*Promoting choice and value for all gas and electricity customers*

# Monitoring the 'Connect and Manage' electricity grid access regime

**Third report from Ofgem, 15 November 2012**

This is our third report to the Secretary of State for Energy and Climate Change, monitoring the impacts of the enduring Connect and Manage reforms introduced by the Government in August 2010[1]. Following publication of our second report, we agreed to report on an annual basis, rather than every six months, to be able to more clearly monitor the effects of Connect and Manage.

The Connect and Manage reforms, fully implemented on 11 February 2011, aim to improve access, for generators, to the electricity transmission network. More background information is set out in Annex 2.

We provided our first report to the Secretary of State in April 2011[2] followed by a second report in September 2011[3]. This report covers the period from 1 August 2011 until 31 August 2012.

In carrying out our monitoring role of the Connect and Manage regime, DECC has asked that we provide a published report to the Secretary of State on the following:

1. Impact on connections by generation type and region
2. Developers' confidence in the new arrangements
3. Costs and benefits to consumers of the new arrangements
4. Progress and costs of delivering the necessary wider grid investments.

We set out in the following pages a summary of the available evidence in each of the areas for the period 1 August 2011 to 31 August 2012. We also include information provided by the onshore transmission licensees on factors influencing the carrying out of works to allow developers to connect to the national electricity transmission system. These factors influence the connection date offered to developers by National Grid Electricity Transmission plc (NGET).

[1] http://www.decc.gov.uk/assets/decc/Consultations/Improving%20Grid%20Access/251-govt-response-grid-access.pdf
[2] http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/TAR/Documents1/110330_CM_report_SoS%20(amended).pdf
[3] http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/tar/Documents1/110930_CM_report_to_SoS.pdf

**Key points**

- 125 large generation projects[4] have signed enduring Connect and Manage offers, with capacity totalling 30,106MW.
- Connection dates for these projects have been brought forward by an average of six years compared to the previous 'Invest and Connect'[5] approach.
- 49 projects[6], with a total capacity of 620MW, have connected to date under Connect and Manage arrangements (of which 432MW relates to six large projects).
- To date, constraint costs attributable to the Connect and Manage regime total £4.4m. However these are forecast to be £41m in 2012-13, rising to £95.7m in 2013-14. This is due to increasing numbers of generators connecting.
- Work on major reinforcements to the transmission system continue to progress through the funding provided under the current electricity transmission price control arrangements, and the transmission companies are planning a substantial programme of investment under our new regulatory regime, RIIO-T1[7]. These works will have a significant impact on reducing constraint costs attributable to Connect and Manage.
- To date, 214,745 tonnes of carbon have been saved through renewable generation connecting early as a result of Connect and Manage.

## 1. Impact on connections by generation type and region

This section sets out the number of connection offers made, agreements entered into, and the amount of generation connected to the transmission system under enduring Connect and Manage agreements. The data is based on information provided to us by NGET and published in their latest quarterly report on the Connect and Manage regime[8].

As at 31 August 2012 a total of 125 signed Connect and Manage agreements have been entered into by generators for connection to the transmission system or by large embedded generators. These agreements total 30,106MW. This is an increase of 52 projects, and 4,111MW, from July 2011.

