

SEM – Grid Code Harmonisation

and in Northern Ireland only, EU Directive Compliance

Grid Code Modifications User Paper

Sections under Common Governance (SDC1 and SDC2)

Consultation: 19 June – 10 July 2007

1. **Introduction and Update following on from December 2006, March 2007 and May 2007 Joint Grid Code Review Panel meetings**
 - 1.1 The following sets out the background to the consultation process which has been undertaken to date. This consultation forms part of an ongoing process which is part of the development of the Grid Codes in Ireland and Northern Ireland as part of the SEM Implementation Project. This User Paper deals only with those sections that have been identified as under common governance (SDC1 and SDC2) and describes the proposals for these sections.
 - 1.2 **First Meeting:** A joint Grid Code Review Panel meeting was held on 13 December 2006 at NIAUR's (then NIAER) offices in Belfast. There was good attendance at that meeting and an overview of the process for achieving the harmonised Grid Codes for SEM in Northern Ireland and the Republic of Ireland was given by EirGrid and SONI. A number of key issues were discussed in detail, including how the harmonised Grid Codes would work together, the process for governance of the 'Sections under Common Governance' of the Grid Codes, and details of discussions on matters such as availability, within day testing, demand side units and wind. Issues relating to planning, ancillary/system support services, outage planning and process were also usefully discussed.
 - 1.3 **Second Meeting:** A second joint Grid Code Review Panel meeting was held on 27 March 2007 in Dublin. There was also good attendance at that meeting and an overview was given of the following documents, with discussion on the points where attendees wanted to explore issues further:
 - 1.3.1 the first draft of the 'Sections under Common Governance' of the Grid Codes (SDC1 and SDC2);
 - 1.3.2 a first draft of the Glossary and Definitions containing the new definitions used in these Sections under Common Governance;
 - 1.3.3 revised drafts of the Planning Codes of both Grid Codes;
 - 1.3.4 revised draft of the SONI Connection Conditions;
 - 1.3.5 revised drafts of the OC2 (Operational Planning) sections of both Grid Codes;
 - 1.3.6 a new section, OC7.2.4.5, for the EirGrid Grid Code (Information Exchange requirements for price-making wind farms); and

1.3.7 the inclusion of "Substitute Reserve" in EirGrid's OC4.6.

There was a formal consultation from 27 March 2007 to 11 April 2007, with documents posted on both TSOs' websites.

1.4 **Third Meeting:** A third joint Grid Code Review Panel meeting was held in Belfast on 3 May 2007. At this meeting, the TSOs provided an overview of the further changes made to SDC1, SDC2 and the New Definitions Glossary following the second Grid Code Review Panel meeting and the comments helpfully received from some users. The main changes discussed at the meeting included:

- the changes made to give a more "All-Island aspect" to the SDCs;
- the change in wind farm terminology with the introduction of the terms "Controllable WFPS" and "Dispatchable WFPS";
- the new references made to both Generator and Demand Side Unit Aggregators;
- the introduction of "Technical Parameters" as a common term to refer to "GSDPs" in Northern Ireland and "Operating Characteristics" in the Republic of Ireland.

The TSOs also confirmed at that meeting that they would not create a new SDC3 section under Common Governance, as a careful review of the existing SDC3 section of the SONI Grid Code and the OC4.3 and OC5 sections of the EirGrid Grid Code showed that, subject to a few limited areas, the approach in terms of frequency control was essentially consistent in both Grid Codes, and therefore could be left to be dealt with in those different sections in each of the Grid Codes. As a result some minor modifications have been proposed to EirGrid's OC4.3 and Connection Conditions.

There was a formal consultation from 3 May 2007 to 18 May 2007, with documents posted on both TSOs' websites.

1.5 **This Consultation:** This User Paper deals with the Sections under Common Governance which have been identified as SDC1 and SDC2 only. This User Paper describes the nature of the proposed changes to these sections and provides clarification on the consultation process. It should be noted that separate User Papers dealing with the changes being made to the "EirGrid only" and the "SONI only" sections have been prepared to accompany this common User Paper.

