

## **Ofgem RII02 Consultation Storelectric Response**

There are a number of fundamental flaws in the RII02 proposals, namely:

1. Too short term-ist
  - ◆ Focus on consumer value is for consumers during the life of RII02, not for consumers in future years. If we'd had that focus, we'd never have built the grid in the first place.
  - ◆ New network assets often take longer than the RII02 framework period to build, so developers can't get returns on investment without using specially created financial instruments - this is distorting the market. The only way not to distort the market is to create a framework long enough for returns to be earned by normal contracts.
2. Too focused on sweating assets
  - ◆ The more we sweat the network, the less resilient it is either to shocks / failures or to supply/demand evolving in ways different from those forecast.
  - ◆ We need to focus more on resilience, and on building for all scenarios.
3. Static regulatory window
  - ◆ An investment built in year 1 of a 5-year framework has 4 years in which to earn back its capex (itself far too short for most network assets, whose amortisation lives are typically 20-60 years).
  - ◆ An investment in year 3 only has 2 years. Later investments don't even have that.
  - ◆ Any derogations and permissions for cost recovery have similar windows.
4. The window should be rolling.
  - ◆ Single regulatory window for all assets
  - ◆ There should be longer duration windows for longer-lived network assets. Whereas batteries deteriorate to the point of replacement within 6-8 years, generating plant and transmission assets have 40-60 year lives.
5. Not geared towards legally compliant plans
  - ◆ Only 2 of the 4 FES scenarios comply with the Climate Change Act.
  - ◆ The development of the system is designed to be reactive rather than proactive in building a network ahead of the energy transition, to encourage rather than delay that transition.
6. Minimal incentivisation of cleanness
  - ◆ There are no financial or contractual preferences given to clean energy assets over dirty ones, other than the Carbon Levy.
  - ◆ Therefore lots of gas reciprocating engine plants are being built to deliver ancillary services when there are much better, cleaner technologies available.
  - ◆ And Ofgem / BEIS is encouraging the construction of gas-fired power stations (not to mention fracking) even though the legally required 5<sup>th</sup> Carbon Budget requires no more gas-fired emissions in 2030 than in 2010, even after having eliminated coal – which means that the average useful life of a new gas plant

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would be ~5 years, and BEIS would end up having to compensate owners for the remainder of their asset lives for breach of contract / expectations.

- ◆ Instead, all new assets should be compliant with 2050 targets, to enable the system as a whole to transition.
7. No incentivisation of new technologies / First-of-a-Kind (FOAK) plants
- ◆ No contracts or enforceable letters of intent are available for plants pre-planning and pre-grid connection offer.
  - ◆ FOAKs need such assistance in order to obtain the private funding required to obtain planning approval and an accepted grid connection offer.
  - ◆ Financiers see technical, commercial and regulatory risk: they can accommodate two of these, but not all three. Ours is the fastest changing regulatory regime in the world, therefore very high regulatory risk. A FOAK is their definition of technical risk. Therefore they need commercial certainty in order to invest private money into new solutions to grid problems.
  - ◆ The typical response to this complaint is that we buy in technologies that have had their FOAKs built overseas. This kills British industry, inventiveness and entrepreneurialism, and eventually the British economy.
8. Market fragmentation
- ◆ We currently have a UK-sized (60GW peak, 350TWh annual supply, 300TWh consumption) electricity market.
  - ◆ By creating 13 DSOs and the ESO, we split this into 14 Croatian markets. These are not big enough to incentivise major developments in grids and in technologies, making us dependent on imported technology.
  - ◆ We also lose market power: the smaller the market, the fewer the competitors and therefore the higher the prices over the medium to long term.
9. No physical scenarios
- ◆ Network planning is done principally using statistical scenarios of LOLE.
  - ◆ These need to be sanity checked against physical scenarios, for example:
    - ◇ After sunset on a windless winter evening –
      - By 5pm batteries and DSR are exhausted,
      - It's also peak demand, dark and low wind on the continent, so interconnectors are "killed" as they have no surplus energy to export,
      - We need to supply 5 hours' peak electricity, and beyond that into the night;
    - ◇ Kalte dunkel Flaute and shorter-duration weather events –
      - Up to 2 weeks continuous of very similar circumstances (usually with some weak daytime solar generation) to the first scenario;
    - ◇ Summer minimum –
      - Duration is far too long for batteries and DSR to absorb,
      - Neighbouring countries experience these concurrently, so they're also trying to export simultaneously.
  - ◆ These scenarios need to be modelled for the duration of FES, i.e. right up to 2050. If it's too much to do this continually, then I suggest an analysis for each decade 2020, 2030, 2040 and 2050, with an intermediate one at 2025 because that is quite soon.

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- ◆ Without such modelling of physical scenarios, we will be looking forward to frequent rolling brown-outs and panic investments into sub-optimal equipment on the basis that their lead times are short, despite their exorbitantly high cost to deliver the required durations.
- ◆ Other factors should be modelled at these times, especially inertia and the other services that are lost due to the loss of inertial plant on the system.

There is, on the other hand, a very simple regulatory structure that would solve every single one of these problems – and would do so without a penny of subsidy: please see the document **A 21<sup>st</sup> Century Electricity System**, appended to this submission.