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Submitted via email: FutureFrameworkpublicconsultation@decc.gov.ie

Draft Offshore Renewable Energy Future Framework Policy Statement

Dear Sir/Madam,

WindGrid welcomes the opportunity to respond and provide feedback to DECC's draft ORE Future Framework Policy Statement.

WindGrid is a subsidiary of international electricity transmission utility Elia Group, the 5th largest transmission utility in Europe. WindGrid develops, builds, owns, and operates offshore transmission infrastructure and leverages Elia Group's decades of experience in offshore transmission infrastructure gained through its subsidiaries Elia and 50Hertz, transmission system owners and operators in Belgium and Germany, respectively. Elia Group's experience covers HVAC and HVDC technologies with a total of circa 5GWs of offshore transmission infrastructure in operation, and circa 15GW of offshore transmission projects at various development stages across the North and Baltic Seas.

In relation to the consultation, we consider a number of key points worthy of mention and have stated theses directly below, after which targeted consultation questions are addressed.

According to DECC's draft policy statement, hybrid interconnectors have the potential to offer significant benefits to the energy system including operational synergies, lower capital costs by sharing infrastructure, integrated planning process, and reduced environmental impacts. Enhancing security of supply could be explicitly added to this list of benefits but, either way, it is reassuring to learn that DECC is acutely aware of the significant benefits that hybrid interconnectors have to offer. According to Afry's analysis, 2.65GWs of additional interconnectivity by 2040 is justified. Indeed, WindGrid's own analysis shows that two hybrid interconnectors (one from Ireland to GB, and the other from Ireland-France) both increase the social economic welfare benefits in Ireland and deliver a positive CBA. Moreover, two additional hybrid interconnector projects will ensure that the EU's 15% interconnection target is met. These two hybrid interconnectors, each rated at 1.4GWs, are capable of connecting more than 15% of Ireland's targeted 20GWs of OWF generation by 2040 – and from a risk mitigation perspective offers an

alternative means of delivery, noting that Eirgrid alone will be responsible for delivering all (non-hybrid interconnector) offshore transmission assets.

With respect to the statement within the draft policy statement which asserts that interconnections require "significant construction of both onshore and offshore grid capabilities", WindGrid would like to draw attention on the fact that onshore reinforcements will be inevitable to achieve the State targets, and many of them have already been planned (e.g., Greater Dublin where a 400kV North-South ring is already being planned by Eirgrid/ESB Networks). Also, with respect to interconnections and hybrid interconnections, WindGrid would advise DECC to consider the overall costs of the project against intended consumers benefits. For example, interconnections are expected beyond 2030 to significantly reduce the curtailment of renewable energy resources in Ireland. Also hybrid interconnectors would effectively combine a simple interconnector and a radial connection to an offshore windfarm, effectively reducing the offshore transmission assets, and very likely the onshore construction work (in particular cable landfall and onshore substations work).

In relation to DMAP evaluation and selection, the hybrid interconnectors offer attractive OWF development opportunities further offshore than would ordinarily be the case i.e., locations not constrained by the proximity of the offshore transmission network e.g., near-shore non-radial connections, bootstraps etc.

Regarding delivery timelines, we would recommend to consider a 3-year window (including necessary contingencies) for the commissioning of multiple OWF projects connecting to a hybrid interconnector (see discussion below). In this respect, a 2037 target commissioning date for the hybrid interconnector is required, to ensure that the inter-dependent and multiple OWF projects are commissioned by 2040. Working back from 2037 reveals two critical timelines; these are bulleted directly below and elaborated upon further down in our response:

- Timely implementation of regulatory framework and market design for hybrid interconnectors
- Timely submission of project into the TYNDP2026 that ensures PCI/PMI status is reached by 2027 – essential for de-risking project e.g., streamlined EIA, attracting finance etc.

WindGrid eagerly awaits the soon-to-be published OBZ policy framework analysis, and the OTS (in Q2 2024) within which it is hoped that an integrated and time-lined roadmap will elaborate on all the relevant and interdependent processes, ownerships (i.e., DECC, CRU, Eirgrid etc.), and deliverables/milestones up to 2040 e.g., Future Framework, Industrial Strategy, Grid Infrastructure Plan, 2040 Vision, OTS, Private Wires, DMAPs (including offshore transmission), Pilot Alignment Framework, consultations, tender rounds, TYNDP2026 submissions etc.

Consultation Questions

Section 1

a. Has this section adequately identified the general key priorities for ORE delivery in Ireland? Are there additional priorities that should be integrated into the holistic, plan-led approach?

