

Electricity Demand Turndown Trials

Presentation to the DSWG – 20th April

John Perkins

Overview

- ◆ Background to the trials
- ◆ Summer pilot scheme
- ◆ Winter pilot scheme
- ◆ Overall conclusions
- ◆ The Way Forward

- ◆ Full report on
 - ◆ <http://www.nationalgrid.com/uk/Electricity/Balancing/new/>

Background to the trials

- ◆ Existing Balancing Services have short response time to accommodate real time balancing
- ◆ Potential barrier to participation by sites who require longer lead times
- ◆ DSWG identified potential to develop a new service with longer lead times to compete in the provision of contingency reserve

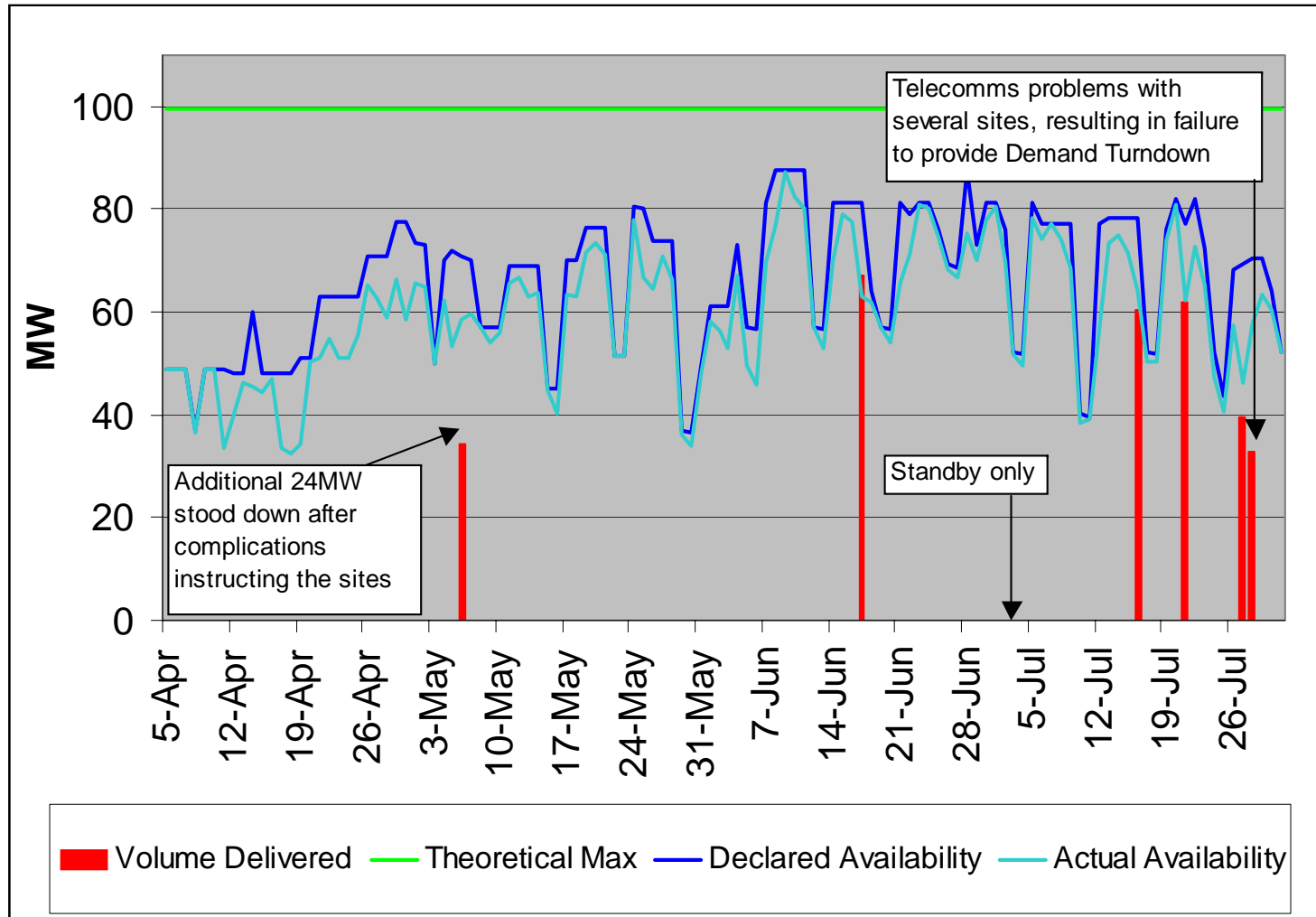
Drivers for the trial

- ◆ Gather empirical data
- ◆ Ascertain viability of an additional reserve service
- ◆ Improve Demand Side Liquidity
- ◆ Prove reliability and establish confidence
- ◆ Pioneer Email availability declarations

