



PUBLIC CONSULTATION TASK FORCE PRINCESS ELISABETH ZONE

COMMENTS STORM

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Question	Page	Excerpt	Comment/question
1	16-17	"The VSP contract falls under a specific tendering process which will mostly likely evolve over time."	VSP contract: this seems rather vague: → Can ELIA provide further information regarding the current and "most likely" future requirements, modalities of the tendering process, expected remuneration, ... for VSP contracts offered for the PEZ projects. Several current offshore projects in operation are already providing VSP services. As such, they might have access to additional information not available to all potential PEZ bidders. Furthermore, it is crucial that any requirement with respect to VSP is provided upfront in order to allow each interested party to doublecheck with potential suppliers on solutions; and to take (if relevant) the estimated remuneration for VSP services into account in the project's business plan. Exactly the same is applicable to aFRR services.
2	28		With the future PEI acting as an Offshore Energy Hub, how is the already existing NEMO link integrated in this system? Does the operating strategy of the parallel connection NEMO - NAUTILUS have an impact on possible congestion problems in the network? If yes, on what basis is it decided how to operate these connections?
3	29	The Public Consultation makes reference to a flexible connection access right to be implemented in the meantime of the completion of two major infrastructure projects: "Ventilus" and "Boucle du Hainaut." We understand from the Public Consultation that Elia is willing to connect offshore projects as from realization of Ventilus. "A maximum of 700 MW of offshore wind capacity (= phase I) can already be connected to the electricity system after the realization of Ventilus." We understand from the Public Consultation that that 700 MW tranche, the projects will be given a flexible access right "for as long as Boucle du Hainaut is not realized yet."	In Storm's view, in principle it can be included in the price models that full return on investment only occurs after phase II, in 2030 – when the development of Boucle du Hainaut is expected to be completed, as long however as this is done in a very predictable manner. As Elia only provides an estimated completion date, the exact duration during which the access right will be "flexible" is not entirely clear, which creates some legal uncertainty. To limit such uncertainty, we would suggest that Elia, when limiting access rights: (i) makes the period of "flexible access" as specific as possible.

			<p>(ii) includes in its guidance documents as well as in its individual grid connection agreement the different phases (e.g., phase 1 from Ventilus completion to Boucle du Hainaut completion and phase 2 as of Boucle du Hainaut completion).</p> <p>(iii) limits its “flexible access” to those phases where absolutely necessary; to the proportion objectively and technically required. If e.g. after Ventilus 70% of the access capacity can already be fixed but 30% should remain variable, we would propose that grid connection agreements reflect that split, and not simply make the entire project subject to 100% flexible access.</p> <p>(iv) also sets very clearly as of which phase the injection rights are 100% fixed again.</p>
		<p>The Public Consultation contains limited modalities on flexible access/ Elia’s constraints to curtail projects. We understand however from the Public Consultation that “a ‘flex file’ will be drafted and sent to the CREG for approval, ahead of the launch of the 1st OWF tender.”</p>	<p>We recommend that Elia provides a thorough specification of all “flexible access modalities,” ensuring they are detailed and objective. It is crucial that projects are informed as early as possible in the grid access process. Elia’s practices should align with statutory requirements, and the selection of flexible access must be justified using objective and technically sound criteria. For each project, Elia’s technical reports should outline the conditions for granting flexible access, including:</p> <ul style="list-style-type: none"> (i) The planned moment for commissioning necessary network reinforcements outlined in the development plan. (ii) The division between permanently available capacity and flexible capacity. (iii) An estimate of the average and total duration per year during which flexible capacity can be reduced. <p>We request Elia to consider the level of certainty required by project-financed projects. Specifically, Elia should quantify, whenever possible, the frequency and timing of imposed curtailments, providing timelines and quantifications for the likely annual curtailed energy amount. If exact quantification is not feasible,</p>