Within sub-section 2.1 v., "determining a route to market", "environmental assessments", and "project investment" are among the 'delivery of targets' identified by DECC as priorities but are not teased out in sufficient detail. In the case of route-to-market, we highlight below the urgency with which an appropriate regulatory framework and market design for hybrid interconnectors need to be implemented. Projects labelled as PCI/PMI will benefit from faster and more efficient permitting procedures and will pave the way to securing financing under favourable conditions. Obtaining PCI/PMI status also significantly de-risks the project and, in so doing, enables a significant increase in development budget to be committed, and time-critical and cost-intensive activities to progress. In this respect, we highlight below the criticality of PCI/PMI status being obtained in 2027 – to enable hybrid interconnectors to be commissioned by 2037, and subsequent inter-dependent multiple OWF projects to be commissioned by 2040.

In the context of a hybrid interconnector and interconnected OWF generation, route-to-market necessarily relates to both the hybrid interconnector developer and the OWF developer.

In the case of the hybrid interconnector, a regulatory framework and market design will need to be designed and implemented by CRU/DECC as a matter of urgency. Relevantly, the list of actions contained within the draft policy document includes the establishment of OBZ frameworks (delivery Q4 2024), and the establishment of a pilot framework (delivery by end of 2025). In the case of the OBZ frameworks, WindGrid looks forward to reviewing the soon-to-be published policy framework analysis report. In the meantime, the time criticality of implementing an appropriate regulatory framework and market design cannot be overstated. In the UK, Ofgem is currently evaluating two hybrid (non-standard) interconnector projects which were submitted to Ofgem for consideration as 'pilot' projects back in 2022. In parallel with the project (CBA) assessments, Ofgem has been maturing the underpinning regulatory framework and market design. The target date for completing the full project assessment (FPA) and awarding hybrid/non-standard operating licenses (if successful) is late 2028. This 6-year timeline serves as a useful benchmark that DECC might want to consider.

We have stated above that a commissioned hybrid interconnector will be required by 2037 if interdependent and multiple OWF projects are themselves to be commissioned by 2040. Assuming a 6-year lead-time on capital equipment (e.g., HVDC converters, HVDC cable etc.), an at-risk (pre-FID) commitment to secure capacity slots will be required in 2031 and will rely on both the key project consent (KPC) milestone being achieved and a route-to-market being secured i.e., award of hybrid interconnector operating license. Working back from the 2031 commitment date, it is evident that (based on Ofgem's benchmarked 6-years) a 'pilot' hybrid interconnector project needs to be initiated in 2025, underpinned by a maturing regulatory framework and market design.

Route-to-market for OWF generators is discussed further below in answer "1 b."

Since 2013, the TEN-E framework has helped identify cross-border infrastructure needs, select Projects of Common Interest ('PCI'), secure political support and accelerate their implementation with streamlined permitting. Projects labelled as PCI/PMI benefit from improved regulatory treatment, faster and more efficient permitting procedures, and may be eligible for funding under the Connecting Europe Facility (CEF). The PCI status has also been instrumental in securing supportive financing conditions, as a widely recognised label that gives additional comfort to financing institutions. A key action within the EU's 'Action Plan for Grids' is for Member States to promote the development of new priority projects.

Working back from the 2037 target commissioning date reveals that timely submission (Q3 2025) into the TYNDP2026 is required to ensure that PCI/PMI status is reached in late 2027 – an essential project de-risking milestone at which point a significant ramp-up in development budget can be justified, enabling cost-intensive environmental surveys to commence (e.g., benthic, geophysical etc.). Even with the necessary upfront desktop studies already undertaken (e.g., cable route optioneering, scoping, land referencing, survey license applications etc.), offshore surveys will not be possible until 2028 which translates broadly to all the key project consents (KPC) being achieved sometime around 2031. Only at this point (assuming that the hybrid interconnector operating license too has been obtained) will the project be able to secure its long-lead (6-years) capital equipment, pointing to a commissioning date of 2038, leaving just 2-years for the interdependent and multiple OWF projects to be commissioned – if the 2040 target is to be met.

b. Has each key priority been adequately described and considered all relevant components?

Nothing to add here.

c. How best should the 2 GW of non-grid limited offshore wind capacity be procured?

Nothing to add here.

d. What are your views on the design parameters for the successor scheme to ORESS, what else should / should not be considered?

The 2-way CfDs have been used successfully across Europe and beyond to promote offshore windfarm development, providing the required level of revenue certainty for project owners, financiers, and the supply chain alike. In this respect, preserving the 2-way CfD mechanism within the ORESS successor scheme makes a lot of sense. In the case of CfDs designed for OWF generators connecting to a hybrid interconnector, consideration needs to be given to the attending peculiarities e.g., OBZ design with respect to revenue (price and volume) certainty, and transmission use-of-system costs allocation, given the dual purpose of the hybrid interconnector assets.

