Minutes of meeting

Date: 30th June 2017 **Location:** KTN Business Development Centre, Upper St, London

Project: Offshore Wind Innovation Hub ("OWIH") Time: 10:00

Subject: OWIH Technical Advisory Group ("TAG")

Attendance:

- Ray Thompson (RT) – Siemens Gamesa Renewable Energy
- Steve Wyatt (SW) – ORE Catapult
- Rajnish Sharma (RS) – Statoil
- Rachel Beedie (RB) - Scottish Power Renewables
- Ross Beattie (RB) - Vattenfall
- Ian Taylor (IT) - GeoSea/DEME
- James Young (JY) – JDR Cables
- Chris Poyner (CP) – ABB
- Olivia Burke (OB) - Carbon Trust / OWA
- Jørn Scharling Holm (JSH) – Dong Energy (by phone)
- Daniel Santa Cruz (DSC) - Scottish Power Renewables (by phone)

Apologies:

- Alan Hannah (AH) - Scottish Power Renewables
- Alan MacLeay (AM) - Seaway Heavy Lifting
- Chris Spruce (CS) – MHI Vestas Offshore Wind
- Jo Chetwood (JC) – Vattenfall
- Jan Matthiesen (JM) – Carbon Trust / OWA
- Bill Leithead (BL) – Strathclyde University / SuperGen Wind Hub
- David Hÿtch (DH) – InnovateUK
- Nee-Joo Teh (NJT) - KTN

Observers

- Chris Bagley (CB) – KTN
- Jonny Flowers (JF) – ORE Catapult
- Andy Lewin (AL) – ORE Catapult
- David Wallace (DW) – ORE Catapult

Item	Notes	Action
1. Introductions, Anti-Trust	The co-chairs gave welcome to all and reminded all attendees of antitrust obligations.	
2. Review of previous minutes & actions	There were two actions from the previous meeting: 1) More granularity had been requested on the funding that has been made available to offshore wind in the UK over the last 5 years. *OUTCOME:* Additional background to the figures were circulated with meeting papers on 15th Jun 2017. - Closed 2) Request for TAG papers to be circulated two weeks in advance of the meeting. *OUTCOME:* Meeting papers circulated on 15th June 2017 for meeting on 30th June - Closed	
3. Innovation Updates		
a. Market Update	Building on the 5GW we have in the UK, by 2020 we will have another 5 GW The sector is awaiting the next CfD auction rounds. Expectation from the industry is that the strike price will be well below the £105/MW mark. Recent market auctions in Germany recently saw energy prices as essentially market rates, but noting that differences in the German and British offshore wind markets mean that prices aren't strictly comparable. However, prices are expected to come down and offshore wind is on the journey towards being the lowest cost form of energy, challenging fossil fuels and nuclear. Ministerial messages coming from Claire Perry have been very positive and Greg Clark's team at BEIS seems positive on offshore wind. Set against a background of lots of existing plant coming to end of life, there is a good case for offshore wind to continue to grow and meet an increasing amount of the UK energy demand. A question was raised on whether the TAG saw CFD auctions having any impact on stifling competition through limiting what parties can share. There is no doubt that a competitive process drives down prices, and can lead to a limited the pool of players. Therefore an important aspect to ensuring innovation continues to flourish is to open up the pipeline to allow more players and more volume to drive more innovation. However the feeling so far is that the industry has broadly got the balance right, and continuing to get this balance right is part of the mission of the Hub.	
b. Sector Deal & SIA Update	**Sector Deal** Industry is developing a 'Sector Deal' to be submitted to Government as part of the Industrial Strategy work. The Sector Deal will include both 'Asks' of Governement i.e. what actions we would like Government to take to support the industry as well as 'gives' i.e. what can the industry contribute to both generation and economic development goals. The	