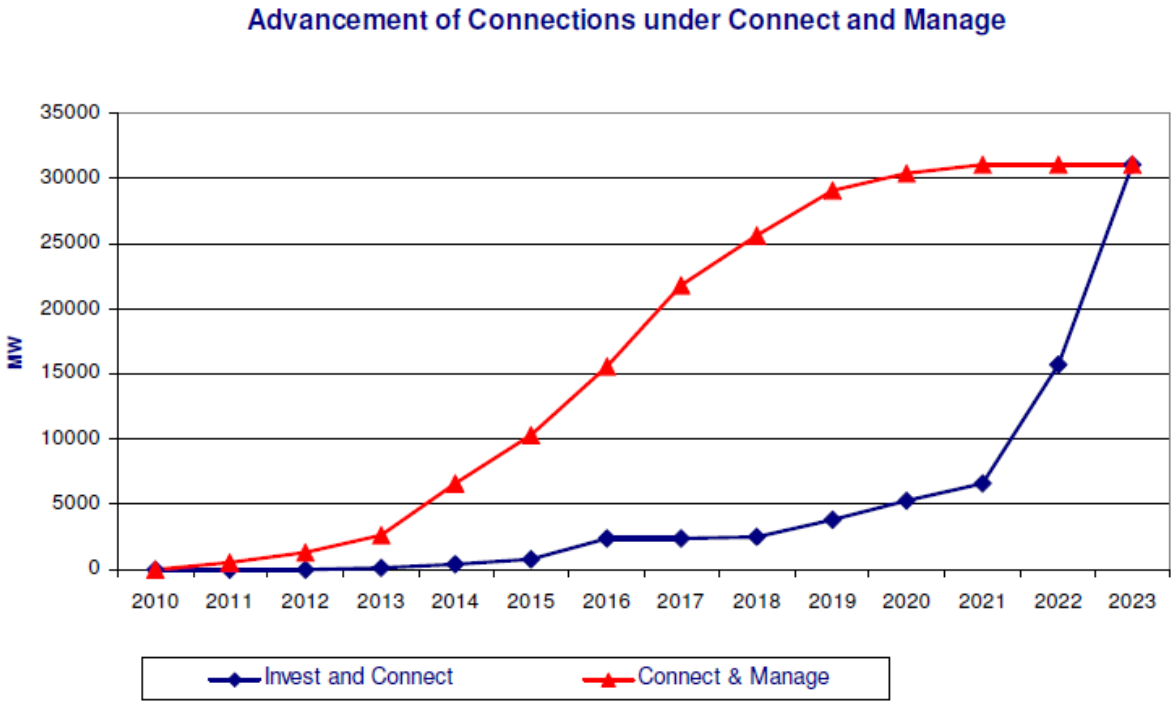
Similarly there has been an increase in the number of small embedded generation plants with signed Connect and Manage agreements. These have risen to 104 with a total of 491MW. This is an increase of 28 signed agreements and 186MW from July 2011.

The number of generators with a signed Connect and Manage agreement that are connected to the system has also increased. Since July 2011, 20 generators were

[4] Transmission connected and large embedded generation projects.
[5] Under 'Invest and Connect' generators seeking to connect to the network had to wait for the completion of all wider transmission system works, identified as required for their connection in accordance with the minimum criteria set out in the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS).
[6] Large embedded generation and small embedded generation projects.
[7] RIIO: Revenue = innovation + incentives + outputs. RIIO-T1 is the first transmission price control to reflect the new arrangements.
[8] The report is available at http://www.nationalgrid.com/NR/rdonlyres/7E169129-8116-453A-B9B5-F1812C00CAEC/57274/ConnectandManageQuarterlyReport010512to310812v10.pdf

connected, with a total of 86MW. At 31 August 2012 49 generators were connected, with a total of 620MW.