CfDs can be either production-based or non-production based. Production-based CfDs take the actual injection of the supported generator as reference volume. It is the most common metric for existing support schemes, although they retain inherent important market distortions, and

are not easily scaled. Non-production based CfDs use a counterfactual (deemed injection), reflecting the potential production as a reference volume and in this respect makes dispatch independent of the CfD payments, thereby avoiding distorted bidding behaviour. In addition, a non-production based CfD design is more scalable towards a market with a high share of RES. One such non-production design is the Capability-based CfD, where the maximum possible production of the individual asset is used – reflecting the active power output under normal conditions i.e., without any curtailment. Because it is calibrated to the specific conditions of the asset, it scores well in terms of risk coverage for the generator, which should lower costs associated to risk in the strike price tender.

As a useful reference point, an Ofgem-led consultation on CfDs is currently open in the UK and dedicates a section to OWF generators connecting to hybrid interconnectors.

e. What frameworks and / or supports are required for alternate routes to market such as cPPAs, Power-to-X projects, interconnector-hybrid projects and export projects?

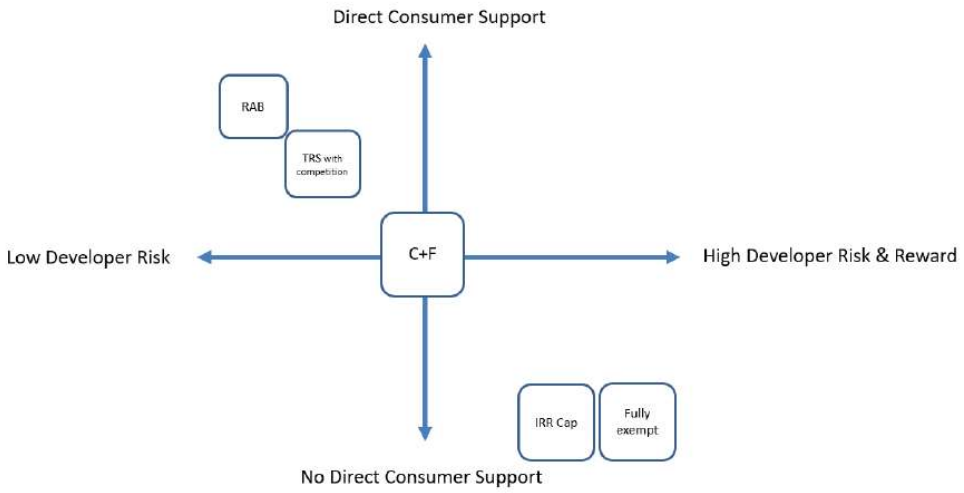
In the case of the hybrid interconnector, a regulatory and market framework will need to be designed and implemented by CRU/DECC, and with a degree of urgency as discussed above.

Historically, regulated point-to-point interconnector assets have received revenues either based a cost of asset investment return (return on asset base, or RAB), or based on a 'cap and floor' design which ensures that the amount of congestion revenue is sufficient to support the project's business case and attract the required investment – Greenlink Interconnector being a case in point.

However, hybrid interconnectors deviate from point-to-point interconnectors in terms of both scale (includes an offshore converter station) and complexity (relies on multiple OWF projects exporting power through the hybrid interconnector), both of which serve to increase the risk profile of a hybrid interconnector project. In this respect, the level of certainty around revenue needs to increase accordingly, to reflect the increased risk. The RAB regulatory regime is relatively simple to administer and almost guarantees the amount of revenue which makes it attractive to developers and financiers – and to the supply chain which relies on certainty when reserving over-subscribed production slots. Another regulatory approach which seeks to reflect the inherent risks associated with a hybrid interconnector is a *narrow* 'cap and floor' which increases the 'floor', reduces the 'cap', and tends towards a risk profile resembling the RAB.

In late 2022, DESNZ/Ofgem published a consultation, in the UK, on the regulatory framework relating to offshore hybrid interconnectors. The consultation considered (among other regulatory themes), a number of possible regulated revenue options for hybrid interconnection assets, including RAB and a *narrow* cap and floor mechanism.

The table below usefully illustrates the project risk profile and associated level of consumer support based on the type of regulatory regime.



Given the significant investment required for the development and construction of offshore transmission infrastructure, as well as the operational complexity of delivery such infrastructure, we would advise for DECC to consider several delivery models for hybrid interconnectors, as part of its plan-led approach. Competing for the right to develop, build and own hybrid interconnectors will unleash economies and efficiencies that consumers will benefit from. Also, a Public-Private Partnership (PPP) could be another relevant framework so that both a Public entity and Private strategic partner combine expertise to deliver such infrastructures.

f. What additional capacities and responsibilities should be held by industry in the context of the plan-led approach?