			<p>modalities should be established regarding the objective thresholds justifying a curtailment (e.g., a production value exceeding which may trigger curtailments).</p> <p>On the mentioned “flex file”, Elia should notify CREG well in advance of all these modalities, certainly before connection agreements are signed to avoid uncertainties on the status of signed connection agreements if the flex file is not sent in time.</p> <p>Additionally, we urge Elia to incorporate all modalities for flexible access directly and in a precise manner into the grid connection agreement, as mandated by Articles 169 and 170 of the 22 April 2019 Royal Decree establishing technical regulations for the management of and access to the electricity transmission network. This is particularly important as such contracts often play a pivotal role in due diligence processes for funding.</p> <p>We believe that demonstrating to banks and investors that curtailment modalities are contractually defined is more persuasive than relying solely on Elia's discretionary application.</p>
4	31		What is the power capacity of the 6 220 kV AC cables? Can the full power of the OWF still be produced if one of the 220 kV AC cables is out of service? Can the full power of the OWF still be produced if the DC-system is out of service?
5	31		Can all 6 220 kV cables still be used if one of the 90 MVAR reactors is out of service?
6	31		What is the power rating of the HVDC step-up transformers?
7	32		The 400 MVA 66/220 kV transformer per 350 MW OWF block is a single point of failure in the system. Please confirm there is no spare transformer on the island. Is there space on the island to install an extra transformer when required?
8	33	“The connection of the two ends of inter array cables as shown in illustrative figure 20 will remain feasible for power supply for auxiliary services. However, Elia emphasises that in this configuration connecting two inter array cables on the busbar 66 kV is strictly prohibited”	It seems that it is only allowed to have looped infield strings for auxiliary power purposes. What about maintaining full load of 1 string connection during lower wind conditions (e.g., due to 1 inter-array cable failure), as long as the WTGs are curtailed to 87.5 MW of injection in 1 string entry? On p.34 even that is not required: “No maximum injection or maximum installed capacity is imposed per

			66kV string", only per 350MW block (and which cannot exceed 380/400MVA)? Please clarify.
9	41		Please confirm if the watertight cable transits through the secondary wave wall are to be installed by the OWF developer or ELIA?
10	41		Cable crossing are as much as possible avoided in the land area / drainage buffer zone. What measures will be taken for cable crossings which are unavoidable? Seems to be the case with (future) DC interconnection cables.
11	41		Which constraints apply to be able to work in the drainage buffer zone? Is space available to drive with a mobile crane?
12	41		Can Elia provide information/provisions regarding fixing of de-armoured cables in the designated route by means of cable cleats?
13	42		What is the height of the cable cellar underneath the AC substations? Is there a universal cable support system provided by ELIA or is it up to the OWF developer to design this?
14	55		What are the applicable power quality requirements on the 66 kV busbar?
15	55		Is there a limit on the maximal inrush current of the transformers inside the wind turbines?
16	66		Can we get insight in the study how it was concluded to choose the new voltage boundaries on 95% and 105% instead of 90% and 110%? What assumptions were taken into account?
17	78	The torque-based control of the SSTD results in active power variations which causes forced oscillations in the electrical system in the frequency range of 0.1 – 0.3 Hz.	Further onwards on p.79 this range is extended from 0.1-2.0 Hz. Why is the range 0.3-2.0 Hz also taken along as a restriction? Does it furthermore mean that if the resonance frequency of the WTG's are outside of this range (below 0.1Hz or above 0.3 or 2.0Hz) , there would be no specific requirements from ELIA and the WTG's can excite the active tower damping without limitations (hence active power oscillations to be allowed outside of these ranges)? p.79: "frequency ranges as specified in table 2 and voltage ranges as specified in table 10" these 2 tables are not provided in the PDF. Please provide.
18	101		What are the criteria for model validation? What accuracy is required? Specific criteria are needed?

