

Appendix G Connections

G.1 Connections Policy

In November 2010 the Utility Regulator published a consultation on Electricity Connection Policy to the Northern Ireland Distribution System¹.

The purpose of the consultation paper was to identify the specific areas of the current Statement of Charges for Connection to the Northern Ireland Distribution System which may need to be reviewed. These areas could have an impact on the current costs to connecting customers and also those who pay for use of the system that they are already connected to.

The Utility Regulator then published its Next Steps Paper² on Electricity Connection Policy for the Northern Ireland Distribution System in May 2011. Within the 'next steps' paper, a number of areas were identified as relevant to RP5. These are discussed in the following sections, with the Utility Regulator minded to position stated for each.

G.2 Subsidy for New Domestic and Smaller Business Connections

The current charging methodology in the Statement of Charges produced by NIE T&D provides information for domestic customers and small business that require a new connection. Any customer in this category wishing to connect is required to pay 60% of the estimated cost of installing new and/or modified Connection Assets.

In the Next Steps paper the Utility Regulator confirmed that it would remove the 40% subsidy from the start of RP5 in order to promote cost reflective charging and to encourage connections at the points of the network that require the least construction of new assets.

1

http://www.uregni.gov.uk/uploads/publications/Consultation_on_Electricity_Connections_to_the_NI_Dist_System_Vfinal.pdf

2

http://www.uregni.gov.uk/uploads/publications/Next_Steps_Paper_on_Electricity_Connections_to_the_NI_Dist_System_V_final.pdf

G.2.1 Utility Regulator Minded to Position for Connections Subsidy

The Utility Regulator is minded to instruct NIE T&D to remove the 40% subsidy from the Statement of Charges.

In doing so the direct cost charged to all electricity customers using the DUoS tariffs will be reduced and this will also minimise any increases in the value of the asset base (and subsequent return on the capital) associated with this subsidy.

For RP5 the net connections forecasted by NIE T&D to be added to the RAB (including capitalised overheads) is £57.567m. The Utility Regulator accepts that there will be a transition period, where NIE install the connection assets required under assets that have already been accepted. In the capex proposals, it has been assumed that this transition will take place over 2 years. Any new connection offers issued after 1 October 2012 should be based on the updated connection policy. This is discussed further in Chapter 12 of the main paper.

While the 40% subsidy was considered to be appropriate for the initial electrification of Northern Ireland and served to deliver the wider social benefits associated with a supply of electricity to homes and small businesses, there are now requirements on the Utility Regulator to ensure that charges to customers are cost reflective.

Given the extent of the distribution system within Northern Ireland today, it could be argued that the electrification policy has been delivered and that the circumstances that required a subsidy no longer exist. Removing this subsidy will provide a benefit to all customers, including vulnerable customers in general due to the reduction of the RAB.

A vulnerable customer seeking to connect to the distribution system is currently treated no differently than any other customer and will be required to pay NIE T&D for the cost of connection. This is regardless of whether or not the customer in question has the ability to pay for his or her connection. The removal of the 40% subsidy would possibly increase the number of occurrences of this situation, however the affordability threshold for vulnerable customers is low and there is a concern that even a subsidised cost of connection could be deemed too high.

Having previously consulted³ on the issues surrounding vulnerable customers and their ability to pay for a connection to the Northern Ireland Distribution System the Utility Regulator is now mindful of the cross utility implications that this brings with regard to utility connections. As stated as part of this consultation the Utility Regulator proposed not to make any further changes to policy in relation to vulnerable customers. The Utility Regulator may however, consider any future proposals on a cross directorate level.

G.3 Assessment of Distribution Connection Costs

In its RP5 submission, NIE T&D provided the details of the process followed when determining connection charges. These include the methods and reasoning behind adopting a detailed estimate, Simplified Desk Top Pricing and Standard Connection charges. NIE T&D highlighted the important role of the Planning Officer in carrying out studies of the existing system to determine available capacity and suitable routes and locations for any new connection assets required.

NIE T&D has stated that detailed estimation represents approximately 60% of all connection offers made. Simplified Desk Top Pricing is used when estimating small routine jobs of relatively low value. NIE T&D maintain that approximately 20% of offers made are ultimately not accepted by customers and is mainly due to the fact that the customer chooses not to proceed with the project. It is prudent therefore for NIE T&D to consider lower cost estimation methods to avoid waste. Standard connection charges are only used to provide offers of connection charges to developers of new housing developments of 12 or more dwellings. For Authorised Generators charges are generally based on estimated costs.