Nothing to add here.

g. How can Government facilitate a more comprehensive and streamlined engagement process with developers to ensure national ORE targets are delivered?

WindGrid would welcome a DECC-led developer forum dedicated to hybrid interconnectors with a focus on removing barriers-to-deployment. It is expected that both CRU and Eirgrid will be key participants. It is anticipated that a number of working groups/workstreams will be constituted to focus on key themes e.g., regulatory framework, market design, licensing, operability etc. WindGrid is happy to be provide active support to this initiative in whatever form it takes.

Section 2

a. What grid infrastructure should be of particular focus in facilitating the build-out of capacity to support ORE generation targets?

According to DECC's draft policy statement, hybrid interconnectors have the potential to offer significant benefits to the energy system including operational synergies, lower capital costs by sharing infrastructure, integrated planning process, and reduced environmental impacts. According to Afry's analysis, 2.65GWs of additional interconnectivity by 2040 is justified. Indeed, WindGrid's own analysis shows that two hybrid interconnectors (one from Ireland to GB, and the other from Ireland-France) both increase the social economic welfare benefits in Ireland and deliver positive CBAs. Moreover, two additional hybrid interconnector projects will ensure that the EU interconnection target of 15% is met.

These two hybrid interconnectors, each rated at 1.4GWs, are capable of connecting more than 15% of Ireland's targeted 20GWs of OWF generation by 2040 – and from a risk mitigation perspective offers an alternative means of delivery, noting that Eirgrid alone will be responsible for delivering all (non-hybrid interconnector) offshore transmission assets.
But if hybrid interconnectors are to play any part in helping to meet the 20GWs OWF target by 2040 target, there are time-critical actions that need to be addressed.

Regarding delivery timelines, we would recommend to consider a 3-year window (including necessary contingencies) for the commissioning of multiple OWF projects connecting to a hybrid interconnector. Indeed, factors determining the extent to which commissioning dates will stagger over time include: the number of OWF projects/project owners, block sizes (typically determined by available developable seabed, economies of scale, foundation technology etc.), planning consent delays, equipment lead-times, construction delays (e.g., weather downtime etc). In this respect, it is reasonable to assume a 3-year commissioning window for multiple OWF projects connecting to a single hybrid interconnector, and this translates to a 2037 target commissioning date for a hybrid interconnector project – if all the inter-dependent OWF projects are to be commissioned by 2040.

Working back from this 2037 target date reveals that implementation of a regulatory framework and market design, and submission into the TYNDP2026 are time-critical – as discussed elsewhere in our response.

b. In relation to National Security / Department of Defence interaction with ORE development, are there any issues you would like to highlight?

Nothing to add here.

Section 4

a. What structures, measures, and interventions can the state and state agencies implement to assist in the development of a long-term, sustainable skills and workforce pipeline? Provide any recommendations on what the State can do to promote careers in ORE across a range of educational backgrounds and movement from other sectors.

Nothing to add here.

b. Are you aware of initiatives in other jurisdictions or at a European level that would be relevant to Ireland's ambition of building a sustainable skills and workforce pipeline for ORE?

Nothing to add here.

c. To what extent should an emphasis be place on multipurpose sites for ORE delivery, including the colocation of devices? What Government structures should be developed to encourage and facilitate progress in this aspect?

Locating onshore point of interconnection (POI) for a hybrid interconnector close to a demand centre with enhanced transmission grid resilience would trigger less grid reinforcements (e.g., Greater Dublin where a 400kV North-South ring is already being planned by Eirgrid/ESB Networks). Moreover, opportunities to co-locate green hydrogen production facilities could further reduce reliance on transmission grid infrastructure.

Situating green hydrogen production facilities in close proximity to the hybrid interconnector onshore POI could make sense and needs to be considered as part of the plan-led approach when identifying suitable onshore POIs (both hybrid interconnectors and non-radial/bootstrap topologies) and green hydrogen production locations. Hydrogen production has the potential to create demand centres of critical mass – either as greenfield sites or in addition to existing industrial sites – whilst providing POI opportunities with minimal transmission grid reinforcement requirements e.g., sites in close proximity to existing 220kV overhead line into which new teed-in substation can connect, for the purpose of connecting an onshore HVDC converter station and the proximate green hydrogen production facilities.

d. How can Government ensure policy is kept in line with evolving technological innovation and developments in ORE devices? What structures and government procedures should be implemented to future-proof the ORE planning process and account for technological shifts?

Nothing to add here.

Kind regards

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[redacted] - WindGrid