	Sector Deal is being developed by OWIC on behalf of the industry and OWIC going forward will be co-chaired by Richard Harrington MP, minister at BEIS. The Sector Deal wants to be ambitious and look beyond evolutionary growth, looking at ambitions for 30GW+, deeper sites, floating wind, etc. and establish what that looks like. The key for success in a Sector Deal is to show net benefit for the UK and often what resonates with BEIS is where the Sector Deals show that industry has skin in the game. BEIS asked for the Innovation Hub and the TAG to be convened showing that the offshore wind sector is on the BEIS radar. DIT is also engaged in how the sector is going to respond to Sector Deal, particularly given the desire for UK content. DIT is joining up with BEIS. DIT minister Greg Hands MP attended the last Offshore Wind Industry Council meeting along with Jesse Norman MP from BEIS. There was discussion on the balance between driving down costs and maintaining pressure on UK content. There was a view that there will always need to be a support process for projects in the early stage in order to give price security to projects and act as a market stabiliser.. It was also noted that there is a greater focus from government on jobs and headcount rather than just UK content in terms of GBP. **Science and Innovation Audit:** The SIA programme asks local regions to conduct an audit of industrial areas and map the specific innovation and academic strengths of those regions. It considers factors such as supply chain strength and strength in intellectual property ("IP") to assess how strong the UK is in sectors such as offshore wind. The draft report has been published and ORE Catapult has now picked up that draft to refine it and to incorporate the market knowledge of ORE Catapult. Highlights from the draft report are that the independent assessment suggests that the Academic strength is good, but IP strength is less strong. It is suspected that this may be an artefact of how some of the IP classifications are made and the relatively early stage of the industry. It also highlights that the UK is historically strong in composites manufacturing and identifies where there may be potential for UK supply chain to contribute. The TAG also commented that jobs and skills are a really important area and highlighted the need to ensure that the sector has the skills necessary to maintain UK content and jobs. This requires the design approach for wind farms to ensure that there is balance of resourcing needs. The challenge of retaining the necessary skills within the sector was also highlighted. Further discussion focused on standards within the sector and ensuring that the UK offshore wind sector continues to ensure quality and consistency during design, delivery, and operation.	
c. Innovation Approach and	RT gave an update on the approach to innovation from Siemens Gamesa Renewable Energy ("SGRE"), and a brief	

Activities	overview of the activities that are ongoing. Topics covered included: • Challenges related to the increasing size of Wind Turbine Generators ("WTGs"). • Integrating a higher level of wind into the power network. For example, wind farms not just selling MWh to the grid, but selling services to the grid (frequency response, load balancing, etc.) • Identifying how human factors can be addressed to improve the safety and productivity of technicians. Following on from the final topic listed above, there was discussion among the TAG members about human factors being increasingly important, particularly for wind farms further from shore. For example, a key lesson from previous projects has been that internet access and comms were critical. The TAG highlighted that this could be an innovation priority as comms on all wind farms becomes critical to welfare as well as safety (e.g. being able to use mobile phones while offshore). There was broad agreement that this slot had been useful for sharing approaches and stimulating discussion on areas for innovation. It was proposed to make this a standing item on the agenda and rotating the presenter each meeting. Statoil volunteered to present at the next meeting in October.	**Action:** Statoil to present at the next meeting on their innovation approach and activities
4. Roadmapping		
a. Roadmapping Process & Structure	The Hub presented on the process and structure of the innovation roadmapping and reiterated that the mission of the Hub was to bring together a common view of where the need for innovation is. The data for populating the roadmap will combine existing knowledge with industry engagement. Where there are existing roadmaps and industry groups (such as the OWA) the Hub will incorporate the learnings and data from these. The metrics the roadmap will look to identify include LCOE, UK content, the case for intervention, and the size of the market. The roadmap will also reflect various timeframes and identify likely dates. It was highlighted that the big technologies here are the things the Hub wants to test with the TAG. BEIS have given strong steer that this should also include potential disruptive technologies.	
b. Discussion	The TAG were asked for feedback, for example on the possibility of being subsidy free by 2025 as this is the kind of thing that would get the Government's attention. There was a general feeling that "subsidy free" was the wrong terminology, but there was an ambition was to be the lowest cost commercial scale form of generation. There was also a comment that the LCOE curves of offshore wind and onshore may converge or even cross as it is unlikely onshore wind farms will be able to double in size/capacity in the same way as offshore wind farms could. Discussion over the dispatchability target. This is the	**Action:** Hub to review the wording around "subsidy free" in the Innovation Roadmap **Action:** Hub to take the dispatchability

