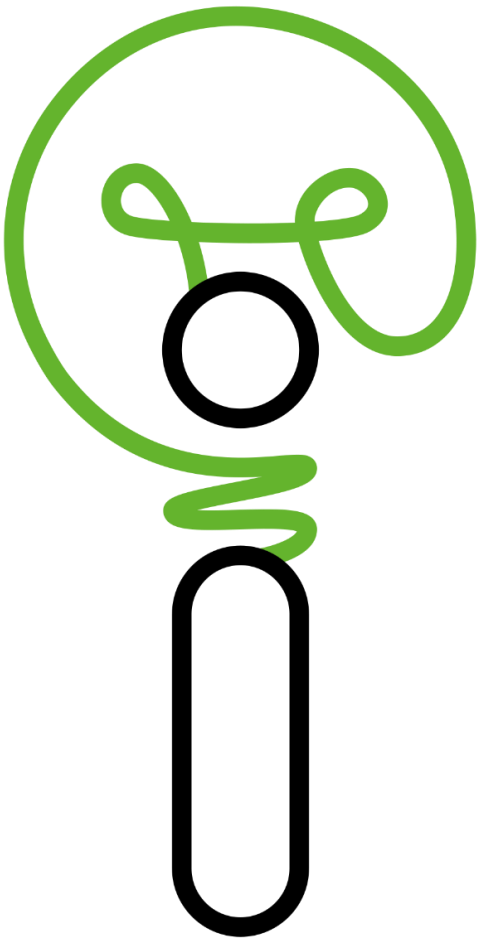
Ends

innogy SE
Innogy Renewables UK Ltd • Windmill Hill Business Park • Whitehill Way • Swindon • SN5 6PB •
Follow us on Twitter @innogy_UK

EV007

Champions for Wind FS

Not confidential



Sofia Offshore Wind Farm Limited

Forewind
Champions for Wind

Fact Sheet
July 2014

Background
Early in 2011 Forewind understood there was a need to engage the local communities near its proposed onshore infrastructure to ensure they were aware both of the Dogger Bank development itself and also of the opportunities it could bring.

Given the indicative timeframe of the development, it was decided that students in the first three years of secondary school would be best placed to take advantage of the earliest pre-construction and construction roles (2015 and onwards), as well as the longer-term operations and maintenance opportunities. They would be looking at subject choices and their potential futures in these years when aged 13 to 14. It was therefore decided to develop a programme that would engage with secondary school students and raise awareness of the types of careers that would be on offer as the Dogger Bank project progressed.

The key objectives for creating a local careers programme were:
- To engage relevant stakeholders
- Encourage local students to consider career in wind – across the whole range of possible jobs
- Contribute to reducing the wind industry skills gap
- Meet community and other expectations for community involvement
- Positively profile Forewind
- Address issue of potential socio-economic benefits
- Create a legacy for the lead operator(s).

Aims
Forewind approached the Humberside Engineering Training Association (HETA) with a brief to help them progress a programme with the aims of developing:
- Gender balance in STEM careers
- 'Roundedness' of the industry
- Local skills development
- Pride in the area
- Innovation
- A vision for the future
- Teacher continuous professional development.

It was also vital to have a robust evaluation methodology.

From this brief, the Champions for Wind programme was created. Champions for Wind, is an innovative careers education engagement initiative which awards bursaries to teachers from a broad range of subject areas to help them develop curriculum-based materials and lessons that teach their students about offshore wind and the potential career opportunities within it.

First cohort
Ten teachers from Hull and East Riding secondary schools were selected to be the first group of 'champions' in early 2012.

Each teacher champion, working with careers advisors and wind industry representatives, designed and developed a curriculum-based resource relevant to their local area and appropriate to their school, on opportunities offered by the offshore wind industry. The teachers then delivered their resource to their own school, followed by one to two additional schools. Each teacher received funding and a bursary to support their work.

They were given six months to design activities specific to their students before delivering it in the classroom. The second phase of the programme was to roll out the initiatives to other schools in the local catchment areas.

Evaluation
To evaluate the success of the programme, 198 students and nine teachers within nine secondary schools completed pre and post programme questionnaires and focus groups were carried out with a sub-sample of students.

Student's knowledge about the offshore wind industry and related careers significantly increased after the programmes had been delivered in their schools. Increases in student's interest to learn more about the offshore wind industry and related careers or pursue a career in the industry also increased.

This is a map of the participating schools with other schools also involved via the dissemination process. In some of the schools, more than one teacher has taken part.

Champions for Wind – participating schools

1. Oases North East
2. Dykehouse School
3. Hartlepool Pupil Referral Unit
4. Redcar and Cleveland College
5. St. Anne's Primary
6. Lockwood Primary
7. St Peters School
8. Kirkleatham Hall School
9. Ryehills School
10. Bydales School
11. Castleton Primary
12. Glaisdale Primary
13. St Hedda's Primary
14. Caedmon School
15. Eskdale School
16. Scalby School
17. Graham School
18. Headlands School
19. Driffield School
20. Ashwell Academy
21. Cottingham High School
22. Malet Lambert
23. Kelvin Hall School
24. Boulevard Academy
25. Hessle Federation
26. Act the Facts (educational script writers)
27. The Snaith School
28. Withernsea High
29. Laurence Jackson School

Gender differences in knowledge were wider prior to the programme than after the programme, with boys consistently reporting greater knowledge. Gender differences in interest were similar before and after the programme, with boys reporting greater interest.

Teachers also reported a significant increase in knowledge and confidence to deliver an education programme relating to the offshore wind industry and related careers, after the programme.

A key learning was the fact that to maximise impact, students should find out about offshore wind career opportunities through a variety of methods. This would help to both increase the interest and reduce gender differences – likely to be the greatest challenges in the future.

Other learnings incorporated into the management of the subsequent cohorts included a selection process focussing more on the passion and commitment needed to be a champion, and an increase in support throughout via professional dialogues among the champions and better resource sharing.

Programme extended

The successful evaluation of the initial cohort enabled the extension of the programme to schools near the Dogger Bank Teesside catchment area.

Ten Teesside teachers were selected in late 2012 and in summer 2013 presented their results at the National STEM teachers' conference at the National STEM Centre in York.

A further successful evaluation led to the third cohort where teachers geographically spread from Hull to Hartlepool, spent six months developing their resources having attended the introductory workshop in November 2013. They presented their initiatives along with the work produced by students at the 2014 National STEM teachers' conference, again held at the National STEM Centre in York. More than 60 teachers from across the country attended the event and saw first-hand the success of the programme.

Wide subject spread

'Champions for Wind' facilitates the development of tailored curriculum materials to raise student awareness of the full range of potential career opportunities in offshore wind energy. Subject areas have included a very wide spread including: humanities, mathematics, geography, business, science and design and technology. Also a three-part script has been produced to give teachers an inventive way of highlighting the offshore wind energy career opportunities through the use of drama and performance.

The champions have interpreted the brief in many innovative and creative ways with student activities ranging from building wind turbines and foundations, to making stop-start animation films, preparing job advertisements, debating the merits of offshore wind, canvassing parent opinions via surveys, producing wind-energy apps, and holding inter-school competitions.

Resources and impact

The teacher resources are now available on a central website managed by HETA enabling teachers from across the country to access and gain inspiration from the work done by the champions. The resources include the Act the Facts script, lesson plans, survey questionnaires, debate materials, and creative outlines for classroom activities.

The programme was also recognised locally by being a Finalist in the 2013 Humber Renewables Awards.

More than 3000 students will have had some level of involvement with the programme by the summer of 2014 and exit surveys from those who have taken part have shown a marked increase in both their level of knowledge of the offshore wind industry and also of their interest in pursuing a career in the sector.

Forewind contact details

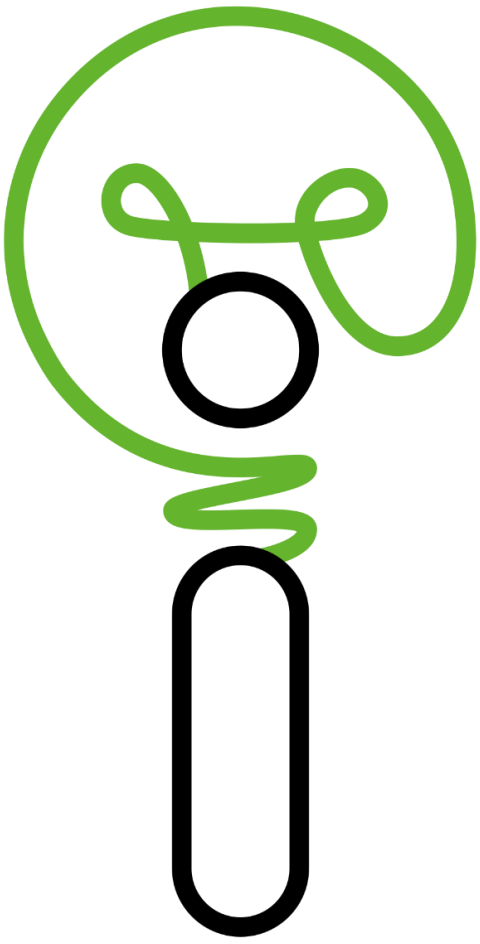
Website: **www.forewind.co.uk**
Email: info@forewind.co.uk
Freephone: **0800 975 5636**

Freepost RSLY-HKGK-HEBR
Forewind
Davidson House
Forbury Square
Reading RG1 3EU

EV009

Triton Knoll offshore wind farm newsletter

Not confidential



Triton Knoll Offshore Wind Farm
eBusiness Bulletin - November 2018

Message from Julian Garnsey, Triton Knoll Project Director

Welcome to our latest Triton Knoll suppliers bulletin, sent to all those businesses who have signed up to our Register of Interested Suppliers.

This bulletin coincides with our official start of construction, and follows an intensive few months for the project and contractor teams, completing the extensive processes behind the financing, partnerships and contracting needed to deliver our project.

We are pleased to confirm our port decisions linked to our offshore works, provide you with a finalised list of our Tier 1 contractors and highlight upcoming opportunities to get involved with Triton Knoll.

We've been delighted with the level of interest in our Register of Interested Suppliers, with over 600 businesses having given us consent to keep in touch. I therefore hope you find the information in this and subsequent eBulletins of real value.

Julian Garnsey
Project Director

For more information about the project, please visit: www.tritonknoll.co.uk

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Financial Close sets foundations for construction

On 31 August, Triton Knoll successfully reached its most significant milestone yet by achieving Financial Close and securing the financial commitments to build and operate our project.

In combination with our equity partners, a consortium of 15 banks will finance the project.

Read the full story

'Big in Japan' with new far East partners

Setting the scene for Financial Close, Triton Knoll attracted the investment aspirations of two new Japanese partners, establishing a shareholder partnership between innogy (59%) J-Power (25%) and Kansai Electric Power (16%). The majority share owner, innogy, will continue to manage the construction, operations and maintenance of the project on behalf of the partnership.

Read the full story

Turf cutting marks start of onshore works

On 10 September, we held a small ceremony to officially mark the start of construction and the installation of our onshore electrical system.

The works include the construction of a new substation at Bicker Fen, new landfall facilities just north of Anderby Creek, installation of a 57km underground cable circuit, and a connection into the national grid network.

Our tier 1 suppliers **J Murphy & Sons** and **Siemens Transmission and Distribution** are leading these works on our behalf. Murphy has recently contracted **Nexans** to supply the miles of underground cable required.

This work constitutes one of the biggest supply chain opportunities in the region, and so we would urge you to look out for more news and information from us and our suppliers.

Read the full story

Port decision will unlock investment and jobs

With our turbine supplier, **MHI Vestas**, we have confirmed our ports for the turbine assembly and our longer term Operations & Maintenance activities.

Turbines will be assembled and installed from **Able UK's** Seaton Port, in Teesside. **MHI Vestas** will establish a full turbine assembly base at the port, while **Able UK** will develop an additional 140 metres of new heavy-duty quayside, and invest in new equipment and facilities. We anticipate securing jobs and local investment as a result, while Able UK says the new facilities will increase its competitive edge in future.

At the same time, Triton Knoll has signed a Memorandum of Understanding with **ABP** to use its Grimsby Port as a Construction Coordination Base, and as our long term Operations & Maintenance Base. More information will be available in future weeks as we progress our plans.

Read the full story

Full round up of Tier 1 contractors

We have now formally executed all contracts and can confirm the full list of Tier 1 contractors with whom we will build Triton Knoll Offshore Wind Farm.

Please note, the bulk of contracting opportunities with Triton Knoll will be via our Tier 1 contractors.

Our Tier 1s are:

- MHI Vestas - **supply 90 x V164-9.5 MW turbines**
- 3SF (Sif Netherlands B.V. and Smulders Projects Belgium N.V) - **manufacturer monopile foundations for turbines and OSPs**
- NKT and Boskalis Subsea Cables and Flexibles (previously VBMS) - **supply and install all offshore export and array cables**
- GeoSea - **transport and install all 90 wind turbines**
- J Murphy & Sons - **supply and install the 57kms underground onshore cable route**
- Siemens Transmission and Distribution - **design and manufacture 1 x onshore and 2 x offshore substations. STDL will also install the onshore substation**
- Seaway Heavy Lifting - **transport and install all offshore foundations and two offshore substations**

Grimsby Port building construction contract tender

The bulk of new contracting opportunities with Triton Knoll will be via the procurement leads of our Tier 1 contractors, as detailed earlier.

However, Triton Knoll is currently looking to directly line up a local UK contractor to construct and deliver our new multi-million pound Operations & Maintenance building, at our port in Grimsby.

Contractors entered on to our Register of Interested Suppliers, and which have suitable expertise, will be sent a detailed request for information by 2 November, 2018.

Applications will be reviewed first, before a formal tender process commences during December.

New Head of procurement takes the reins

Graham Cowley joins the team as the project's new Head of Procurement, taking over the reins from John Kane.

Graham and his team will be out and about at a range of events and engagement opportunities over the coming months, looking to talk with local firms and to discuss opportunities.

Join us at Offshore Wind North East

Through our majority stakeholder innogy, we will be taking part in the NOF Energy, 'Offshore Wind North East' Conference, which takes place on 7 & 8 November, 2018 in Newton Aycliffe.

Procurement representatives from both Triton Knoll and our Tier 1 contractors will be at the innogy stand and Business Lounge. so come and find out more about the project and opportunities arising.

We will also be joined by staff working on innogy's Sofia Offshore Wind Farm, which is being developed in Teesside, presenting further potential opportunities for your business to get involved in offshore wind.

Click here for tickets and information

Finally ... introducing Triton Knoll's new Stakeholder manager for supply chain and skills

"Taking over from David Crowther, I look forward to maintaining the momentum of delivering our project's commitments to promote and create supply chain opportunities for UK businesses. I am also focused on driving Triton Knoll's educational outreach and up-skilling initiatives which will help prepare the next wave of individuals for fulfilling their aspirations and joining the green economy.

"I will be keeping in touch on supply chain news via regular editions of this newsletter and posts on the Supply Chain pages of our website.

"I should also be noted as the lead contact for skills, training and education professionals in Triton Knoll's catchment area.

"I look forward to meeting you at Offshore Wind North East and future events!"

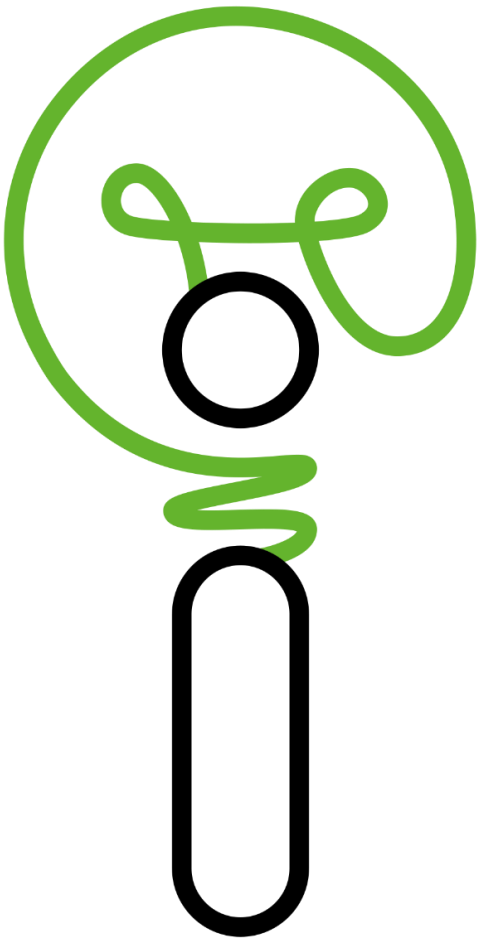
Fruzsina Kemenes

For more information, please visit our website
http://www.tritonknoll.co.uk

EV015

RenewableUK Supply chain and people event

Not confidential



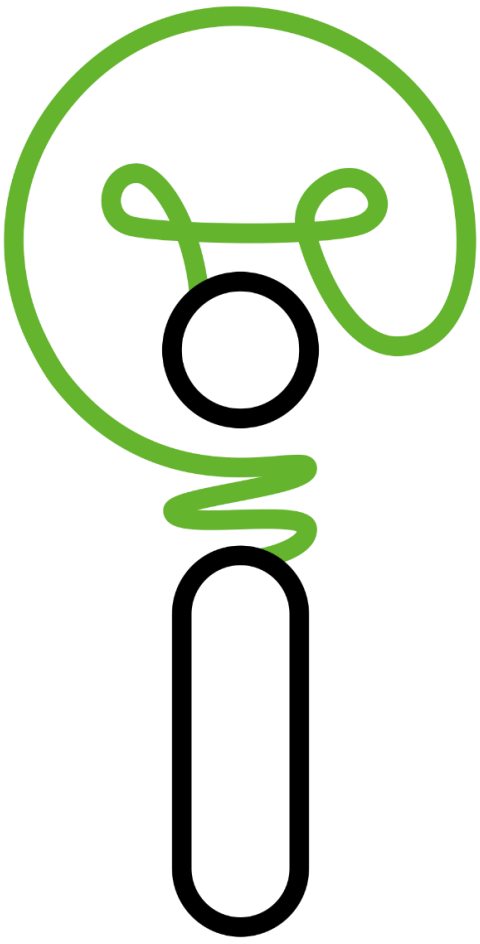
Supply chain and apprentice reception – Wed 21 November (1.30pm till 3pm)
Location: Macmillan Room, Portcullis House, SW1A 0AA