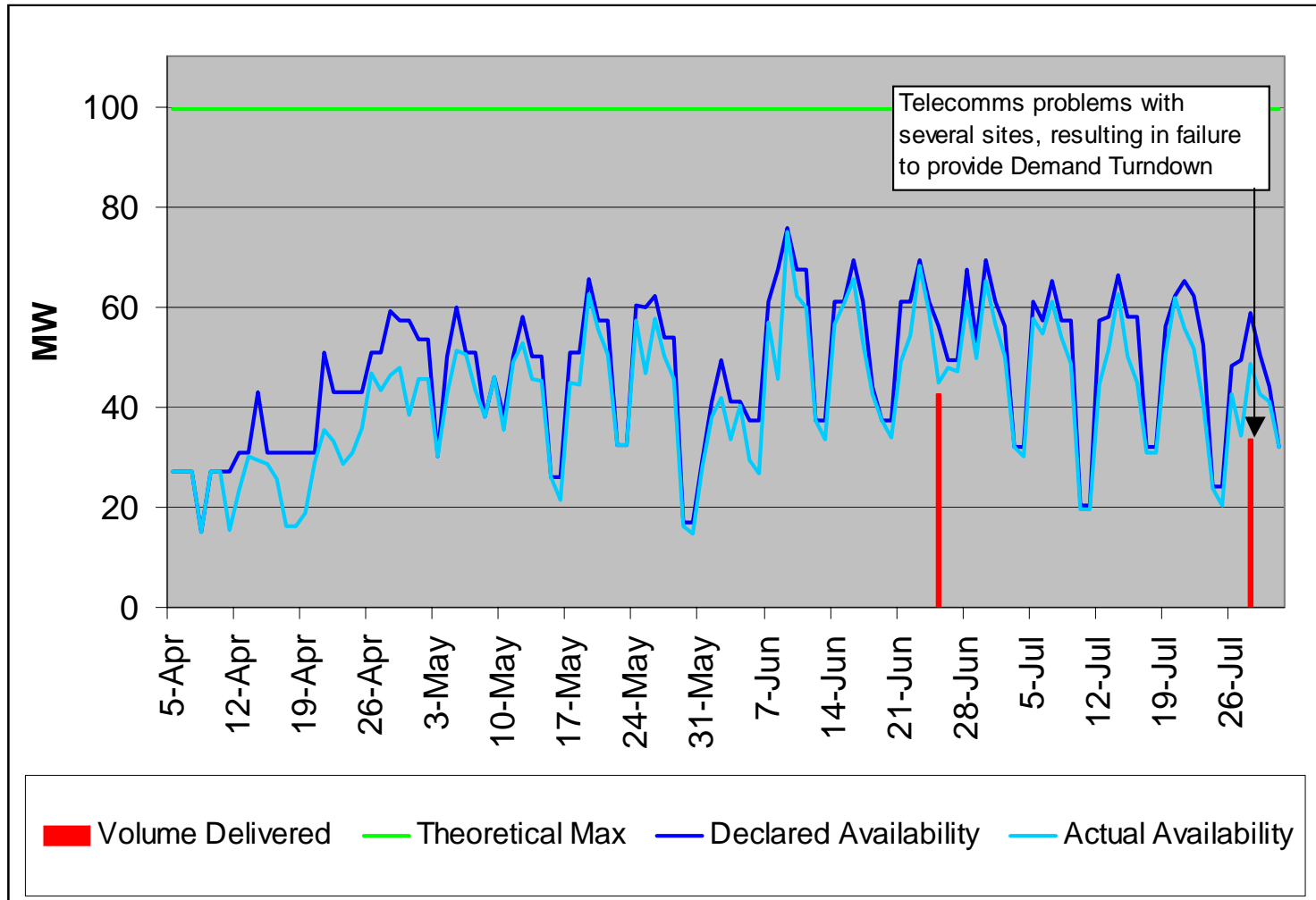
Summer Pilot – Demand Turndown

- ◆ 5th April to 30th July 2004
- ◆ 100 MW minimum requirement
- ◆ 2 Windows (0930 – 1130 & 1130 – 1330)
- ◆ Availability, standby and utilisation payments
- ◆ Early interest from 6 aggregators (450 MW)
- ◆ 2 Aggregators participated (<100MW)

