1. Attendees

1 Frank Prashad (FP), RWE npower	2 Robert Longden (RL), Mainstream Renewable Power
3 Ivo Spreeuwenberg (IS), NGET	4 Stuart Cotten (SC), Drax Power Limited
5 James Anderson (JA), ScottishPower	6 Michael Dodd (MD), ESB International
7 Paul Jones (PJ), E.ON	8 Helen Snodin (HS), Scottish Renewables and HIE
9 Garth Graham (GG), SSE	10 Ricky Hill (RH), Centrica
11 Louise Schmitz (LS), EDF Energy	12 Guy Nicholson (GN), RenewableUK
13 Anthony Mungall (AM), Ofgem	14 Jonathan Hodgkin (JH), Ofgem
15 Scott Hamilton (SH), Ofgem	16 Steve Davies (SD), DECC
Apologies for absence: Tim Russell (TR), REA; Simon Lord (SL), First Hydro	

2. Overview of discussion

Ofgem opened the meeting, noting the progress that had been made in the earlier Technical Working Group (WG) meetings in developing ideas on what options Redpoint should simulate in their modelling scenarios. Taking this forward, the objective for WG meeting 4 was to review progress made so far on Themes 1 through 4, and to consider Theme 5 (Unit Cost of Transmission Capacity), and Theme 6 (G:D split).

Review and feedback from WG 3:

Ofgem circulated a draft note of WG meeting 3 and requested feedback from participants on their accuracy. Ofgem noted that in a change from previous meetings, it had released the draft note in a Microsoft Word document rather than pdf document to allow WG members to suggest revisions to the draft note, should they be necessary. Ofgem noted that it had received one set of comments, it was agreed that these comments would be considered for the final version of the meeting note.

Review of actions points from WG meeting 3:

Ofgem noted that action point 10a, which required Redpoint to provide a question and answer document on their modelling work, remained outstanding. It was expected that this would be completed in the following week.

Ofgem further noted that action point 11, requesting Ofgem provide the WG members with information on the modelling assumptions, would now be completed by 24 August. All other action points had been completed within their stated deadlines.

As an action from the previous meeting, the WG requested information on the process through which Ofgem had mapped the issues raised by stakeholders throughout the Project TransmiT process to the 6 Themes being considered by the WG. In response, Ofgem had circulated a 'mapping document' which explained the process through which they had distilled the various issues into the 6 Themes of the Project. Ofgem had requested feedback from WG members on the mapping process. Ofgem noted it had received several comments on the mapping document prior to the meeting and these would be reviewed and considered accordingly.

Stakeholder Feedback:

Some members noted that there was concern among industry stakeholders about the intensity of the Project TransmiT timetable. Specifically, one member noted that the frequency of meetings and the volume of documentation, comments and analysis in circulation could potentially weaken the Project's quality of output. Ofgem noted this point, stating that while this was a valid concern it could be partly mitigated by reducing the flow of documentation and the number of action points requested of WG members between meetings.

Specifically in relation to the preparation for WG meetings, the WG agreed that the volume of documentation and comments in circulation was at risk of negatively impacting upon the quality of debate in the WG meetings. Ofgem noted this point and agreed with the WG that, where possible, documentation should be circulated at the earliest opportunity to allow WG members sufficient time to consider and reflect on the issues they raised. Ofgem also noted that a further discussion across all themes was scheduled to take place at the next WG meeting (WG 5).

The WG noted that reviewing and reconsidering Themes discussed at previous WG meetings was proving beneficial. It was agreed that the opportunity to reflect and return to earlier Themes was an important part of the WG process and should be continued in the remaining WG meetings.

Update on Theme 1, Reflecting Characteristics of Transmission Users:

As an action point from WG meeting 3, LS had circulated a summary of the WG's comments on NGET's Improved ICRP strawman model to assist NGET in further developing the detail of their proposal. Reflecting on LS's document, IS had since revised the strawman model and circulated this via email in advance of the WG meeting.

LS provided the WG with a brief review of her summary paper and the key points the document intended to capture. These included:

- Requests for further detail in the justification for the use of Annual Load Factor (ALF) as a reasonable proxy for driving long-run investment in the transmission network in the calculation of tariffs in and NGET's Improved ICRP model.