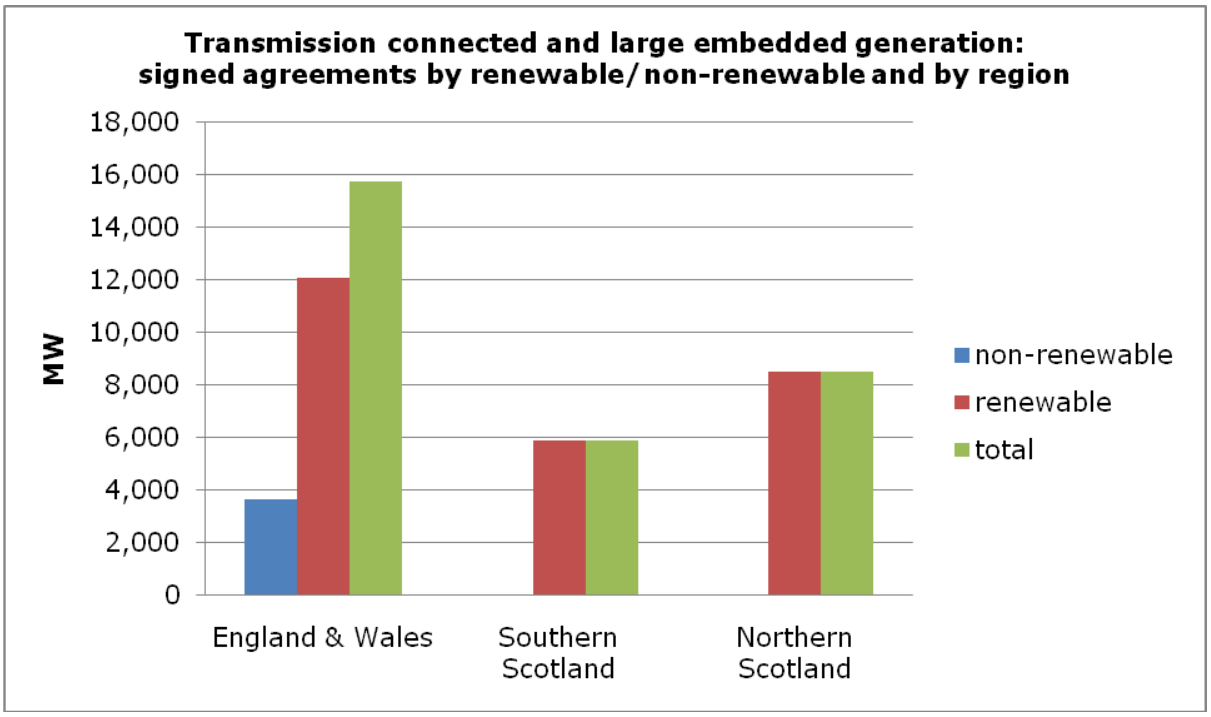
Connection dates continue to be advanced under Connect and Manage with an average date 6 years ahead of the connection date which would be provided under an 'Invest and Connect' offer[9]. This is the same level of advancement as set out in my previous report.




From the information below, we can see that many of the projects that have benefited from Connect and Manage agreements are renewable. In England and Wales, over 3,000MW of non-renewable generation has also benefited.[10]

[9] As we noted in earlier reports, the Invest and Connect date against which NGET compare the Connect and Manage date is only an estimate of the timescales within which projects would have been expected to connect. Even prior to Connect and Manage, the transmission licensees were optimising the queue for connections to facilitate earlier connection where possible by identifying spare capacity.

[10] The Transmission Owner (TO) in England and Wales is National Grid Electricity Transmission plc, the TO in southern Scotland is SP Transmission Limited (SP Transmission) and the TO in northern Scotland is Scottish Hydro Electric Transmission plc (SHE Transmission).




*Source: Quarterly report on the Connect and Manage regime, 1 May 2012-31 August 2012, NGET*

More detailed connections data is available in Annex 1.

## 2. Developers' confidence in the new arrangements

It is difficult to report with accuracy on developers' confidence in the new arrangements; however the feedback we have received indicates that there are no significant issues. Developers have said they find the information on indicative connection dates provided by NGET, through the quarterly Connect and Manage report and the Transmission Networks Quarterly Connections Update, helpful. In some areas, particularly in Scotland, network constraints mean that many reinforcements are now classed as enabling works for projects seeking to connect. This means that these projects cannot connect until the reinforcements are complete.

