

Electricity Market Information Update for DSWG

Richard Price
Andrew Ryan
Network Operations
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Agenda

- ◆ Market information update
- ◆ Background to recent System Warning (NISMs)
- ◆ Embedded generation

Market Information

Market Information - progress since last meeting

- ◆ Conclusions report published
- ◆ BSC mods (P219/P220) raised by National Grid for November BSC Panel
- ◆ Internal National Grid and ELEXON projects continuing
- ◆ Prototype phase 1 summary page under development by ELEXON / Logica

Conclusions / Recommendations

- ◆ BMRS should be retained as the primary platform for information
- ◆ National Grid should continue to progress demand consistency changes
- ◆ National Grid should improve resilience of existing data published on SONAR
- ◆ National Grid should progress the publication of demand side actions
- ◆ ELEXON should take forward improvements to data querying, accessing historical data and navigation on the BMRS
- ◆ Further investigation and industry discussion is required on the publication of GSP level demand data
- ◆ National Grid and ELEXON should implement the new daily summary page on the BMRS including the new data feeds
- ◆ National Grid will continue to explore other items raised by respondents to the consultation

Progress with summary page

- ◆ ELEXON and Logica are making good progress with the implementation of the phase 1 summary page
- ◆ Prototype front end in development
- ◆ Still on target for delivery early 2008
- ◆ Phase 2 full summary page on target for summer 2008
- ◆ BSC governance process now underway
- ◆ National Grid and ELEXON IS projects progressing to publish new data feeds on BMRS

BSC modifications raised

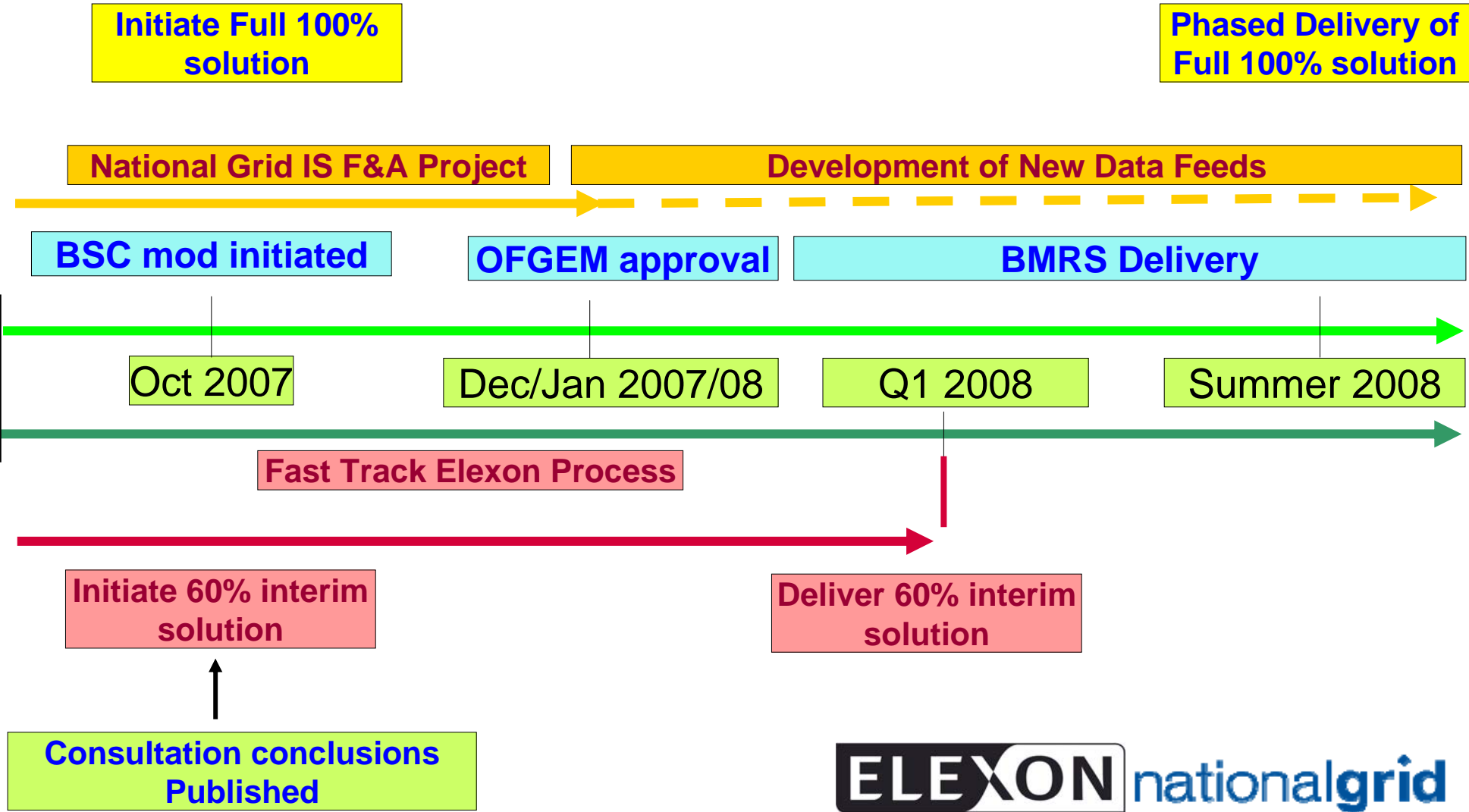
- ◆ Two BSC modifications have been raised by National Grid to cover the demand consistency and market information changes
- ◆ These are not expected to impact on delivery timescales for new market information
- ◆ Key reasons for raising BSC modifications
 - ◆ All market data supplied to ELEXON by National Grid currently falls within BSC governance arrangements
 - ◆ BSC modification proposal will ensure transparency of changes to industry
 - ◆ Industry will have opportunity to formally provide views on new data items and implementation costs
 - ◆ Given current broad support that exists for changes, BSC governance process is unlikely to hinder delivery of new proposals
 - ◆ Ofgem has final approval authority over BSC mods