1. Guy Middleton (Galloper)
2. Adrian Emanuel (Triton Knoll)
3. Alastair Gill (Offshore consents and Extensions)
4. Nathan Jones (appr)
5. Rob Thomas (appr)
6. Kieron Drew (Galloper)
7. Sam Whall (appr)
8. Richard Holmes (appr)
9. Fruzina Kemenes (Triton Knoll
10. Sue Vincent (PR)

EV017

Examples of supply chain engagement days

Not confidential



Atlantic Array Offshore Wind Farm

Offshore wind farm supply chain event

9th March 2010

RWE npower renewables

An RWE Innogy company

Atlantic Array is intended to be one of the first Round 3 offshore wind farms and be built with a ‘best in class’ HSE record

To achieve this RWE npower renewables are keen to engage with and support the local supply chain throughout the project

Atlanticarray@npower-renewables.com

BUSINESS BREAKFAST BRIEFING ON GALLOPER WIND FARM

January 31st 2014

EEEGR Breakfast Club in Association with Galloper Wind Farm, supported by OrbisEnergy

January 31st 2014
Orbis Energy Lowestoft

EUROPEAN UNION
Investing in Your Future
European Regional Development Fund 2007-13

Agenda

08:35 Alastair Gill- Offshore Projects & Simon Gray- CEO at EEEGR

08:40 Welcome from Peter Aldous- MP for Waveney

08:55 Pat Paton- HSE Manager

09:10 Bart Oberink- Galloper Project Director

09:40 Michael Nolan- Procurement Manager

10:10 Registration with RWE Tom Snowdon- Supply Chain Manager

10:20 Video from Gwynt y Mor Alastair Gill- Offshore Projects

10:30 Ports Alex Woods- Port & Harbour Logistics Manager

10:40 Q&A

11:00 Meeting close and next steps

11:05 Networking

For your diary

- **Meet the Buyer** in partnership with DECC: ConocoPhillips and RWE 5th February 2014 : Top of the Terrace, NCFC
- **Technology and Innovation in Offshore Renewables** : OrbisEnergy, Lowestoft, Suffolk 18th February 2014
- **SNS2014** EEEGR's flagship event of the year. Norfolk Showground arena March 5th & 6th Inc. gala dinner Michael Fallon
- **EEEGR Breakfast** Funding sources for energy businesses. NALEP, Banks, Grants and Angels March 28th
- **Decommissioning Special Interest Group** 29th April, 30th July, 26th November
- **House of Commons Reception** May 13th
- **Innovation Awards & gala Dinner** Top of the Terrace, NCFC 2nd July
  EEEGR2014 Summer Conference John Innes Centre. July 3rd
- **EEEGR Christmas ball** Ocean Rooms Gorleston Dec 11th Booze Bros

Galloper Procurement and Business Opportunities

Mike Nolan Procurement Manager

Opportunities in the Development Phase

- Majority of the spend in the UK
- Development work areas include the Environmental Impact Assessment as well as Engineering
  - EIA: specialist consultants, marine ecology, archaeology, marine traffic, radar, bird studies, land purchase, planning, legal, PR, fisheries, e.g. CEFAS, OWL Architects - Lowestoft
  - Project Design: site investigation and survey, civil, mechanical and electrical engineering and studies, e.g. Gardline Geosciences - Great Yarmouth

Shellfish survey work

Galloper OWF: Development Spend
Approx. value spent to date, excluding direct employees and tertiary services (Jan2014): £12.1m

Other England **46.5%**

> (Chichester) SeaRoc Ltd
> (London) The Crown Estate, Navartis Ltd, National Grid, Halcrow, Reed Recruitment Ltd, CMS Cameron McKenna Ltd, Offshore Wind Consultants, Poyry Managing Consulting, Informa UK, HIS Global Ltd, Independent Print Ltd, Intrafish Media, The Stationary Office, Hobs Reprographics PLC
> (Bristol) Burges Salmon , Anemoi Renewables Ltd, Woodman Towers Business, Garrad Hassan Ltd, Gardner Power Ltd,
> (Epsom) Atkins Ltd
> (Bromborough) Osiris Projects
> (Bromley) ERSG Environmental Recruitment, Networkers International UK Ltd
> (Reading) Peter Brett Associates, Regus Management UK Ltd, Fallon Engineering Ltd, TPR Berkshire Ltd, Stephanie Feather, Heathbrook Ltd
> (Southampton) ABP Marine Environmental Research Ltd, International Offshore Project, Jim Hodder Associates Ltd
> (Newton Abbot) GoBe Consultants Ltd
> (Rochester) Wessex Archaeology Ltd
> (Fareham) P Howson Consultancy Ltd, NATS
> (Bishops Waltham) Subacoustech
> (Manchester) Sinclair Knight Merz Europe Ltd
> (Hull) Danbrit Ship Management Ltd

Wales **1.5%**

> (Ogmore) CPS Group Ltd
> (Cardiff) Eversheds LLP

Scotland **2.6%**

> (Aberdeen) RPS Group PLC
> (Hamilton) Pafrrak Consultancy UK Ltd
> (Hamilton) Offshore Digital Engineering Ltd
> (Edinburgh) Studio LR
> (Edinburgh) Textlynx

East of England **48.9%**

> (Great Yarmouth) Gardline Geosciences Ltd, Fugro Alluvial Offshore Ltd, Offshore Design Engineering Ltd
> (Chelmsford) AECOM Ltd
> (Norwich) The Ecology Consultant, Archant, Bidwells LLP
> (Eye) Brown and May Marine Ltd
> (Lowestoft) OWLArchitects, Cefas
> (Ipswich) EDI Surveys Ltd, Barker Gotelee Solicitors
> (Bury St Edmunds) Hayden's Arbicultural Consultants
> (Leiston) Sizewell Cafe
> (Peterborough) Royal Haskoning Ltd, LDA Design Ltd
> (Ely) Anatec Ltd
> (Cambridge) Niras Consutling Ltd, Venue Service Ltd

Procurement Strategy

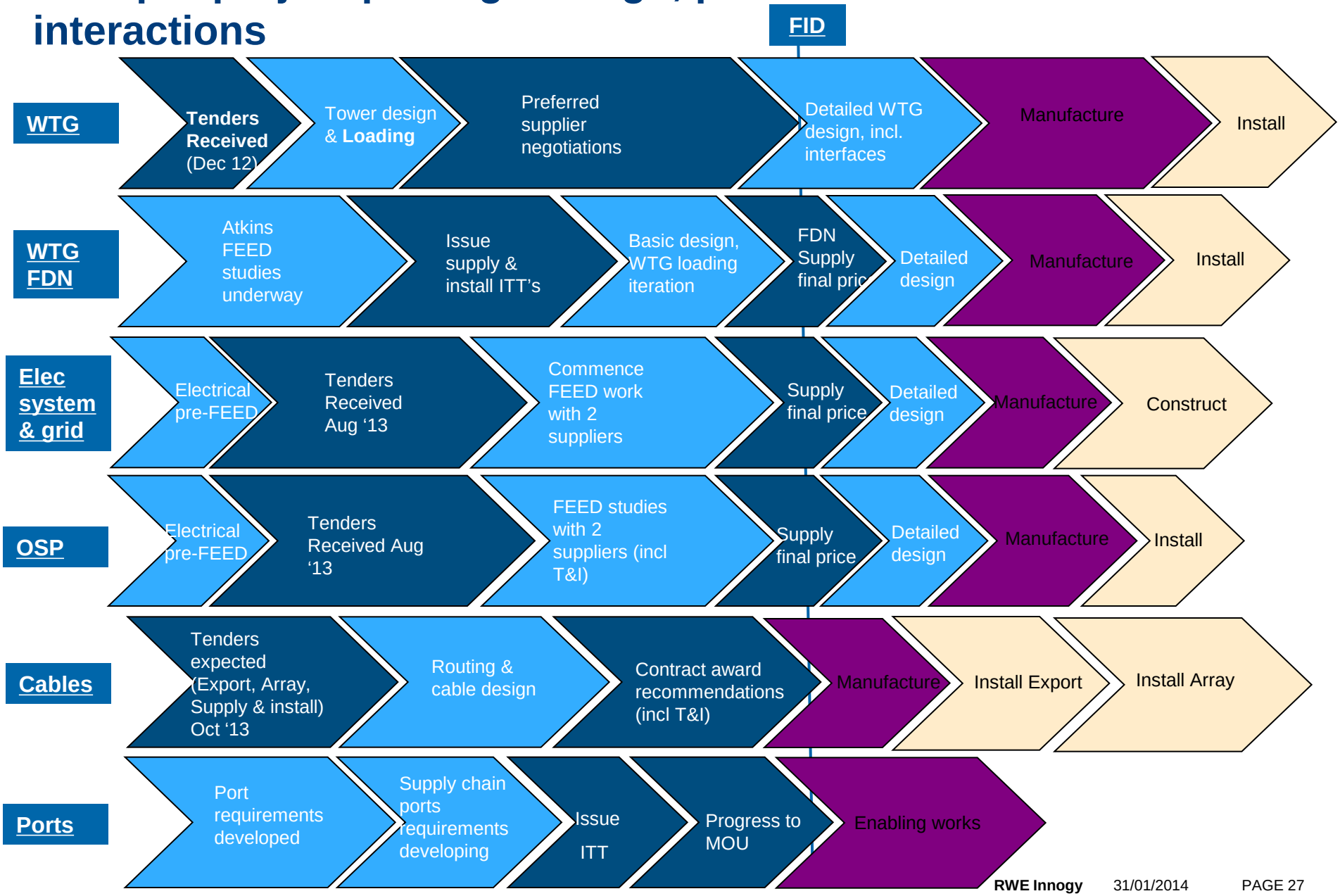
Multi-Contract Strategy

Contract Breakdown for the Main Supply and Construction Contacts:

1.Design, Supply & Installation of wind turbine generators (WTG) including service and maintenance period. Includes provision of the installation vessel
2. Design of the WTG Foundations
3. Manufacture and supply of the WTG foundations
4. Transportation and Installation of the WTG foundations
5. Electrical System Works
Includes design and build of onshore substation, supply and installation of onshore cables (substation to termination pit), design manufacture, supply and installation of the offshore substation platform (OSP) and OSP foundation
6. Subsea export cable supply and installation
7. Subsea array cable supply and installation
8. Construction port

Procurement for the above contracts commenced in September 2012 and is currently work in progress.

Galloper project package design, procurement and construction interactions



Experiences from the Gwynt y Môr & Greater Gabbard projects

Alastair Gill

Local Supplier content on Greater Gabbard

The following figures are a summary from the last year :

- 65% of the overall spend on the daily running of Greater Gabbard is with local suppliers (the actual spend with local suppliers is approx £9.5million so far this budget year)
- 72% of the transactions that Greater Gabbard make are with local suppliers
- 55% of the suppliers that Greater Gabbard use are local

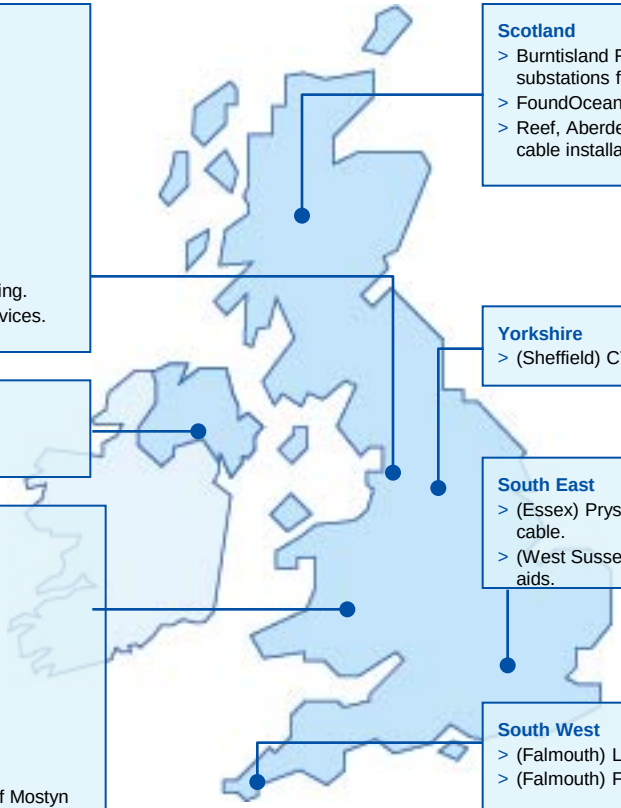
UK contracts awarded by Gwynt y Môr

Approx. value of UK contracts awarded to date (Aug 13): circa £350m.

North West
> (Birkenhead) Cammell Laird: £8m. Port facilities
(Manchester) Siemens Transmission & Distrib. Ltd:
Circa £100m. Onshore substation construction.
> (Manchester) Wardell Armstrong: £thousands.
Site surveys and investigations
> (Rochdale) Granada Material Handling Ltd:
£multi-million. Crane units construction.
> (Altrincham) 3D Web Graphics: £thousands.
3D wind farm modeling.
> (Warrington) IH Brown: £multi million. Port enabling work.
> (Wirral) CMACS Ltd: £multi million. Marine Mammal Monitoring.
> (Merseyside) Hughes Sub Surface Eng Ltd: £5m. Diving services.

Northern Ireland
> (Belfast) Harland and Wolff: £20m+. Offshore substations
construction contract awarded by Siemens.

Wales
> (Flintshire) Port of Mostyn: £50m over wind farm
> lifetime. O&M base & construction support.
> (Anglesey) Turbine Transfers: £10M+.
Supply of crew transfer vessels.
> (Deeside) DRB Group: £thousands. Crane units,
subcontract to Granada Material Handling
> (Wrexham) Prysmian: £15m. Onshore cabling.
> (Ruthin) Jones Bros: £multi-million. Onshore substation
enabling works.
> (Chepstow) Mabey Bridge: £thousands. Drill components.
> (Abergavenny) Alun Griffiths: £1m. Enabling works at Port of Mostyn



Scotland
> Burntisland Fabrications Limited (BiFab), Fife: £12m. Offshore
substations foundation contract.
> FoundOcean, Livingston: £8m. Contract for foundation grouting
> Reef, Aberdeen (and Stockton on Tees): £40m.Inter array
cable installation

Yorkshire
> (Sheffield) CTL Seal: Subcontract to LDD, drill services

South East
> (Essex) Prysmian PowerLink Services Ltd:£20m+. Offshore export
cable.
> (West Sussex) Tidelands Signal Limited: £thousands. Navigation
aids.

South West
> (Falmouth) LDD: £multi-million. Offshore drilling services.
> (Falmouth) Fugro Seacore: £multi-million. Offshore drilling services.

Economic investment in Wales − £90m in contracts

- Gwynt y Môr Offshore Wind Farm has awarded contracts worth more than £90million to firms in Wales.
  - £50m to Port of Mostyn as the long term O&M base.
  - £10m+ to Holyhead based Turbine Transfers for crew and vessels.
  - £15m to Wrexham based Prysmian Cables and Systems Ltd for onshore cables.
  - £multi-million to Ruthin based Jones Bros for enabling works.
- Welsh companies are also supporting our supply chain:
  - DRB Group in Deeside subcontracted by Granada Materials to fabricate cranes.
- Businesses across North Wales are gaining from spin-off economic benefits from the construction of Gwynt y Môr, eg hotels, boat operators, cleaning companies.