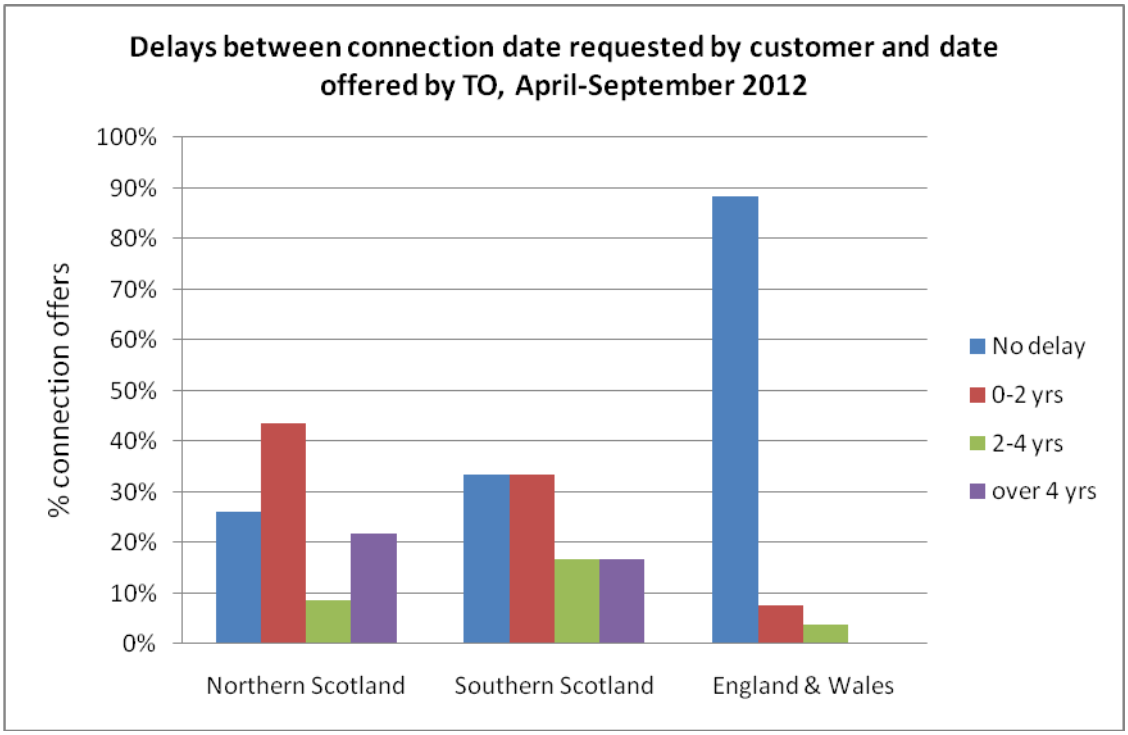
### Ofgem activity to facilitate timely connection and network reinforcement

*Timely connections reporting*

We have received the first of the timely connections reports from onshore transmission licensees as discussed in my last report to you. These reports provide us with information on the factors influencing the connection dates offered to generators, in order to inform our ongoing consideration of whether any changes are needed to the existing framework to facilitate timely connection. A non-confidential version of the report will shortly be published on NGET's website.

These reports show that in total NGET, as system operator (SO), has issued a total of 55 connection offers between 1 April 2012 and 30 September 2012. 26 of these were in England and Wales, 6 were in Southern Scotland and the remaining 23 were in Northern Scotland. The graph below shows what proportion of these offers met the customer's

requested completion date, and the extent of the delays, for each of the transmission owners' (TOs') regions.




*Source: timely connections data*

From the information we have received from the TOs, the main factor delaying connection to the national electricity transmission system is obtaining consents for undertaking the enabling works on the transmission system. The other factors cited by the TOs are outage and construction timescales.

We will continue to monitor the reasons identified in the reports as delaying timely connection. In particular, we may look at delays in processing connections by generation type or geographical location.