There are, as marked on the SDC1 and SDC2 sections and on the New Definitions Glossary which accompany this User Paper, a number of areas where further thought is being given to developing those areas or completing the drafting etc. Further versions of those areas, or the sections of which they form part, may be issued as part of the overall consultation process. It should be noted that the redline versions of SDC1, SDC2 and the New Definitions Glossary show the changes made against the versions published on 20 April, prior to the third GCRP meeting.

1.6 **IME Directive:** SONI will also be consulting as part of this Grid Code modification process in order to put in place changes for the full introduction of the EU "Internal Market in Electricity" Directive, which requires some additional modifications to the SONI Grid Code to reflect the changes in the retail market related structure in NI. As explained above, the changes required are summarised separately in the User Paper for the SONI only Grid Code sections.

2. Process

2.1 **Consultations:** Following the consultations and the three joint Grid Code Review Panel meetings referred to above, the TSOs are now making a final joint consultation on the amendments to be made to the SONI and EirGrid Grid Codes. This consultation runs from 19

June 2007 to 10 July 2007, which is the last date for submission of any comments to the TSOs on the Grid Code changes proposed in the User papers and for the sections to be included on the websites.

This paper provides a summary of all the changes made to the Sections Under Common Governance as well as an update on the set of proposed changes which were presented at the GCRP meeting in May 2007 to the principal 'Sections Under Common Governance' of the Grid Codes.

2.2 **Overall Timetable:** The overall timetable for the changes, which has been discussed with the Regulatory Authorities, is attached for ease of reference.

3. Key amendments made to Grid Code Sections Under Common Governance

3.1 **Scheduling and Dispatch Code 1**

3.1.1 *Overview and Harmonisation:* SDC1 deals with scheduling in preparation for the dispatch of plant on the system. The current SDC1s in both the SONI Grid Code and the EirGrid Grid Code are broadly similar. They deal with much the same issues, and deal with the issues in a very similar manner. There are, due to historical reasons, differences in approach in some areas, and some differences in terminology, but the broad approach is the same. It has been the intention in developing the Sections Under Common Governance that the common approach on the Grid Code provisions will blend the two approaches and produce a composite set of provisions which will in general terms be familiar to Users in both jurisdictions.

3.1.2 *Pool Changes:* However, in relation to SDC1 (and SDC2), as well as the issue of the 'combination' of the two Grid Code provisions, it has been necessary to introduce some other changes that specifically arise from the SEM. Thus, SDC1 now reflects the new trading arrangements that exist under the SEM, namely the "pool" which is reflected in the Trading and Settlement Code (TSC) which is being prepared for the SEM. The introduction of the pool, with bidding and a full merit order as a consequence, changes the basic approach in terms of plant, which exists in each of the current Grid Codes. Currently within each jurisdiction there is a reflection of a series of bi-lateral physical contracts and the taking into account of those in producing a "merit order". Under the pool, bids will be submitted in and those bids, in relation to each "Price Set", will dictate the overall merit order as provided also in the SEM TSC. This therefore necessitates some changes to the way in which both bidding is reflected and also the way in which the merit order is compiled.

3.1.3 *Bidding:* Therefore, in relation to bidding, SDC1 reflects that bids are as submitted under the SEM TSC, that they are then taken into account when preparing the initial schedule (the Indicative Operations Schedule) and are then further developed by the System Operators (SOs).

3.1.4 *Working Together:* The revised SDC1 also reflects that fact that the System Operators (SOs) remain as two separate SOs but act together in many instances in taking forward the day to day system operation in the context of the SEM. Following receipt of comments after the GCRPs regarding the need to give a more "All-Island flavour" to the SDCs, references to all-island factors have been made, where appropriate, throughout SDC1, including within SDC1.2 (Objective of SDC1), SDC1.4.5.2/3 (Merit Order) and SDC1.4.5.5

3.1.5 *Dispatchable Demand Side Units:* The other principal change which arises from the introduction of the SEM is that it is also now possible for "Demand Side Units" to participate in the market and therefore the concept of demand side units and demand being taken into account in preparing the Indicative Operations Schedule and then in dispatch has been reflected in the SDC1s. Demand Side Units that aggregate together, 'Aggregators', are also now to be considered a user of the SDCs. Further

detail on Dispatchable Demand Customers and Aggregators can be found in the relevant EirGrid only and SONI only consultation documentations.