Port of Mostyn

Turbine Transfers

Registration and Qualification of suppliers - Supplier Life Cycle (SLC)

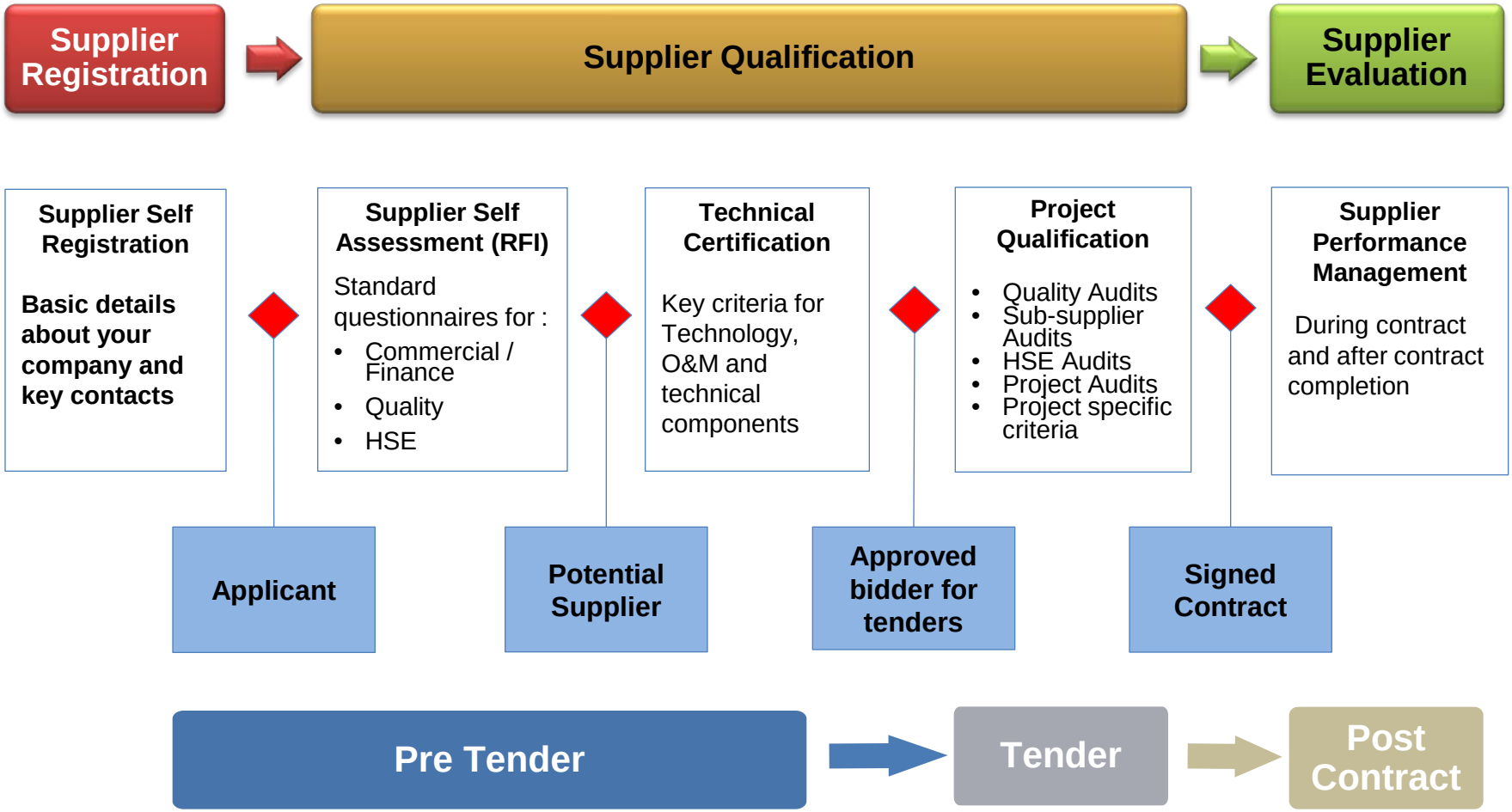
Information at a company level

Standard questionnaires

& Self-assessment

Tom Snowdon - Strategic Supply Chain Management

SLC Steps in the qualification process



SLC - Driven by Categories

Unique RWE Innogy Categories :

Innogy Category:	Renewable Energy
Technology Categories:	Offshore Wind
	Onshore Wind
	O&M Procurement
	Hydro

Sub-Categories for our Technology Groups

Offshore Wind

- Offshore Turbines
- Offshore Foundations
- Offshore Cables
- Offshore Electrical & Substations
- Offshore Vessels and Logistics
- Offshore Services

Onshore Wind

- Onshore Wind Turbines
- Onshore Wind Electrical
- Onshore Wind Civil works
- Onshore Wind Ground investigation
- Onshore Wind Met mast installation
- Onshore Development Services

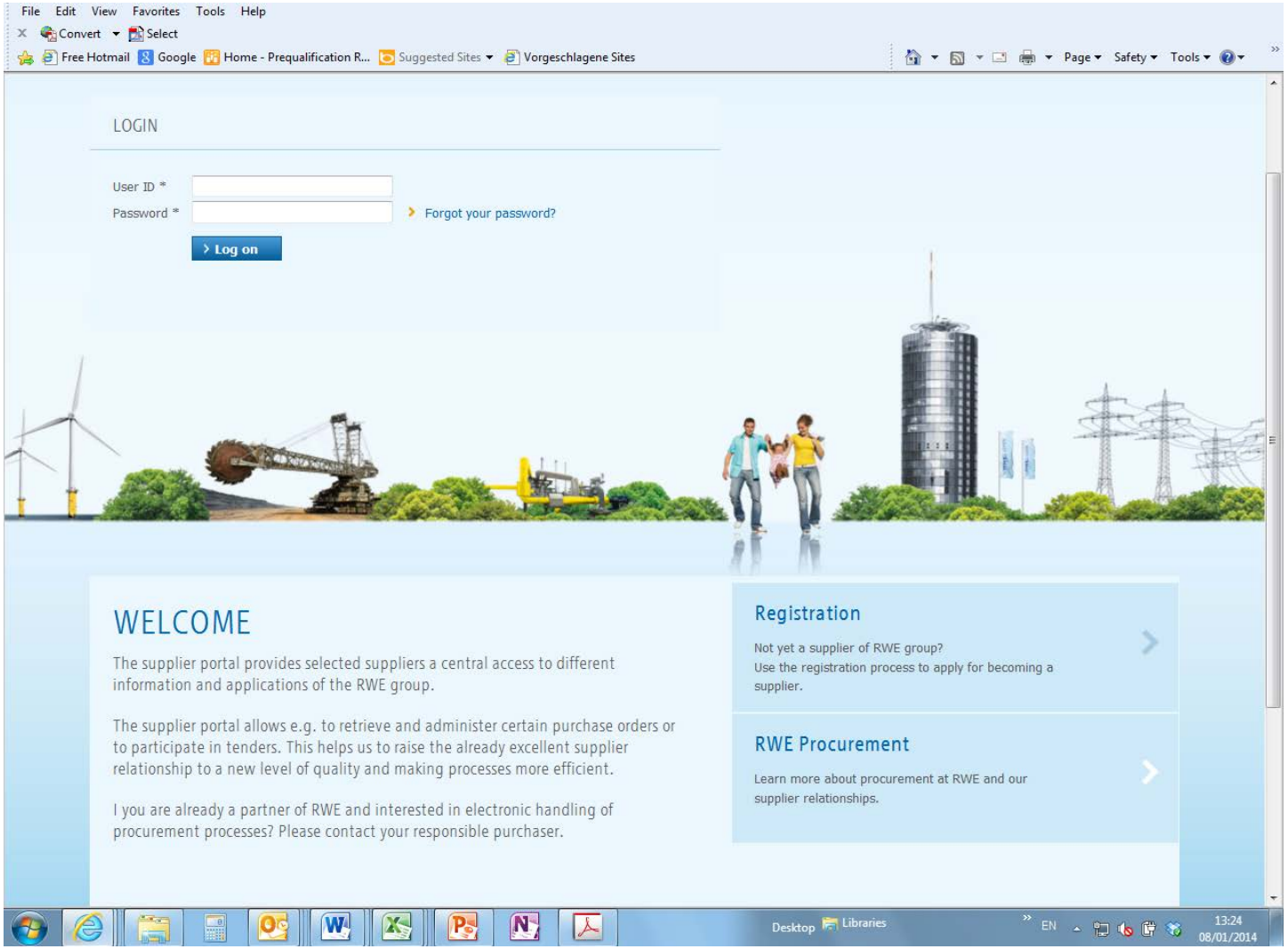
O&M Procurement

- Offshore O&M Services
- Offshore O&M Parts
- Onshore Wind O&M Services
- Onshore Wind O&M Parts

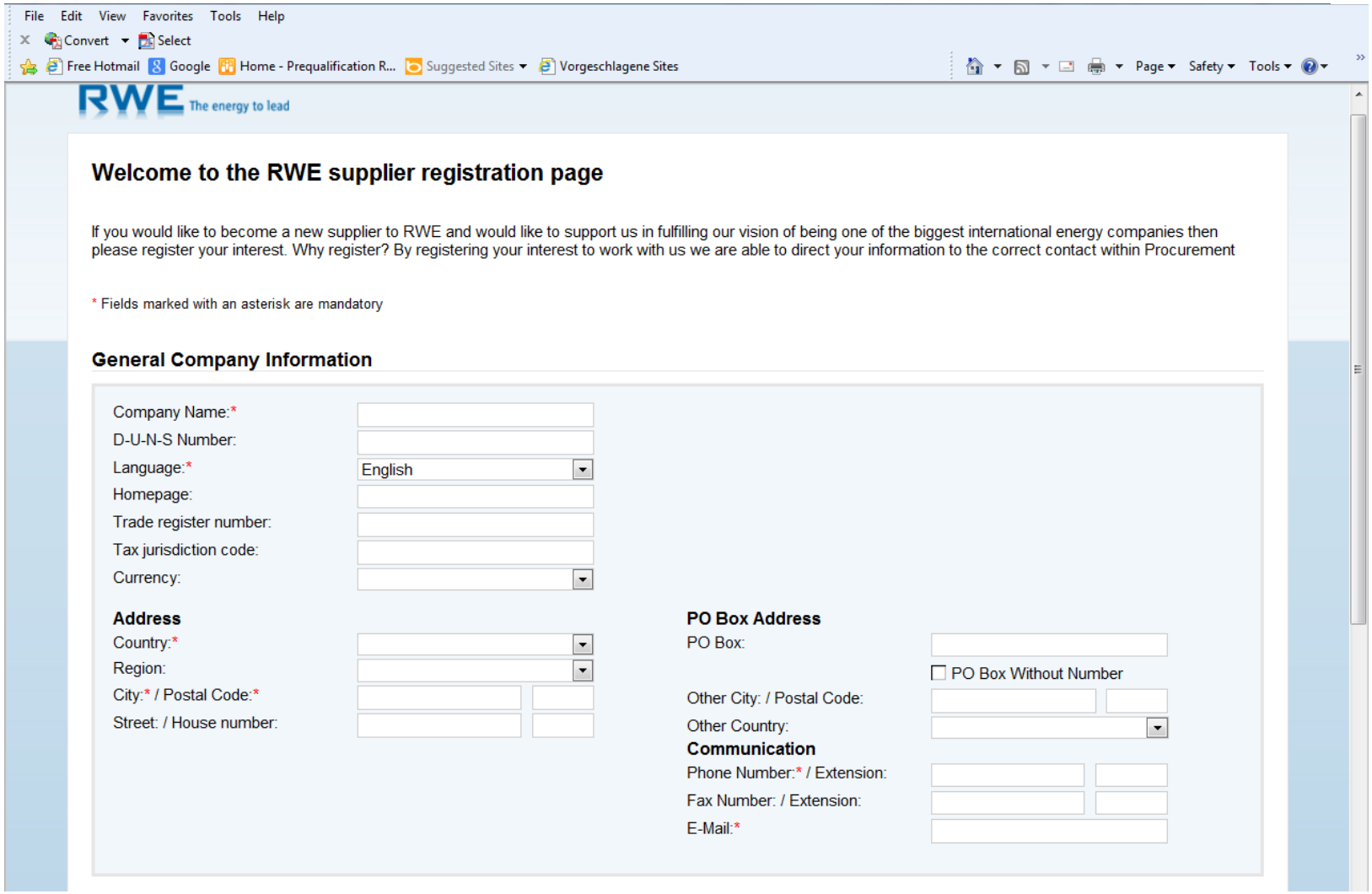
Hydro

- Hydro services
- Hydro electrical
- Hydro mechanical
- Hydro civil works

Supplier Registration



Supplier Registration

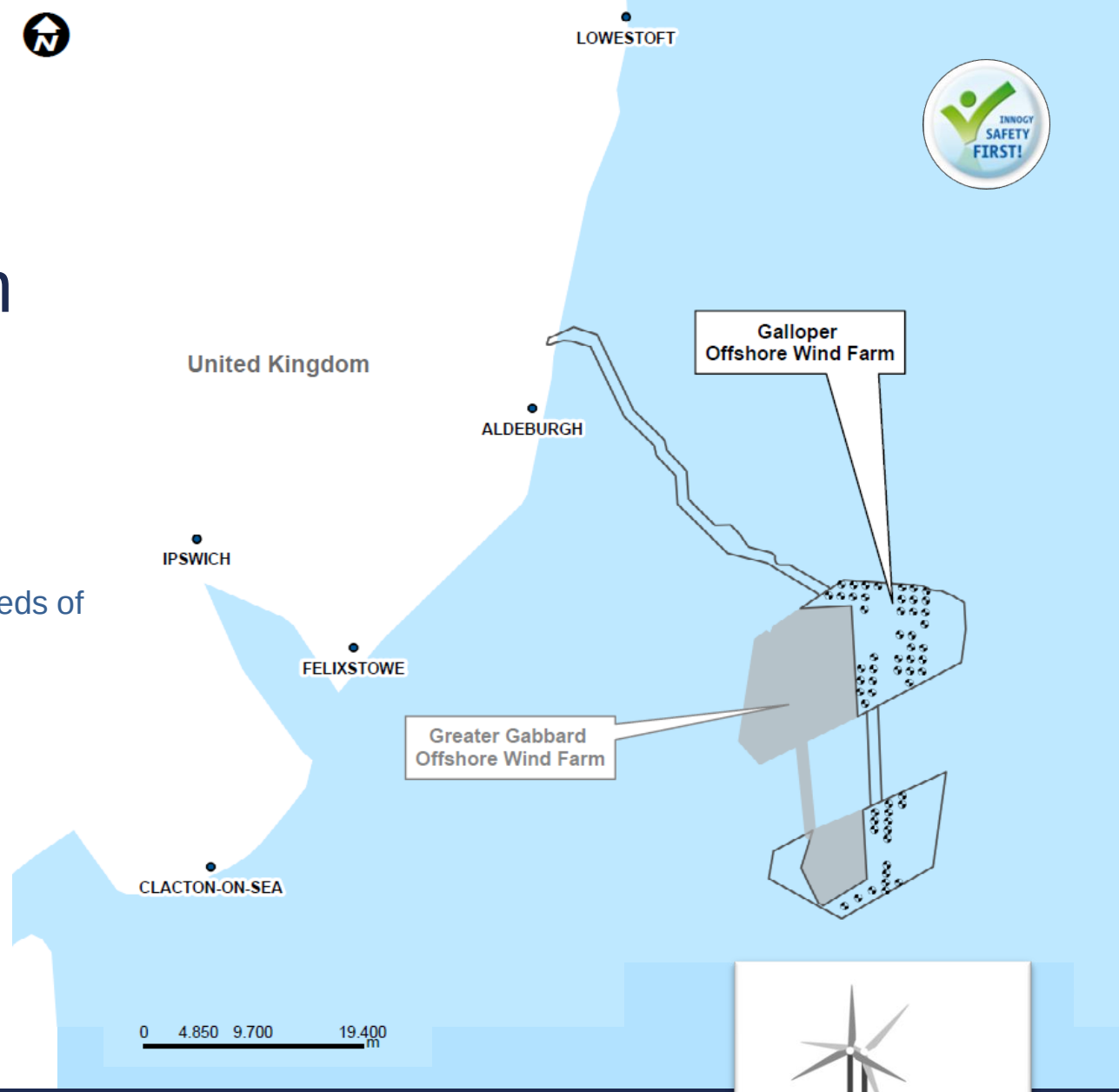


Galloper Wind Farm Limited

Toby Edmonds, Project Director, GWFL

Galloper Offshore Wind Farm

- 56 x 6 MW Siemens wind turbines
- Installed capacity of up to 336 MW
- Generate enough energy to power the equivalent domestic needs of around 336,000 average UK households
- Located 27km off the Suffolk Coast
- Construction of the project coordinated from the Port of Lowestoft



History

- Granted development consent in May 2013 by the Secretary of State for Energy and Climate Change
- Initially a joint project between RWE Innogy & SSE
- April 2014 SSE announced their intention to exit the project
- Agreed to jointly continue the development, at the same time seeking new strategic equity partners
- Awarded a grace period under RO in October 2014
- October 2015 put the project on hold
- Consider a revised business case and project design

Moving forward, working together

SIEMENS

- Optimised project design – working with Siemens
- Launched the banking and new partner process in February 2015
- On 30th October 2015 reached Financial Close

So in 8 months:

3 new project partners	13 new investors	Confirmed the key contractors

Jobs, investment, partnerships

- C.800 jobs overall
- GWFL has placed contracts with UK based suppliers
- From Aberdeen, Peterborough, Manchester, Cardiff & Lowestoft
- Support from local MPs, Councillors and Community Councillors and representatives
- Collaboration within the industry to maximise benefits and opportunities
- Linking up with the local economic development officers; Job Centre; Skills and educations experts
- Engaging with local residents - 6 drop-in sessions, 3 Local Liaison Committee meetings
- Launch of the Community Fund administered via Suffolk County Council
- Working with the media

Partnership with OGN & APB

- Announced November 2015 that Port of Lowestoft selected as the construction coordination base for the project.
- In partnership with Associated British Ports (ABP) and OGN Group
- Around 40 personnel will work from the OGN Group facility over the two year construction period.
- Deal signifies a multi-million investment into the local economy
- Lease, port payments and preparation of the facility
- The extensive OGN facility will provide a 'ready to go' support base for Galloper
- Underpins the port as a key driver of both the local and regional economy

James Fisher contract award

- James Fisher selected to provide offshore and marine services during the construction of the wind farm
- Up to 100 new jobs created for the east coast of England
- Will comprise a dedicated project management team of around 20 people based at OrbisEnergy
- A further 20 to 30 onshore and offshore based personnel who will form part of the project's Principal Contractor Team
- And a further 40 to 50 offshore technicians.
- Contract value expected to exceed £25 million over next two years

Thank you

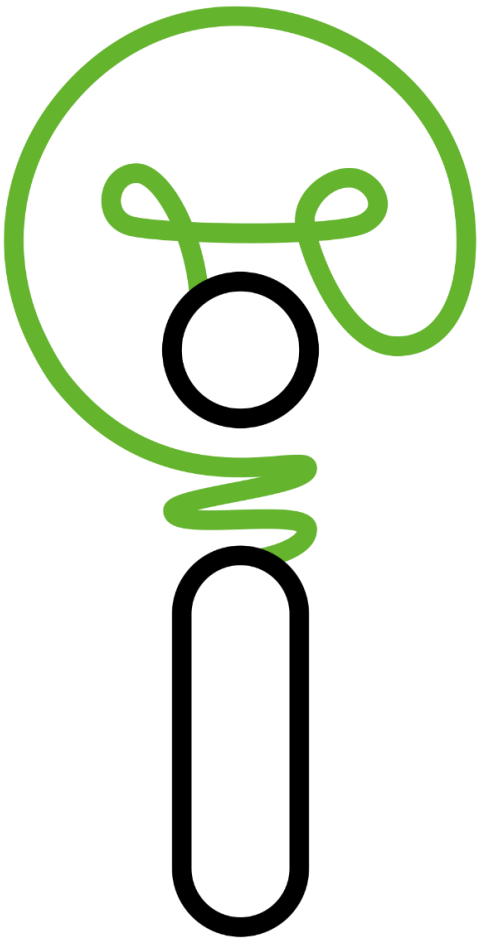
www.galloperwindfarm.com
0845 078 2941
info@galloperwindfarm.com