*RIIO-T1*

RIIO-T1 is the first transmission price control to reflect the new RIIO (Revenues = Incentives + Innovation + Outputs) model. Under RIIO we are adopting a very different process for setting price controls from the previous RPI-X methodology. Companies are required to develop and submit well-justified business plans, supported by stakeholder views, setting out what they will deliver for both existing and future consumers, and how they will meet the challenges associated with facilitating the move to a low carbon economy. These plans inform the setting of the components of the price control. The objective of RIIO is to encourage network companies to play a full role in the delivery of a sustainable energy sector, and to do so in a way that delivers value for money for existing and future consumers.

We expect the outputs delivered by TOs to include meeting the timely connections obligations in the licence. We have included scope for a possible financial penalty,

equivalent to up to 0.5% of allowed base revenue, for failure to deliver a connection offer within the prescribed timescales.

Going forward we should be able to provide better information on stakeholder confidence. As part of RIIO-T1, we propose to introduce an incentive on onshore transmission licensees in respect of customer satisfaction and stakeholder engagement. We intend this will be made up of two elements:

- an annual incentive of +/-1% of the licensees' allowed revenue[11] informed by results of a customer/stakeholder satisfaction survey and supporting information, and
- a discretionary reward will be available for exceptional outcomes generated through stakeholder engagement (up to 0.5% of allowed revenue).

We expect the first survey results to be used in determining the financial reward/penalty to be those for the year 1 April 2013 – 31 March 2014.

## 3. Cost and benefits to consumers of the new arrangements

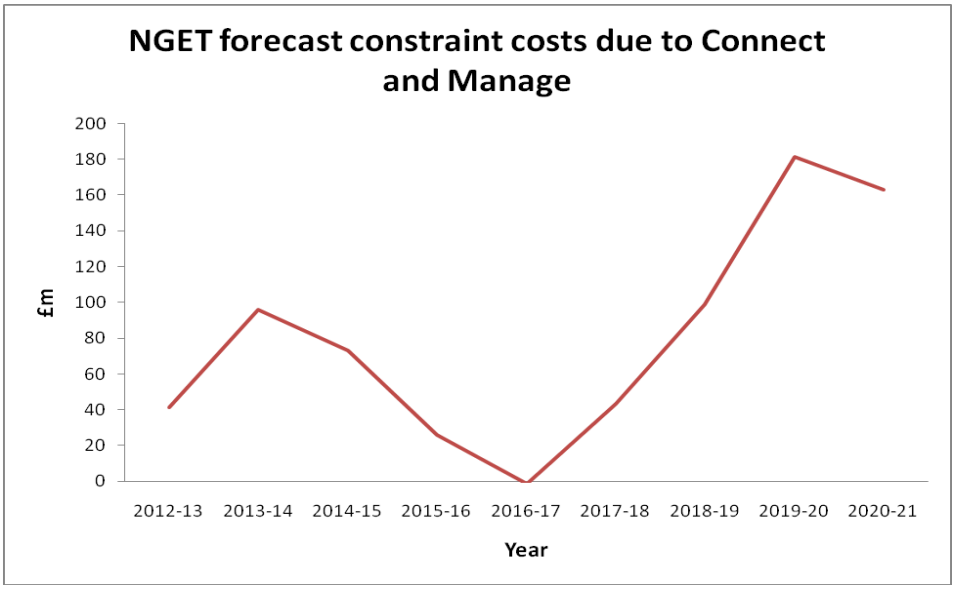
*Constraint costs*

My last report identified no constraint costs attributable to projects that had benefited from earlier connection dates under Connect and Manage. This was due to the relevant large projects not yet generating, and limitations on embedded generation metering preventing accurate measurement of constraints.

In this report, NGET has identified constraint costs due to Connect and Manage of £4.4m between 1 April 2011 and 31 August 2012, attributable to the six large projects that have benefited from earlier connection dates and were active at this time. To put this in context, total constraint costs incurred by NGET for the same period were £379.3m.

NGET has also provided estimates for the anticipated future costs of earlier connection under Connect and Manage. Under NGET's 'More Likely' scenario, which is based on contracted data until 2013-2014 and then based on its 'Gone Green' forecasts, the modelling estimates constraint costs of £41.4m in 2012-13, rising to £162.9m in 2020-21.