- 3.1.6 *Other Grid Code Users:* Additionally, the combination of the detail of each of the SDCs has resulted in a longer list of plant being reflected. Thus, Pumped Storage Plant is, for example, reflected in the SDC1 for both the SONI Grid Code and the EirGrid Grid Code, albeit that the only Pumped Storage Plant on the island of Ireland is in the South. Interconnectors are also mentioned, although the only Interconnector external to the island is the Moyle. Additionally, in relation to the existing "PPA Plant" (Power Purchase Agreement Plants) in the North, those provisions that currently exist in the SONI Grid Code have been fully retained in the SONI Grid Code only, as they tie into the legacy contractual arrangements with those power stations. The SDCs are structured so that the PPA Plant requirements appear in a separate appendix and therefore remain fully applicable to the relevant Users in Northern Ireland.
- 3.1.7 *Wind Farm Power Stations:* The following two categories of Wind Farm will now apply in the SDCs (and Grid Codes as a whole): (i) 'Controllable WFPS' which is a WFPS (Wind Farm Power Station) which can automatically act upon a remote signal from the TSO to change its output and (iii) 'Dispatchable WFPS' which is a Controllable WFPS which has a control facility equipped with EDIL which enables it to comply with any dispatch instructions from the TSO. SONI will also have a third category of Wind Farms namely 'Non-Controllable WFPS' (which are autonomous WFPSs and cannot be dispatched).
- 3.1.8 *Terminology:* The TSOs have agreed a common term for referring to 'GSDPs' (Generation Scheduling and Dispatch Parameters) in the North and 'Operating Characteristics' in the South and propose using the term 'Technical Parameters'
- 3.1.9 *New Definitions:* A number of new definitions have been required. Some of these reflect and borrow from defined terms in the SEM TSC. Others have been created in order to reflect new concepts or processes within the SDCs. The accompanying Glossary extract contains these. For the purposes of this part of the consultation, it can be broadly assumed that the other defined terms which appear in each of the Grid Codes apply broadly as currently written. It has been necessary to develop some of them to reflect a consistent approach, but many are capable of remaining much as they are.
- 3.1.10 *Timing of Availability Declarations:* It is essential that both TSOs treat real time Availability Re-Declarations in the same way, to ensure that all Participants are treated the same. When a unit has been unavailable (for any reason) and then is ready to return to service, then the time that the unit will be considered to be Available is the earliest time at which it is capable of synchronising to the power system and generating MW, using the appropriate warmth state to calculate the relevant run-up time.
- 3.1.11 *Principles of Temperature Correction of Availability:* As it is no longer appropriate for the TSO to calculate a Generator's availability as it varies with ambient temperature, it is proposed and reflected in the new SDC1 that Generators should make Availability Declarations based on the capability of the plant in real time, as the actual ambient temperature varies. This approach is already implemented in the EirGrid Grid Code and so only involves a change to the SONI requirements. The proposed approach results in Capacity Payments and Energy Payments based on actual availability, hence removing the situation whereby additional and currently unbudgeted Constraint Costs are born by the TSO.
- 3.1.12 *Changes since previous GCRP:* Following the GCRP meeting in May 2007, the TSOs have continued to develop the Sections under Common Governance of the Grid Code further by incorporating changes based on further consideration by them of outstanding issues, and by reflecting a number of the comments helpfully received

from Users and the Regulatory Authorities. The main changes to the Scheduling and Dispatch Code 1 are as follows:

