

Meeting minutes

GB TERRE Implementation Group

Date: 21/09/2021 **Location:** Virtual
Start: 13:00 **End:** 14:00
Contact: box.balancingprogramme@nationalgrideso.com

Minutes and slides for all meetings will be published [here](#).

Participants

Attendee	Company
David Bowman (Chair)	ESO
Bernie Dolan	ESO
Tom Ireland	ESO
Noemi Szabo	ESO
Sarah Elias	AFRY
Stephen Woodhouse	AFRY
John McShane	AFRY
John Perkins	AFRY
Sebastien Sauvagnat	Acer
Murray Rennie	Brady
Natasha Davidson	CGI
Tom Edwards	Cornwall Insight
Mads Odsgaard Olesen	Danske Commodities
Ilias Varsos	ElecLink
Roger Harris	Elexon
Chris Fisher	Enegen
Chris Mook	Enegen
Kate Boon	Engie
Sabina Chaudhary	Engie
Shalini Suthasan	National Grid

Simon Baxter	National Grid
Alastair Owen	Ofgem
Paul Usher	Quorum Development
Frederic Troalen	RTE
Jo Manship	RWE
Mark Hancock	Siemens Energy

Agenda

#	Topics to be discussed	
1.	Welcome and introductions	David Bowman
2.	Plan	David Bowman
3.	Summary	Sarah Elias
4.	Methodology	John Perkins
5.	Quantitative assessment of benefits	AFRY
6.	Costs of implementing RR	AFRY
7.	Other qualitative issues	AFRY
8.	Next steps	David Bowman

Discussion and details

#	Topics to be discussed
1.	Welcome, introductions, agenda, and terms of reference <ul style="list-style-type: none"> The chair welcomed everyone to the Group and thanked them for their attendance and continued participation. The chair thanked AFRY for their work in producing the cost-benefit analysis report.
2.	Plan <ul style="list-style-type: none"> Today <ul style="list-style-type: none"> Draft findings from cost-benefit analysis Next steps <ul style="list-style-type: none"> Feedback is requested by: (note: this is different to what is presented in the slides). ESO will consider the report and publish next steps.
3.	Summary <ul style="list-style-type: none"> Modelled results indicate that the average annual benefit of a GB only product depends heavily on bidding behaviour, ranging from £4.8m if margin bidding is maintained to £26m if variable cost bidding becomes common. The addition benefit of including France is £6m with IFA1 capacity with a marginal further benefit if IFA2 was considered. The indicative costs of implementing RR in GB are estimated at £13-20m capex (upfront) and £4m opex per year. This does not include industry costs incurred by balancing service providers (BSPs) and interconnectors.

4. Methodology

- A dispatch model has been used to calculate the clearing price of RR in each half-hourly period from 2019 to 2021. This is created by taking the historic demand for RR in GB and France, constructing a merit order of RR service providers and calculating the available transmission capacity.
- For the GB-only product, two scenarios have been considered to compare against the status quo:
 - Scenario 1: GB RR - Variable cost bidding
 - Scenario 2: GB RR - Balancing Mechanism opportunity cost bidding
- Two further variants examine the benefits of cross-border RR provision with France:
 - Scenario 2+: GB plus France RR with BM opportunity cost bidding and including IFA1
 - Scenario 2++: GB plus France RR with BM opportunity cost bidding and including IFA1 and IFA2

Questions and brief answers:

- Q: How was demand for RR modelled?
- A: Using ESO data on historic actions, the actions that were "RR-like" have been considered. It was assumed that a future RR mechanism would meet the needs of those actions.
- Q: Was the ElecLink interconnector considered?
- A: No, the analysis suggests diminishing returns as more interconnection is added (see below section)