[11] The revenue a licensee can recover from consumers in the relevant year.




*Source: Quarterly report on the Connect and Manage regime, 1 May 2012-31 August 2012, NGET*

This represents an increase on the forecasts provided by NGET in my last report, however the figures are not comparable as a different modelling methodology is used and the amount of generation anticipated has also increased during this time. There are still difficulties in accurately forecasting these figures due to the modelling methodology used by NGET. In particular, some years record negative constraint costs, for example in 2016-2017. This is when the assumed forecast constraint costs under 'Invest and Connect' are larger than those forecast under Connect and Manage, for example, because the behaviour of generators in reducing output in response to new generation connected under Connect and Manage, has not been adequately captured in the 'Invest and Connect' scenario. Another change is that the forecast constraint costs now take account of the completion of wider reinforcement works. We are working with NGET to improve the forecasting of constraint costs due to the Connect and Manage regime.

Nevertheless, low projected constraint costs for the year 2016-17 reflect the anticipated completion of major reinforcement works as part of the business plans under RIIO-T1, many of which are currently being progressed through the funding arrangements we have introduced within the current price control to facilitate critical investment ahead of RIIO-T1 (see below). This demonstrates the success of those arrangements and the resulting benefits to consumers.

You will also be aware that we have been reviewing our approach to constraint costs and how NGET as SO is incentivised to be efficient in the way that it balances the system. This has led to our proposal to change the SO incentive scheme from 2013. The incentives are going to be set within a longer term framework and are also moving to a broader incentive approach than currently. These changes are designed to encourage more innovative behaviour, recognising the increasing challenges that are likely to be associated with balancing the system, and include proposals for the disallowance of balancing costs that are deemed to be inefficient.

The Transmission Constraint Licence Condition (TCLC) has also been introduced into generation licences via primary legislation, and will stay in effect until 15 July 2017. Its purpose is to prevent generators from obtaining an excessive benefit at the expense of

consumers during periods of electricity transmission constraint, for example by making dispatch decisions that create or exacerbate constraints, or by obtaining an excessive benefit from bids they make to reduce their output. We will monitor compliance with the TCLC.

We are also, as part of RIIO-TI, strengthening the accountability of the TOs in the way they interact with the SO, particularly in relation to short and long term network planning, with the objective of reducing constraint costs arising from TO network maintenance plans. It is proposed that each onshore transmission licensee will have in place a Network Access Policy (NAP) describing a set of principles for coordination and communication with the SO. The TOs will be obliged through their licences to operate in a way that is consistent with the NAP. Even though this is still in development, we have already witnessed more effective contact between the Scottish TOs and NGET as the SO in the effective management of constraint costs.

*Carbon savings*

For the first time since the implementation of enduring Connect and Manage, NGET has published information on the on carbon savings as a result of this mechanism. These savings arise when renewable generation that has connected under Connect and Manage offsets generation from other sources[12].

For the six large generation projects connected under Connect and Manage, total carbon savings from 1 April 2011 until 31 August 2012 were 214,745 tonnes.

NGET has set out that it continues not to have access to real time metering information for certain types of embedded generation and, for this reason, it remains unable to allocate any related constraint costs or related carbon savings to these generators.

## 4. Progress and costs of delivering the necessary wider grid investments

We are continuing to ensure that the transmission companies are incentivised to invest appropriately in their networks and deliver this investment efficiently and in a timely fashion.

Work continues to be ongoing on reinforcements funded under the Transmission Investment for Renewable Generation (TIRG) mechanism[13]. A number of further reinforcements, identified in the 2009 report by the Electricity Networks Strategy (ENSG) group, are currently being progressed under Transmission Investment Incentives (TII) framework[14] which has facilitated £617m of investment prior to RIIO-T1.