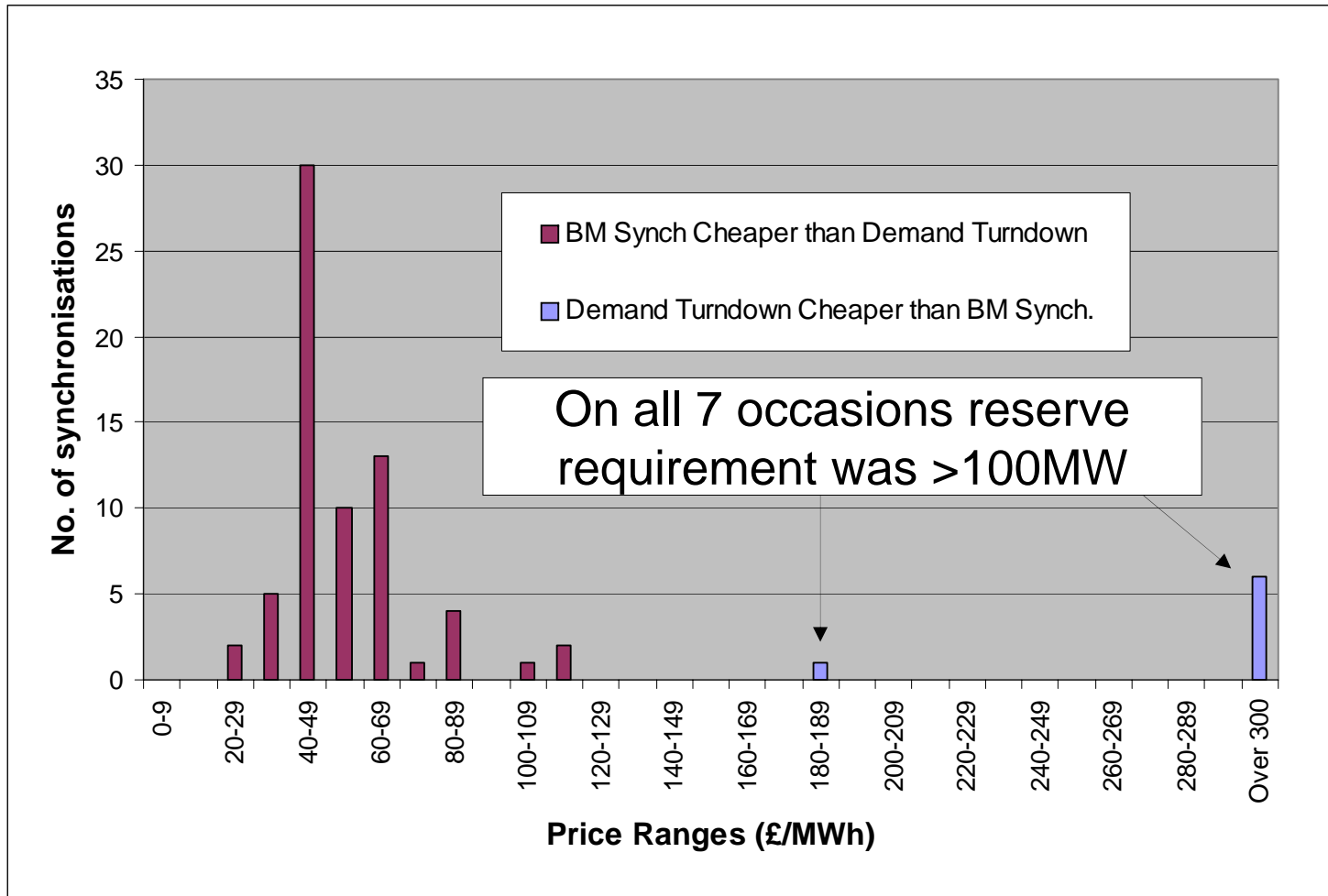
Summer Performance Window 1



Summer Performance Window 2



Summer Pilot – Economic Viability



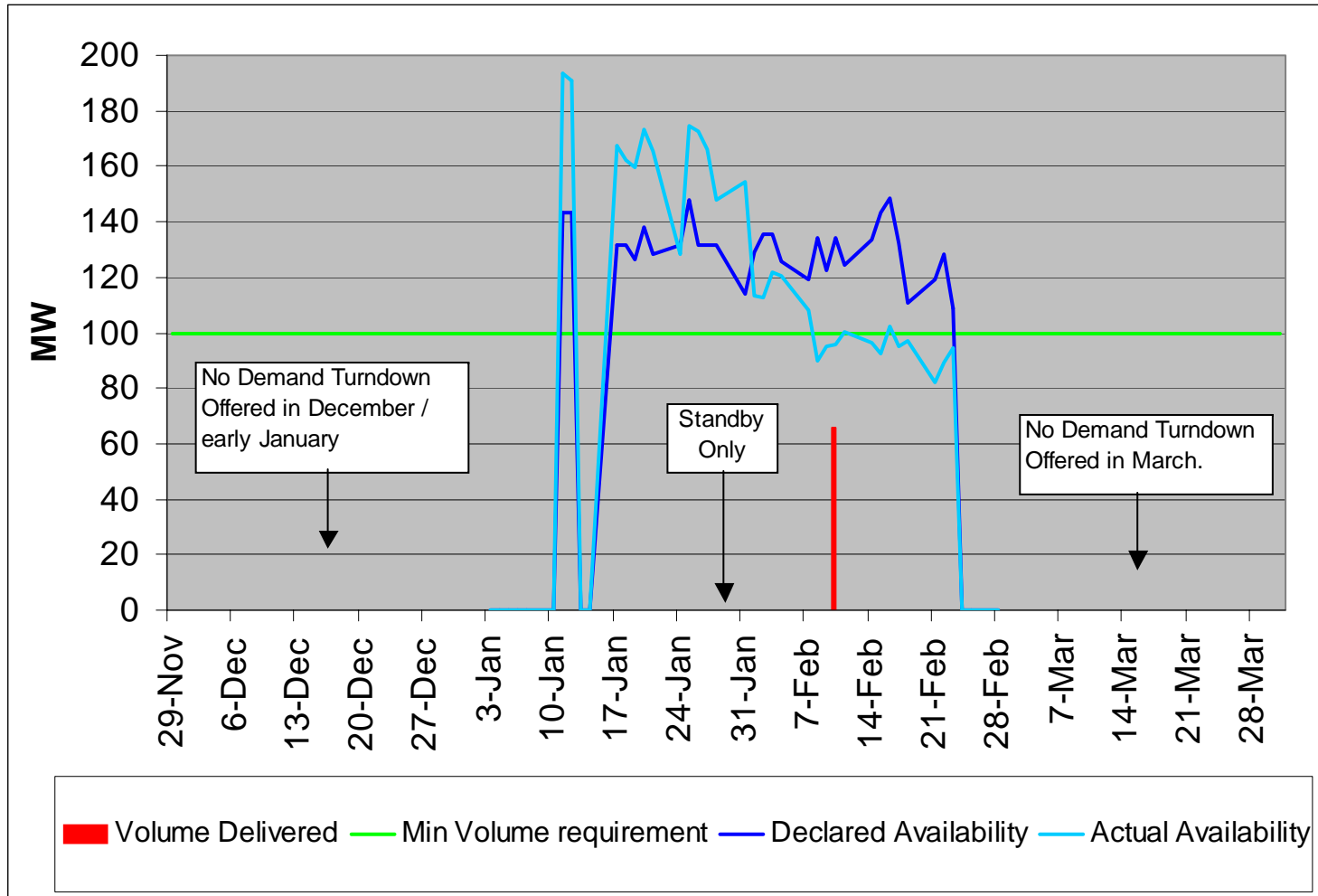
Summer Pilot – Observations

- ◆ Aggregators successfully provided single point of despatch
- ◆ Average Demand Turndown delivered - 46.5 MW
- ◆ Actual availability below declared availability
- ◆ 47–83% of declared availability delivered on utilisation
- ◆ E-mail availability declarations worked
- ◆ Only 3 new sites participated
- ◆ Some communication problems