In response to an information request, NIE T&D submitted files on Standard Connection Charges and Simplified Pricing and explanatory notes. The costs were for completed jobs from the start of RP4 up to September 2010.

³[http://www.uregni.gov.uk/uploads/publications/Consultation on Electricity Connections to the NI Dist System Vfinal.pdf](http://www.uregni.gov.uk/uploads/publications/Consultation_on_Electricity_Connections_to_the_NI_Dist_System_Vfinal.pdf)

[http://www.uregni.gov.uk/uploads/publications/Next Steps Paper on Electricity Connections to the NI Dist System V final.pdf](http://www.uregni.gov.uk/uploads/publications/Next_Steps_Paper_on_Electricity_Connections_to_the_NI_Dist_System_V_final.pdf)

G.3.1 Standard Charging Analysis

Standard connections charging are applied to New Housing Developments of 12 or more domestic premises. The current Standard Connection Charge is £420 per dwelling. A total of 444 jobs were completed during RP4 up to September 2010.

The percentage of actual Outturn Variance Cost from Estimated Budget Cost for the 444 Standard Charging jobs is shown in figure G1

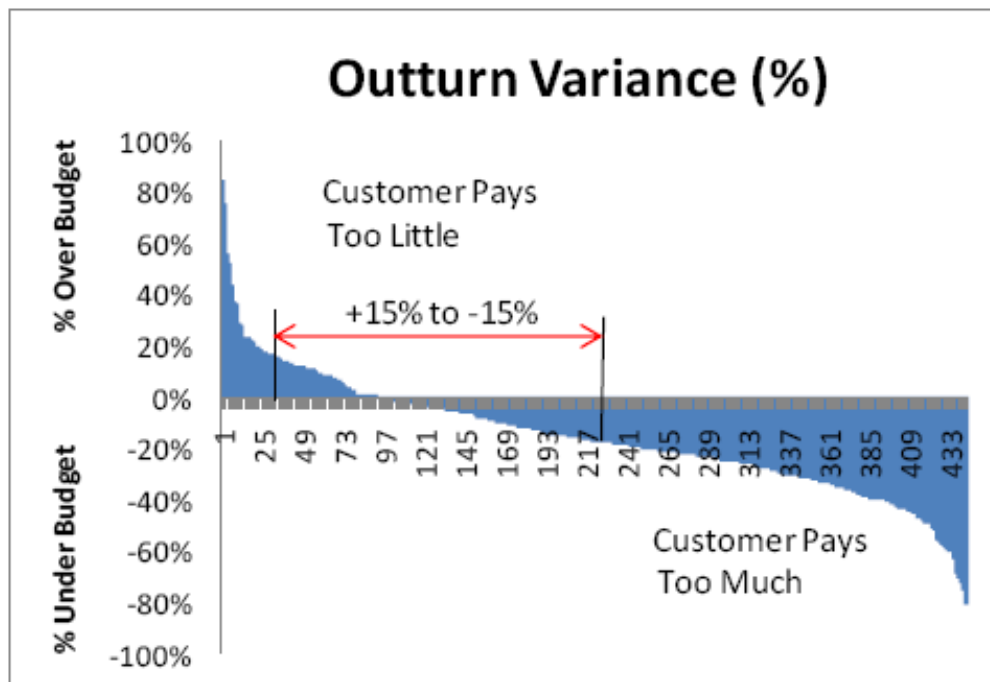


Figure G1: Variance Analysis

Jobs that are Over Budget result in increased Capex on the RAB at the expense of all customers but to the benefit of connecting customers. Jobs that are Under Budget result in less Capex on the RAB to the benefit of all customers but at the expense of connecting customers. Cost Variance in this case is skewed towards being Under Budget.

The Utility Regulator accepts that in most cases there will be a variance between the actual cost and the actual outturn. However, an appropriate tolerance level should be within the +15% to -15%. It is evident from the above analysis that NIE T&D need to improve their cost estimate function to make the costs charged more accurate and cost reflective. The net effective of the above is that connectees in total have paid £1.27M over the out turn costs during a 3.5 year period.

