

Reserve Review - Update

Mark Duffield, Senior Account Manager, Contracts



nationalgrid

The power of action.™

Agenda

- ◆ Reserve Review
 - ◆ Background
 - ◆ Update – June 2010
- ◆ Demand Side Update
 - ◆ STOR
 - ◆ Firm Frequency Response
 - ◆ SMART Metering
 - ◆ Storage

Reserve Review - Background

December 2009 Update

- ◆ Comprehensive Review of Reserve Services
 - ◆ Recognising the need to act now to meet future requirements
- ◆ Work ongoing to address short term issues through other workstreams
 - ◆ E.g.. STOR Review
- ◆ Reserve Review to be focussed on the medium and longer term challenges and opportunities to reserve provision and procurement

Reserve Review - Background

- ◆ Two principle Workstreams proposed
 - ◆ Workstream 1 Focus:
 - ◆ The existing services and their development up to 2015/16
 - ◆ Workstream 2 Focus:
 - ◆ longer term developments for reserve services,
 - ◆ the likely future sources of reserve
 - ◆ The contractual structure of the reserve service
 - ◆ Pre-Consultation followed by Industry Working Groups
- ◆ National Grid has now given further thought to the key areas of work in each workstream:

Reserve Review – June 2010 Update

Workstream 1: Key Areas

- ◆ BM Start-Up review
- ◆ STOR Service enhancements* / Optional Review
- ◆ Generation Curtailment Service / Negative Reserve Service

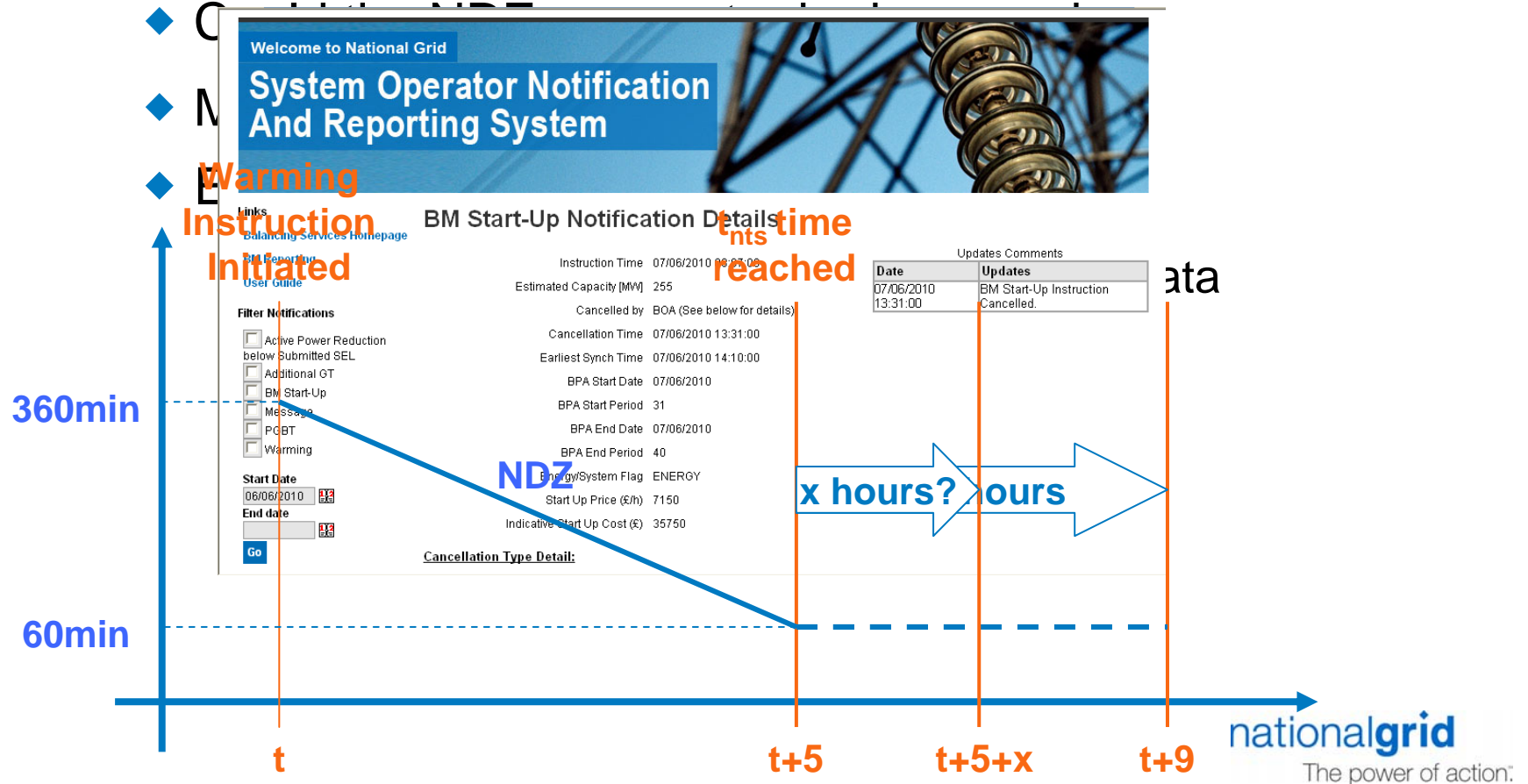
* The Workstream will also be heavily interactive with the annual STOR Reviews undertaken by National Grid, with medium term STOR development being influenced by discussions in this workstream

