REDPOINT

Summary of Working Group Meeting 10 October 2011

1 Introduction

This note summarises discussion of Redpoint provisional modelling results presented at the TransmiT Working Group meeting on 10 October. The note is structured to reflect the focus of discussion around generation build potential, results for Stage 1, and the methodology for setting CfD levels in Stage 2 of the modelling. Other issues that will be addressed in further modelling are noted at the bottom of the summary.

2 Generation build potential and annual build limits

There were a number of questions about the constraints placed on annual and cumulative generation build by technology. The working group expressed a view that build constraints should reflect non-economic considerations such as planning, supply chain and finance constraints, whereas economic factors should be captured endogenously in the modelling. There is a delicate balance between modelling real world restrictions and allowing enough flexibility for the economics to have an effect.

There was some debate over whether the TEC register (used as a basis for generation constraints to 2020) was suitable for informing build constraints. Some members argued that the TEC register was not suitable because it incorporates economic considerations and that there is a need to be careful about constraining locational decisions according to the TEC register. On the other hand, others argued that using the TEC register is only incorrect if there is time to change from this before 2020. Further, there is a lot of plant in the TEC register (not all of which will be delivered) and therefore it should allow sufficient choice between different projects.

The discussion then moved to the constraints applied to specific technologies, where a general consensus emerged that constraints should be loosened for:

- growth in coal with CCS between 2020 and 2030 (but at the same locations as for currently)
- onshore wind to 2030
- tidal and wave to 2030.

There was also some debate about appropriate constraints on biomass. For offshore wind, it was noted that it is important that constraints do not place stringent limits on locational build decisions.

Redpoint actions

Following the meeting, Redpoint circulated further detail on build rate assumptions. Working Group feedback up to 2pm Wednesday 12 October was collated and used to derive new maximum capacity assumptions, as summarised in Table 1 (changes to aggregate figures in bold).

The limit on coal with CCS in 2020 has been reduced, while limits for onshore wind, tidal and wave, and offshore wind have been loosened, according to the following:

- The CCS limit in 2020 has been reduced to include demonstration projects only, bringing greater consistency with the TEC register. CCS locations have been reviewed for proximity to depleted gas fields. Limits on CCS in 2030 have been maintained to allow a ramp up of CCS capacity to 2030.
- Upper limits for onshore wind have been increased to 17,000MW by 2020 and 21,600MW by 2030, based on Working Group feedback and consistent with the RenewableUK high scenario.
- Tidal and wave limits have been increased in 2020 and 2030 by bringing selected projects forward and increasing overall capacity limits in line with Working Group feedback. However, actual build is likely to be constrained by an annual build limit of 1,000MW for tidal and 1,000MW for wave, allowing no more than 2,000MW of aggregate tidal and wave build in any one year.
- Maximum build of offshore wind in 2020 and 2030 has been increased by updating the capacities available from specific development zones according to the 2011 Offshore Development Information Statement (ODIS).

Table 1 Updated maximum build assumptions

(MW)		South England	North England	Wales	South Scotland	North Scotland	Embedded	Total	Growth from existing[1]
New nuclear	2020	1,670	0	0	0	0		1,670	1,670
	2030	13,200	4,850	3,600	0	0		21,650	21,650
	TEC register								21,650
Coal + CCS	2020	0	800	0	1,950	0		**2,750**	2,750
	2030	0	4,740	0	1,950	0		6,690	6,690
	TEC register								2,450
CCGT + CCS	2020	0	0	0	0	0		0	0
	2030	4,786	2,000	0	0	0		6,786	6,786
	TEC register								0
Onshore wind	2020	98	1,152	118	6,532	7,531	1,570	**17,000**	11,496
	2030	348	1,787	420	8,230	9,245	1,570	**21,600**	15,047
	TEC register								6,052
Dedicated biomass	2020	0	879	350	97	0	2,804	4,130	1,229
	2030	165	879	649	347	0	4,511	6,551	1,943
	TEC register								1,546
Tidal and wave	2020	155	0	85	0	1,359	401	**2,000**	1,589
	2030	5,000	0	400	0	5,210	1,315	**11,925**	10,600
	TEC register								3,232
(MW)		**Offshore south**	**Offshore Irish Sea**	**Offshore North Sea**	**Offshore Scotland**			**Total**	**Growth from existing[1]**
Offshore wind	2020	7,735	4,691	6,817	3,835			**23,078**	21,413
	2030	12,879	5,891	19,595	9,610			**47,975**	46,310
	TEC register								25,564

Notes: [1] Excludes growth in embedded capacity, for comparison with TEC register figures.

Redpoint also received useful feedback from the Working Group on assumptions about the location of new CCGT and onshore wind. However, there was no clear consensus across the Working Group, so we have maintained our existing locational split for these technologies, based on the TEC register in the short term and a wider geographical spread in the longer term.