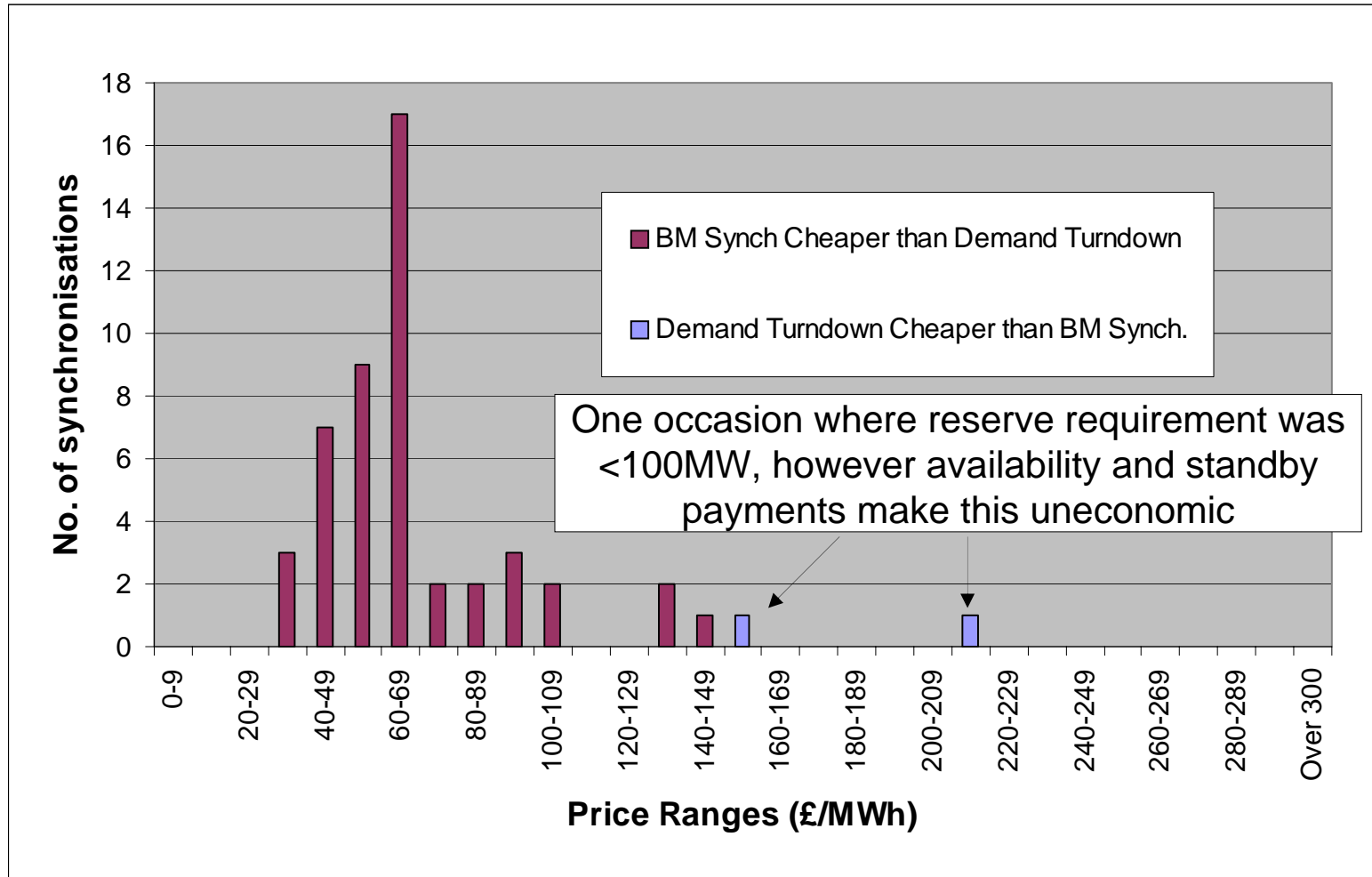
Winter Pilot Demand Turndown

- ◆ Winter Pilot built on lessons from Summer Pilot
- ◆ 29th November 2004 to 31st March 2005.
- ◆ Following feedback requesting increased flexibility
 - ◆ One Demand Turndown window (0900 – 1100)
 - ◆ New Demand Management Product (see later slides)
- ◆ Firm 100MW requirement for Demand Turndown
 - ◆ 100MW+ reached on 30 out of 89 days
- ◆ Participation from a single aggregator and 15 sites
 - ◆ 7 of which were new providers (58MW)

Winter Performance



Winter Pilot – Economic Viability



Winter Pilot Demand Management

- ◆ Introduced following feedback from Summer Trial on the requirements for a more flexible product
- ◆ Run alongside Demand Turndown Trial
- ◆ Min 25MW requirement
- ◆ Utilisation payments only
- ◆ One aggregator participated
- ◆ Service offered by aggregator on 40 out of 89 days
- ◆ Never instructed due to uneconomic utilisation prices

Overall Conclusions

- ◆ Levels of participation lower than expectations and early indications of interest
- ◆ 100MW requirement not achieved
- ◆ Balancing Services require certainty of delivery, this certainty was not achieved by the pilots
- ◆ Based on the pilots, the services appear uneconomic in contingency reserve timescales
- ◆ Use of aggregators and e-mail despatch were successful and may have future applications

The Way Forward

- ◆ A range of Balancing Services that can be provided by the Demand Side (inc. Demand Management) continue to be available to providers
- ◆ National Grid continues to talk to potential new providers
- ◆ Lessons have been fed into other developments
 - ◆ FFR – Developed with a view to facilitating DS participation
 - ◆ Reserve Review has considered developments to Balancing Service structures (E.g. Changes to response times for Standing Reserve).
- ◆ Continued discussions via DSWG