Galloper Wind Farm Ltd

EV018

Far and Large Offshore Wind (FLOW) projects

Not confidential

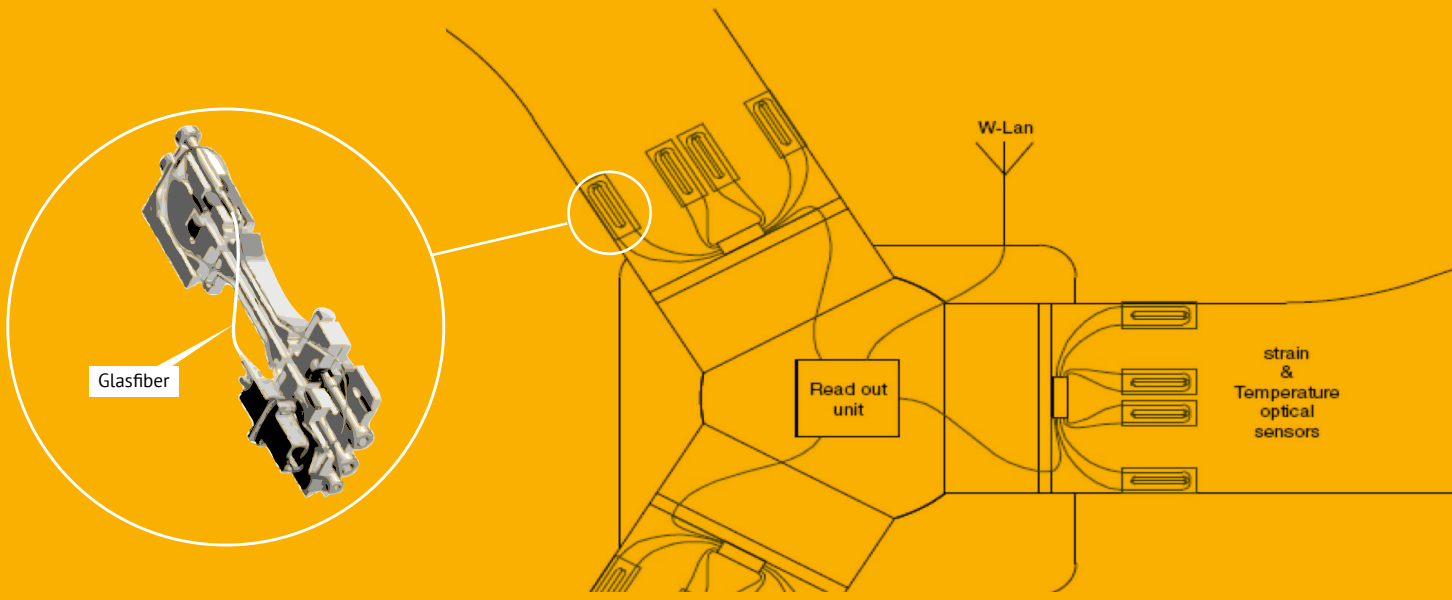


Sofia Offshore Wind Farm Limited

FLOW

COMPETITIVE THROUGH COOPERATION

FLOW the book



The glass fibre FOBM sensor, plus housing, is attached to the construction. It has been designed to ensure that the sensor can easily be replaced.

Load and fatigue

For proper coordination of the necessary maintenance to the wind farm and the turbines condition, sufficient insight into the mechanical loads and fatigue is essential. Monitoring is key. Such fatigue measurements were previously done with so-called 'strain gauges', attached to a steel construction. These gauges are copper strips which register minuscule bends in the pole or rotors and convert these into electrical signals. Strain gauges measure the mechanical load of a wind turbine, which in turn determines the need for any maintenance to the wind farm. When the loads are higher than assumed, there is an increased risk of damage and a higher need for maintenance or replacement. Improved knowledge of mechanical load can significantly cut costs.

The FLOW programme worked on two fundamental innovations in this regard. ECN developed the so-called 'Fleet Leaders' concept. Strain gauges are only placed on a few representative turbines, rather than on all of them. The 'Fleet Leaders' concept informs the operators on the loads on other turbines. It has been extensively tested and verified with data from the RWE wind farm Rhyl Flats in the United Kingdom.

FLOW also provided an alternative for the classic strain gauges which measure the loads in the construction. The functionality of these strain gauges expires after a few months, and needs to be checked frequently. Their lifespan is limited.

The alternative is a glass fibre tube (see figure) and a laser to measure how much the tube has been stretched, compressed or bent. These optical 'strain gauges' are much more durable and do not need to be replaced as frequently. ECN has also developed a system for efficient installation and replacement of the sensors.

Environment and noise

The natural habitat at sea may not be disturbed by the installation of offshore wind farms. Porpoises in particular are very sensitive to sound. This is why there are strict noise regulations during the installation.
In the Dutch part of the North Sea, there are rules for installing under water: a maximum between 160 and 172 dB, depending on the season and the number of piles. Germany has a limit of 160 dB.

These rulings have a direct effect on the costs of the construction of wind farms at sea, because applying them may cause delay in the installation, and therefore may cost a lot of money. This is why a study was started into the most economical solution for noise mitigation. IHC IQIP, part of Royal IHC, started a study in 2007 which was later supported by the FLOW programme. Royal IHC, from the very beginning involved in the installation of offshore wind farms, has gained an important position thanks to, among others, this 'Noise Mitigation System' (NMS). This improved position represents the influence of FLOW on Dutch industrial activities.

Two steps

Royal IHC started the noise study in a water tank on scale. "FLOW contributed to the development of a 'full scale' test," says Richard Agema, product manager 'Heavy Lift' at IHC. "The noise is reduced in two steps. First, we create an "air bubble screen" directly around the monopile, which is protected against tides and waves by a steel cover. This cover consists of two screens with air in between. These two steps ensure very effective sound damping in a wide frequency range."

"Pile driving using the current system offers the contractor the advantage of faster, more accurate, more flexible and more secure installation, which also meets the noise standard."

IHC IQIP has developed this system into an installation tool in which noise mitigation can be considered a side effect. "Pile driving using the current system offers the contractor the advantage of faster, more accurate, more flexible and more secure installation, which also meets the noise standard." says Agema.

This concept was tested in 2011 in cooperation with FLOW partners RWE and Van Oord when installing the 'met' mast, 65 kilometers off the coast of IJmuiden. The first commercial offshore wind farm was equipped with the Noise Mitigation System (NMS 6900) in 2012. Currently, the Riffgrund, Butendiek, Amrumbank, Godewind 1, Godewind 2 and Nordsee One wind farms have been installed using NMS, which first needed to meet the very stringent German noise standards.

Upcoming FLOW innovations

Besides the applied innovations in Eneco Luchterduinen and Blyth, FLOW provides some other innovations that are still one or two steps away from market implementation. This chapter describes a few of these innovations.

Wind measurements with Lidars

Banks require an estimate of the yields of the turbines before financing a wind farm. This estimate must be properly substantiated before the certification bodies approve the measurements and estimates of the proceeds and the banks accept this.

Because of these high demands, project developers have been placing measuring towers or 'met' masts at the location of the wind farm. Together with other meteorological data, these measurements ensure the certification body and the bank that the yields will be sufficient.

But such a campaign with a meteorological measurement mast is costly, between the € 3 and 7 million. There is an alternative for this, however, being monitoring wind speeds with a so-called 'Lidar' from a buoy at the location of the proposed wind farm. This Lidar measures the wind speeds by means of a laser system (see page 56), and it is a lot cheaper, but is not always accepted by the certification body. The data of a Lidar are not yet always 'bankable', but FLOW has initiated a development to get the Lidar accepted.

"Nine months of measurements showed that the Lidar is sufficiently accurate for wind measurements for offshore wind farms in comparison to the met mast."

Because RWE constructed the meteorological measurement mast for the 'Tromp Binnen' wind farm, around 40 miles off the coast of IJmuiden, at the start of FLOW, the Lidar could be installed next to the mast to compare and validate the measurements. The 'Tromp Binnen' farm ultimately was not constructed because the concession was cancelled, but the meteorological measurement mast was still there. "Nine months of measurements showed that the Lidar is sufficiently accurate for wind measurements for offshore wind farms in comparison to the meteorological measurement mast ," says Leon van der Meijden of Eneco. "More buoys at different locations increase its accuracy, and thereby the confidence of the certification body and the banks."

Correction

One of the problems that needed to be solved for these laser measurements is that the Lidar must be corrected for the movements of the buoy. It is attached to an anchor, for example, and the buoy will pull to one side when the chain is taut. Leon van der Meijden: "We have found a solution for this, in an alternative approach to anchoring, without additional risks that the buoy would start drifting."

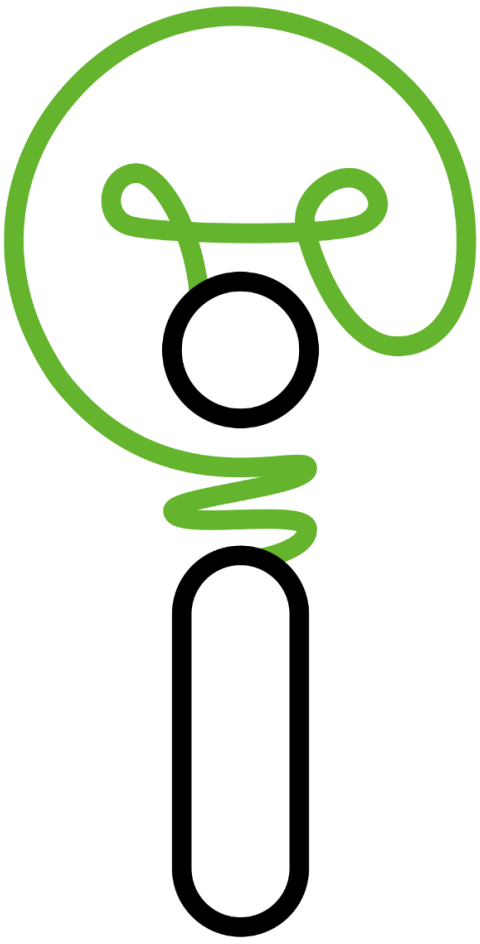
"You demonstrate the value of the farm to the bank and certifier without there being an actual project."

A Lidar buoy costs around one million Euro. The alternative for the meteorological measurement mast is not yet accepted for certification, but the validation of the Lidar based on the measurements in FLOW does make this classification more probable. "This would mean an immediate saving of a few million on a meteorological measurement mast . This might not be much compared to the costs for an offshore farm, but it is significant for the investment decision in the preparatory stage. In that stage you demonstrate the value of the farm to the bank and certifier without there being an actual project."

EV027

Welsh apprenticeship scheme

Not confidential



Sofia Offshore Wind Farm Limited

RWE npower renewables

INTRODUCING WALES' FIRST WIND TURBINE TECHNICIAN APPRENTICESHIP

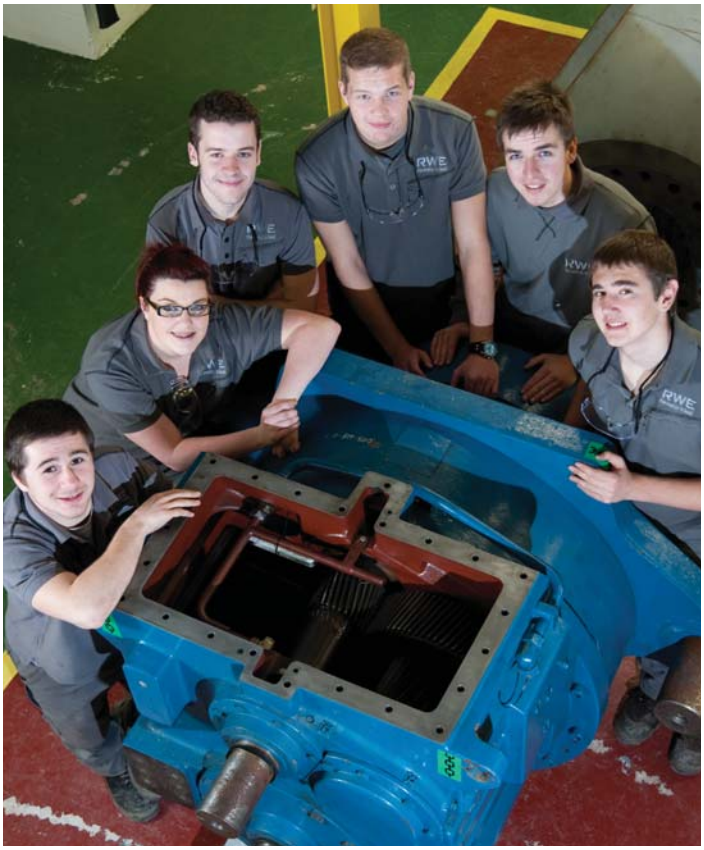
RWE npower renewables (RWE NRL) is one of Wales' largest inward investors and a leading Welsh developer and operator of wind farms and clean energy plant, including hydro and marine.

With five main offices across Wales, including a UK wind turbine service centre, at Llanidloes; and a UK operational control centre at Dolgarrog, north Wales, we already employ almost 100 of our staff (over 20% of our UK workforce) in support of our existing projects.

Through the delivery and operation of our current fleet of renewable energy projects in Wales, RWE NRL has already invested over £450million, and has committed a further £1billion investment in support of our pipeline of developing projects. In addition, by 2014 we will be investing over £1million a year, through our community benefits packages, which could be used for education and training initiatives, as well as local priorities in Wales.

Annually, RWE NRL works with hundreds of contractors on a short, medium and long term basis, to build and operate our energy plant, generating electricity from Wales' clean and abundant natural resources of wind and water.

Against a backdrop of the continuing threat of CO2 atmospheric pollution and climate change, the need to build and operate renewable energy projects like wind farms is ever more important.



RWE npower renewables is committed to delivering these projects to help achieve Wales', UK and EU carbon reduction goals, while at the same time ensuring the people and communities in which we work can benefit and grow as a result of our activities.

Our ground-breaking Wind Turbine Technician Apprenticeship in Wales creates high-skilled, long-term opportunities, and is delivered through a small network of local colleges in north and south Wales.

The course has been specially designed by RWE npower renewables, Energy and Utility Skills, National Skills Academy for Power, and its consulting engineers to specifically meet the growing needs of the industry. It will also provide highly-sought after and transferable engineering skills for the future.

The scheme will support a batch of new apprentices each year, who will be able to be deployed at wind farms across Wales and the wider UK, both in support of RWE npower renewables and also other renewables companies, which are already keen to engage with the specialist training programme.

An RWE Innogy company

FREQUENTLY ASKED QUESTIONS

Why did we decide to set up this programme?

We wanted to ensure the company and industry as a whole has a sufficiently skilled local workforce for wind farm sites in Wales. We already have a good number of staff in Wales, however as major projects like Gwynt y Môr become operational, we will need more. Staff at RWE npower renewables are encouraged and supported to develop, and many of our turbine technicians have progressed onwards and upwards within the company and we are keen to maintain a steady growth of technicians in this area.

How did we get this scheme off the ground?

RWE npower renewables worked closely with a number of colleges and industry experts to develop a focused and high-quality scheme. Grŵp Llandrillo Menai is a perfect partner, committed to high quality training at its wind turbine technician training centre at Coleg Llandrillo, resourced with top quality equipment direct from our own site resources.

As a result, we believe this is the best apprenticeship of its type across Wales, providing an excellent training platform, utilising the great resources and support available. Demand and quality of candidates who applied to join the scheme was of a very high standard.

Our aim is to continue to support the development of young talent in Wales, and to develop this scheme further into other parts of the UK. Other companies in the sector have already joined us in the scheme and we hope our partnership with Grŵp Llandrillo Menai will create a centre of excellence in training for the renewables sector.

How does RWE NRL build skills among young people?

We are focused on long term, skilled and sustainable jobs within the Science, Technology, Engineering and Maths arena, with our education partners Smallpeice, and we also support initiatives in other education areas with Rowanbank.

Our industry faces a large skills shortage as the industry grows; we are attracting people from the engineering sector which already has skills shortages. We have a variety of programmes in place to support the development and delivery of skills into the industry, for example graduate schemes, placements, internships, scholarships and work experience opportunities.

If you would like to know more about the Apprenticeship, please contact: nrlvacancies@rwe.com

If you would like to know more about other opportunities with RWE npower renewables within the wind industry, please vist the careers section of our website www.npower-renewables.com

Release date: Monday, 1 July, 2013.

RWE expands successful wind turbine apprentice scheme with recruitment of new applicants

RWE npower renewables (RWE NRL) is expanding its highly popular Wales wind farm apprenticeship programme with a second round of recruitment for new candidates.

The Apprentice Scheme, first launched by RWE NRL in partnership with Grŵp Llandrillo Menai, is the first of its kind in Wales and was fully supported at the official opening in June 2012 by First Minister Carwyn Jones.

Recruitment for the new applicants is now well underway online, and prospective recruits from all corners of North, Mid and South Wales are already applying for the five places up for grabs.

Welcoming recruitment to the scheme, newly appointed Deputy Minister for Skills and Technology Ken Skates (AM) said: *"It's vital than we have a highly-skilled, well-trained workforce that can meet the needs of employers in the renewable sector.*

"The Welsh Government is committed to providing more opportunities for young people to take up apprenticeships and to support employers who want to recruit additional apprentices.

"We believe employers need to use apprenticeships as a key mechanism to make their business more competitive.

"This apprentice scheme is an excellent example of partnership working between the sector and our colleges. It is very pleasing to see Welsh apprentices taking up these opportunities, assisting us in generating more electricity from clean, renewable energy sources."

RWE npower renewables worked closely with Grŵp Llandrillo Menai, North Wales, as well as representatives from EU Skills and the National Skills Academy for Power to bring these apprentice opportunities to Wales**.**

RWE NRL UK Economic Investment Manager Tanya Davies added: *"We're delighted that RWE NRL is able to provide five more skilled learning and employment opportunities in Wales, in addition to the six apprentices we took on last year.*

"These apprenticeships demonstrate an absolute and clear link between the

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delivery of renewables and the opportunities the sector can represent for the Welsh economy.

"Half of all the apprenticeship posts will be located and work in rural areas, where there are few enough opportunities for skilled engineering jobs. We hope these posts enable the young people involved to be able to live, learn and work locally, while supporting their economies, communities and the environment long term."