- The title of SDC1 has been changed from “Generation Scheduling” to “Unit Scheduling”.
- To reflect further comments regarding the need to give a more “All-Island aspect” to the SDCs, further amendments have been made to reflect the all-island nature of scheduling, such as specifying in SDC1.4.5.3, SDC1.4.5.5 and SDC1.4.5.6 that when compiling and making adjustments to the Indicative Operations Schedule, the TSO will take into account factors occurring on the Other TSO’s system, which will have been looked at by the Other TSO. Additional references to some other all-island factors have also been inserted;
- Following comments received and further development on “Demand Side Unit” issues, certain sections of SDC1 have been expanded to refer to Demand Side Units. These include, for instance, the insertion of a new paragraph SDC1.4.3.5 that now sets out the exceptional circumstances under which Dispatchable Demand Customers are not subject to the obligation under SDC1.4.3.4 to declare Demand Reduction and other characteristics at levels consistent with what the Demand Side Unit can achieve at a relevant time. New DSU references can also be found in several other sections of SDC1, such as for instance at SDC1.4.3.6 (Changes in Availability/Demand Reduction), SDC1.4.4.8 (submission of notice) and SDC1.4.5.7 (Synchronising/De-Synchronising times);
- References to the term “System”, in its various guises, have now been clarified and made consistent throughout the SDCs by specifying where reference is being made to the Transmission System, Distribution System or to both systems or another system;
- References to units represented by a Generator Aggregator or Demand Side Unit Aggregator have now been simplified and replaced with the terms “Aggregated Generating Units” and “Aggregated Demand Side Units”. It should be noted that the Grid Codes are more advanced than the TSC in this area as the TSC does not fully reflect Aggregators yet, which the TSOs believe it will need to do. It is anticipated that a set of changes to cover this area will be introduced in the period from Go Active to Go Live in order to correct the omissions in the TSC;
- The references to data to be submitted by Pumped Storage Plants and Hydro Units have also been expanded (see SDC1.4.4.5(d) for Commercial Offer Data to be submitted by Pumped Storage Plants, and SDC1.4.4.6(f) for revisions to energy limit data submitted by Hydro Units);
- Several changes have been made to Part 1 of Appendix A to reflect the changes made to the list of Technical Offer Data from version 1.2 of the TSC, on which Part 1 of Appendix A was based, to version 2.0 of the TSC; and
- References to the different types of fuels (such as “Designated Fuel”, “Declared Fuel”, etc.) have now been simplified in the main body of SDC1 and replaced with the term “fuel”. A new paragraph has been added to Appendix B to clarify for NI PPA Generators the type of fuel that is being referred to in each section of SDC1, so as not to alter the position in relation to NI PPA Generators.

- The inclusion of Nomination Profiles by Price Takers and Generator Units under Test as a factor that is considered in determining the Indicative Operations Schedule.

3.2 **Scheduling and Dispatch Code 2**

- 3.2.1 *Overview:* The existing SDC2s in each of the Grid Codes again very much reflect coverage of the same types of issues in both jurisdictions, namely dispatching of plant onto the system, and the requirements to comply with dispatch instructions and to notify the SO in relation to any issues which arise. In the existing SDC2s there is a slightly different approach on the description of how dispatch is structured in relation to both active power and reactive power, but the substance in each is identical at the moment, and the new form of SDC2 reflects a combined approach where both active power and reactive power dispatch is fully covered.
- 3.2.2 *Market Model:* As with SDC1, the nature of the changes also reflects the existence of the new market model, namely the “pool”, and the way the provisions have developed also reflects the changes that are proposed to be made to SDC1.
- 3.2.3 *SDC2.4.2.4 (b) / new Appendix B:* This paragraph deals with Dispatch Instructions in respect of reactive power. As the treatment of Mvars is currently subject to more detailed provisions in the South than in the North, a new Appendix B, which has been taken from SDC2.8 of the EirGrid Grid Code, has been added at the end of SDC2. This Appendix will only appear in the EirGrid Grid Code.
- 3.2.4 *Changes since previous Joint GCRP meeting:* SDC2 has been amended since the previous GCRP to reflect the general changes highlighted above in SDC1. In addition to these types of changes, other key changes that are being made to SDC2 include:
- Changes to reflect confirmation of the decision to dispatch MWs in exported terms rather than generator terminal terms, by appropriate replacement of the words “Generator Terminals” with “Connection Point” (see for example, paragraph 2.4.2.4 (b) (ii) and 2.4.2.6). Provisions for the Code to ensure that in relation to NI PPA Generators the position is still consistent with the other documentation are being considered further.
 - New paragraphs (c) to (e) have been added to SDC2.4.2.11 to deal with the circumstances where a Generator is aware that its CDGU will not be able to synchronise at the time instructed by the TSO;
 - Following comments received, several sections have been expanded to apply to all users, such as SDC2.4.2.14 (Implementation of instructions by Users), SDC2.4.2.15 (User Plant Changes) and SDC2.4.3 (Special Actions). It should also be noted that as with SDC1, several new references are now being made to Demand Side Units, such as at SDC2.4.2.13 (which deals with the circumstances where Dispatchable Demand Customers can reduce or increase Demand Reduction) and in Appendix A where a new section has been added to deal with the form of Dispatch Instructions for Demand Side Units; and
 - A new Appendix C has been added to deal with the issue of Dispatch Instructions for different fuels in Northern Ireland especially in relation to NI PPA Generators.