	percentage rate of "firm" generation from offshore wind, and could reflect the combination of storage or downstream technology. Currently National Grid views 10% of offshore wind capacity as "firm". Additionally there was discussion on whether the roadmapping should consider a more global perspective on the success indicators and feed into elements such as UK exports. It would also be interesting to find out if there is similar work ongoing in China regarding roadmapping. The innovation roadmap identifies the area of "integrated OSW & storage/flexibility". A comment from the TAG highlighted that this could potentially also consider the integration of solar PV and other complimentary technologies.	target and flesh out what this number should be.
c. O&M Roadmap Example	The Hub has used O&M a case study for developing the first roadmap, and this has given the format/framework for building the other roadmaps. It was highlighted that the Hub has focussed on O&M initially but the ambition is for TAG members to think about it could apply to their specialties. There was a question over how Health, Safety, and Environment ("HSE") issues were reflected in the innovation roadmap structure. The Hub responded that purely HSE innovations would sit within the Windfarm Lifecycle category of the roadmap, but that there would also inevitably be HSE topics with the other categories as they are integral in many design aspects of turbines, electrical infrastructure and substructures. An overview was given on the roadmapping process undertaken for creating the O&M roadmap. This identified the broad topics within a "post-it note" breakdown. From here innovation requirements and potential solutions were identified within each breakdown area and then mapped these onto a timeline. Within the roadmap the challenge is to look at each and assess the case for intervention (i.e. would it happen anyway?).	
d. Discussion & Next Steps	The need to ensure that the roadmap doesn't "pick winners" was highlighted, and for the Hub to put its effort into defining the requirements rather than too closely defining the solutions. General agreement that the proposed methodology seems strong however. The Hub will attempt to address this by ensuring that multiple possible solutions are reflected in the roadmap, including potential disruptive technologies or placeholders for other potential solutions. The TAG also commented on the need to engage with other industries to bring in innovation. The Hub responded that this is part of the mission of the OWiX pilot programme. A question was raised on how the hub will map other existing projects. The response was that the plan for the Hub is not to say how things are going to happen, but to map what is happening to avoid duplication and highlight where there is a need to do further work. The primary purpose of the Technical Advisory Group is to provide industry's input into the sector's technical innovation objectives and priorities, so we would now like to request feedback from TAG members on this O&M roadmap.	**Action:** TAG members to review the O&M roadmap and provide feedback
5. OWiX Update	Pilot programme launched with one Operator and one OEM. Four challenges developed, two of which were similar in terms	

	of blade inspection. The programme is intended to be cross-sector and highlighted the importance of making it understandable to other sectors, and to support new entrants in understanding the OSW vocabulary.	
6. Convening	Update provided on the convening activates of the Hub. Following the convening activities undertaken by the Hub for the InnovateUK Infrastructure Systems Round 2 funding call, the Hub has sought feedback from the consortia it supported. In total there were 15 offshore wind bids submitted to the Infrastructure Systems Round 2 call, of which 7 were identified by the convening activities of the Hub. A further two involved ORE Catapult but were independent of the Hub. InnovateUK have now announced Round 3 of this funding call and the Hub will undertake the same convening role. This will allow the Hub to refine its convening support based on the feedback from the Round 2 activities. The Hub is also working with InnovateUK to try and ensure that when unsuccessful applicants are notified by InnovateUK they are encouraged to get in touch with the Hub. The relationship between the Hub and InnovateUK allows this feedback loop to exist, and ensures the Hub can help unsuccessful bidders understand how they could refine their bids in future, or direct them to more appropriate funding calls.	
7. AOB	The Hub website was launched on 11th May 2017. This includes a section on the TAG where members are identified and minutes are published. The TAG was made aware that the Hub will shortly be sending out a request to TAG members for headshots and 50 word biographies in order to publish these on the TAG section of the website. The next TAG meeting will be held on Thursday 5th October in London.	**Action:** Hub to send out request to TAG members for headshots and brief biographies
8. Close	The co-chairs thanks the attendees for their time.	