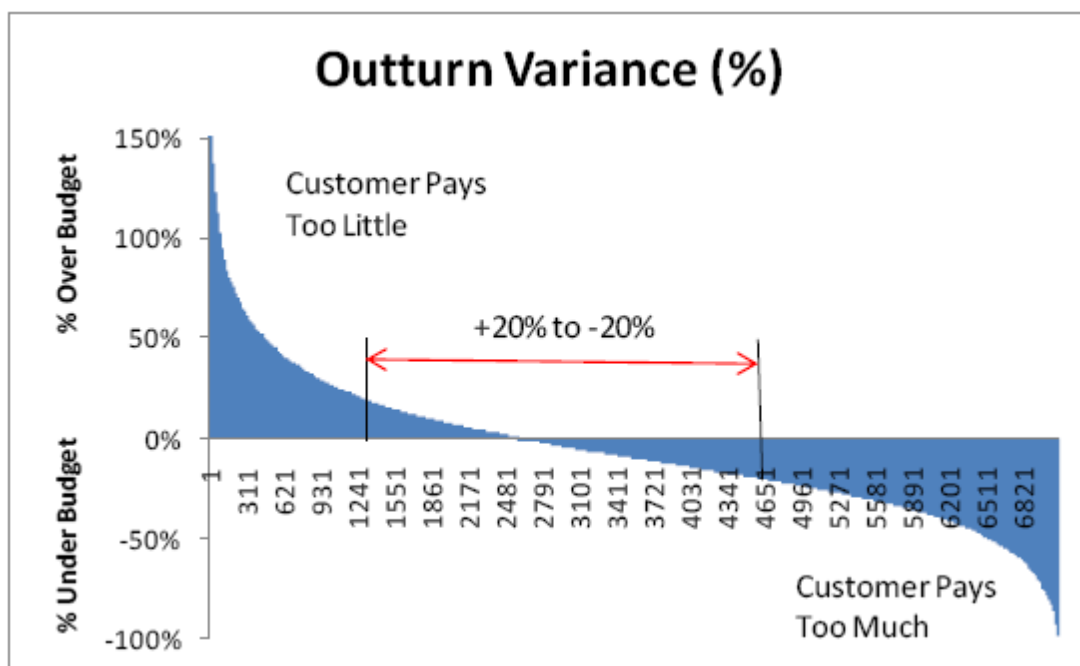
G.4 Simplified Pricing Analysis

Simplified desktop pricing is based on a NIE T&D Job Pricing System where a schedule of 78 items covering equipment and activity prices is used to build up cost estimates. Connections are categorised as Domestic, Commercial/Industrial and Generation.

G.4.1 Domestic Outturn Variance from Budget

The Percent Outturn Variance Cost from Estimated Budget Cost for 7127 jobs undertaken during RP4 is shown in figure G2.

Figure G2 – Percentage Outturn Variance from estimated budget cost – Domestic connections