The first six RWE NRL apprentices, recruited in 2012, have almost completed their initial year's training at Grŵp Llandrillo Menai's Llandrillo College, in North Wales. Four further apprentices were taken on by South Wales engineering company ISOfab, in preparation for working on Vattenfall's Pen y Cymoedd wind farm in South Wales.

All 10 of the 2012 intake will now turn their focus on wind turbine engineering and technology in their second year, at Llandrillo College's specialist multi-million pound Renewable Energy Centre at the Rhos-on-Sea Campus in Conwy.

Once the course is complete, the apprentices will support wind farm operations onshore and offshore, across Wales.

RWE NRL has an operating portfolio of seven onshore and two offshore wind farms in Wales, all of which will become the workplace once the apprentices become fully trained turbine technicians.

Offshore, Gwynt y Mor will provide a further significant opportunity, once it begins operation at the end of 2014, while proposed onshore wind farm developments at Taff Ely, Brechfa Forest West and Mynydd y Gwair, all in South Wales, could offer further security for the future.

- **In North Wales,** three of the new offshore recruits will join last year's apprentices working out of the Port of Mostyn on RWE's flagship project Gwynt y Môr Offshore Wind farm, the largest currently under construction in the RWE fleet. Studies also suggest additional pipeline projects like Clocaenog Forest, near Ruthin, could be worth up to £22million to the region's supply chain during construction alone, with long term operational and support jobs required over the project's 20 years+ operational lifetime.

- **In Mid Wales,** two new onshore recruits will join three existing apprentices, working out of RWE NRL's Wind Turbine Service Centre located in a purpose built facility at Llanidloes, Mid Wales. From here the already 30+ strong team operates and maintains RWE NRL's fleet of wind turbines across Wales, and parts of the Midlands and South West

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England. Studies also suggest additional pipeline projects like the 150megawatt Carnedd Wen Wind Farm and Habitat Restoration Project, in Powys could be worth up to £31million to the region's supply chain during construction alone, with long term operational and support jobs required over the project's 20 years+ operational lifetime.

- **In South Wales,** proposed onshore wind farm developments at Taff Ely, Brechfa Forest West and Mynydd y Gwair could potentially open the door for the new apprentices to work locally on projects. Studies suggest additional pipeline projects like Brechfa Forest East in Carmarthenshire, could be worth up to £19million to the region's supply chain during construction alone, with long term operational and support jobs required over the project's 20 years+ operational lifetime.

ADDITIONAL QUOTES

Energy and Utility Skills Group's Skills Director Wales, Aled Davies, said: "EU Skills and the National Skills Academy for Power are committed to developing a skilled workforce in the renewable sector in Wales and pleased at the expansion of this apprenticeship programme which was developed in partnership with employers to meet their needs in Wales.

"The pan-Wales delivery model underpinning this programme enables collaboration between colleges and the development of talent across the country, this second intake of apprentices demonstrates the model is sustainable and delivering high quality learning which maximises the benefits to employers."

Ends

Contact:

Mark Fleming, RWE npower renewables
Senior PR Officer, Wales

[redacted]

Editor's notes:

About the programme:

- The framework for the apprenticeship scheme has been developed by Energy and Utility Skills Group.
- The apprenticeship programme will be carried out in collaboration with Llandrillo College at its specialist multi-million pound Renewable Energy Centre at the Rhos-on-Sea Campus in Conwy.
- The course lasts three years, two years in college and one year on site getting hands on experience working on wind turbines. Successful apprentices will gain BTEc & EAL qualifications in year one; City and Guilds and further EAL units in year two and an NVQ in the wind place in the third year.

RWE npower renewables is the UK subsidiary of RWE Innogy and one of the UK's leading renewable energy developers and operators. We are committed to developing and operating renewable energy projects to produce sustainable electricity.

We operate 21 hydroelectric power schemes, 25 onshore wind farms and two offshore wind farms, including the UK's first major offshore wind farm, North Hoyle. RWE npower renewables is currently constructing its first biomass CHP power plant in Scotland, and the 576 megawatt Gwynt y Môr Offshore Wind Farm, off the North Wales coast.

From development, to construction and operation, our 453 staff in area offices across Wales, Scotland and England work in close partnership with local communities and with companies. In 2011, renewable energy sites operated by RWE npower renewables invested nearly £794,000 into communities across the UK. The investments made by RWE in the UK are creating substantial new jobs opportunities, developing the supply chain and, very importantly, helping the UK Government achieve the EU target of supplying 30% of electricity from renewables, by 2020.

RWE Innogy pools the renewable energy expertise and generating plant of the RWE Group. RWE Innogy is fully committed to growth in renewable energy across Europe, and has a current pan-European pipeline of 17.3GW. The UK will continue to play a significant role in the delivery of this pipeline.

RWE npower renewables is a sister company to RWE npower, a leading integrated UK energy company with around 6.8 million customer accounts. RWE npower also owns and operates a flexible portfolio of conventional power stations as well as a portfolio of cogeneration plant producing more than 10% of the electricity used in England and Wales.

In Wales, RWE npower renewables operates six hydro-electric power projects, two offshore wind farms, North Hoyle and Rhyl Flats and seven onshore wind farms. The onshore wind farms are located from Neath in South Wales to Anglesey in the north.

We are also currently constructing the €2billion Gwynt y Môr offshore wind farm. This has

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generated investment of over £70million into North Wales businesses alone. We continue to support the ongoing development of the wider Wales Supply Chain through a number of initiatives, working with Welsh Government and businesses.

RWE npower renewables is also the proud sponsor of the Osprey's rugby team.

Almost a third of RWE npower renewables' UK staff, approximately 90 employees, are based in Wales, from our regional offices, at Baglan, South Wales; Llanidloes, Mid Wales; and Dolgarrog, St Asaph and Port of Mostyn in North Wales.

RWE npower, our sister company, also operate Aberthaw Power Station and two Combined Heat and Power plants at Barry and Bridgend. In all, RWE's combined installed conventional and renewable energy generation in Wales supplies the equivalent of around one-third of Wales' electricity needs.

For further information about RWE npower renewables and RWE Innogy visit www.npower-renewables.com and www.rweinnogy.com For further information about RWE npower visit www.rwenpower.com

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Press Release

YOUNG engineers en route to completing RWE & Wales' 1st wind turbine apprenticeship

- VIP guest Ospreys star Rhys Webb awards certificates

Wales, July 2014

Release date: immediate.

TEN aspiring young engineers are en route to completing RWE and Wales' 1st Wind Turbine Apprenticeship after graduating from Coleg Llandrillo's purpose built Wind Turbine Training Centre this week.

To mark the occasion, VIP guest Osprey scrum half and Wales international rugby star Rhys Webb presented certificates to the apprentices, who completed their academic studies before heading out for a final year's training in the field.

A ceremony to mark the end of their full time academic studies at Coleg Llandrillo was held at the college and attended by family and friends, in the shadow of RWE Innogy UK's flagship Gwynt y Môr Offshore Wind Farm – where half of the intake will complete their final year.

The course is the first wind turbine apprenticeship in Wales, and was designed by RWE Innogy UK, in partnership with Grŵp Llandrillo Menai, North Wales, and EU Skills and the National Skills Academy for Power . The framework for the apprenticeship scheme was developed by Energy and Utility Skills Group.

RWE Innogy UK's Chris Griffiths who has lead the development of the scheme for the company said: *"The standard set by this very first intake of apprentices has been tremendous – they've worked exceptionally hard, achieved a great deal and proved to be amazing advocates for wind turbine engineering.*

"The skills from this programme are specific to the sector, and are also highly transferrable, making our apprentices very highly sought after, and qualified. It's a tremendous scheme that's directly linked to the building and operating of wind farms in Wales, and we're absolutely delighted to be able to take on five new candidates."

The apprentices all received an Apprenticeship Framework Certificate (a group of qualifications including a BTEC subsidiary diploma in engineering; NVQ 2 in Performing Engineering Operations; City & Guilds level 3 diploma in Electrical Power Engineering – Wind Turbine Maintenance). They now go on to complete

the final year of their apprenticeship onsite, towards an NVQ 3 in Wind Turbine Operations and Maintenance.

The six apprentices from **RWE Innogy UK** are: Liam Llewellyn Edwards; Natasha Frost; Ross Kenyon; Richard Mason; Christopher Newens; and Tom Woodward.

Four more apprentices from **ISOFAB,** are: Liam Douglas; Cory Thomas Dunn; Michael John Leach and Adam Evans.

Editor's notes:

For more information about the latest vacancies, go to our website:
http://www.rwe.com/web/cms/en/472412/rwe-innogy/career/current-job-offers/

About the Wind Turbine Apprenticeship Programme:

- The apprenticeship programme is carried out in collaboration with Llandrillo College at its specialist multi-million pound Renewable Energy Centre at the Rhos-on-Sea Campus in Conwy.
- The course lasts three years. Each intake will complete an initial year's general engineering training, before turning their focus to wind turbine engineering and technology in their second year, at Grŵp Llandrillo Menai's specialist Renewable Energy Centre at the Rhos-on-Sea Campus in Conwy.
- Once the course is complete, the apprentices will support wind farm operations onshore and offshore, across Wales.
- Successful apprentices will gain BTEc & EAL qualifications in year one; City and Guilds and further EAL units in year two and an NVQ in the wind place in the third year.

Contact

RWE Innogy UK

[redacted]

About RWE Innogy UK

RWE Innogy UK is the UK subsidiary of RWE Innogy and one of the UK's leading renewable energy developers and operators. We are committed to developing and operating renewable energy projects to produce sustainable electricity.

We operate 22 hydroelectric power schemes, 28 onshore wind farms and two offshore wind farms, including the UK's first major offshore wind farm, North Hoyle. RWE Innogy UK is currently constructing its first biomass CHP power plant in Scotland, and the 576 megawatt Gwynt y Môr Offshore Wind Farm, off the North Wales coast.

From development, to construction and operation, our staff in area offices across Wales, Scotland and England work in close partnership with local communities and companies. In 2013, renewable energy sites operated by RWE Innogy UK invested over £1 million into communities across the UK. The investments made by RWE in the UK are creating substantial new job opportunities, developing the supply chain and, very importantly, helping the UK Government achieve the EU target of supplying 30% of electricity from renewables, by 2020.

RWE Innogy UK is a sister company to RWE npower, a leading UK energy company with around 5.4 million customer accounts.

RWE Innogy is fully committed to growth in renewable energy across Europe and the UK continues to play a significant role.

For further information about RWE Innogy UK and RWE Innogy visit www.rweinnogy.com/uk or www.rweinnogy.com

Search for the 'Green' Apprentice comes to Wales

SKILLED, long term jobs in the renewables industry are up for grabs through a new Apprenticeship scheme being launched for the first time in Wales today by RWE npower renewables at the Renewables UK Cymru Conference in Cardiff.

The Large Scale Wind Apprenticeship programme will recruit six trainee wind turbine technicians who will complete a three year course, with the aim of moving into a full-time engineering post with one of the largest renewable energy developers in the UK.

Recruits will work on some of the wind farm company's biggest, most important flagship projects onshore and offshore in Wales, including Gwynt y Môr – one of the largest offshore wind farms in construction in Europe.

The announcement was today warmly welcomed by the First Minister of Wales, Rt. Hon Carwyn Jones AM who said: "In March I announced the Welsh Government's commitment to work with business to drive forward the long term economic benefit for Wales from the investment being made in our low carbon energy sector.

"Today's announcement by RWE is a clear demonstration of how they are maximising the job potential and community benefits from their activities across Wales.

"Developing the Welsh workforce to meet the industry's needs by providing high quality vocational learning is one area where we will be continuing the engage with businesses as part of our Energy Wales programme."

RWE npower renewables has been working closely with Landrillo College in North Wales as well as representatives from EU Skills and the National Skills Academy for Power to bring these apprentice opportunities to Wales.

The Large Scale Wind Apprenticeship programme was launched by Siemens in England in 2011 and attracted over 1500 applicants, and the Welsh scheme is expected to be just as popular.

The programme is also of interest to other companies in Wales. ISOFab, a mechanical engineering contractor based In Treherbert in the Rhondda, is offering two further apprentice positions through the scheme, making a total of eight appointed through the renewables sector.

Candidates are now invited to submit application forms online at www.npower-

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renewables.com. Next steps will be to short list a selection of candidates for an assessment centre, prior to making the final selection for the scheme.

Rachel Disney, UK HR manager for RWE npower renewables, and instrumental in building the Apprenticeship programme, explained: “Looking at the demographic of engineers working within the industry, it quickly became very clear to us that there was an opportunity to look to attract more, younger and locally based engineers to work on our wind farms. These projects have significant 20 year lifespan, and so the skills that Apprentices learn can be applied over the long term, and will be at the cutting edge of engineering skills for the future.

“We’re absolutely delighted to be able to launch this scheme in Wales, now, especially so soon after the March Energy Statement by Welsh Government, which focused on delivering jobs and economic benefits from the renewables sector.

“These Apprenticeships support so many core principles that underpin the renewables industry in the UK. They're focused on long term, skilled and sustainable jobs within the Science, Technology, Engineering and Maths arena. They demonstrate the significant investment the industry is prepared to make into upskilling the local workforce, and demonstrates where jobs can and are being created directly through the renewable sector.”

The apprenticeship programme will be carried out in collaboration with Llandrillo College at its specialist multi-million pound Renewable Energy Centre at the Rhos-on-Sea Campus in Conwy.

The course lasts three years, two years in college and one year on site getting hands on experience working on wind turbines. Successful apprentices will gain BTEc & EAL qualifications in year one; City and Guilds and further EAL units in year two and an NVQ in the wind place in the third year.

Glyn Jones, Grŵp Principal and CEO for Grŵp Llandrillo-Menai, said “Grwp Llandrillo Menai is delighted at the potential this scheme presents for the institution and learners in Wales. We are very pleased that the College has been recognised as the specialised training centre for the wind industry in Wales, in partnership with RWE npower renewables, Siemens, EU Skills and the National Skills Academy for Power.”

The framework for the apprenticeship scheme has been developed by Energy and Utility Skills Group.

Its Skills Director Wales, Aled Davies said: “EU Skills and the National Skills

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Academy for Power are excited about the creation of a new progressive training framework developed in partnership with employers.
“The pan-Wales delivery model based on collaboration between colleges is sustainable and we are confident that the framework established will deliver high quality learning and maximise the benefits available to employers.”

Ends

Contact:

[redacted]

Supporting Quotes:

Deputy Minister for Skills, Jeff Cuthbert AM said: “It is great to see how the initial investment made as part of our Delivering Low Carbon Skills Project has enabled RWE to work in partnership with Energy and Utility Skills Sector Skills Councils and our Further Education sector to ensure apprenticeship training is seen as a staple part of how the industry recruits new trainees. We will continue to support employers like RWE who are looking to take on apprentices as this is one the most important ways of delivering the skilled workforce the Welsh economy needs to grow. This is especially significant across our low carbon energy sector which will underpin our future economic sustainability.”

Chris Smith, Director of Technology at Coleg Llandrillo, said: “Young apprentices in Wales will now have the opportunity to develop the technical skills required to work in this vibrant and expanding industry. The multi-million pound Renewable Energy Centre at the College’s Rhos-on-Sea Campus will provide outstanding specialist facilities for the second year of the wind turbine maintenance apprenticeships.”

Richard Morris, ISOFab, said: “ISOFab is proud to be involved in this new and exciting Apprenticeship scheme, and intend to continue to invest and nurture our future employees through developing their skills and personal development in the Green technology sector. We hope that we can build on this year’s intake and embed this qualification as an Industry Standard recognised across the UK.”

Editor’s notes:
RWE npower renewables is the UK subsidiary of RWE Innogy and one of the UK’s leading

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In Wales, RWE npower renewables operates six hydro-electric power projects, two offshore wind farms, North Hoyle and Rhyl Flats and seven onshore wind farms. The onshore wind farms are located from Neath in South Wales to Anglesey in the north.

We are also currently constructing the €2billion Gwynt y Môr offshore wind farm. This has generated investment of over £70million into North Wales businesses alone. We continue to support the ongoing development of the wider Wales Supply Chain through a number of initiatives, working with Welsh Government and businesses.

RWE npower renewables is also the proud sponsor of the Osprey's rugby team.

Almost a third of RWE npower renewables' UK staff, approximately 90 employees, are based in Wales, from our regional offices, at Baglan, South Wales; Llanidloes, Mid Wales; and Dolgarrog, St Asaph and Port of Mostyn in North Wales.

RWE npower, our sister company, also operate Aberthaw Power Station and two Combined Heat and Power plants at Barry and Bridgend. In all, RWE's combined installed conventional and renewable energy generation in Wales supplies the equivalent of around one-third of Wales' electricity needs.

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For further information about RWE npower renewables and RWE Innogy visit www.npower-renewables.com and www.rweinnogy.com For further information about RWE npower visit www.rwenpower.com

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RWE npower renewables

Press Release

INFORMATION CONTAINED IN THIS INVITATION IS STRICTLY EMBARGOED UNTIL 11am Tuesday 11th December 2012.

MEDIA NOTICE - RWE npower renewables and Grŵp Llandrillo Menai invite you to the official launch of Wales' first wind turbine apprenticeship programme and dedicated training centre

On Tuesday 11th December RWE npower renewables (RWE NRL) in partnership with Grŵp Llandrillo Menai is launching Wales' first wind turbine apprenticeship programme and dedicated training centre.

This pioneering programme and centre will be officially opened by the First Minister of Wales, Rt. Hon Carwyn Jones AM, accompanied by senior members of RWE NRL and the college.

The event will include an opportunity to tour the new wind turbine training centre and interview senior representatives from RWE NRL, the college and the six new apprentices.

The launch will take place at 10.30am, on Tuesday 11th December 2012, at Coleg Llandrillo, Rhos on Sea, Conwy.

There will be opportunities for filming, photographs and interviews.

If you intend to come along, advise by email or phone using the contact details below.