Reserve Review – June 2010 Update

BM Start-Up review areas:

- ◆ Transparency of the BM Start-Up Service:

- ◆ Cancellation
- ◆ Notification
- ◆ Warming
- ◆ Instruction



Reserve Review – June 2010 Update

◆ STOR Development (2011-2015)

The following areas are proposed for review

- ◆ Review of the Working Day / Non-Working Day definition to permit weekday only services
- ◆ To consider if Fast Reserve provision could be amalgamated with the STOR service
- ◆ Fast Start
 - ◆ Move Manual Fast Start terms to STOR terms
 - ◆ Consider the need for automatic Fast Start service

Reserve Review – June 2010 Update

- ◆ STOR Development (2011-2015) continued...
 - ◆ Innovative Aggregation
 - ◆ Consider not only MW aggregation but time of despatch aggregation?
 - ◆ Permit BM providers to offer flexible STOR service
 - ◆ possibly to include headroom on synchronised generating units?
 - ◆ Develop a complementary reserve service for STOR with eased base parameters (e.g. sustainable for 1 hour only, narrower availability windows etc)

Reserve Review – June 2010 Update

- ◆ Generation Curtailment Service / Negative Reserve
 - ◆ Generation Curtailment service introduced in 2009
 - ◆ Designed to access reduced output of non-BM generation
 - ◆ The management of Downward Regulation issues also require access to reduced generation outputs at low demand
 - ◆ Potential perhaps to combine the two to offer an option contract to reduce generation output at specific times?

Reserve Review – June 2010 Update

◆ Workstream 1 Timescales



Reserve Review – June 2010 Update

Workstream 2: Reserve Developments beyond 2015

- ◆ The focus here will be to establish the likely future shape of the reserve market
- ◆ Examine likely drivers of operational and market behaviours in 2020
- ◆ Assess the potential sources of reserve in 2020
- ◆ Look to structure reserve product(s) to best meet the challenges envisaged

Reserve Review – June 2010 Update

Workstream 2: Reserve Developments beyond 2015

- ◆ Key Areas for Investigation
 - ◆ Further development of Future Reserve Requirements curves
 - ◆ Assessment of how reserve requirements evolve through a day
 - ◆ Evaluation of potential for firm contracted reserve v “on-the-day” reserve
 - ◆ Seek industry input into how best to manage the interaction between National Grid requirements and management of contracted positions

Reserve Review – June 2010 Update

Workstream 2: Assessment of new technologies

- ◆ SMART technologies
 - ◆ Assess the potential for SMART metering to provide Balancing Services
 - ◆ Potential challenges that may lie in the way of providing Balancing Services and ways to manage them
- ◆ Reserve Provision from new generation technologies
 - ◆ Opportunities and challenges to providing existing reserve services
 - ◆ How might services need to adapt to permit new technologies in a reserve market