[12] Information on the methodology used by NGET to calculate carbon savings is available at page 10 of their latest Quarterly Report on the Connect and Manage Regime: http://www.nationalgrid.com/NR/rdonlyres/7E169129-8116-453A-B9B5-F1812C00CAEC/57274/ConnectandManageQuarterlyReport010512to310812v10.pdf

[13] This is a mechanism designed to fund transmission projects specific to connecting renewable generation outside the price control allowance to minimise delays. TIRG is comprised of four projects: Beauly Denny, Sloy, South West Scotland and the Anglo Scottish Interconnector

[14] http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/CriticalInvestments/InvestmentIncentives/Pages/InvestmentIncentives.aspx

We also confirmed our decision[15] to fund the Western High Voltage Direct Current (HVDC) link, also known as the Western Bootstrap. This is a sub-sea cable being delivered by NGET and SP Transmission. The Western Bootstrap will cost around £1 billion and provide over 2GW of additional transmission capacity for north-south transfers by 2016.

We have now published our RIIO-T1 final proposals for both SP Transmission and SHE Transmission[16] as well as initial proposals for NGET[17]. We plan to put forward final proposals for NGET in December. For each of these licensees, for the eight year period we have proposed funding as shown in the table below:

**RIIO-T1 proposed baseline funding**

| | Total load-related expenditure[18,19] |
|---|---|
| SP Transmission | £0.8bn |
| SHE Transmission | £0.6bn |
| NGET | £5.0bn |

The figure for NGET was set out in our Initial Proposals document and therefore could be subject to further change.

In addition to the total load-related expenditure above the companies will be able to request further funding to deliver major reinforcements, when these are needed, through the Strategic Wider Works (SWW) uncertainty mechanism introduced for RIIO-T1. Under this mechanism Ofgem would make within-period determinations on funding to enable TOs to deliver large reinforcement projects during the price control period. The companies estimated in their business plans the amount of additional expenditure that might be required over the next price control to reinforce and build the new transmission network to support the increase in renewable and low carbon generation. This is set out in the table below.

[15] http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=69&refer=Networks/Trans/ElecTransPolicy/CriticalInvestments/InvestmentIncentives

[16] http://www.ofgem.gov.uk/NETWORKS/TRANS/PRICECONTROLS/RIIO-T1/CONRES/Documents1/SPTSHETLFP.pdf

[17] http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/RIIO%20T1%20Initial%20Proposals%20for%20NGGT%20and%20NGET%20Overview%202707212.pdf

[18] RIIO-T1 monetary values are in 2009-10 prices.

[19] Includes both baseline funding and funding that will come through automatic volume drivers.

**RIIO-T1 potential SWW funding**

| | Strategic Wider Works (SWW) |
|---|---|
| SPTL | £0.4 – 0.7bn[20] |
| SHETL | £4.5 – 6.0bn[20] |
| NGET | £1.7bn |

The potential expenditure for SWW is approximate only. Ofgem will assess and determine the final efficient costs when the needs case for the reinforcement works is more certain.

[20] This range is taken from the company's best view and upper view scenarios in their business plan.

## Annex 1: Connections data

*Table 1: Connection information for large projects (offers, agreements and connected generation)*

| Region | | | As at July 2011 | As at August 2012 | Difference[21] |
|---|---|---|---|---|---|
| **England &Wales** | Total number of offers, agreements and connections | | 15 | 24 | 9 |
| | Mega Watts (MW) | | 14,180 | 15,721 | 1,541 |
| | Average reduction in connection date[22] | | 6 years | 5 years | -1 year |
| | | Number of projects connected | 0 | 0 | 0 |
| | | MW connected | 0 | 0 | 0 |
| **Scotland** | Total Number | | 58 | 101 | 43 |
| | MW | | 11,815 | 14,385 | 2,570 |
| | Average reduction in connection date | | 6 years | 6.5 years | 0.5 years |
| | | Number of projects connected | 3 | 6 | 3 |
| | | MW connected | 69 | 432 | 363 |
| **Totals** | **Total number of offers, agreements and connections** | | **73** | **125** | **52** |
| | **MW** | | **25,995** | **30,106** | **4,111** |
| | **Average reduction in connection date** | | **6 years** | **6 years** | **-** |

[21] Difference between 'as at August 2012' and 'as at July 2011'.