- Further detail, or explanation, on the justification for the Peak / Year Round separation, and potentially charging some generators for both.
- General comments about NGET's proposal, mainly requesting further detail and explanation of various aspects of the proposal (inc. explanation of: graphs, indicative tariffs, plant classifications, etc.).

IS noted the valuable contribution LS's document had made in further developing NGET's proposal. IS informed the WG that he was optimistic NGET's updated proposal accounted for these comments and currently had a colleague reviewing the LS paper to provide feedback on how the points raised in the document were being addressed in NGET's revised proposal. It was hoped that information on how each point had been addressed could be circulated to the group by 19 August.

Following this, IS gave an overview of NGET's revised Improved ICRP strawman, highlighting the changes made since the last version. Additions and amendments included:

- More information on the treatment of constraints
- More detail on the relationship between load factor and constraints, making the point that load factor is not the only factor that has an influence on constraint levels and cost (a simplified assumption that remains robust in the short to medium term).

The WG noted NGET's efforts to consider their comments and analytical points. Nonetheless, the WG wished to note existing concerns that they believed needed to be addressed before they could fully embrace NGET's strawman model.

Comments included:

- Some members of the WG believe the justification for using ALF as a proxy in the calculation of tariffs is credible, but remain to be fully convinced of its suitability without further detail and analysis, particularly the implied link between load factor and constraints.
- There were perceived problems relating to (a) the use of past behaviour as an indicator of future use and the derivation of tariffs and future "access" and (b) the background condition used in NGET's modelling approach.
- Clarifying the linkages between NGET's Improved ICRP proposal and the SQSS (ie why it is reasonable to de-link current SQSS, or as proposed under GSR009, from TNUoS charging). One member noted that the charts which intend to evidence this relationship in NEGT's recent paper seem to demonstrate that this relationship breaks down across many boundaries.
- Imposing different tariffs on individual generators had not been fully justified and could, potentially, be discriminatory.

IS noted his confidence in a revised paper's ability to account for these concerns, briefly making the following points:

- Applying a user-specific load factor to derive tariffs is justified on the basis that each user will contribute differently to constraint costs (point a. above).

- The proposal represents an inherent simplification of the cost benefit analysis that currently prevails of which there are many iterations for many different demand levels (point b. above).
- One alternative approach (to the use of annual load factor as a proxy for the impact users have on the planning decisions for long-run investment in the transmission network) is to revisit the introduction of different access products previously considered through the Transmission Access Review process. IS was of the opinion that introduction of DECC's Connect and Manage regime effectively removes this as a viable option.
- The revised paper will reflect different options for load factor, including the use of no load factor at all, and use of the actual background conditions (ie removing some of the proxy elements contained in the current tariff calculation).

The WG agreed to consider his revised proposal and to report back through email and future WG meetings.

To advance WG thinking on their proposal, NGET proposed a WG sub-committee meeting on 24 August. It was hoped that the sub-committee meeting would help the WG reach consensus on NGET's proposal, or provide an opportunity for others to raise alternative models for consideration. The WG agreed with this proposal. Ofgem stated its intention to attend the sub-committee meeting and minute the discussions which could be reported to the full WG at meeting 5 (30 August). IS agreed to circulate a draft agenda for the sub-committee meeting by 19 August.

Update on Theme 3, Treatment of Security Provision:

As an action point from the previous meeting, IS had, as requested, circulated to the WG information on the distribution of nodes around the average security factor of 1.8, and for nodes more than 1 or 2 standard deviations from the mean to indicate the zone in which they reside. IS had also circulated the requested information on the SECULF (Secure Load Flow) methodology.

One member of the group suggested that the data on the distribution of nodes around the average 1.8 security factor be presented in a different format to better illustrate the zones in which those nodes which deviated most significantly below or above the average are located. IS responded by noting that he did not consider further analysis was necessary on the basis that as the SECULF model is flow related, and will take account of all credible contingencies in an area, the parts of the network that the member is interested in are adequately captured by the analysis provided.

The WG noted the general consensus that the current treatment of security provision was appropriate and should be modelled in its current form.

Ofgem noted that the key outstanding issue in Theme 3 was the security treatment of potential transmission links to island groups within the TNUoS methodology.