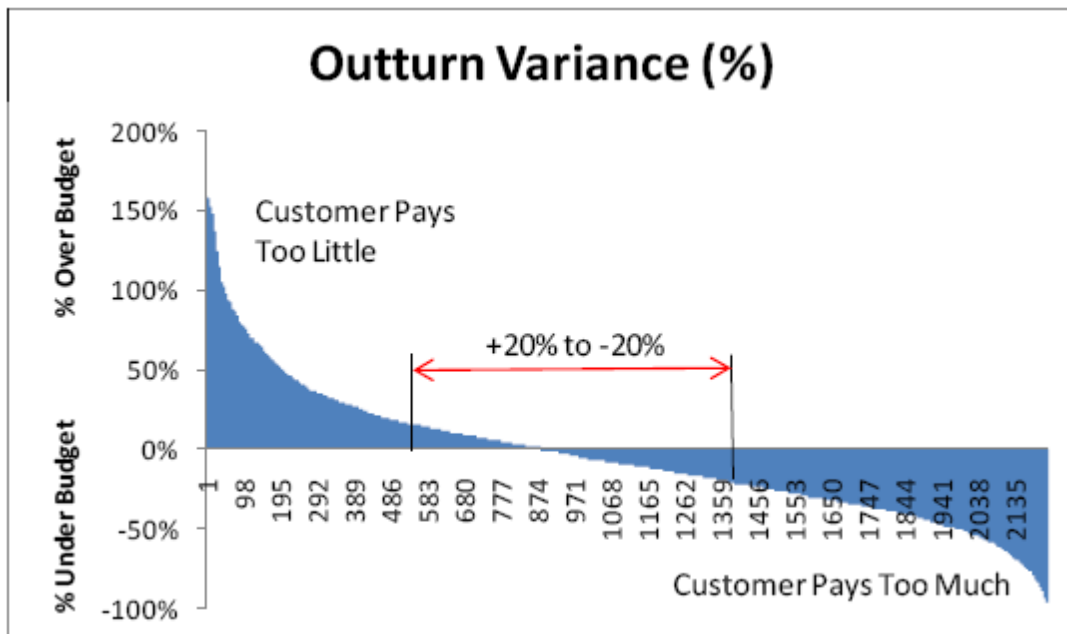


Similar to the Standard Charging Analysis the Cost Variance for domestic connections is skewed towards being Under Budget. For Simplified Pricing, the Utility Regulator are aware that NIE T&D may incur pass through costs and excavation and reinstatement costs (i.e. areas where the greatest cost estimating uncertainty is likely to lie) therefore a wider variance of no more than +20% to -20% of the cost estimate is considered to be achievable. The net effective of the above is that connectees in total have paid £1.33M over the out turn costs during a 3.5 year period.

G.4.2 Commercial/Industrial Outturn Variance from Budget

The Percent Outturn Variance Cost from Estimated Budget Cost for the 2223 jobs undertaken during RP4 is shown in figure G3.

Figure G3– Percentage Outturn Variance from estimated budget cost – Commercial connections



Cost Variance is slightly skewed towards being Under Budget. The net effective of the above is that connectees in total have paid £0.34M over the out turn costs during a 3.5 year period.

G.5 Generation

Only 6 generation connection jobs have been undertaken by NIE T&D during the RP4 period to end September 2010 using the Simplified desktop pricing method. Details of the connection projects undertaken have not been listed due to the information being commercially sensitive.

Unlike the other jobs discussed above, in the case of Generation Connections, the Outturn Cost were slightly greater than the Estimated Budget Cost (Net impact of £0.01M). Only 1 job was within a variance target of $\pm 20\%$.

G.6 Bottom Up Investigation to Validate Connection Offers

As well as the above top down analysis, the Utility Regulator also completed a detailed assessment of several connection projects. The details of the projects examined could be classed as commercially sensitive and therefore have not been included in this paper

The main issues arising across the projects assessed were:

- The inclusion of “Capitalised Overheads” is inconsistent and ranged between 15.3% and 20.6%. The RP4 Capital Investment Plan for Customer Work indicates that Capitalised Overheads should be 13.7%.
- Material and labour price variations do not appear to have been taken into account when using dated estimates to evaluate NIE T&D contributions to the total cost of connections that have mutual benefit to NIE T&D and the customer.
- The Special Protection Schemes (SPS) cost appears excessive for the size of some of the wind farms examined and NIE T&D has not justified the functionality and performance of the SPS that requires an expenditure of this magnitude.
- The Indicative Costs set out in Schedules 2 & 3 of the NIE T&D Statement of Charges for Connection to the Northern Ireland Distribution System are not comprehensive enough to allow customers to estimate an indicative cost for connections.
- Many documents included in NIE T&D submissions were undated and unsigned.

G.7 Operation and Maintenance (O&M) Costs

The two key responses from the connections consultation process was that respondents felt that the O&M charges were too high and there should be an option to allow for annual payments, rather than upfront payments.

NIE T&D submitted information to the Utility Regulator showing how they determined the O&M costs. They applied a ratio of their overall Repairs & Maintenance costs against their RAB. The figures show that in early RP3, the O&M charges were close to 2%, but this reduced towards 1% during RP4. This is shown in table G1

The Utility Regulator considers this reduction was due to the change in capitalisation practice (as discussed in Section 6 of the main paper). As highlighted, the Utility

Regulator will assess the impact of the change in capitalisation practice on the O&M charges and will adjust the Statement of Charges if appropriate.