5. Quantitative assessment of benefits

- The benefit of a GB-only product depends heavily on bidding behaviour.
 - For scenario 1, benefits are in the range of £21m - £31m per year for 2019-21
 - For scenario 2, benefits are in the range of £3.8m - £5.6m per year for 2019-21
- The **additional** benefit in the GB + France scenarios is very variable by year:
 - For scenario 2+, benefits are in the range of £1.8m - £32.9m per year for 2019-21
 - For scenario 2++ benefits are in the range of £2m - £39.3m per year for 2019-21:

Questions and brief answers

- Q: If the price in GB is higher than France the interconnectors will be flowing into GB at day-ahead or month-ahead stage. This would mean that there would be no volume available for RR. How does this align with the suggested benefits?
- A: We have now made an additional restriction to limit potential cross-border contribution in times when prices in the two countries suggest the IC should have been fully importing into GB. This restriction is made to discard actions taken by NG ESO to manage RoCoF as these are not expected to be required once RoCoF issues resolved.
- Q: Why have IFA1 and IFA2 been included and not interconnectors to other countries?
- A: There are two reasons:
 - Benefits of a GB-France cross-border product were included in the original TERRE CBA, so it is important to update the benefits.
 - France is the only country that GB has interconnectors to that participates in TERRE and has a RR product. Therefore, there is the possibility of a bilateral arrangement on a RR product. (Now that GB is not in the internal energy market, bilateral arrangements are the only such way to achieve this).

6. Cost of implementing RR

- The indicative costs of implementing RR in GB are £13m (GB-only) and £20m (GB + France) in capex (upfront) and £4m (both scenarios) opex (per year).
- Interconnector and balancing service provider costs are not included in this.
- To date, the ESO has invested £18m on TERRE implementation.

Questions and brief answers

- Q: Has a net present value been calculated?
- A: Not yet, although this will be considered. It may be worth weighting the backward-looking years to account for which one is the most realistic of future looking years (if any).
- Q: Interconnectors have been predominantly importing over the last year, often at maximum flow, unless the ESO has taken actions to restrict it. Could ESO actions be skewing the benefits case because it could be overestimating the interconnector flows?
- A: This will be checked and considered. There are number of factors to consider, including whether:
 - The time of ESO actions overlaps with when RR would be needed
 - Interconnector flows are reduced pre-fault but increased post-fault
 - New ESO policies, including Frequency Risk and Control Report, and products like Dynamic Containment, reduce the number of ESO actions on interconnectors.
 - Post-meeting update: we are now including an adjustment as described above.
- Q: Could a forward-looking analysis produce a different result because interconnector and cross-border trades could become more marginal in future years, with less import into GB.
- A: Yes, as the number of interconnectors increases there could be price convergence and less import into GB, for many reasons. This would mean better availability for RR.

7. Other qualitative issues

- There are several factors that have been considered qualitatively. These are summarised below and should be considered alongside the quantitative analysis present.
- The RR product includes a pay-as-clear methodology, in contrast to the BM which is pay-as-bid.
- The ESO's reserve reform work may overlap with a future RR product.
- Whether auctions are hourly or continuous may mean a different amount of benefit is delivered.
- Non-delivery of balancing service providers and interconnectors may mean a different amount of benefit is delivered.

8. Next steps

- Feedback is requested by:
 - ESO will consider the report and publish next steps.
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Action Item Log

Action items: In progress and completed since last meeting

ID	Description	Owner	Due	Status	Date
1	Provide comments on scenarios presented, including: <ul style="list-style-type: none">• Are the scenarios credible?• Have any scenarios been missed?• Based on the scenarios, when could your organisation commit to implement?	All	27/11/2020	Closed	25/11/2020
2	Provide comments on the high-level implementations plans for Scenarios 1 and 2	All	04/12/2020	Closed	02/12/2020
3	Provide comments on implementation plans presented	All	11/12/2020	Closed	09/12/2020
4	ESO to publish open letter on group progress	ESO	23/12/2020	Closed	16/12/2020
5	Respond to ESO open letter	All	27/01/2021	Closed	16/12/2020