Modification timescales

- ◆ BSC modification proposals submitted to Elexon (26 October 2007)
- ◆ Present BSC modification proposal to the BSC Panel (9 November 2007)
- ◆ Detailed industry assessment and report back to BSC Panel (14 February 2008)
 - ◆ BSC Panel recommendation to Ofgem to approve or reject the proposal
- ◆ Elexon submit report, with BSC Panel recommendation, to Ofgem (21 February 2008)
- ◆ Ofgem formal decision document published soon after

- ◆ The above process is occurring in parallel with National Grid and ELEXON projects outlined earlier

Overview plan for the way forward



Recent System Warnings

Recent System Warnings

- ◆ National Grid issued two system warnings (NISMs) to the market last month on Fri 19th Oct and Mon 29th Oct (for Tue 30th)
- ◆ These notifications both arose due to similar circumstances
- ◆ Several hours ahead of real-time, our contingency reserve requirement was not met by a relatively small amount (a few 100MW)
- ◆ Main reason for this was plant losses and MEL redecisions
- ◆ As we approach real time, our requirement for contingency reserve declines, and on both occasions more generation became available
- ◆ The combination of these two factors enabled us to cancel the system warnings ahead of real-time

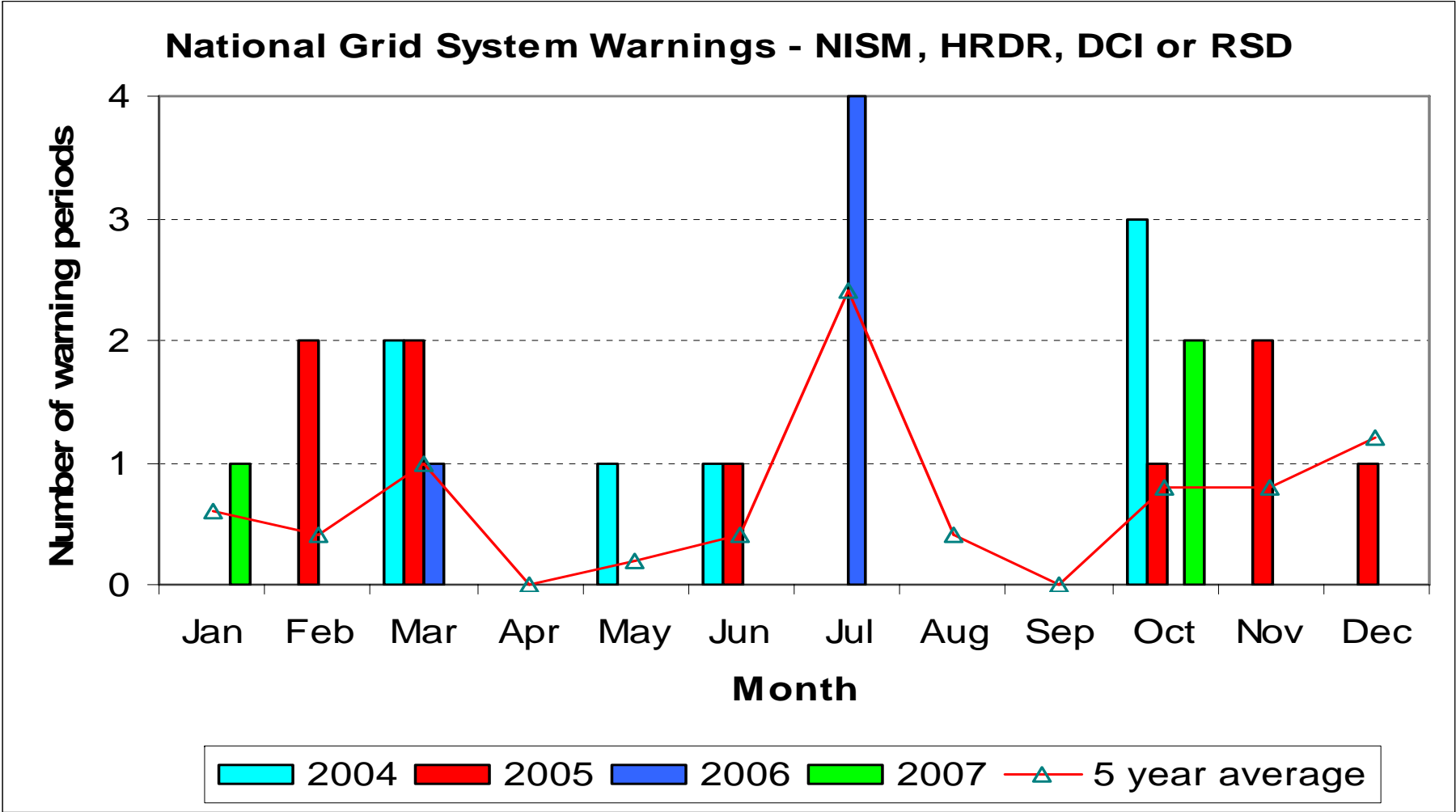
System Warnings

- ◆ We issue system warnings to encourage the market:
 - ◆ not to make the situation worse (*do not start outages*),
 - ◆ make the situation better (*make more plant available*),
 - ◆ take preparatory actions (*e.g. DNO for demand control*)
 - ◆ review imbalance positions (*trade accordingly*)
- ◆ We did see some market response to the NISM earlier this week

NISM – Tuesday 29 October 2007

- ◆ For the NISM earlier this week, a couple of generation outages were cancelled, and some plant that failed earlier on in the day managed to return for the darkness peak
- ◆ To maximise the generation available to us, we cancelled a transmission system outage that would have restricted some generation,
- ◆ We also reconfigured part of the system to avoid a potential export constraint.
- ◆ We agreed PGBTs with two stations ahead of gate closure provided firm capacity that was not accessible within BM timescales
- ◆ NISMs are a fairly “normal” part of our balancing tools, and are the lowest level of system warning.
- ◆ Post clock change we often see margins tightening and some demand forecast uncertainty.