Table G1 – Repairs & Maintenance as a % of CORE RAB

Analysis of R&M										
	RP4					RP5				
	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Forecast	Forecast
Total Repair & Maintenance (as per NIE)	£15m	£15m	£15m	£12m	£11m	£10m	£11m	£10m	£10m	£10m
Closing Core RAB 09/10 prices (actual to 2010 and NIE submission from 2010 onwards)	£845m	£860m	£869m	£880m	£893m	£899m	£927m	£944m	£971m	£987m
Total R&M as a % of Closing Core RAB	1.75%	1.71%	1.75%	1.36%	1.21%	1.15%	1.14%	1.05%	0.99%	0.99%

G.8 Utility Regulator Minded To Position on Connection Costs

As can be seen from the above assessment NIE T&D's budget cost estimating process has consistently fallen outside the parameters that the Utility Regulator believe should be generally achievable.

There is little risk to NIE T&D over or under estimating connections. If NIE under estimate a connection job the shortfall (difference between the actual cost and the estimated cost) is added to the RAB and therefore paid for by the wider customer base. If the connection job is over estimated there is nothing added to the RAB but NIE keep the difference between the estimate and the actual cost.

The Utility Regulator is recommending that NIE T&D make significant changes in the Statement of Charges for Connection to the Northern Ireland Distribution System and the Transmission Charging Statement.

To ensure that estimated costs are more accurately achieved the Utility Regulator is recommending that NIE T&D provide as part of their connection offer a schedule of work and a bill of quantities. The Utility Regulator has observed a demonstration of NIE T&D's internal systems used for costing and therefore considers that to produce a bill of quantities and schedule of work will require minimal additional effort. In doing so NIE T&D will ensure that it is fully transparent in its pricing methods and this in turn should also bolster consumer confidence.

NIE T&D should therefore in the first instance, as part of the connection process, identify to the customer the method used for determining to connection offer. This will establish the level of detail and accuracy a customer can expect when receiving their connection offer.

The Utility Regulator has already written to NIE T&D requesting them to prepare a new Statement of Charges for the Utility Regulator to scrutinise and approve. NIE T&D have been requested to consider all stakeholders as part of this activity. The changes proposed by the Utility Regulator include:

- Format, layout and content of the SoC with a view to bringing them in line with those produced by DNOs in GB and RoI
- Greater transparency and granularity on the build up of costs used for various connection types
- Details of requirements and costs associated in complying with Grid Code and Trading and Settlement Code Costs
- Details of requirements and costs associated SCADA and communications
- O&M costs and payment options.

- As part of the connection process, identify to the customer the method used for determining to connection offer
- Details on what will be provided as part of a connection offer including the Format of Connection Offer letters, schedule of work and bills of quantities (sample templates to be included in SoC
- Other such changes as may be required or arising as part of the review process

G.9 Timing of Connection Offers and Connections

Condition 30 of NIE T&D's Licence specifies the timescale that NIE T&D must comply with when offering terms for connection or modification to an existing connection. This is currently set at three months, except where the Utility Regulator consents to a longer period. There are no requirements defined for the time allowed to NIE T&D for carrying out the work.

The Utility Regulator has instructed NIE T&D to revise its statement of Charges for Connection to the Distribution System. As part of this revision the Utility Regulator are minded to require NIE T&D to provide a regular detailed reports on connections and the timing of connections to ascertain NIE T&D's performance in this area and to ensure licence compliance.

The Utility Regulator however has proposed a new GSS to cover generator connections.

G.10 Review of NIE T&D Forecasts and Growth Assumptions

Based on the minded to position in relation to the removal of the 40% subsidy, the forecasts for connections is less critical for RP5. However, the Utility Regulator did assess the assumptions used by NIE for forecasting and have made the following observations.

G.10.1 Load Related Distribution Connections

The assumptions used to develop all of the forecasts are highly simplistic; more complicated techniques are available. The forecasts would benefit from better use of existing information, such as forecasts for the construction of new build accommodation and offices. No efficiency savings are built into the cost estimates.

G.10.2 Generator Distribution Connections

There is very limited information/evidence provided to support the estimates and explain the rationale for the deviation from historical levels. The estimated number of <1MW connections is forecast to increase from just 30 in 2010/11 to 250 in 2011/12. This is stated to be as a result of the introduction of financial incentives resulting from the Renewable Obligation Certificates (ROCs) for on-shore wind generation.