19	111,112 and 115	<p>The Public Consultation examines what the ideal setting for the PEZ would be, including bidding zones, pricing mechanisms and market design. One of Elia’s key points of attention is the fact that post-Brexit capacity on the UK border, market participants have to “separately buy and nominate cross border capacity in order to exchange energy between the UK and Europe”. To solve this, Elia mentions that there should be optimisation reachable through “a return of the UK to the European single implicit price coupling, the application of an Offshore Bidding Zone and the rollout of Advanced Hybrid Coupling.” There seems to be other variables as well. The Public Consultation stresses that “multiple scenarios are possible” which depend on “the exact go-live date of the Nautilus and TritonLink interconnectors” and “the feasibility to operate the Princess Elisabeth Zone as single node (coupling the offshore wind farms connected to the AC and DC side in the Princess Elisabeth Island)” and “the policy choice of a return of the UK to the European single implicit price coupling” as well as “technological developments enabling a meshing of HVDC interconnectors (DC circuit breaker).” The multiple points raised within the report denote an in-depth diligence by Elia in the multiple configurations that can occur in the PEZ and what is optimal for investors. Unfortunately, most of the above falls outside Elia’s control.</p>	<p>Based on the scenarios set out in the Public Consultation, Storm generally does not object to a mechanism of Offshore Bidding Zone and implicit price coupling as this indeed seems an efficient and open market-based system.</p> <p>However, we understand that Elia’s preference is still not fully implemented and heavily depends on policy choices (including from a non-EU actor, which so we understand only undertook very limited legislative or regulatory steps).</p> <p>If as a consequence of such policy choices, Elia’s preference is not followed and a different model is opted for (e.g., the Home Market model, retaining standard hybrid coupling, etc.) we would recommend foreseeing as a minimum sufficient compensation for windfarm developers in case of Elia’s forecasting errors leading to projects not being able to inject electricity on the Belgian market. Projects should not bear the costs for any such forecasting errors.</p>
20	125		<p>Available Active Power” or “AAP”: We wonder if the TSO will rely blindly on the AAP “calculated” by the SCADA system of the WTG supplier of the bid’s winner. What about more exotic suppliers with whom ELIA has no experience yet? AAP could be over or underestimated. How is this checked?</p>
22	147 - 148	<p>The Public Consultation states that the technical capabilities to deliver the mitigation measures will be “imposed by Elia through the connection requirements” linked to the tenders for offshore wind concessions, and that the operational</p>	<p>While Storm acknowledges the necessity of mitigation measures for storms and ramping events and values Elia’s provision of information on the design principles, it would appreciate additional details on how these measures will be enforced by Elia and the resultant impact on connection requirements. For legal certainty, it</p>

		procedures themselves are “subject to regulatory approval and might also be subject to system evolutions towards 2029 - 2030.”	would be beneficial for Elia to offer an overview of how it intends to incorporate these mitigation measures into their connection requirements, potentially contingent on regulatory approval and/or changes.
23	148 to 150	We understand that in addition to mitigation measures for storms and ramps, Elia also puts forward a "preventive cap," involving a real-time injection limit.	Storm favours maximal injection of the produced electricity but also understands that measures for storms and ramps are necessary. In any event, Storm emphasizes the importance of providing advance publication of the precise limit to be imposed, allowing bidders to factor this into their considerations. The “preventive cap” should thus be published in a very precise manner. Any injection limit should be minimized to what is strictly necessary for system adequacy and safety reasons. This approach would enable the market to autonomously determine when electricity is injected or withheld in all other circumstances. Such approach would also best fit with the “market first approach” advocated by Elia on page 212 of the Consultation.
24	149	In its report, Elia states that, under the selected subsidy mechanisms (a capability-based contract-for-difference complemented with the possibility of a power purchasing agreement), no financial compensation or limit on the amount of activation of the mitigation measures is recommended. This decision appears to be based on Elia's belief that the impact of the mitigation measures on the business case of the wind farms is anticipated to be limited. Additionally, Elia argues that allocating the costs to market players responsible for the system security risk and the activation of mitigation measures is equitable. Lastly, Elia contends that this approach preserves the right incentives for market parties to balance.	Storm contends that relying solely on the expectation that the "effect of the mitigation measures" will be limited offers insufficient legal certainty for project-financed wind projects, particularly for lenders and investors in such projects. In this regard, introducing some form of limit on the activation of mitigation measures would provide justified assurance. If an outright limit is deemed unacceptable, it might be worth considering compensation for the wind farms if a specified threshold is surpassed, while still allowing the activation of such mitigation measures.
25	188		Is aFRR and/or mFRR participation mandatory by PEZ 1, or optional? Please clarify.
26	212	HWS / HWRT: “until 31m/s” as clarified on p.213 this relates to 10min avg. values. “These Deep HWS curves are based on storm shut down technologies as they are already installed in the latest of the commissioned offshore wind power plants in Belgium. Based	We do not fully agree with this statement. One of the recent wind farms has a WTG shut down at 28 m/s 10 min avg. Furthermore: for structural integrity, WTG's can shut down during lower 10min avg intervals when high wind gusts occur. To be clarified by ELIA that this is allowed. No restrictions were imposed on smaller time intervals.

		on discussions with turbine manufacturers and inputs received from the Technical University of Denmark, these technologies are expected to be a standard feature for offshore wind turbines. Furthermore, no fundamental remarks were received from stakeholders when discussing the assumptions in April 2022 within the Task Force.”.	
27			<p>General requests:</p> <ul style="list-style-type: none"> • ELIA to provide asap a complete set of grid code compliance documents that can be back-to-back included in the Employer Requirements of the WTG contract. • ELIA to provide a generic logical diagram for all forms of interactions between the wind park controller and the TSO.