System warnings - history



Embedded Generation

System Balancing

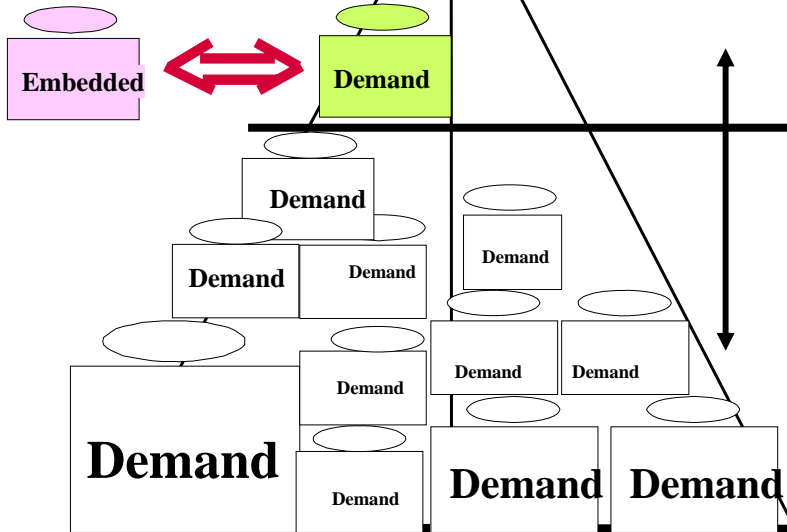
- ◆ National Grid despatches generation to meet demand seen at Grid Supply Points (GSPs) – exit points from main HV transmission system
- ◆ National Grid meters those BMUs that participate in the Balancing Mechanism. Typically such BMUs are >100 MW
- ◆ Additionally National Grid meters “large” stations in Scotland which have a significant effect on flows on the Transmission System
- ◆ It is the output of these metered generators which forms the basis of our “demand” forecast and availability figures

Synchronous AC System Always Balanced

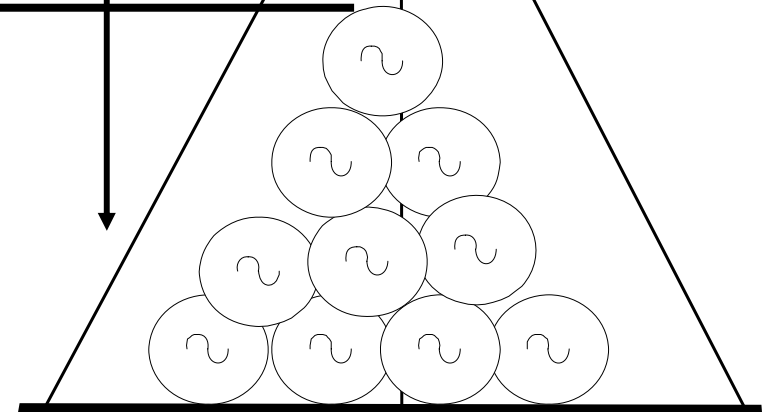
Demand and Generation vary continuously

Causing frequency to change

Embedded generation nets off some demand



Centrally despatched generation BMUs



What generation does National Grid not meter?

- ◆ In England and Wales:
 - ◆ Embedded generation <100 MW. Embedded means connected to the distribution system
 - ◆ ~6 GW currently
- ◆ In SPT and SHET Transmission Areas
 - ◆ National Grid has the right to meter “large” stations connected at the distribution level
 - ◆ Large is ≥ 30 MW in the SPT transmission area
 - ◆ Large is ≥ 10 MW in the SHET transmission area
 - ◆ ~1 GW is not metered
- ◆ National Grid has no relationship with embedded generators below 50 MW in E&W, and <10/30 MW in Scotland
- ◆ Non-metered generation manifests itself as a requirement for less “centrally-dispatched” generation

The future

- ◆ We recognise that in future the volume of embedded generation is likely to increase significantly
- ◆ At certain strategic sites, including off-shore wind, National Grid may need visibility of the metered output of embedded generation to allow it to effectively secure the system in that area
- ◆ For these sites, there may be a clear cost/benefit in installing operational metering to allow more efficient and secure system operation
- ◆ We have already initiated some investigations in this area
- ◆ We will continue to assess the requirement for operational metering at future embedded generation sites
- ◆ Where there is a clear case for improving system security, we will install metering