As previously noted in WG 2, the growth of demand on the islands may lead to a situation where generation connected to the mainland network via an island link could shift from a "local" circuit to being considered part of the "wider" network under the charging

methodology due to the application of the local/wider boundary criteria[1]. This will mean that a Security Factor used in the calculation of a generator's TNUoS tariff will be equal to the GB average Locational Security Factor value, currently 1.8[2], and not the actual Local Security of 1.0 (reflecting the likely situation that the loss of a single circuit would result in complete loss of access to the network). Even in a scenario where a second additional cable may be built linking the island group to the mainland network it is likely that the loss of a single circuit would result in partial loss of access to the network (the design of the link is highly unlikely to be fully compliant with the onshore SQSS).

The issue to consider is whether there is justification to treat island links as a distinct group within the circuits captured by the GB average Locational Security Factor applicable to the wider network and continue to apply a factor reflective of the actual redundancy. Ofgem noted that the modelling approach will need to make a decision on this issue. The two options were noted as: i) should the status quo assume that potential island links will transfer to the wider network and apply the wider security provision (1.8) from this point; or ii) treat islands as a "special case" on the onshore wider network and allow charges to continue to be set on the basis of a security factor less than 1.8 (ie the expected long-run redundancy of the islands links will not be 1.8).

Some members of the group noted concerns regarding option ii) for the reason that special treatment for islands generators in this instance could potentially set a precedent for concessions in other areas. Following a brief debate, the WG were of the broad opinion that the modelling should seek to apply the GB average Locational Security Factor to circuits considered to be part of the wider network.

Some members confirmed their understanding that island links designed with little or no redundancy (ie non-SQSS compliant) would not have firm guarantee of access to the wider system and generators behind the boundary would not receive compensation for constraints, however they would receive a reduced TNUoS charge through the local circuit charge.

The WG agreed that option i) should apply for the purposes of Redpoint's modelling. However, it was agreed that the treatment of islands would need further consideration at future WG meetings.

Update on Theme 4, Reflecting New Transmission Technology:

The discussion began by reflecting on TR's paper on the options for calculating relative impedance which had been circulated to the WG. The WG was in general agreement that TR's overall approach was credible and presented a logical way of dealing with impedance, although there were still choices for dealing with links that cross multiple boundaries. It was agreed that before deciding whether to adopt a simple approach based on calculating

[1] All generation that is subject to TNUoS and not connected directly to a Main Interconnected Transmission System (MITS) substation will have a circuit component to their Local Charge. A MITS substation is defined as: (i) A Grid Supply Point (GSP) connection with 2 or more transmission circuits connecting at the substation; or (ii) More than 4 transmission circuits connecting at the substation.

[2] The GB-wide Locational Security Factor is included within the wider tariff to recover the costs of ensuring that the network can cope with peak demand under various SQSS contingency conditions.

relative impedance for the most constrained boundary, or a more complex approach taking into account all intervening boundaries, the impact of both approaches would be modelled by IS and reported back at WG meeting 5.

Ofgem noted that a key outstanding issue within this theme concerned the treatment of converters, ie should the full cost of the link, including converter station costs, be subject to the locational signal?

Following some debate, the WG proposed that for the improved ICRP model converter costs should be excluded from the locational charge calculation and spread across all users through the residual charge element. A lengthy debate on the approach for the status quo model followed, with some WG members preferring to include all HVDC costs, including converter costs, in the locational signal. This discussion noted the precedent of offshore arrangements whereby converter station costs are included in the expansion constant. Conversely, some WG members noted their preference for a consistent approach for both status quo and improved ICRP (socialised model will not be identical) which they deemed necessary if treatment of HVDC was not to contribute to significant differences in modelled outputs and obscure other effects. It was proposed that the decision about which costs to include in the status quo model should be reserved to Ofgem, which would make its decision in light of the modelling options available. This issue will be further discussed at WG meeting 5.

One member noted that an approach to take converter station costs out of the locational calculation should be applicable to both onshore converter stations and those applicable to offshore links. IS confirmed that the balancing services cost impact of converter stations will not be considered by the WG.

Update on Postalised / Socialised strawman proposal:

Following HS and GG's presentation at WG meeting 3, an action point was agreed that GG would develop his strawman in more detail in advance of WG meeting 4. In particular, GG was asked to provide a more detailed exposition, including worked examples, of his ideas on charging and reconciliation. The WG spent some time considering the updated proposal.