[22] This is the average difference between the estimated date for connection in an offer made under 'Invest and Connect' (see footnote 5) and Connect and Manage.

*Table 2: Small/embedded generation connections data*

| Region | | | As at July 2011 | As at August 2012 | Difference |
|---|---|---|---|---|---|
| **England &Wales** | Total Number of offers, agreements and connections | | 1 | 1 | - |
| | MW | | 81 | 81 | - |
| | Average reduction in connection date[23] | | 3 years | 3 years | - |
| | | Number of projects connected | 0 | 1 | 1 |
| | | MW connected | 0 | 81 | 81 |
| **Scotland** | Total Number | | 75 | 103 | 28 |
| | MW | | 224 | 409 | 185 |
| | Average reduction in connection date | | 11 years | 10.5 years | -0.5 years |
| | | Number of projects connected | 17 | 42 | 25 |
| | | MW connected | 17 | 108 | 91 |
| **Totals** | **Total Number of offers, agreements and connections** | | **76** | **104** | **28** |
| | **MW** | | **305** | **491** | **186** |
| | **Average reduction in connection date** | | **11 years** | **10 years** | **-1 year** |

[23] This is the average difference between the estimated date for connection in an offer made under 'Invest and Connect' and Connect and Manage.

## Annex 2: Background to Connect and Manage

Following consultation on models for improving grid access[24], in August 2010 the Government introduced Connect and Manage. Under this access regime, all new generation is able to apply for a connection date based on the time taken to complete a project's enabling works, ie ahead of the completion of wider reinforcements. Any resultant constraint costs are socialised across all consumers, along with constraint costs more widely. The cost of wider works required on the network is also spread across all consumers.

Connect and Manage followed the 'Interim Connect and Manage' (ICM) arrangements which Ofgem introduced in 2009. Ofgem introduced ICM on a temporary basis, with the aim of accelerating the connection of new generation by extending the principle of 'over selling'. We noted that, in the transition to the British Electricity Trading and Transmission Arrangements (BETTA) in 2005, certain generators that had connected or applied to connect to a transmission or distribution system in GB by 1 January 2005 had benefitted from the policy of over selling transmission capacity[25]. To avoid undue discrimination in the terms for accessing and connecting to the transmission system, we considered it appropriate to extend this principle for an interim period until, and subject to, the timely and successful implementation of enduring access arrangements[26].

We recognised that the Connect and Manage approach could give rise to significant increases in the volume and costs of constraints. However, we expected that the impact on costs would be small in the short term, and considered this interim approach appropriate until enduring arrangements were developed that would address our concerns about high constraint costs. We set out that we would revisit this approach if, for example, there were delays to introducing a new access regime or if costs were to rise. We noted that this could require remedies which would affect all generators in areas of over selling. The Connect and Manage regime introduced by Government in August 2010 replaced ICM, and was fully implemented on 11 February 2011.

[24] http://www.decc.gov.uk/assets/decc/consultations/improving%20grid%20access/1_20100303161452_e_@@_condoc.pdf

[25] In the transition to BETTA, Ofgem granted a derogation to NGET and SP Transmission from the requirement to comply with the Security and Quality of Supply Standard (SQSS) planning criteria over the circuits which form the transmission boundary between Scotland and England ('the Cheviot boundary'). The effect of this derogation was that additional generation connected to the system, ahead of the reinforcement of that boundary, needed to achieve compliance of the SQSS.

[26] Ofgem's decision letter on Interim Connect and Manage can be viewed at the following link: http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/tar/Documents1/20090508%20derogations%20interim.pdf