- 3.3 ***New Definitions Glossary:*** This is a form of ‘Glossary’ containing the new definitions which are now required as a result of the modifications to the SDCs. It also contains definitions where a change is required to the existing definition in either the North or the South. Since this document was last presented to the GCRPs, it has been updated in order to reflect the latest

changes made to the SDCs, and to ensure that these terms are defined in a way that is consistent with the objectives of the SDCs. Some of the definitions which were originally taken from the TSC, have also been updated to make them more Grid Code specific and readable, as well as in certain circumstances, to reflect the latest changes made to the TSC. These definitions will not be kept as a separate section once the Grid Code Modifications are approved. For further information on the interaction between the New Definitions Glossary and the separate amended SONI Grid Code Glossary, please refer to the SONI Grid Code Modifications Paper.

3.4 **Documents provided along with this Paper:** The following sections are therefore available on the website:

- Revised draft of SDC1, together with a mark-up showing the changes compared to the last version which was circulated ahead of the GCRP meeting in May;
- Revised draft of SDC2, together with a mark-up showing the changes compared to the last version which was circulated ahead of the GCRP meeting in May; and
- Revised draft of the Glossary containing the new definitions used in the Sections under Common Governance, together with a mark-up showing the changes compared to the last version which was circulated ahead of the GCRP meeting in May.

4. SONI SDC3/ EirGrid OC4

4.1 As explained above and in the previous User Paper, the TSOs have decided not to create a new 'SDC3' section dealing with Frequency issues under Common Governance.

4.2 In order to harmonise frequency control provisions in both Grid Codes, certain existing provisions of SDC3 in the SONI Grid Code. The concept of dispatching target frequency, which is currently in place in the SONI Grid Code is also being considered for EirGrid's Grid Code. Full details on proposed changes to EirGrid's OC4.3 and any changes necessary to SONI's SDC3 can be found in the User Papers dealing with the SONI and EirGrid specific changes.

5. Next Steps

5.1 As indicated above, the consultation period for this TSOs Consultation begins on 19 June 2007 and Users have until **close of business on 10 July 2007** to submit their comments on the proposed amendments to the Grid Codes.

5.2 Following the end of the consultation period, the TSOs will consider comments received from Users in conjunction with the RAs and update the Grid Code sections as necessary. As explained earlier in this User Paper, a number of areas are being considered further and may be developed in the draft Grid Code sections, with some replacement sections possibly being posted on the website to replace those accompanying this User Paper. We will notify Grid Code Panel Members if that happens.

5.3 Non-final updated Grid Code drafts are expected to be published on the TSOs' websites by 21 August 2007 for information only. Regulatory approval of the Grid Codes will take place soon thereafter and the RAs are expected to publish a note on the AIP website approving the Grid Codes by 18 September 2007.