The assumption for the estimated costs of completing the connections for >1MW of £4m compares to the historic average of £2.8m and for <1MW £120k compared to an average of just £16.8k for the period 2007/08 – 2009/10.

As with the load related distribution connections no scope for efficiency savings are built into the cost estimates.

G.10.3 Transmission

The NIE T&D submission assumes that there will be just one transmission connection in RP5 of between 12MW to 60MW. While in RP6 it is forecast that there will be three connections as with the distribution connections there is no information or evidence provided to support the forecasts.

G.11 NIE T&D Resources

The issue of NIE T&D resources was not specifically covered within the connections consultation paper however there was sufficient interest from respondents to merit review. Although the staff costs associated with connections will not be included in the RP5 determination, the Utility Regulator did assess the proposed resourcing levels put forward by NIE T&D for connections.

G.11.1 NIE T&D Current Connection Resources

The information used in this assessment has been extracted from NIE T&D's response to the RP5 Business Plan Questionnaire (BPQ) and NIE T&D's response to a Further Information Request.

Connection Offers within NIE T&D are dealt with by 3 depots as shown in the table G2

Table G2 – NIE split between Load related and Generator connections

<i>Role</i>	Depot			Total
	Dargan	<i>Craigavan</i>	<i>Ballymena</i>	
Planning Coordinator	1.0	1.0	1.0	3.0
Planner Band F	-	1.0	-	1.0
Planner Band E	4.0	5.0	2.0	11.0
Planner Band D	3.0	2.0	5.0	10.0
Service Planner	1.0	5.0	-	6.0
Surveyor	2.0	5.0	4.0	11.0
Wayleave Officer	2.0	2.0	2.0	6.0
Field Officer	-	1.0	-	1.0
Field Officer (PTE)	0.3	0.3	0.3	1.0
Chainman	0.3	0.3	0.3	1.0
Admin Coordinator (PTE)	0.8	0.8	0.8	2.3
Admin	2.0	2.0	2.0	6.0
Total	16.4	25.4	17.4	59.2

The number of staff per role in each depot is approximately the same apart from Service Planners where the staff are concentrated in the Craigavan Depot with none in the Ballymena Depot. The Utility Regulator consider that the balance of staff between technical, support and administration staff coupled with the gradings of the technical staff is reflective of Good Industry Practice.

G.11.2 Proposals for Future Staffing

The total staff numbers are forecast to increase from 59.3 in 2010/11 to 68.3 in 2012/13 and remain at that level thereafter as shown in the table G3

G.11.3 Efficiency of Demand Connection Offer Activity

The Utility Regulator were not able to obtain information in the public domain to benchmark the efficiency of NIE T&D in respect of dealing with demand connection applications therefore requested technical consultants (SKM) to make an assessment based on their estimate of the planning resource required to prepare a demand connection offer. The estimate is based on their experience of managing planning and connection sections within distribution utilities and their experience of undertaking similar connection studies for clients. The estimated number of Planners in 2011/12 required to deal with the forecast number of demand connection applications is shown on the table G4

Table G4 – NIE split between Load related and Generator connections

Estimate of Planners Required in 2011/12					
Demand Connection Class/Number		Days per Connection Offer	Annual Mandays	FTE Planners	Comment
>1M	25.3	5.0	126.3	0.6	Production of conceptual design and costing
<1M	1010.0	4.0	4040.0	18.4	Complex connections
	1010.0	1.5	1515.0	6.9	Straightforward connections
Domestic	3030.0	0.2	606.0	2.8	Standard connection charging
Total	5075.3			28.6	Total number of Planners
				177.6	Connection Offer/Planner Ratio

The total whole number of Planners required in 2011/12 is estimated to be 29 with a Connection Offer / Planner ratio of 177.6. This compares with the NIE T&D forecast of having 28 planners rising to 34 planners. NIE T&D did not provided any justification for the increase in the number of planners between 2010/11 and 2011/12.