Ends

Media contact: **RWE npower renewables**

[redacted]

www.rwe.com/gwyntymor

[redacted]

www.npower-renewables.com

An RWE Innogy company

Gwynt y Môr Offshore Wind Farm Ltd | Auckland House| Lydiard Fields| Great Western Way| Swindon| Wiltshire SN5 8ZT | T +44 08456 720090 | email: gwyntymor@rwe.com

Release date: 20 February 2013

North Wales AM backs wind turbine apprenticeship programme

Assembly Member for North Wales, Aled Roberts, has praised the partnership between RWE npower renewables and Grŵp Llandrillo Menai for establishing Wales' first wind turbine apprenticeship programme and dedicated training centre.
Mr Roberts was commenting during his first tour of the dedicated training centre at Rhos-on-Sea, where he also met with the course tutors and apprentices, all of whom come from Wales.

All six apprentices are expected to take a job on RWE NRL's most important flagship wind farm projects onshore and offshore in Wales, including Gwynt y Môr(1) – currently one of the largest offshore wind farms in construction in Europe.

Commenting after his visit Aled Roberts said: *"It shows what can be achieved when the Further Education sector set up programmes in co-operation with leading companies.*
"I enjoyed meeting six apprentices who were able to show me the work that they were undertaking during their training.
"We need to ensure that North Wales takes full advantage of such opportunities so that our young people can become skilled workers within the companies that we are able to attract to North Wales."

Alan Martin, wind farm operations manager for RWE npower renewables, who accompanied Mr Roberts on the tour, added: *"The apprenticeship programme is a pioneering scheme which we are delighted is already attracting attention as the first of its kind in Wales and our first as a company, across Europe.*

"We are committed to building a long term local workforce to operate and maintain our portfolio of wind farms both onshore and offshore in Wales.

"This represents a significant investment for us to support the development of young talent in Wales and we hope our partnership with Grŵp Llandrillo Menai will see the College becoming a centre of excellence in training for the renewables sector."

The wind turbine apprenticeship programme and dedicated training centre was formally opened by the First Minister of Wales, Carwyn Jones in December.

Six trainees, three from North Wales and three from Mid Wales, are spending two years at Coleg Llandrillo's new wind turbine training centre in Rhos-on-Sea, before gaining first-hand experience on a project in their final year.

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RWE NRL is one of the Welsh Government's anchor companies with an existing portfolio of onshore and offshore wind farms in North Wales, including North Hoyle and Rhyl Flats in Liverpool Bay and onshore projects on Anglesey.

Locally, the company is busy constructing the 576MW Gwynt y Môr Offshore Wind Farm, at a cost of €2 billion [3], also in Liverpool Bay, and developing Clocaenog Forest Wind Farm, near Ruthin.

Up to 32 turbines are proposed for Clocaenog Forest, which could generate significant long term local jobs and investments. It will carry with it a community benefit fund of up to £480,000 per year, along with an economic development fund of up to £288,000 per year, both subject to final installed capacity.

RWE npower renewables has been working closely with Grŵp Llandrillo Menai as well as representatives from EU Skills and the National Skills Academy for Power to bring these apprentice opportunities to Wales**.**

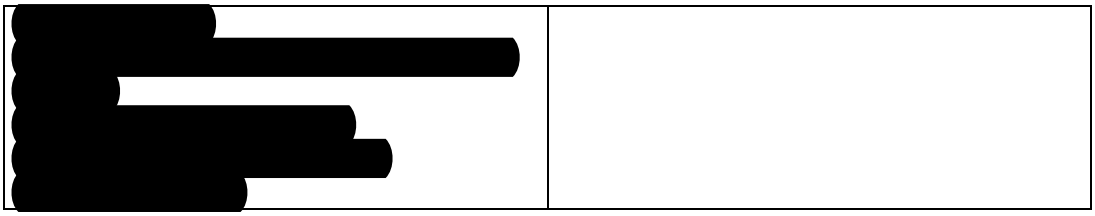
Glyn Jones, CEO of Grŵp Llandrillo-Menai, said: "*Energy is one of the Grŵp's key sectors for economic activity, with both Coleg Llandrillo and Coleg Menai developing provision in this area.*

"Coleg Llandrillo's recent approval as a 'National Skills Academy for Environmental Technologies'[4] confirms its importance in helping to expand the low carbon energy sector within Wales, and supports the Grŵp's strategic goal of developing its curriculum to reflect local priorities and also the economic aspirations and priorities of Wales. The opening of the Wind Turbine Training Centre marks the next stage in Coleg Llandrillo's plans to help achieve this.

"I am delighted that partnerships with major organisations in the sector have been forged to enable this apprenticeship programme to be launched, and we look forward to developing successful relationships with other key players in the sector in the future."

Ends

Media contacts:



Editor's notes:

RWE npower renewables | Port of Mostyn | Coast Road | Mostyn| Holywell | Flintshire CH8 9HE
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(1) Gwynt y Môr represents a total investment of more than EUR2 billion, shared between RWE npower renewables' parent company RWE Innogy(60%); Stadtwerke München GmbH, Munich's municipal utilities company (30%); and Siemens(10%).

(2) Energy predicted to be generated by the proposal is derived using wind speeds monitored in the local area. This enables a calculation to be made to estimate the average annual energy production for the site based on 160 turbines each of rated capacity 3.6 MW. The energy capture predicted and hence derived homes equivalent figures may change as further data are gathered. Equivalent homes supplied is based on an annual electricity consumption per home of 4700 kWh. This figure is supported by recent domestic electricity consumption data available from The Digest of UK Energy Statistics and household estimates and projections from the UK Statistics Authority.

(3) The Marine & Built Environment Centre at Coleg Llandrillo's Rhos-on-Sea Campus overlooks the construction of Gwynt y Môr, well underway more than eight miles offshore with 80 monopile foundations and the two offshore substations now in place.
Onshore, the new 400kV Bodelwyddan substation south of St Asaph Business Park is now live and connected to the National Grid. Sections of the 132kV substation, on the same site, which takes electricity from the offshore substations, have also been successfully connected into the National Grid. The 11km onshore cable route between Pensarn and St Asaph is almost complete.
Once fully operational, Gwynt y Môr will generate enough clean green energy to meet the needs of approximately 400,000 homes[(2)] and carries with it a £19 million community benefit fund, securing investment into local communities for the next 25 years.

(4) *The Marine & Built Environment Centre at Coleg Llandrillo's Rhos-on-Sea Campus provides state-of-the art facilities for renewable energy and sustainable technologies training in the region, with full-time and part-time courses up to Foundation degree level being delivered to meet the expanding needs of the local economy.*

RWE npower renewables is the UK subsidiary of RWE Innogy and one of the UK's leading renewable energy developers and operators. We are committed to developing and operating renewable energy projects to produce sustainable electricity.

We operate 21 hydroelectric power schemes, 25 onshore wind farms and two offshore wind farms, including the UK's first major offshore wind farm, North Hoyle. RWE npower renewables is currently constructing its first biomass CHP power plant in Scotland, and the 576 megawatt Gwynt y Môr Offshore Wind Farm, off the North Wales coast.

From development, to construction and operation, our 453 staff in area offices across Wales, Scotland and England work in close partnership with local communities and with companies. In 2012, renewable energy sites operated by RWE npower renewables invested nearly £1million into communities across the UK. The investments made by RWE in the UK are creating substantial new jobs opportunities, developing the supply chain and, very importantly, helping the UK Government achieve the EU target of supplying 30% of electricity from renewables, by 2020.

RWE Innogy pools the renewable energy expertise and generating plant of the RWE Group. RWE Innogy is fully committed to growth in renewable energy across Europe, and has a current pan-European pipeline of 12GW. The UK will continue to play a significant role in the delivery of this pipeline.

RWE npower renewables is a sister company to RWE npower, a leading UK energy company with around 6.8 million customer accounts.

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In Wales, RWE npower renewables operates six hydro-electric power projects, two offshore wind farms, North Hoyle and Rhyl Flats and seven onshore wind farms. The onshore wind farms are located from Neath in South Wales to Anglesey in the north.

We are also currently constructing the €2billion Gwynt y Môr offshore wind farm. This has generated investment of over £80million into North Wales businesses alone. We continue to support the ongoing development of the wider Wales Supply Chain through a number of initiatives, working with Welsh Government and businesses.

RWE npower renewables is also the proud sponsor of the Osprey's rugby team.

Almost a third of RWE npower renewables' UK staff, approximately 90 employees, are based in Wales, from our regional offices, at Baglan, South Wales; Llanidloes, Mid Wales; and Dolgarrog, St Asaph and Port of Mostyn in North Wales.

RWE also operates Aberthaw Power Station and two Combined Heat and Power plants at Barry and Bridgend. In all, RWE's combined installed conventional and renewable energy generation in Wales supplies the equivalent of around one-third of Wales' electricity needs.

For further information about RWE npower renewables and RWE Innogy visit www.npower-renewables.com and www.rweinnogy.com For further information about RWE npower visit www.rwenpower.com

About Grŵp Llandrillo Menai

Grŵp Llandrillo Menai was formed on 1st April 2012 as a result of the merger between Coleg Llandrillo Cymru (itself merged with Coleg Meirion-Dwyfor in 2010) and Coleg Menai. The creation of Grŵp Llandrillo-Menai has created an institution with the following characteristics:

- Over 30,000 students studying at 14 campuses
- Almost 2,000 staff
- Turnover of over £70 million
- The largest FE institution in Wales and one of the largest in the UK
- An organisation that serves 4 local authorities: Anglesey, Conwy, Denbighshire and Gwynedd.

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Press Release

RWE Innogy UK expands successful wind apprentice scheme for third year.

- 16 apprentices now linked directly to wind farm operations

Wales, June 2014

Release date: immediate.

RWE Innogy UK (Innogy) is expanding its highly popular Wales wind farm apprenticeship programme for a third year running and is now recruiting for new candidates.

Five more bespoke, highly skilled engineering posts have been created to support the business's onshore and offshore activities, taking the total number of wind turbine generated apprenticeships in Wales to 16.

RWE's Chris Griffiths who has lead the development of the scheme said: "*We are absolutely delighted to be able to expand the scheme for a third year running. These are very highly prized posts, which will deliver excellent, bespoke engineering skills training and experience for the lucky candidates. Once qualified, the apprentices will work on some of our most prestigious flagship projects, including Gwynt y Môr Offshore Wind Farm – shortly to become the second largest operating offshore wind farm in the world.*

"The skills from this programme are specific to the sector, and are also highly transferrable, making our apprentices very highly sought after, and qualified. It's a tremendous scheme that's directly linked to the building and operating of wind farms in Wales, and we're absolutely delighted to be able to take on five new candidates."

The Apprentice Scheme, was first launched by RWE Innogy UK in partnership with Grŵp Llandrillo Menai, becoming the first apprenticeship of its kind in Wales and was fully supported at the official opening in December 2012 by First Minister Carwyn Jones.

Recruitment for the third intake of applicants is now well underway online, and prospective recruits from all corners of North, Mid and South Wales are already applying for the five places up for grabs. (see weblink, below.)

At the same time, the first ever intake of six wind turbine apprentices from 2012 are coming the end of their two-year-long, classroom based training and will

begin working from Innogy's Operations bases at Llanidloes, Mid Wales, and Port of Mostyn, North Wales.

Natasha Frost, from Rhyl, **North Wales**, will shortly go on to work from Port of Mostyn, supporting Innogy's flagship Gwynt y Môr offshore wind farm. She's flying the flag for women engineers and features in ***The Guardian Careers*** section, talking about her experience on the course so far. See http://careers.theguardian.com/gallery/women-in-engineering-industry-career-gallery#/

Natasha said: *"I grew up seeing the Rhyl Flats Wind Farm out at sea and I have always been fascinated by the technology and how the turbines work. Now, I can see first-hand and be part of how the new wind farm, Gwynt y Môr, is taking shape during construction and I'm a part of that industry. It's great.*

"This apprenticeship has given me the skills and knowledge needed to become a good engineer. It has also given me an opportunity to experience new things and helps me prove myself within a very male dominated environment. It shows that women do have a place in engineering and I look forward to my future with RWE Innogy UK."

Local Newtown, **Mid Wales** boy Tom Woodward was one of the first six apprentices recruited and is coming to the end of his academic learning at the college. Next, he will move back home where he will work from Innogy's Llanidloes Wind Turbine Service Centre.

He said: *"I have always had an interest in engineering but never had the relevant qualifications to undertake a job in this sector.*

"Mid Wales is an area that has unfortunately suffered from limited career opportunities for some time. However, this apprenticeship has provided me with an opportunity to tie together earning and learning on my doorstep, and also lays strong foundations for a prosperous, long term career.

"I am now looking forward to gaining invaluable experience in the work place at Llanidloes during this third year of my apprenticeship."

RWE Innogy UK has an operating portfolio of seven onshore and two offshore wind farms in Wales, all of which will become the workplace once the apprentices become fully trained turbine technicians.

Offshore, Gwynt y Môr will provide a further significant opportunity, once it enters full operation, while proposed onshore wind farm developments at Taff Ely, Brechfa Forest West and Mynydd y Gwair, all in South Wales, could offer further security for the future.

Editor's notes:

For more information about the latest vacancies, go to our website:
http://www.rwe.com/web/cms/en/472412/rwe-innogy/career/current-job-offers/

About the Wind Turbine Apprenticeship Programme:

- RWE Innogy UK worked closely with Grŵp Llandrillo Menai, North Wales, as well as representatives from EU Skills and the National Skills Academy for Power to design the course and bring these apprentice opportunities to Wales.
- The framework for the apprenticeship scheme has been developed by Energy and Utility Skills Group.
- The apprenticeship programme will be carried out in collaboration with Llandrillo College at its specialist multi-million pound Renewable Energy Centre at the Rhos-on-Sea Campus in Conwy.
- The course lasts three years. Each intake will complete an initial year's general engineering training, before turning their focus to wind turbine engineering and technology in their second year, at Grŵp Llandrillo Menai's specialist Renewable Energy Centre at the Rhos-on-Sea Campus in Conwy.
- Once the course is complete, the apprentices will support wind farm operations onshore and offshore, across Wales.
- Successful apprentices will gain BTEc & EAL qualifications in year one; City and Guilds and further EAL units in year two and an NVQ in the wind place in the third year.

Contact

RWE Innogy UK
[redacted]

About RWE Innogy UK
RWE Innogy UK is the UK subsidiary of RWE Innogy and one of the UK's leading renewable energy developers and operators. We are committed to developing and operating renewable energy projects to produce sustainable electricity.

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RWE Innogy UK is a sister company to RWE npower, a leading UK energy company with around 5.4 million customer accounts.

RWE Innogy is fully committed to growth in renewable energy across Europe and the UK continues to play a significant role.

For further information about RWE Innogy UK and RWE Innogy visit www.rweinnogy.com/uk or www.rweinnogy.com

Press Release

Wind turbine apprentice call marks Global Wind Day

Wales, 16 June 2014

Release date: immediate.

Prospective engineers in Mid Wales are being encouraged to bid for a place on RWE Innogy UK's Wind Turbine Apprentice scheme, as the company celebrates Global Wind Day today (16 June 2014).

With just a week to go before applications close, prospective applicants from Mid Wales are being encouraged to consider an opportunity to work with RWE Innogy UK in the onshore wind sector and based locally.

The call comes from Newtown apprentice Tom Woodward, who was among the first intake of six apprentices taken on in 2012 and has returned to Mid Wales to help mark Global Wind Day.

In just a few weeks' time, Tom completes two years of academic study undertaken at Llandrillo College, North Wales, and will return home to Mid Wales where he will undertake the third year of his apprenticeship, working in the field out of RWE Innogy UK's Llanidloes Wind Turbine Service Centre.

He said: *"I have always had an interest in engineering but never had the relevant qualifications to undertake a job in this sector.*

"Mid Wales is an area that has unfortunately suffered from limited career opportunities for some time. However, this apprenticeship has provided me with an opportunity to tie together earning and learning on my doorstep, and also lays strong foundations for a prosperous, long term career.

"I am now looking forward to gaining invaluable experience in the work place at Llanidloes during this third year of my apprenticeship."

This is the third year RWE Innogy UK has been able to run the highly popular Apprenticeship programme and expects two of five more apprentice placements to be based in Llanidloes. They will join five further apprentices alongside the current team of 26, supporting the company's fleet of onshore wind farms both already in operation and coming through the planning process.

RWE's Chris Griffiths who has lead the development of the scheme said: "*These*

roles are directly aligned to the building and operating of onshore wind farms. Skills learned are specific to the sector, and also highly transferrable, making our apprentices very highly sought after and qualified."

The Apprentice Scheme, was first launched by RWE Innogy UK in partnership with Grŵp Llandrillo Menai, becoming the first apprenticeship of its kind in Wales and was fully supported at the official opening in December 2012 by First Minister Carwyn Jones.

RWE Innogy UK has an operating portfolio of seven onshore and two offshore wind farms in Wales, all of which will become the workplace once the apprentices become fully trained turbine technicians.

Offshore, Gwynt y Môr will provide a further significant opportunity, once it enters full operation, while proposed onshore wind farm developments at Carnedd Wen, Neuadd Goch Bank in Mid Wales could offer further security for the future.