GG talked the WG through his paper and summarised the key choices within his proposal. Key aspects of the proposal include:

- Applies solely to Generation charges
- Limited to wider network (MITS) cost recovery but retains local / wider boundary
- Based on a £/MWh generation figure which would be set ex-ante

The WG acknowledged the contribution of the proposal in developing WG thinking on a socialised/postalised model.

Ofgem reminded the working group that the primary outstanding issue to be resolved was the decision on retaining the local / wider boundary in a socialised/postalised model. The WG was in general agreement that the decision to remove or retain the local / wider boundary was, in some sense, dependent on the significance given to ICRP principles within

a socialised/postalised model, ie is retaining a local boundary necessary to ensure that charges more accurately reflect a user's impact upon the network?

GG confirmed that the proposed strawman retains the current arrangements for wider and local boundary charges (ie the labels of "sole use" to local assets covered by a local circuit charge is not intended to suggest a movement to a deep connection charging boundary, local assets would still be charged on the basis of infrastructure assets being potentially shareable). PJ's proposal represents a fully postalised model that removes the local boundary. For the avoidance of doubt, Ofgem noted that the postalised model proposed by PJ was under consideration along with those proposed by NGET and GG.

One member of the WG expressed concern that in the event that Redpoint modelled a fully postalised scenario (removing local boundary) it would produce 'extreme' outputs that will lead industry to reject a postalised/socialised charging system. As an alternative, she proposed consideration of the 'less extreme' Scottish Government proposal (submitted in its response to the Project TransmiT consultation), which advocated a reduction in the number of zones.

Ofgem responded by stating that the purpose of the WG process was for the WG members to arrive at a consensus on a socialised/postalised scenario to be simulated in Redpoint's modelling. Ofgem stated that it was for the WG members to decide on the form that model would take.

Reflecting on the current models under consideration, the WG considered whether it would be suitable to review demand charging within a postalised model. The WG asked Ofgem to clarify if consideration of Demand charges was within the scope of Project TransmiT and included in Redpoint's Terms of Reference as a variable input. Ofgem agreed to clarify this for the next meeting.

Theme 5, Unit Cost of Capacity:

Ofgem noted that there had been prior thinking that discussion of the unit cost of capacity could be considered under the RIIO price control review rather than fully debated within the WG. Some members of the WG noted that while this was sensible, it was, nonetheless, important that the WG discuss it while they had the opportunity.

Comments included:

- FP noted his view that the exclusion of non-distance related assets meant that the method of calculating the expansion constant was sub-optimal.

- NGET confirmed that in their Improved ICRP strawman the expansion constant would remain unchanged from the status quo.

- GN noted that any upward revision to the cost data used to underpin the expansion constant will have a larger impact in the northern regions of the system where applicability of expansion factors (derived from the expansion constant) is more prevalent.

The WG agreed that, subject to noting FP's views in the report, consideration of the unit cost of capacity should be deferred to RIIIO-T1.

Presentation on Offshore Charging

GN gave a presentation on options for dealing with onshore-offshore charge imbalances. GN's presentation outlined a number of potential options for change:

1. Offshore local assets charged G=100% D=0%.
2. Offshore local asset charged G=27% D=73%
3. Offshore local assets charged G=90% but local charge based on 400kV OHL cost (i.e. expansion factor 1).
4. No Local assets

It was noted during the presentation that the onshore-offshore cost differential (£/kW/annum) results from the higher cost of offshore local assets.

IS challenged the description of the current situation as "not cost reflective". In this context, cost reflectivity is about the relativity of the locational differential (there is no change in locational signal) and not the absolute tariff levels (which will be higher for offshore due to the higher cost of links).

The WG debate noted that there are two suggested issues:

(i) **Cost reflectivity of the current arrangements:** The majority of the WG did not agree that this was a valid issue on the basis that the locational differential between generation users does not change. The model still ensures that everyone is charged on the same basis, ie all generators are treated the same for the wider cost reflective signal.

(ii) **Do the arrangements create a disproportionate charge:** The WG was of the broad opinion that the current methodology results in a local charge being applied to some generators of such a size that it has a revenue effect on total revenue recovery, itself a result of the G:D split. IS agreed that there is a disproportionate impact on revenue as a result of the application of the current G:D split.

