Simon Ludlam
Partner

Ofgem
10 South Colonnade
Canary Wharf
London E14 4PU

stakeholders@ofgem.gov.uk

26 July 2021

Interconnector policy review: Working Paper 2 – Socio-economic modelling

Dear IC Policy Review Team,

Thank you for giving us the opportunity to provide comments on the WP2 consultation.

Etchea Energy Partners is an independent firm providing management and consulting services to clients operating in the energy sector including interconnector projects.

Question 1: Do you agree with the approach we have taken to workstream 2?

We are broadly in agreement with Ofgem's approach. We note that Ofgem has expanded its approach by considering a broader set of studies including the 2021 Network Options Assessment (NOA), the Ten Year Network Development Plan (TYNDP) and consequently reduced its reliance on AFRY's Report.

Question 2: What are your views on the scenarios, assumptions and methodology that AFRY has used to model notional future interconnectors and the impact of cross-border interconnector flows?

We welcome Ofgem's adoption of the Net Zero Scenario as an appropriate backdrop to measure GB's need for future interconnection with its neighbours. At 3.1.2 Development approach, the AFRY Report states "*For the purpose of this review, we have developed a bespoke scenario that is based on recent publicly stated ambitions for decarbonising the electricity system in all modelled countries.*" We recognise

that the inputs for each modelled country, based on its own net zero scenario, have been subject to lengthy consultation in their respective markets. As part of this consultation, Ofgem has provided supporting AFRY Data books which provides further insight into the AFRY report. We consider the underlying assumptions have some similarities with other market forecasters, however it is not clear how or why NGESO FES and TYNDP 2020 have been brought together to create a single set of coherent scenarios. It is not possible for the reader to replicate the calculations undertaken by AFRY given the opaque adjustments made to reconcile the two differing sources.

Establishing the Baseline

At 3.2.2 Assumptions for GB interconnection & baseline, the AFRY Report describes the rationale for a baseline of "*the assumed interconnectors to be in place before 2030 across all scenarios, includes all existing projects, those under construction and those that were granted a cap and floor".* Recent history has shown that interconnector projects can be delayed for significant periods of time. Exhibit 3.2 contains a list of projects that may or may not all become operational by 2025/30. The inclusion of projects in Exhibit 3.2 provides no certainty that an individual project will be realised. A less prescriptive and more flexible approach to the number of development projects across each border may be required to ensure interconnector capacity is met, similar to the cluster approach adopted by the EU for PCIs. The baseline may be better represented by those projects in operation, in construction and a cluster of projects in development on each border. That being said, the analysis serves the purpose of identifying those borders requiring further interconnection.

IRR as a metric for determining further interconnector projects

The AFRY Report is a little skinny on its rationale for using an IRR approach as a mechanism to determine additional interconnector capacity. Footnote 17 in the Report provides a little color, "*Investors in interconnector projects are assumed to require a return greater than 10%. As the cap & floor regime could potentially lower that figure, for the step-wise approach, we considered all projects with an IRR of greater than or equal to 7%".* A clear description and definition of return and IRR would be helpful to understand the analysis and in particular if the IRR is levered or unlevered, project or equity. The threshold IRR/return levels are provided with no supporting evidence for their application but are critical to the analysis and its conclusions. The reader is unable to ascertain if a small movement in the threshold IRR level would change materially the additional capacity in 2025 and 2030; a sensitivity analysis as an exhibit would have been helpful to readers.

We are broadly in agreement with Ofgem's view of AFRY's Report indicating a further need for interconnection based on SEW. Before coming to a definitive conclusion we consider the work from WS3 needs to be incorporated into the SEW calculation to give a fuller picture of the benefits of additional interconnector capacity. We expect the inclusion of the following additional components of value to be incorporated in the market modelling to determine the quantum of further GB interconnection:

Stochastic Revenues
Stochastic interconnector revenues are not included in AFRY's modelling and this ignores an important and growing component of revenues as intermittency increases through the further integration of RES. Our analysis on the SEM border indicates this is likely to become a material component of interconnector revenues in the post 2025 period.

Revenues from Ancillary Services
The AFRY Report does not include ancillary services in its analysis. The rapid increase in the proportion of non-synchronous power on networks is creating further demand for ancillary services

to manage RES integration and we anticipate these services will be a material share of interconnector revenues in the future.

Capacity Market Revenues

The AFRY Report notes *"that we assume no capacity market revenues for any of the assessed links. In fact, going forward, interconnectors are not expected to be able to directly access capacity markets under European legislation."* Now that there is clarity around the implementation of EU requirements on the participation of foreign capacities in the GB capacity market, future modelling should include Capacity Market Revenues.

In addition, we note the European Commission, in its assessment of PCIs, places monetised value on the following:

Contribution to decarbonisation

Societal benefit due to CO_2 variation (monetised value) based on the difference between the CO_2 societal cost and the CO_2 price used in the calculation of the socio-economic welfare benefit.

Security of supply - adequacy

SoS adequacy characterises the project's impact on the ability of a power system to provide an adequate supply of electricity to meet demand over an extended period. Variability of climatic effects on demand and renewable energy sources production is taken into account.

Security of supply - Reduction of necessary reserve or re-dispatch power plan

This benefit applies especially for projects able to solve internal congestion. This benefit corresponds to the saved use or capacity needs of peaking units in the system due to the reduction of the maximum re-dispatch volume with and without the project.

Ofgem may want to consider if a broader set of evaluation criteria would be appropriate for determining the overall capacity need on each border. Using comparable measures of value with connecting states may lead to consistency in developing the needs case for a specific project.

Question 3: Do you agree with our view on the results of AFRY's modelling? Do you agree that this modelling supports the needs case for further interconnection?

The results set out in the consultation and the AFRY Report for the SEM border are comparable to our own analysis, indicating a requirement of in excess of 1GW of additional interconnection capacity in the 2025-2030 period. This is consistent with ENTSOE's study *Completing the map*. However, the higher levels set out in AFRY's report to 2.5GW by 2030 on SEM appear challenging without the express support of the connecting NRA and an analysis of local constraint costs. It is interesting to note that AFRY identifies the GB-IE as a commercially attractive border for future capacity but subsequently in its report models just 400MW by 2035 in its High Case.

We agree with the overall conclusion that GB will require further interconnection capacity with its neighbours.

Question 4: Is there any further information or additional studies that you think should be factored into our analysis?

As discussed above, we think the work of WS3 should be integrated into WS2.

Question 5: Do you agree with our conclusions? If not please explain why and provide supporting information if available.

We are broadly in agreement with Ofgem's conclusions and initial proposals.

We are available to discuss any of the points made above,

Sincerely

Simon Ludlam