# TERRE and Wider Access Benefits and Costs

16th April 2018

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## Benefits for TERRE

- Reported benefits of TERRE (Public consultation document for the design of TERRE, Project Solution, 7th Mar 2016)
  - Based on historical analysis of data from France, GB, Spain, Greece, Switzerland and Italy from 2013
  - Total benefit across all six TSOs = 150m€ per annum
  - Benefit estimated for GB = 13m€ per annum

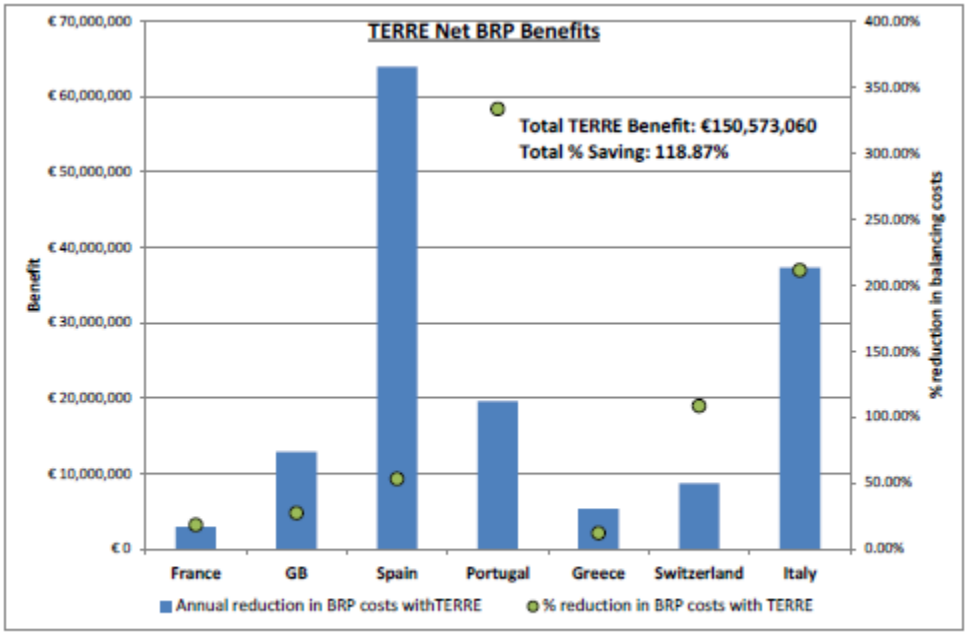


Figure 6-11: BRP Benefits of TERRE per Country

# TERRE and Wider Access Benefits and Costs

## Discussion of benefits for TERRE

- The benefit analysis for TERRE is based on 2013 data which means that for GB (and for Europe in general) it does not have any forecast of the effect of demand side (given the historic situation)
- Hence if the TERRE platform presents opportunities for Aggregators the normal economic benefits associated with great liquidity etc. should be realised and so benefits would expect to be higher

# TERRE and Wider Access Benefits and Costs

## Benefits for Wider Access

- Reported benefits of Wider Access – a number of reports have been produced and quoted
  - “Understanding the Balancing Challenge”, Imperial College and NERA, August 2012
  - “An analysis of electricity system flexibility for GB”, Carbon Trust and Imperial College, November 2016
  - “An assessment of economic value of demand side participation in the BM and evaluation of options to improve access”, Charles Rivers Associates April 2017

| | |
|---|---|
| IC and NERA, August 2012 | Savings in 2020 of £500m pa |
| Carbon Trust and IS, Nov 2016 | Cumulative to 2050 savings of £15bn to £40bn (estimated at £300m to £800m pa) |
| Charles Rivers, April 2017 | £110 to £400 pa in 2020 rising to £160m to £400m pa in 2030 |

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## Discussion of Wider Access benefits

- Benefits quoted for wider access from several sources lead to very large estimates of savings
- Each report uses a different form of analysis
- Charles Rivers Associates cautions that not all savings may be passed on to consumers
- This latter report breaks down savings into three categories
  - Capacity cost savings
  - Reduced energy costs
  - Avoidance of network reinforcements
- National Grid cannot comment on the analysis techniques undertaken by these external parties however there seems to be a consistency in the orders of magnitude being reported
- If we take the lower range of all these estimates it gives a benefit of £100m pa

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## Process to separate out National Grid costs

- At the Workgroup meeting of 21st March National Grid (via the Transmission Impact Assessment) presented its estimate for delivery of the full GC97 solution
- It was pointed out that these estimates consisted of a number of ROMS (rough order of magnitudes) from a number of suppliers covering multiple day ahead, real time and post event systems
- Our intention is to derive detailed requirements and ask suppliers to re-quote by June 2018
- The Workgroup requested that we separate out costs so as to understand how they relate to business benefit
- In the last few weeks our internal Business Analysts have been looking at this - please note that we have not had updates of ROMs from suppliers – hence these numbers are based on our understanding of suppliers assumptions after further discussions

# TERRE and Wider Access Benefits and Costs

## Cases considered

| | Features | Cost | Benefits to GB |
|---|---|---|---|
| TERRE only, with Aggregators defined over GSP groups | • No participation of secondary BMUs in Balancing Mechanism<br>• Supports all external to NG interfaces from BMUs, LIBRA and Elexon<br>• Week ahead, day ahead and within day planning tools adapted for calculating needs and probability that need not met<br>• Modification to post event reporting tools<br>• Nine systems and internal interfaces modified for change to “one to many” relationships from “one to one” relationships | £18m to £23m | > 13m€ pa |
| Wider access with Aggregators in GSP groups | • No TERRE flows<br>• Nine systems and internal interfaces modified for change to “one to many” relationships from “one to one” relationships | £17m to £21m | circa £100m pa |
| Wider access *without* GSP groups | • Not considered a viable industry option, after feedback from Aggregators | n/a | n/a |
| TERRE only, all BMUs at a single GSP | • No participation of secondary BMUs in Balancing Mechanism<br>• Supports all external to NG interfaces from BMUs, LIBRA and Elexon<br>• Week ahead, day ahead and within day planning tools adapted for calculating needs and probability that need not met<br>• Modification to post event reporting tools | £14m to £17m | 13m€ pa |
| Full solution | • Allows for extra benefits from European units | £25m to £28m | > £100m pa |