

## Frequency Response Working Group and Technical Sub Group



Tom Ireland – GCRP 17<sup>th</sup> February 2011

# Working Group



# Frequency Response Working Group update

---

- Working Group progressing in parallel with Technical Sub Group
- Three commercial mechanisms being considered:
  1. Ability to trade codified obligations
  2. Day Ahead Auction (with or without obligations)
  3. Bilateral Tender (obligations removed)
- Option 1 being developed as a first step
- Ofgem have agreed to changes of the SQSS (Largest Loss) from April 2014 – Reinforces requirement for Working Group to conclude

# Technical Sub Group



# Frequency Response Technical Sub-Group Update I

---

- A synthetic inertia requirement based on a  $df/dt$  characteristic has been postulated to illustrate the requirement we are trying to meet
- Wind Turbine Manufacturers have provided clear feedback on the difficulties of specifying a  $df/dt$  controller which is quick enough, yet is stable when applied to a heavily interconnected power system
- Various alternatives have been suggested including
  - frequency trigger ‘one-shot’
  - a delta frequency control and
  - various hybrids incorporating elements of  $df/dt$  and the other methods
- Measurement data supports this view
  - Local voltage events can look like frequency deviations as they distort the voltage waveform which would lead to unnecessary triggers and/or instability;

# Frequency Response Technical Sub-Group Update II

---

- The Group believes that synthetic inertia will not be quick enough to prevent the operation of ROCOF relays
- Further National Grid modelling suggests that delivery timescales of 0.5sec or more may be adequate which could substantially reduce the challenge to equipment manufacturers in designing and building synthetic inertia capable equipment
- The group has requested further clarity on National Grid's modelling assumptions
- National Grid plans to examine a variety of different synthetic inertia controller implementations to evaluate their effectiveness and robustness
- Further debate is expected on a range of issues including concurrent inertia and response delivery and the need for high frequency triggered inertia