G.11.4 Distribution Generator Connections

Staff numbers are forecast to increase from 4.3 full time equivalent (FTE) staff in 2010 to 8.8 FTE staff from 2011/2 onwards. The increase in staff numbers is attributed by NIE T&D to a significant increase in generator connections driven by

the forecast numbers of renewable generation connections of less than 1MW. NIE T&D base this increase on an analysis of the Planning Service applications recently submitted. NIE T&D also attribute the increase to the financial incentives of 4 ROCs for on-shore wind generation up to 250kW. NIE T&D assume that this incentive will continue to be available and therefore maintain the short term forecast numbers through RP5 and RP6.

G.11.5 Efficiency of Generation Connection Offer Activity

Generator Connection Offers step up from 50 in 2010/11 to 256 in 2011/12 due to a significant increase in renewable generation connections

The forecast Annual Connection Offer/Engineer ratio is 13.2 in 2010 which jumps to 32.8 in 2011/12 with the significant increase in generator connection of less than 1MW.

Table G5 – Design Resource required to prepare a generator connection

Estimate of Engineering Designers Required in 2011/12					
Generator Connection Class/Number		Days per Connection Offer		FTE Engineers	Comment
>1M	6.0	8.0	48.0	0.2	Production of conceptual design and costing
<1MW	250.0	8.0	2000.0	9.1	Complex HV requiring study of FL, Voltage Rise and Taps
				9.3	Total number of Engineering Designers

The total number of Engineers required in 2011/12 is estimated to be 9 which is one more than the number of Engineers proposed by NIE T&D.

Although the Utility Regulator agrees that the staffing level that NIE T&D propose is appropriate for the NIE T&D estimate of offer volumes, it is highly dependant on the forecasts used.

The Utility Regulator recommends that NIE monitor their forecasts to consider a phased increase in the planning staff levels for Distribution Generator Connection Offers while the actual volumes of connection requests are monitored.

It should be noted that there will be no allowance given during RP5. The costs associated with staffing will be monitored annually and it will be up to NIE T&D to resource appropriately to meet demand and ensure full licence compliance.

G.12 Contestability

In the 'Next Steps Paper' the Utility Regulator stated that it would investigate further the introduction of contestability for connections. The Utility Regulator will continue to work in this area as highlighted in the Draft Forward Work Plan for 2012/13.

There will always be an Outturn Variance Cost from Estimated Budget Cost. Only with perfect estimating would there be no adjustments needed to the RAB. As detailed above there is currently minimal risk to NIE T&D over or under estimating connections.

If contestability is introduced then the current arrangements for NIE T&D would need to be amended. Without amendments NIE T&D would be in a position simply to under estimate and in turn under cut any future competitors with any shortfalls in contributions being made by the RAB.

At present customers benefit from the current charging arrangements for the following reasons:

- When receiving a quotation the customer knows exactly how much their connection and O&M charges will cost 'up front'.
- NIE T&D are unable to seek additional connection fees.
- Customers (Over 1MW Customers and Authorised Generators) have the choice to request from NIE T&D an alternative charging arrangement which shall require the customer to pay the outturn costs of those works⁴. This requires the customer to pay the estimated cost of the connection with any reconciliation carried out after a determination of the final costs.
- Times and costs for providing a connection quotation can be reduced due to NIE T&D utilising their Simplified Desktop Pricing method and therefore the need to visit site etc prior to issuing a quotation.

It is the Utility Regulator's intention to continue to work towards the introduction of contestability in connections as soon as reasonably practicable. The Utility Regulator requests that respondents present their views regarding contestability and the

⁴ See Section 4.2 of the Statement of Charges for Connection to the Northern Ireland Distribution System

current arrangements detailed above. The exact charging arrangements surrounding contestability will be fully consulted upon separately prior to implementation.

G.13 Utility Regulator Minded to Position for RP5 Connections

As discussed above, the Utility Regulator is minded to introduce the following changes in connections:

- The Utility Regulator will instruct NIE T&D to remove the 40% subsidy for domestic customers and small business that require a new connection.
- The Utility Regulator will require NIE T&D to provide regular reports on connections and the timing of connections to ascertain NIE T&D's performance in this area.
- The Utility Regulator will scrutinise O&M charges and will look to implement changes depending on the outcome.
- The Utility Regulator will instruct NIE T&D to make changes in the Statement of Charges for Connection to the Northern Ireland Distribution System and the Transmission Charging Statement.
- The Utility Regulator will consider options for contestability and intend to consult on this area.