Editor's notes:

For more information about Global Wind Day, go to the website: www.**globalwindday**.org

For more information about the latest apprenticeship vacancies, **go to our website: http://www.rwe.com/web/cms/en/472412/rwe-innogy/career/current-job-offers/**

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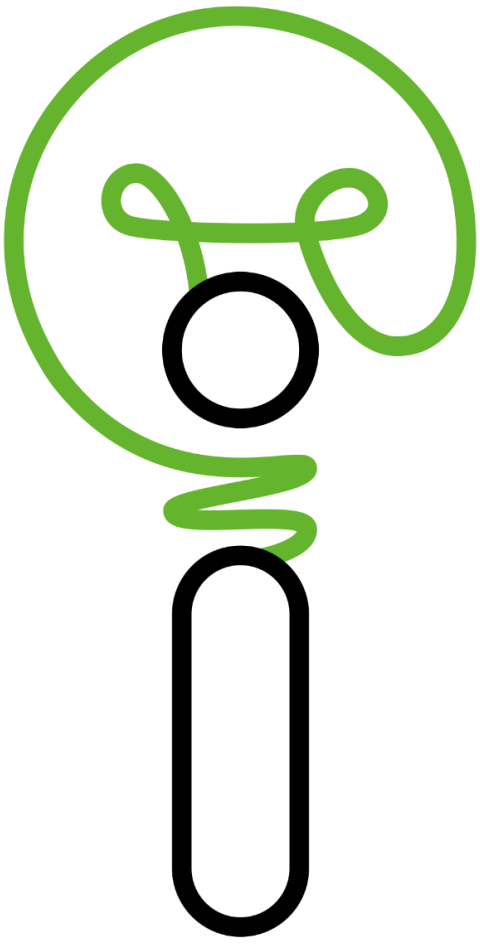
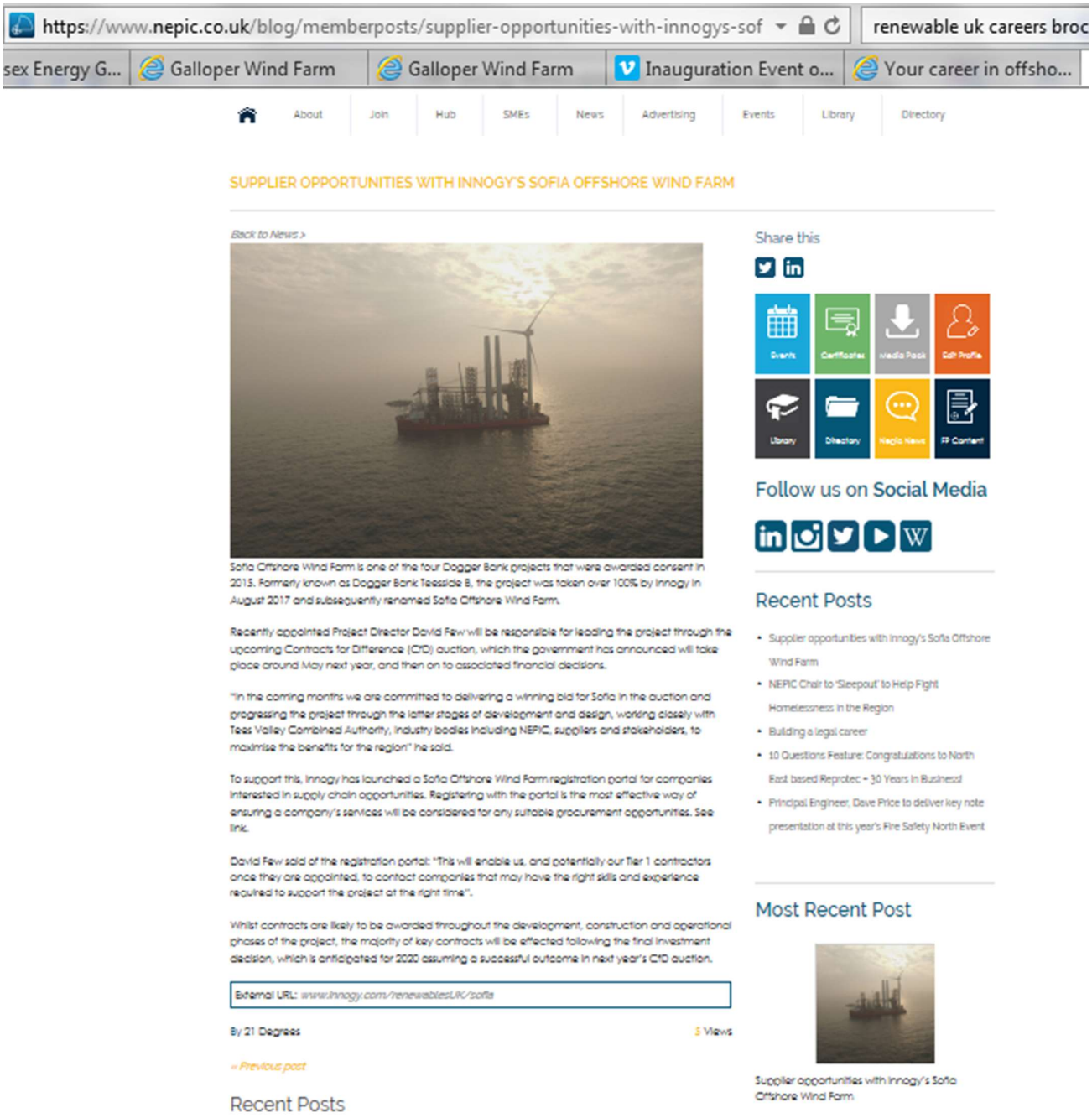
EV028

NEPIC promotions

Not confidential





https://www.nepic.co.uk/blog/memberposts/supplier-opportunities-with-innogys-sofia-offshore-wind-farm/

From: Vincent, Sue
Sent: 04 December 2018 14:57
To: 'Louise Gwynne-Jones'
Cc: Joanne Rout; Victoria Pepper
Subject: RE: Sofia feature in NEPIC quarterly magazine

Hi Louise

Many thanks for this and yes very happy to see the profile issue is all sorted.

Our key aim is to try to encourage businesses/companies who perhaps haven't traditionally considered themselves offshore wind businesses to look at the sector for new opportunities (as well as let those businesses who are in offshore wind know more about the opportunities with Sofia/innogy).

So given that we would be very happy to present at the June conference and detail the supply chain opportunities. As soon as you have more information please send it through.

Likewise a supplier day could work well – ideally later in the year when the outcome of the Contracts for Difference auction is known and we have some of our Tier 1 suppliers in place. Many of the contracts will be via our Tier 1 suppliers so it would be most effective to include them at the time.

I am happy to send an article for the Directory – please just let me know when you have deadlines and also words/space requirement.

Finally, this year's Awards and Dinner are a little too early for us but next year could be better timing.

I will be away in Australia for Christmas from next week until January but a call later in January/early February would work well – I'll make a note to get in touch with you when I am back.

All the best
Sue

From: Louise Gwynne-Jones [
Sent: 29 November 2018 12:32
To: Vincent, Sue
Cc: Joanne Rout; Victoria Pepper
Subject: Re: Sofia feature in NEPIC quarterly magazine

Hi Sue

Lovely to hear from you. I hope you are well?

Good to see the issue with your profile has been resolved. Again, apologies for this.

In terms of future promotions, you are welcome to share as many updates and news items via members hub, and we will automatically share these with the network through the fortnightly news bulletin and our social platforms.

Equally, if you're seeking further exposure, we have commercial packages available including e-newsletter advertising, solas emails to the network and event sponsorship. If these are of interest I can provide more information.

https://www.nepic.co.uk/digital-advertising/

I'd also like to invite Innogy to speak at our annual members conference in June to outline the project and the supply chain opportunities it offers. I'm also keen to discuss a potential Innogy supplier day with you and an article within Nepic's upcoming annual Directory publication that will be launched at the conference in June.

https://www.nepic.co.uk/mtm/about-meet-the-members/

https://www.nepic.co.uk/wp-content/themes/itchyrobot/directory/1IXAGHKHUSMP7LCK-Non-Member-2018.pdf

There are no costs associated with speaking slots at the conference or when invited to support the Directory publication with editorial content. We do however have conference sponsorship available and advertising options within the Directory. Your company profile will automatically be featured as a member benefit.

And finally, can I highlight the upcoming NEPIC annual awards dinner. As a member you are more that welcome to submit entries, take a table at the dinner or look at one of the final award sponsorship packages we have available.

https://www.nepic.co.uk/annual-awards/award-categories/

I hope this helps and perhaps we can arrange a call in the coming week to run through the options.

I look forward to hearing from you.

With best wishes ..... Louise

Kind regards,
Louise

On 29 Nov 2018, at 10:13, "sue.vincent wrote:

Hi Louise

I'm conscious the year is flying by and I wanted to follow up our conversation from September about member profiling and the possibility of a Sofia feature in your quarterly magazine. I know you were changing the comms offering and see we do now have an online profile and I did add a feature on 16 October (NOTE: this is still credited to a different company, 21 Degrees so it would be great if that could be corrected?).

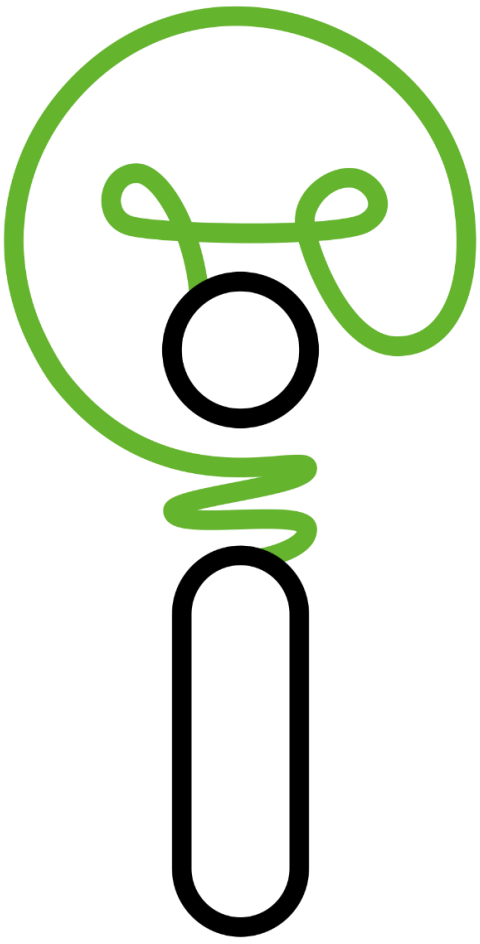
However perhaps we could discuss other opportunities – involvement with an event(s), feature, newsletter etc – it would be good to know what else is available?

Many thanks
Sue

EV037

European offshore wind industry joint declaration on cost reduction

Not confidential



03 June 2016

Offshore wind can reduce costs to below €80/MWh by 2025

Dear Sir,

Ahead of the Energy Council on 6 June, we write to underline the crucial role that offshore wind can play in the European energy system and the commitment the wind energy industry is making to reduce costs.

With the right build out and regulatory framework the industry is confident that it can achieve cost levels below €80/MWh for projects reaching final investment decision in 2025, including the costs of connecting to the grid. This means offshore wind will be fully competitive with new conventional power generation within a decade. The offshore wind industry is on track to achieve its cost reduction ambitions and will be an essential technology in Europe's energy security and decarbonisation objectives.

As an industry, the joint and individual actions taken across the value chain will deliver lasting and tangible advancements that will establish offshore wind as an indispensable source of power generation. We recognise our responsibility to deliver industry and consumers with sustainable, secure and affordable energy. We look to policymakers to match this level of ambition.

This commitment is only possible with a stable, long-term market for renewables in Europe. If the offshore industry is to realise its cost reduction goals, a strong pipeline of projects is needed to scale up offshore deployment and identify efficiencies in the supply chain. Following a record year for installations in 2015, a serious question mark remains over the post-2020 environment for offshore wind. Policymakers at European and national level must set out clear visions for the industry after 2020 with robust laws that give investors peace of mind and visibility well into the future.

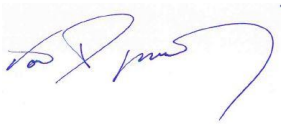
In addition to stable regulation, regional cooperation on offshore wind between European countries is of vital importance, particularly in the northern seas. Closer regional cooperation, e.g. on planning, financial and regulatory issues, would help to reduce costs and remove barriers to investment.

We understand that 10 countries in the northern seas are preparing to sign a Memorandum of Understanding and Work Programme on regional cooperation on 6 June at the Energy Council in Luxembourg. We congratulate this political will and commitment to action from the Energy Ministers concerned and Netherlands for the leadership they have shown on this under their Presidency of the EU Council.

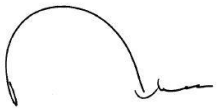
Renewables such as offshore wind are steadily displacing conventional forms of power generation. As costs come down rapidly, the wind industry continues to meet its commitments. We now urge Europe's governments to work together to ensure offshore wind can be central to the continent's energy mix in the years to come.

Signed by

Luis Alvarez Rubio
General Manager
Adwen



João Paulo Costeira
Chief Operating Officer Europe & Brazil
EDP Renewables



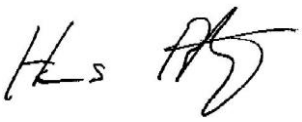
Jeroen de Haas
Chief Executive Officer
Eneco Energie

Michael Lewis
Chief Executing Officer
E.ON Climate & Renewables

Anders Søe-Jensen
President & CEO Offshore Wind
GE Renewable Energy

Xabier Viteri Solaun
Chief Executive Officer
Iberdrola Renovables

Jens Tommerup
Chief Executive Officer
MHI Vestas Offshore Wind



Hans Bünting
Chief Operating Officer Renewables
RWE Innogy

Michael Hannibal
Chief Executive Officer Offshore Wind
Siemens Wind Power

Halfdan Brustad
Vice President Renewables Offshore Wind
Statoil

Gunnar Groebler
Senior Vice President Business Area Wind,
Vattenfall

Statement from DONG Energy:

“On 26 May 2016, DONG Energy published an offering circular in connection with the initial public offering and potential listing of its shares on Nasdaq Copenhagen A/S. As of the date hereof, the offering is not completed. Due to applicable rules and regulations, DONG Energy is restricted from making certain public statements until after completion of the offering and, therefore, DONG Energy is not a co-signatory of this statement. DONG Energy remains fully committed to continue to reduce the cost of electricity in line with the rest of the industry.”

ANNEX

European Offshore Wind Industry

Joint declaration on cost reduction

Introduction

Offshore wind energy is an indispensable part of the EU's energy future landscape. A sustainable, secure and affordable energy system can only be possible by exploiting the immense energy potential that European seas hold through this technology. As Europe progresses towards a low carbon economy, offshore wind energy will play an increasingly important role for businesses and consumers.

Already today, offshore wind energy helps meeting Europe's energy and economic recovery challenges. With over 11 GW of installed capacity across 82 sites in Europe, the offshore wind industry employs 144,000 workers and is the renewable energy technology with the highest deployment rate in the last five years at a 22.7% compound annual growth rate (CAGR). The industry expects its capacity to double by 2020 reaching 24 GW and further tripling in the following decade to 2030 to 66.5 GW cumulative capacity.[1]

The success of offshore wind in Europe over the last years has attracted significant investments from worldwide investors. In the period 2010-2015 investments amounted over €46.5 bn. In 2015, €13.3 bn worth of investments were committed to offshore wind energy, or half of the total investments in wind energy in Europe. The sector expects that by 2030, investments in offshore wind will be in excess of €130 bn.[2]

Offshore wind energy represents the most important technology for Europe to remain as global leader in renewables. 90% of offshore wind turbines are installed in EU waters and companies based in Europe are the world leaders in designing, manufacturing, constructing and operating utility-scale offshore wind farms.

The industry believes that with at least 4GW of projects each year, the industry will be able continue its early success and continue to drive down its cost of energy to below €80/MWh for projects reaching final investment decision (FID) in 2025, including the cost of grid connection.

Cost of offshore wind

As a nascent technology, with large scale development only a decade old, offshore wind energy has progressed steadily in technology development and project execution. Nonetheless, the technology is still today more expensive than other generating technologies under commonly used metrics. If it is to remain as a viable option in the long-term, its energy production costs must be reduced.

[1] WindEurope (2015), Wind Energy Scenarios for 2030
[2] WindEurope (2015), Wind Energy Scenarios for 2030

2020 cost reduction pathway

Since 2012, there have been multiple studies examining where cost reductions could be made in offshore wind to 2020[3]. The studies conclude that cost reductions are possible in a range of 32-46% in levelised cost of energy (LCoE).

The common drivers of cost reduction identified in these studies include: increasing energy yield, reducing the cost of finance and general technological and supply chain optimisation.

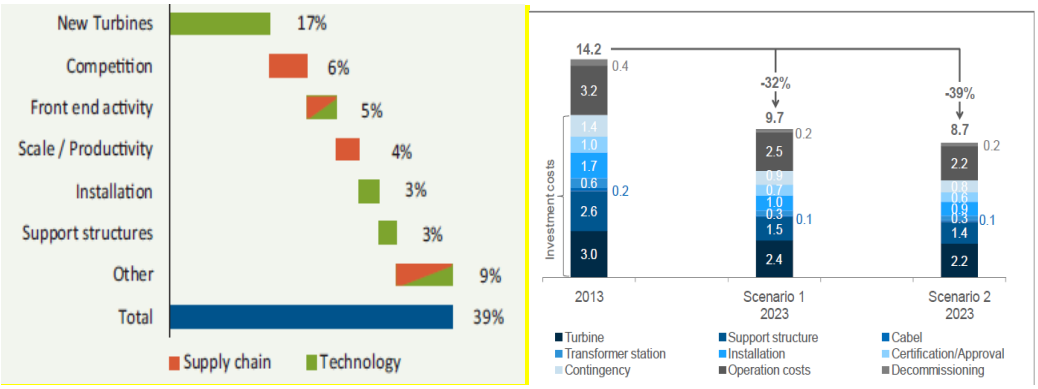


FIGURE 1 - COST REDUCTION PATHWAYS STUDIES - SOURCES: CROWN STATE (2012) LEFT, PROGNOS FICHTNER (2013) RIGHT

In parallel to these studies, industry players set an objective of achieving €100/MWh LCoE for projects reaching FID in 2020[4].

In turn, industry and government in the UK set up a framework for achieving these cost reductions. The Offshore Wind Program Board (OWPB) was established based on successful models used in other sectors to implement recommendations to drive cost reductions and support UK's offshore wind sector by assessing and tackling risks, barriers and implementing solutions in partnership. Similar schemes were then replicated in other major offshore wind markets across Europe.

Cost reductions have been already achieved. Thanks to collaborative partnerships between policy makers and industry but most importantly thanks to the initial economies of scale from the volume of projects committed by European countries to 2020.

