Grid Code Review Panel

Two Shifting Limits

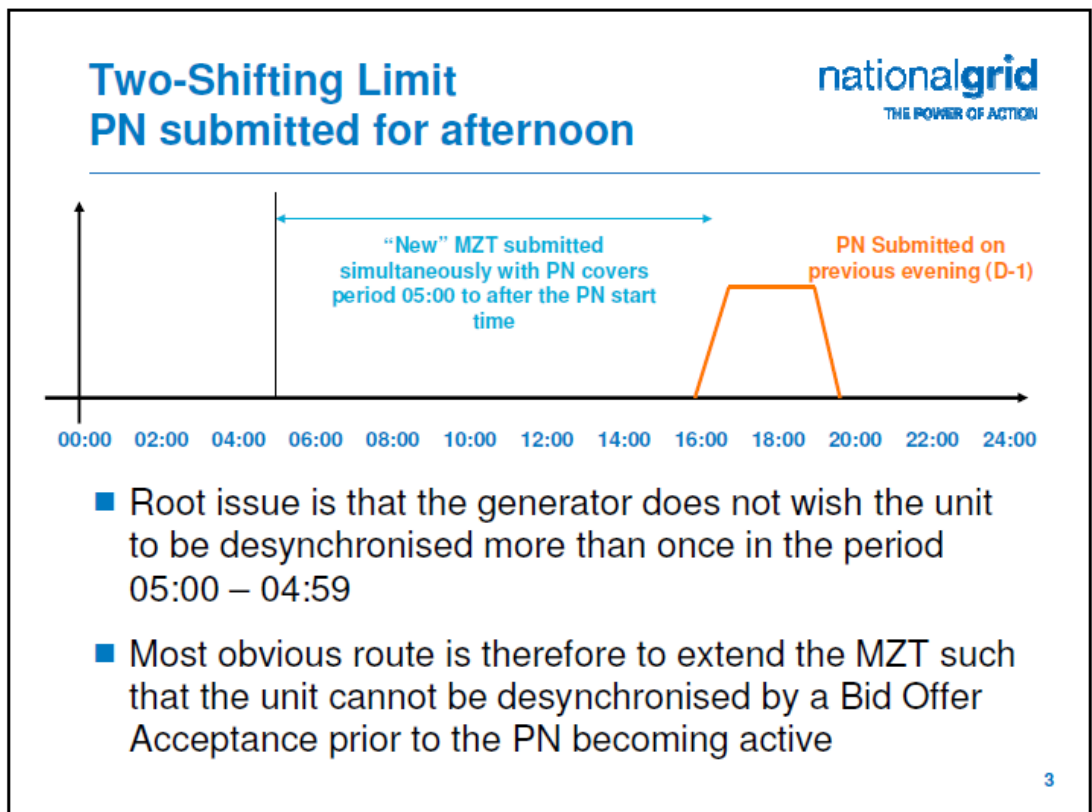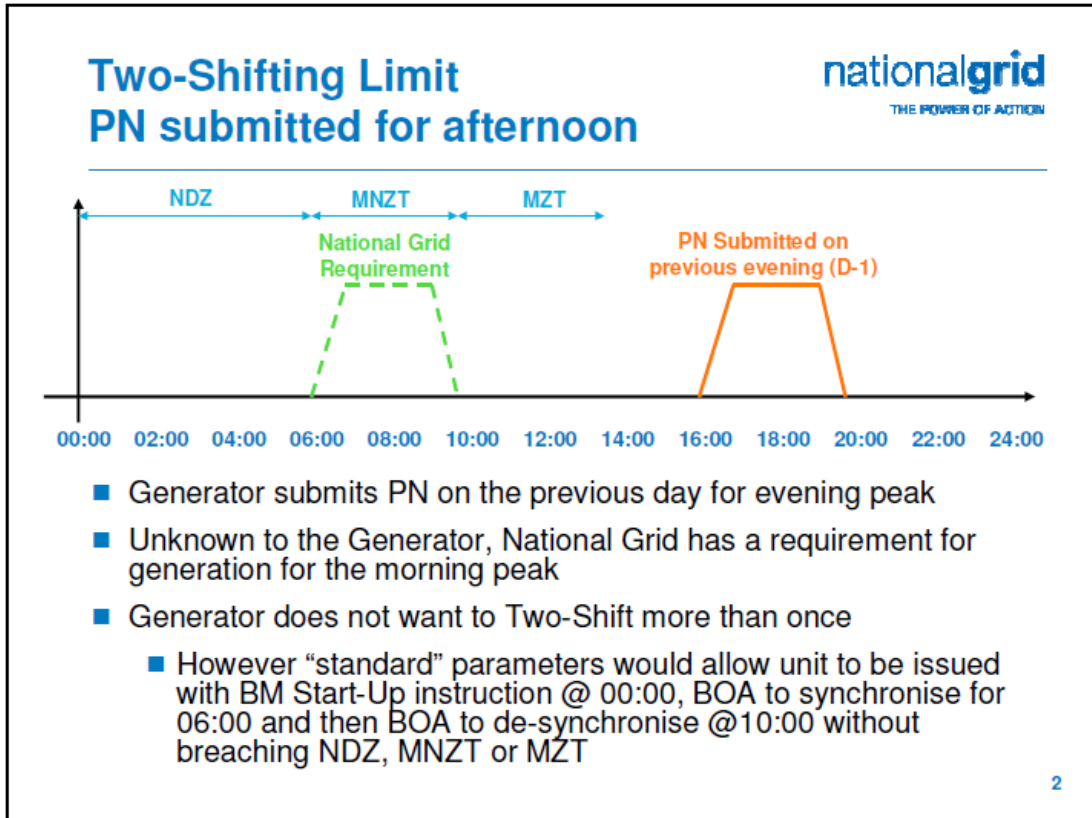**A paper by National Grid**