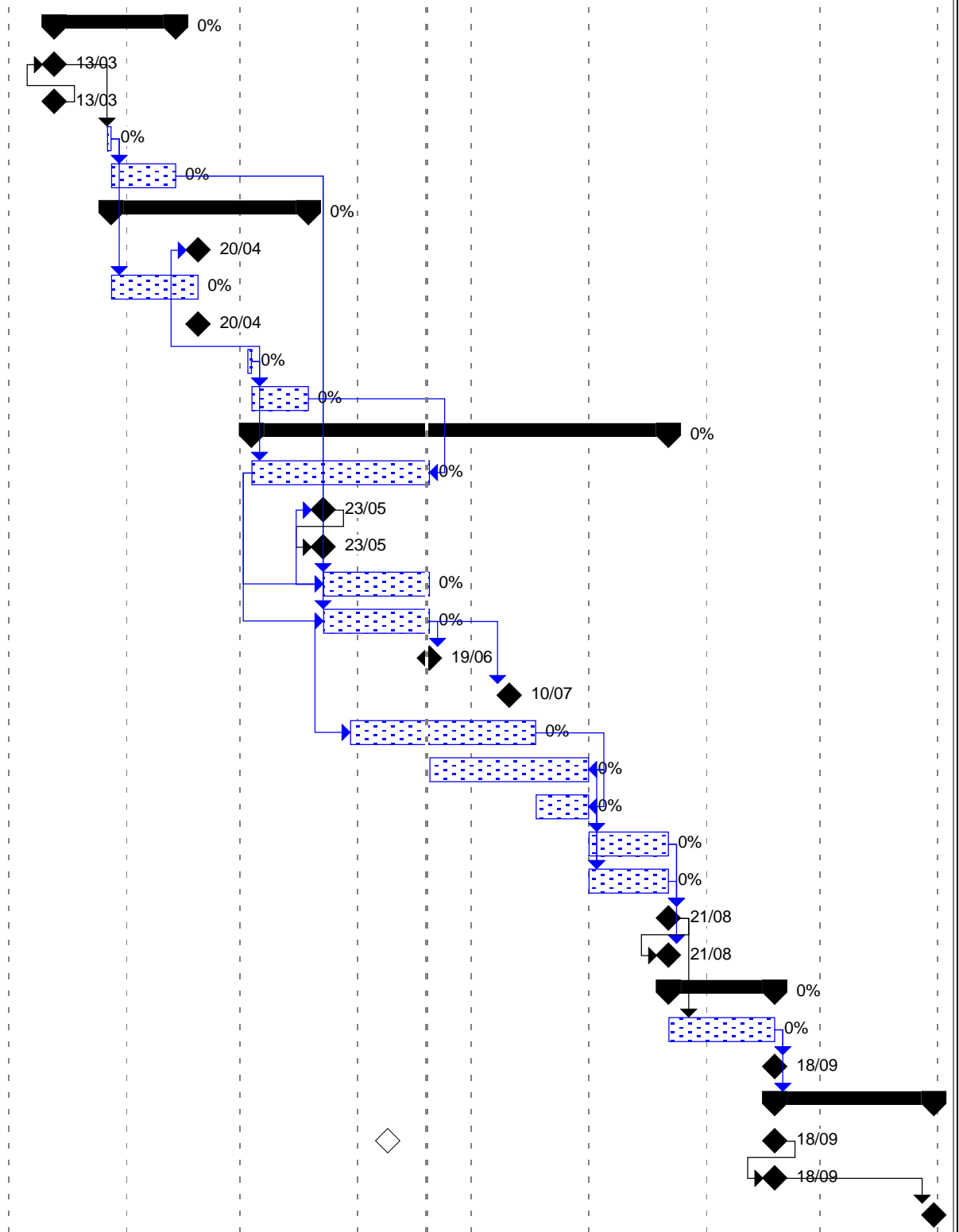
SONI Limited

EirGrid Plc

19 June 2007

TSO Harmonisation Project - Workplan

ID	Task Name	Duration	Start	Finish	Predecessors	2007																																			
						March	April	May	June	July	August	September	October																												
						26	05	12	19	26	02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10	17	24	01	08	15	22	29
1	Grid Code Harmonisation - Remaining Workplan (03/04/2007). Modified following GCRP on 27/03/2007	0 days	Thu 22/03/07	Thu 22/03/07																																					
2																																									
3	March 2007 Meeting	24 days	Tue 13/03/07	Fri 13/04/07																																					
4	✓ Notice of agenda of meeting	0 days	Tue 13/03/07	Tue 13/03/07	5FS-8 days																																				
5	✓ Send draft proposals to GCRP members for comment	0 days	Tue 13/03/07	Tue 13/03/07																																					
6	Meeting to present complete package of proposals to GCRP(s)	1 day	Tue 27/03/07	Tue 27/03/07	4FS+10 days																																				
7	Receive GCRP comments following meeting	13 days	Wed 28/03/07	Fri 13/04/07	6																																				
8	May 2007 Meeting	38 days	Wed 28/03/07	Fri 18/05/07																																					
9	Notice of agenda of meeting	0 days	Fri 20/04/07	Fri 20/04/07	12FS-10 days																																				
10	Update proposals to reflect new material and GCRP comments	17 days	Wed 28/03/07	Thu 19/04/07	6																																				
11	Send updated proposals to GCRP members for comment	0 days	Fri 20/04/07	Fri 20/04/07																																					
12	Meeting to present complete package of proposals to GCRP(s)	1 day	Thu 03/05/07	Thu 03/05/07																																					
13	Receive GCRP comments following meeting	11 days	Fri 04/05/07	Fri 18/05/07	12																																				
14	TSO/RA Consultation with Industry on Draft Grid Code	78 days	Fri 04/05/07	Tue 21/08/07																																					
15	Assess comments / update documentation for circulation to industry	33 days	Fri 04/05/07	Tue 19/06/07	12,13FF+10 days																																				
16	RA's promote start of TSO consultation on AIP website & provide links	0 days	Wed 23/05/07	Wed 23/05/07	18SS																																				
17	SMO promotes start of TSO consultation on AIME website and provides links	0 days	Wed 23/05/07	Wed 23/05/07	16																																				
18	Circulate GC documentation to industry, as available	20 days	Wed 23/05/07	Tue 19/06/07	15SS+13 days,7																																				