Maximum build assumptions have been reviewed and broadly retained as presented at the Working Group meeting, reflecting less feedback on maximum annual build assumptions. However, maximum annual build constraints for onshore and offshore wind have been scaled up to facilitate the delivery of increases in maximum build potential for these technologies.

Table 2 Updated maximum annual build assumptions

	Previous maximum annual build (MW)	Updated maximum annual build (MW)
New nuclear	4,000	4,000
Coal + CCS	4,000	4,000
CCGT + CCS	4,000	4,000
Onshore wind	2,000	4,000
Offshore wind	5,000	7,500
Dedicated biomass	2,000	2,000
Tidal and wave	2,000	2,000

3 Stage 1 modelling results

There were several key points made on the modelling results for Stage 1:

- no new nuclear build in the Socialised scenario is unrealistic
- large decreases in offshore wind tariffs in Socialised have a very small impact on aggregate offshore wind build, which seems strange
- there is a need to be transparent about assumptions made about gas exit charges.

Redpoint actions

- Results for Stage 1 reflect the modelling approach taken, involving fixed CfD levels across the different scenarios. More realistic scenarios for build by technology will be produced in Stage 2. That said, we plan to adjust our modelling approach slightly to respond to this feedback and avoid the unlikely outcome of nuclear build being driven entirely by the transmission charging regime.
  - In the Stage 1 approach, CfD levels are set at the average LRMC (including TNUoS) of each technology under Status Quo and then held constant under Socialised and Improved ICRP. TNUoS tariffs for nuclear are slightly higher under Socialised, leading to a small increase in LRMC. Because the tariffs are tightly matched to the LRMC in a Status Quo world, a small increase in LRMC leads to the result that nuclear is not economic and does not get built under the Socialised policy option.
  - For future model runs, we intend to increase CfD levels slightly for nuclear to move to a less extreme result for build under Socialised charging. Results to date are correct given

the input assumptions, but are very sensitive to the level of CfDs set under Status Quo (which are an uncertain parameter as they will be set according to future Government decisions). Nuclear CfD levels will be increased by no more than 3% (across all scenarios) to ensure that some nuclear build remains under Socialised charging.

  - This will have no impact on modelling results for the Socialised and Improved ICRP scenarios in stage 2, as CfDs will be re-set according to the average LRMC of each technology under that scenario (as detailed below).

- Offshore wind build is constrained by assumptions on generation build potential, which will be reviewed and reassessed as discussed above.
- Gas exit charges are not modelled endogenously, but are fixed according to projections until 2014 and held constant by zone thereafter. These assumptions will be made clear in wider reporting of results.

4 Setting CfD levels for Stage 2 modelling

There was a substantial discussion about the approach to setting CfD levels for Stage 2 modelling of the Improved ICRP and Socialised scenarios. There was no consensus on the existence of a single correct approach, but several pertinent points were made.

- There are many different ways to set the generation mix under different charging scenarios.
- The modelling will need to bring out the conclusion that it is not possible to set transmission charging and low-carbon support levels independently, but should concentrate on the impacts of transmission charging.
- We should avoid second guessing Government policy in setting CfDs and need to be clear about what we are trying to achieve by adjusting low carbon support.
- Under all scenarios, there is a need for diversity of the generation mix to meet targets.
- The approach to setting CfDs should be clear so that people can interpret the results.
- Provisional modelling results indicate that small changes in CfDs can cause large changes in deployment of specific technologies.

Redpoint actions

We will adjust our Stage 2 modelling approach to ensure that low-carbon targets are met with a diversity of generation types under all scenarios. This will be achieved through a three step process.

1. For both Improved ICRP and Socialised, CfDs will be set endogenously according to the average LRMC of each technology, as for the Stage 1 Status Quo scenario. This should achieve an outcome comparable to – but not identical to – the low carbon targets reached in Status Quo. Setting CfDs by technology will also mean that there will not be significant rents accruing to any one technology.
2. Support for all renewables until 2020 will be scaled by a uniform percentage to achieve the same renewable share in 2020 as under Status Quo.
3. Support for renewables from 2020 to 2030, as well as nuclear and CCS until 2030, will be scaled to achieve the same carbon intensity in 2030 as under Status Quo.

This approach will allow locational decisions to vary across charging scenarios. There will also be some variation in the precise generation mix, but a diversity of low carbon generation should be achieved under all scenarios.

When circulating results to a wider audience, we will show CfD levels by technology in 2020 and 2030 to clarify how these have been set.

5 Other issues

Several other issues were raised and will be addressed in further modelling and reporting of final results.

- For comparing different transmission charges, there is a need to compare on a like-with-like basis, including on local and wider charges and showing as a £/MWh for different technologies. Also, we should refer to 'peak security' not 'demand security' for Improved ICRP and show actual tariffs for final modelling results.
- Would be useful to report actual tariff numbers for the final modelling.
- Need to set out assumptions used for transmission reinforcement, including limits on transmission investment once this is modelling endogenously.
- Drivers of locational choice of build for offshore wind under Socialised charging need to be made clear.
- We need to explain how OCGT build is driven.