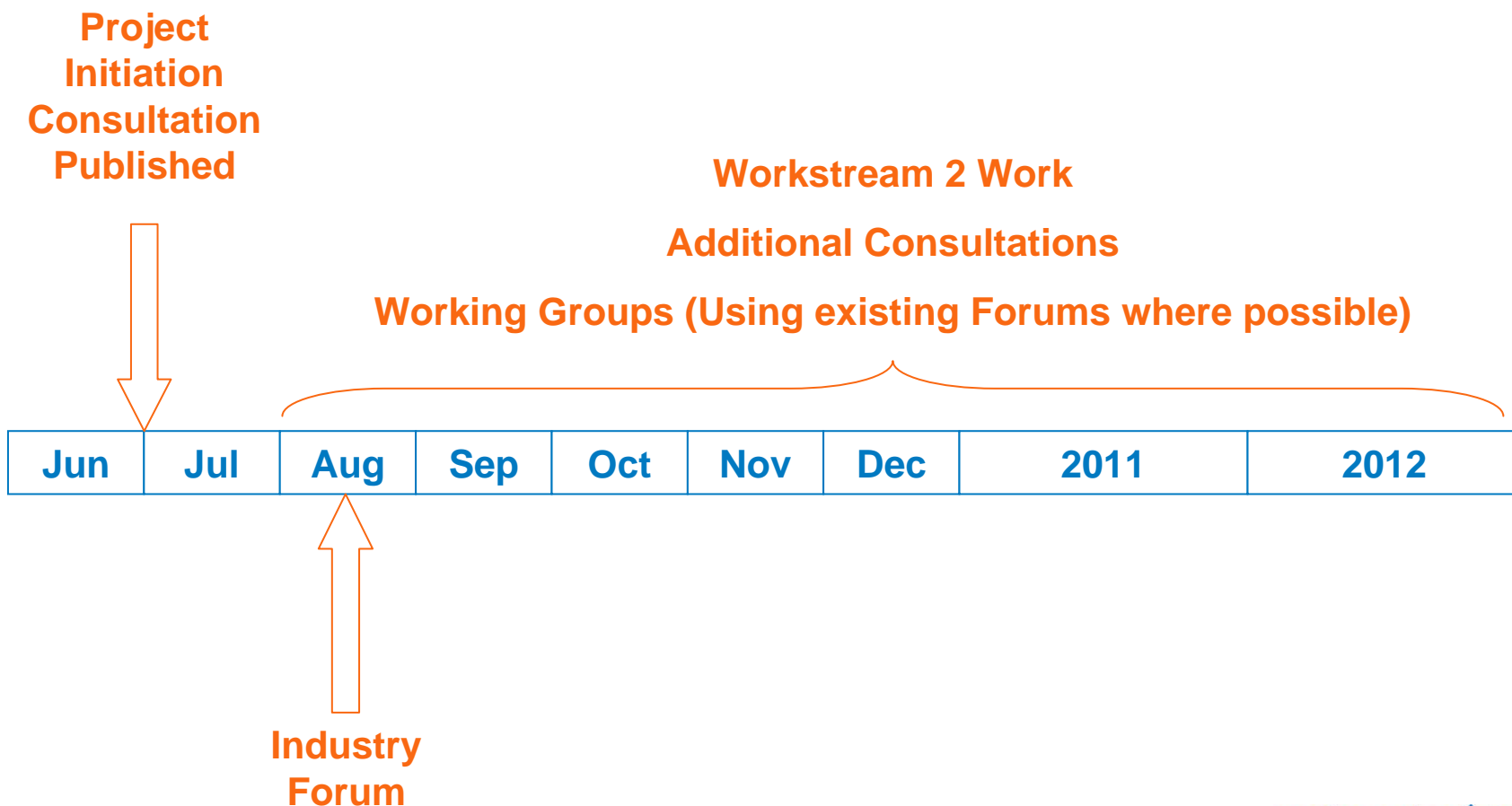
Reserve Review – June 2010 Update

Workstream 2: Market Developments

- ◆ Informing and complementing Ofgem & DECC work
- ◆ DECC: Energy Market Assessment
- ◆ Project Discovery
 - ◆ Increasing Demand Side response
 - ◆ Increased frequency of reserve tenders (Day-ahead markets?)
- ◆ European Developments
 - ◆ Cross-border arrangements; sharing of reserves

Reserve Review – June 2010 Update

◆ Workstream 2 Timescales



Reserve Review – Further Information

Contact: Mark Duffield

Tel: 01926 654971

mark.duffield@uk.ngrid.com

Demand Side Services - Update

Mark Duffield, Senior Account Manager, Contracts



nationalgrid

The power of action.™

Demand Side Services

- ◆ All Balancing Services available to the Demand Side
- ◆ Main participation to date has been in:
 - ◆ Short Term Operating Reserve (STOR)
 - ◆ Firm Frequency Response (FFR)
 - ◆ Frequency Response by Demand Management (FCDM)
 - ◆ Fast Reserve
- ◆ Aim of today's presentation to give an update on recent Demand Side developments

Demand Side Services

- ◆ Short Term Operating Reserve (STOR)
 - ◆ The past 6 months have seen a significant increase in activity on the Demand Side
- ◆ Now seven aggregators looking to aggregate smaller loads to provide STOR (up from three providers)

<http://www.nationalgrid.com/uk/Electricity/Balancing/demandside/aggregators/>

Demand Side Services

- ◆ Short Term Operating Reserve (STOR)
- ◆ Contract Development for Long Term Tenders
 - ◆ Expectation of several new long-term STOR tenderers in the approaching tender rounds
 - ◆ Significant target for 2010 STOR review to produce standard contract terms and pro-forma framework agreements more suitable for long-term tenders
- ◆ New Demand Side Service Providers
 - ◆ 6 new providers contracted in 2009/10
 - ◆ In discussions with >25 potential demand side providers!

Demand Side Services

- ◆ Firm Frequency Response
 - ◆ New dynamic demand side frequency response provider
 - ◆ Currently undergoing final testing phase
- ◆ Expect to see first active despatch of tender later in the year

Demand Side Services

- ◆ SMART Metering

- ◆ Work ongoing through Reserve Review
- ◆ Fully appraise the opportunities and challenges that the use of SMART grids and SMART meters might offer



- ◆ Storage technologies

- ◆ Currently in detailed discussions with energy storage company with aspiration to enter into balancing service contract in the near future

Demand Side – Further Information

Contact: Mark Duffield

Tel: 01926 654971

mark.duffield@uk.ngrid.com