Purpose of Paper

1. At the Extraordinary Grid Code Review Panel held on 31st March 2011, National Grid presented a paper summarising its views on the status of the Grid Code Operational Planning Parameter the Two-Shifting Limit.

2. As part of this paper National Grid noted that it believed it was possible to manage a generating unit's operating regime using parameters other than the Two-Shifting Limit and that a number of industry parties already did so. The GCRP therefore requested that National Grid draw up a brief paper that described how this might be achieved.

3. This paper is therefore designed to discharge this action, drawing on two examples and showing how dynamic parameters may be used to manage the operating position of a generating unit. It does not attempt to provide an exhaustive list of methods in which a generator might manage its position, nor indeed does it provide a recommended course of action. Instead it shows how a generator might manage its position.

4. National Grid has prepared this paper in good faith, however generators should rely on their own information (and not on the information contained in this document) when determining their respective commercial positions. National Grid accepts no liability for any loss or damage incurred as a result of relying upon or using the information contained in this document.

Scenarios

5. In the two scenarios that follow, a generator is modelled as wishing to only desynchronise once in any operational day. It is assumed that under "standard" operating conditions the generating units dynamic parameters would be:

Dynamic Parameter	"Standard" Value
Minimum Zero Time (MZT)	240min
Minimum Non-Zero Time (MNZT)	240min
Notice to Deviate from Zero (NDZ)	360min

6. The first scenario describes an instance where a generator submits a physical notification giving notice that it intends to generate over the evening period. In this scenario the generator wishes to signal that it cannot be brought on for the morning peak by National Grid and then de-synchronised prior to its evening period of generation signalled by its physical notification.

Two-Shifting Limit
PN submitted for afternoon

nationalgrid
THE POWER OF ACTION

NDZ   MNZT   MZT

National Grid Requirement

PN Submitted on previous evening (D-1)

00:00 02:00 04:00 06:00 08:00 10:00 12:00 14:00 16:00 18:00 20:00 22:00 24:00

- Generator submits PN on the previous day for evening peak
- Unknown to the Generator, National Grid has a requirement for generation for the morning peak
- Generator does not want to Two-Shift more than once
  - However "standard" parameters would allow unit to be issued with BM Start-Up instruction @ 00:00, BOA to synchronise for 06:00 and then BOA to de-synchronise @10:00 without breaching NDZ, MNZT or MZT

2

Two-Shifting Limit
PN submitted for afternoon

nationalgrid
THE POWER OF ACTION

"New" MZT submitted simultaneously with PN covers period 05:00 to after the PN start time

PN Submitted on previous evening (D-1)

00:00 02:00 04:00 06:00 08:00 10:00 12:00 14:00 16:00 18:00 20:00 22:00 24:00

- Root issue is that the generator does not wish the unit to be desynchronised more than once in the period 05:00 – 04:59
- Most obvious route is therefore to extend the MZT such that the unit cannot be desynchronised by a Bid Offer Acceptance prior to the PN becoming active

3

7. In this second scenario, the generator has submitted a Physical Notification indicating it wishes to run for the morning period. In this case the generator wishes to signal to National Grid that it does not wish to desynchronise following its Physical Notification, then be resynchronised for the evening period and then desynchronised once more later in the evening.