Moreover, the industry is now on track to exceed its 2020 cost reduction target across Europe, in addition to the UK government's own target equivalent to €123/MWh by FID2020, which are inclusive of grid costs. UK Projects completed at the beginning of this decade had an average costs equivalent

[3] The Crown Estate (2012) – Offshore wind cost reduction pathways study, Prognos Fichtner (2013) – Cost reduction potentials of offshore wind power in Germany, TKI Wind op Zee (2015) – Cost reduction options for offshore wind in the Netherlands FID 2010-2020.
[4] DONG Energy (2013), Vattenfall (2014), Siemens (2013)

to €168/MWh[5]. These costs were maintained for the next four to five years until the next round of projects reaching FID showed a significant decrease in costs reaching around €149/MWh. These figures were well ahead of the trajectory laid out by the Crown Estate's costs reduction pathway, which forecast reductions to take place only as from 2017. Already by 2015 however, projects reaching FID were awarded strike prices equivalent to €141/MWh, which would put project costs at below the price obtained.

Looking forwards, UK strike prices for FIDs in 2017 will have a tender price ceiling of £105/MWh, equivalent to €129/MWh (Figure 2, blue line), and a ceiling equivalent to €105/MWh by FID 2023. The Dutch government has also put forward tender price trajectory ending at €100/MWh for FID 2020 (Figure 2, red line), that means project costs would therefore exceed industry's own targets.

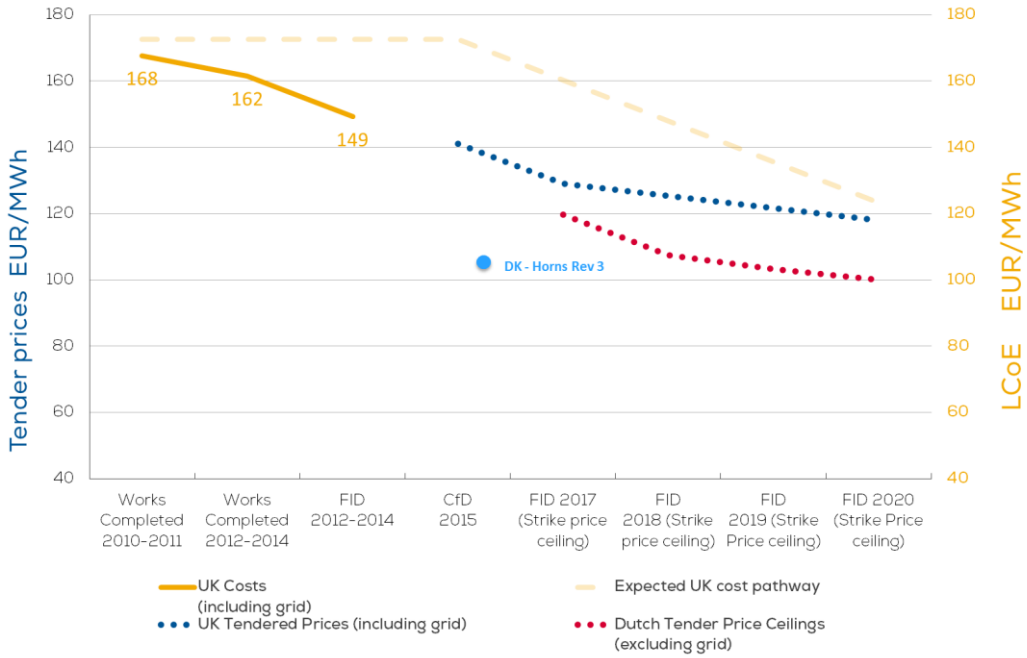


FIGURE 2 – UK AND DUTCH TENDER PRICES AGAINST UK LEVELISED COST PATHWAY. ALL LEVELISED COSTS ARE REPRESENTED IN YELLOW, AND TENDERED PRICES IN BLUE AND RED - SOURCES: ORE CATAPULT/WINDEUROPE

Observed cost reductions are not limited to UK projects; The 400 MW Horns Rev 3 offshore wind farm (DK) tendered at a price equivalent of €103/MWh in 2015 (Figure 2, light blue dot), adding further to indications on where costs will lie in the future.

Based on these trends, there is a strong indication that European projects reaching FID in 2020 would tender at below both GBP and €100/MWh.

[5] ORE Catapult (2015), Cost reduction monitoring framework – Summary report to the Offshore Wind Program Board.

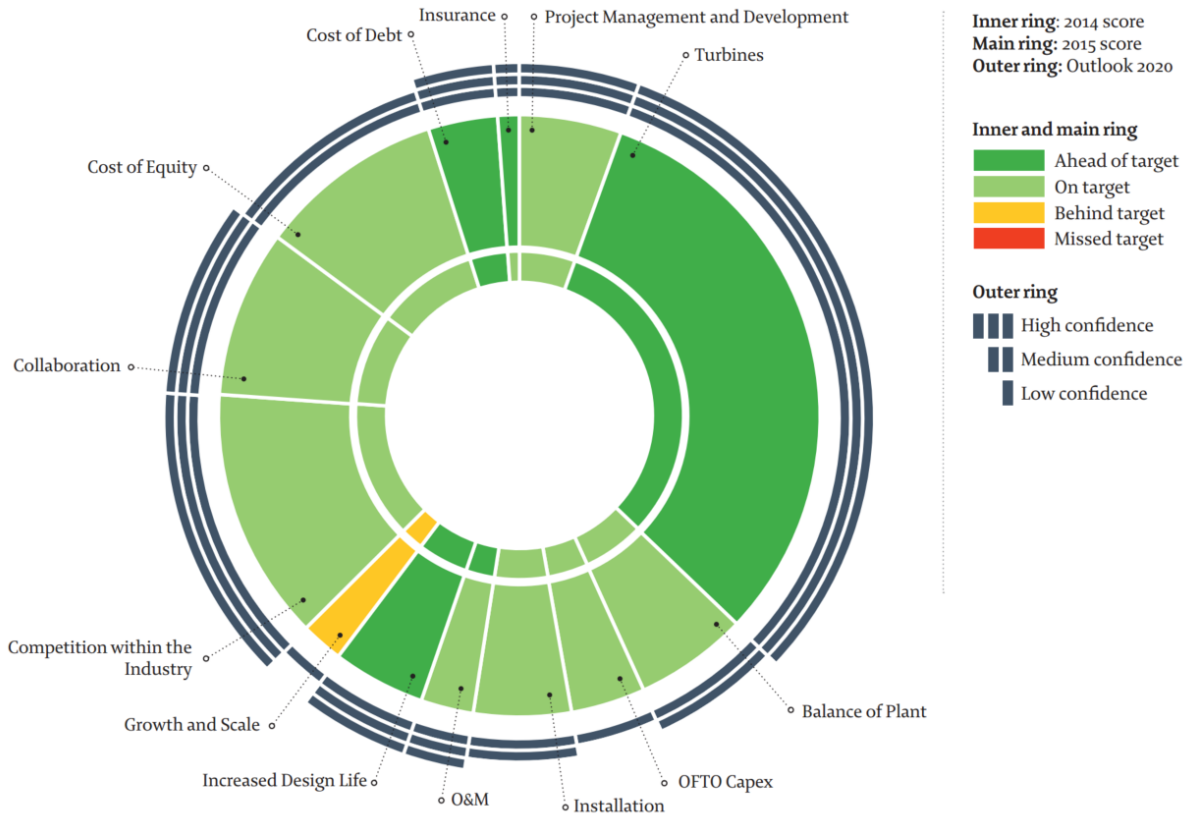


FIGURE 3 - UK CRMF 2015 RESULTS - SOURCE: ORE CATAPULT

In addition to tendered price observations, there is strong evidence that the 2020 cost reduction target can be overtaken based on the latest results of the cost reduction monitoring framework (CRMF), published in 2015. The industry is on target or ahead of the target in almost all areas identified for cost reduction. Only one exception remains behind the target, which is growth and scale of the market. (Yellow slice in pie chart of Figure 3)

Post-2020 cost reduction objectives

The offshore wind energy industry is committed to continue with the pace of cost reduction in the post-2020 period. The level of readiness and scalability exists. With the right volume of projects the industry is confident it can deliver a cost of energy below €80/MWh by 2025, including grid connection costs. This would mean that the industry is on track to achieve cost competitiveness against new conventional power plants by the year 2025.

Based on the observed trends to 2020, the future trajectory, using UK tendered unadjusted prices[6], suggests that projects reaching FID by 2023 will display a 52% reduction in prices compared to 2011. Additional observations reveal a learning rate in offshore wind of 20% in the years 2011-2015[7].

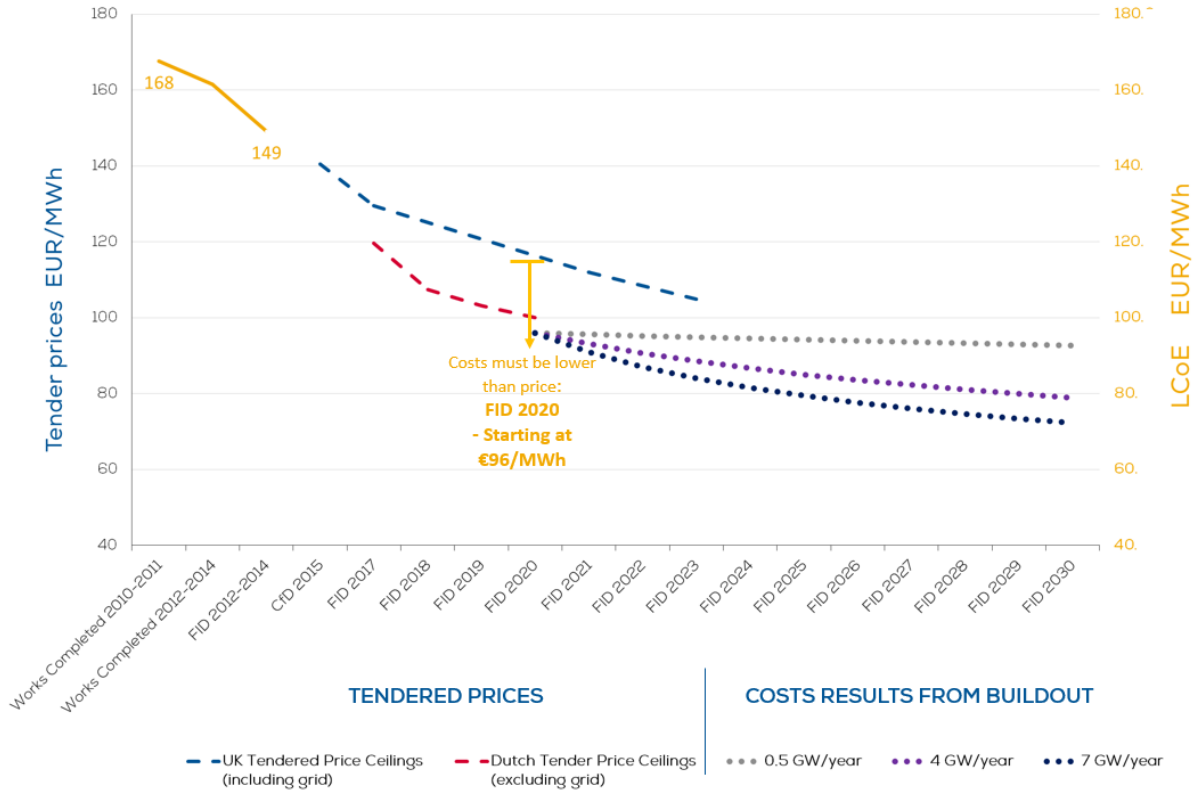


FIGURE 4 - EU OFFSHORE WIND ENERGY TENDER PRICE PROJECTION - SOURCE: WINDEUROPE

With this learning rate, and with expectations on projects coming in at below €100/MWh in FID 2020, a projection can be provided. Figure 4 shows this projection alongside the current tender price trajectories with three possible buildout scenarios from 0.5GW/yr to 7GW/yr. Learning effects do not materialise with low volumes as a lack of investment subsequently occurs that would allow for innovations to be brought to market, as well as only marginal savings gained through learning by doing.

Effect of volumes deployment on costs

Applying a 20% learning rate to costs across Europe allows to estimate the relation between costs and volume for projects expected post-2020 (Figure 5). The following section presents this projection, where projects in FID 2020 have a cost of €96/MWh as a starting point.

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[6] All prices are expressed as 2012 Euros, i.e. no inflation or currency exchange differentials adjusted.

[7] A Learning Rate of X% would suggest that for each doubling of capacity, prices would reduce by Y%. Learning rate is given by the formula: $Price_f = Price_p * (InstalledCapacity_f / InstalledCapacity_p)^{\ln(1-LR)/\ln 2}$

Where f = future, p = present, LR = Learning Rate

Under this scenario, it is estimated that projects reaching FID by 2025, could reach €85/MWh in a 4 GW/year volume scenario from 2020 onwards (solid green line in Figure 5). This would yield a cumulative capacity of 66.5 GW of offshore wind power by 2030. In a 7 GW/year scenario, enough to build 98 GW of cumulative capacity, the LCoE of projects reaching FID by 2025 could be just below €80/MWh (€79/MWh).

A cost estimation for projects reaching FID by 2030 is also shown in Figure 5 (solid blue line).

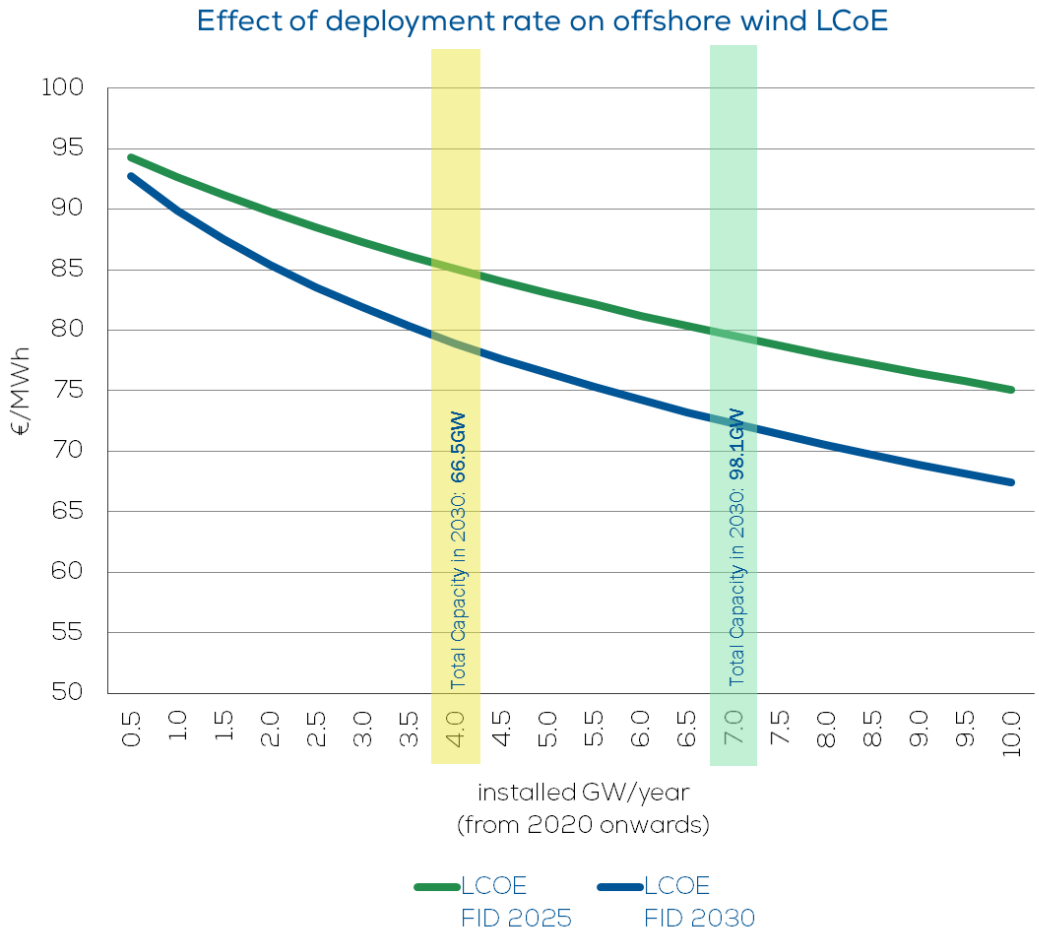

FIGURE 5 - EFFECT OF DEPLOYMENT RATE ON COSTS IN OFFSHORE WIND - SOURCE: WINDEUROPE

Crucially, cost reductions are only possible with a stable, long-term market for renewables in Europe. If the offshore industry is to realise its cost reduction ambitions, a strong pipeline of projects is needed to scale up offshore deployment and identify efficiencies in the supply chain. Following a record year for installations in 2015, a serious question mark remains over the post-2020 environment for offshore wind.

WindEurope 2030 scenarios set out 66-98 GW of installed offshore wind capacity by 2030.

Building 66 GW by 2030 would mean a rate of deployment of 4 GW/year in the period 2020-2030, while 98 GW would signify 7 GW/year. Currently visibility on projects that can be constructed beyond 2020 are limited, and clarity will need to be provided, particularly in the first half of the decade given the lead times required to bring projects to fruition.

Grid costs

Grid infrastructure development is treated differently in Member States. The cost reduction estimations above include grid connection costs. These are based on the most stringent case, where project developers face full costs for developing the grid connection to shore. It should be noted though, that whilst grid costs are factored into the levelised costs as capital expenditure, these costs are quickly recovered under a UK system where transmission assets are sold to be operated and maintained by the Offshore Transmission Owner (OFTO) upon commissioning of the site.

Distance from shore

The general trend across Europe is that offshore wind energy projects are being built farther from shore in order to take advantage of more constant wind resources. This trend is assumed to continue in the coming decade with areas consented at 100+ km from shore. As distances increase, so do costs for constructing and maintaining power plant operations. The cost reduction estimations to 2025 and 2030 are in the context of 2015 project distances from shore of around 40-50 km. However, there is a general view that costs increases of building father from shore are offset by the additional generation that these assets deliver.

Support /revenue stabilisation mechanisms

Offshore wind energy is a fast growing industry but is still in development. In the near future, offshore wind power will require guaranteed stable sources of revenue via national support schemes or revenue stabilisation mechanisms such as subsidy free CfDs. The assumptions made for estimating the cost reduction objectives post-2020 factor in projects receiving support for 15 years (over typically 25 years project life). This support is generally secured ahead of FID.