19	As GC documentation becomes available post on TSO websites	20 days	Wed 23/05/07	Tue 19/06/07	15SS+13 days,7																																				
20	Complete set of GC consultation material posted on TSO websites	0 days	Tue 19/06/07	Tue 19/06/07	19																																				
21	Consultation closes	0 days	Tue 10/07/07	Tue 10/07/07	19FS+15 days																																				
22	Review responses received from industry (GC Users)	35 days	Wed 30/05/07	Tue 17/07/07	19SS+5 days																																				
23	Update draft GC sections in light of responses	30 days	Wed 20/06/07	Tue 31/07/07	22FF+10 days																																				
24	Discuss consultation responses with RAs	10 days	Wed 18/07/07	Tue 31/07/07	23FF																																				
25	Finalise GC and gain necessary internal approvals	15 days	Wed 01/08/07	Tue 21/08/07	24																																				
26	Drafting of "Consultation Commentary" Report to RAs	15 days	Wed 01/08/07	Tue 21/08/07	23,24																																				
27	Submit proposed Grid Codes and Commentary to RAs	0 days	Tue 21/08/07	Tue 21/08/07	26,25																																				
28	Upload latest GC Drafts to TSO websites (for information - non-final)	0 days	Tue 21/08/07	Tue 21/08/07	27,25																																				
29	RAs approval of Grid Codes	20 days	Wed 22/08/07	Tue 18/09/07																																					
30	Regulatory approval of Grid Codes	20 days	Wed 22/08/07	Tue 18/09/07	27																																				
31	RA's publish note on AIP website approving Grid Codes	0 days	Tue 18/09/07	Tue 18/09/07	30																																				
32	Implementation/Cutover (SONI/EirGrid)	30 days	Tue 18/09/07	Wed 31/10/07	30																																				
33	Publish Grid Codes on EirGrid and SONI websites	0 days	Tue 18/09/07	Tue 18/09/07																																					
34	Publish information note on AIME website with links to TSO websites	0 days	Tue 18/09/07	Tue 18/09/07	33																																				
35	New Grid Codes in effect	0 days	Wed 31/10/07	Wed 31/10/07	34																																				



Project: ESBNG Readiness Project
Date: Tue 19/06/07

Critical		Task		Baseline		Milestone		Project Summary		Deadline	
Critical Split		Split		Baseline Split		Summary Progress		External Tasks		External Milestone	
Critical Progress		Task Progress		Baseline Milestone		Summary		External Milestone			

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