The WG was concerned that options which reduced the locational differential would be less cost reflective with little or no justification.

IS asked for clarity on what problem we are trying to solve; is it a revenue issue (solved by changing G: D split – solution 1) or offshore local charges are too high making projects uneconomic (solutions 2, 3 or 4). The WG noted that options 2, 3 and 4 solve the problem by providing a "subsidy" to offshore generators from onshore users (Solution 1 is 27:73 on wider costs and onshore local costs only which decreases proportion of costs recovered from D users as offshore local costs recovered 100% from G). Ofgem noted that the G:D discussions are actually suggesting a movement the other way, ie increasing D proportions and reducing G.

Ofgem noted that of the 4 options GN presented, it believed that option 4 (no local assets) was the only variable change that could realistically be included in Redpoint's modelling, at

this stage. Ofgem requested that further feedback on GN's proposals should be circulated via email. Some members of the WG requested that in the WG report, and the October consultation, the WG's discussions of G:D split for offshore should be recorded.

Theme 6, G:D Split:

The discussion began with GG providing a useful overview of G:D split arrangements with comparable European transmission charging regimes.

Comments included:

- The WG noted that the impending European Tarification Guidelines would inevitably mean there would be a requirement for a change in the current GB G:D split within the medium-term. This is a consequence of EU regulations on Cross Border Electricity Exchanges.
- It was agreed that IS would calculate average GB generation charges in accordance with the European Tarification Guidelines over the next few years to illustrate when the GB arrangements are likely to become in breach of binding EU Transmission Tarification Guidelines. IS agreed to circulate this to the WG for 24 August.
- Some members of the WG noted the timeframes for change would have a significant impact upon retail markets. For that reason, it was noted that an 18 month – 2 year transition period would most likely be required in any change process. This would enable industry to mitigate the impact upon supplier contracts and end consumers' bills (eg there are typically more fixed price and fixed terms deals). It was noted that this is a transitional issue to be considered.
- The discussion noted that a potential movement to the application of an average G=0 split would require more negative generator charges relative to the current position. The comment was made that this could be perceived as one set of the generator offsetting another set.
- Some members noted that the WG will have to provide clear and strong justification to move the proportions of G:D split from their current level.
- The impact on cross border trade was raised as an issue for consideration. Some WG members agreed that it is an issue but to be adequately assessed there is a need to ensure that we are comparing like-for-like across Europe. Some of the WG members also noted concern about the impact of change for UK renewable generators. They noted that a scenario where it became cheaper to import renewable energy from France rather than parts of the UK was highly undesirable.
- IS took an action to circulate the latest summary paper from ENTSO-E which provides data on indicative European transmission tariffs, but noted that this document fails to provide the required transparency of all the costs that generators are subject to in the charging structure within countries connected to GB via an interconnector.
- There was general consensus that the current 27/73 G:D split was adequate, but the impending EU Tarification Guidelines made a potential case for change (ie to), possibly as part of a larger phased transition to lower the G proportion.

Discussion of transition issues:

Ahead of the formal discussion of transitional issues in WG meeting 6 (9 Sep), it was agreed that it would be beneficial to compile a log of potential transition issues at this stage of the WG process.

Issues included;

- Impact upon tariffs
- Mid-year tariff changes
- Should the change process be unilateral / phased / staggered?
- Desire for some form of TEC declaration amnesty
- Impact upon retail markets (inc. legal implications for consumer contracts)
- Impact upon consumer charges (potential for sizeable variance between regions).

Discussion of Draft WG Report:

Prior to the meeting, IS had circulated a template / outline for the WG report. The WG agreed that the proposed format for the WG report was suitable. GN proposed to circulate a spreadsheet that would assist in mapping issues raised within the WG meetings to the corresponding sections of the WG report. The WG agreed this would represent a good starting point.

IS stated his intention to begin drafting the WG report and seek feedback from WG members on its accuracy. As part of this process, he requested assistance from WG members in the development of each section of the report. The WG agreed to lend assistance where possible. To progress this, the WG agreed IS would circulate a matrix to allow WG members to volunteer to assist in developing each section of the WG report by 19 August. WG members would pledge assistance by 26 August.

3. Future meetings

The updated and current WG schedule is set out below.

WG sub-committee (24th Aug)	A WG sub-committee will meet on 24th August at NGET Offices, Warwick, to give further consideration to Theme 1.
WG 5 (30th Aug)	'Tidy up' session across all 6 themes.
WG 6 (9th Sep)	Group discussion will focus on transitional issues.

4. List of Actions

	Action	Date for completion	Owner	Status
1.	Circulate link to 'GSR009' Report.	20/07/11	IS/AM	*completed*
2.	Circulate links to relevant papers (in particular, from ACER) discussing European developments (ie, issues NOT within scope of TransmiT).	20/07/11	AM	*completed*
3.	Publish Ofgem and NGET presentations from WG1.	20/07/11	AM	*completed*
4.	Verbal update at WG 2 on Ofgem process for GSR009.	01/08/11	AM	*completed*
5.	Develop 'socialised charging' strawman, identifying key choices to be made under each of the 6 themes Ofgem has identified.	09/08/11	HS	*completed*
6.	NGET to arrange briefing session for interested parties in the WG to explain NGET's potential options for change (in particular in relation to theme 1 – reflecting characteristics of users) in more detail; explore possibility of this being held Ofgem's Millbank office on 28 July, following the CAP192 workshop.	28/07/11	IS/AM	*completed*
7.	Email any comments on modelling work terms of reference, for discussion with Redpoint at WG 2.	31/07/11	All	*Completed*

8.	Clarify the issues each of the six themes is intended to address	09/08/11	Ofgem	*completed*
9.	Clarify in the minutes and at the wider stakeholder event that: • Redpoint's work for Project Transmit will address TNUoS charges only, and that LMP is a separate piece of work (albeit using the same model) that will follow later • Redpoint will carry out only three model runs – the status quo, one postalised charging approach and one improved ICRP charging approach	11/08/11	Ofgem	*completed*
10.	Email any comments on Redpoint's modelling approach	05/08/11	All	*completed*
10a.	Produce Q&A on modelling approach	12/8/11	Redpoint	
11.	Circulate key modelling assumptions	24/08/11 (originally 19/08/11)	Ofgem	
12.	Email any comments on key modelling assumptions	TBA	All	
13.	Circulate worked numerical examples of NGET's improved ICRP approach for generic plant types	02/08/11	IS	*completed*
14.	Email alternatives/builds on NGET's improved ICRP proposals	09/08/11	TR/All	*completed*
15.	Collate and circulate a list of outstanding issues with National Grid's improved ICRP proposal for	11/08/11	LS	*completed*

	theme 1, separately identifying major "philosophical" issues and those of detail			
16.	Update National Grid improved ICRP proposal for theme 1 addressing issues raised in Action 15. and providing more detail on tariffs	16/08/11	IS	*completed*
17.	Circulate initial draft Working Group report	12/08/11	IS	*completed*
18.	Email any issues missing from Ofgem's paper arising from Action 8.	16/08/11	All	*completed*
19.	Circulate proposal for changing the G:D split for offshore generators	10/08/11	GN	*completed*
20.	Circulate paper providing more detail of the postalisation proposal presented to WG3, including worked examples for charging and reconciliation	12/08/11	GG	*completed*
21.	Write up, further develop (including dealing with multiple boundaries) and circulate National Grid's proposal for HVDC	12/08/11	TR	*completed*
22.	Circulate presentation on operation of SECULF	10/08/11	IS	*completed*
23.	Circulate information showing the distribution of nodes around the average security factor of 1.8 and for nodes more than 1 or 2 standard deviations from the mean indicate the zone they	12/08/11	IS	*completed*

	are in			
24.	Model the impact of different approaches to calculating relative impedance for HVDC and table at next WG meeting	30/08/11	IS	
25.	Clarify the extent to which changes to demand charges are in scope and are being modelled by Redpoint	30/08/11	Ofgem	
26.	Calculate average GB generation charges and compare to the European tarification guideline	24/08/11	IS	
27.	Circulate link to ENTSOE report	18/08/11	IS	
28.	Circulate matrix of sections of WG report with proposed drafting delivery dates (note IS's section to precede others in order to provide a guide on style and length etc)	19/08/11	IS	
29.	Nominate yourself to draft a section of the WG report (see A.28)	26/08/11	All	
30.	Circulate agenda for sub group meeting on 24/08/11	19/08/11	IS	