nationalgrid

Business Plan
Electricity Market Reform

National Grid
Electricity Transmission

January 2015

About this Business Case

This Business Case is a commercially redacted and partially abridged version of that submitted to Ofgem in January 2015 and sets out the detail of the extension, through the enduring phase, of National Grid's role as the Delivery Body for the Electricity Market Reform programme. This includes a review of the options considered in delivering the required outputs and capabilities, proposed incentives and the additional costs we will necessarily incur in the role. In addition, the Business Case explores where there is uncertainty in our plans and highlights our proposals for managing this.

Business Case: Electricity Market Reform

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1. Executive summary

1. Our role as Electricity Market Reform (EMR) Delivery Body is fundamental to the transformation of the UK's electricity infrastructure at the lowest possible cost for consumers. EMR will provide incentives to the electricity market to stimulate future investment, support low carbon generation and help deliver the UK's carbon reduction targets. Our role is to help facilitate this transition as smoothly as possible, ensuring that the EMR processes are efficient as they can be, deliver customer and stakeholder requirements and relevant market information is available at the right time to the right people.

2. This document is the EMR business plan for the RIIO-T1 price control period and sets out the additional outputs, proposed incentives and expected costs associated with us fulfilling our role of EMR delivery body for the period 1 August 2014 to the end of the RIIO-T1 price control period. The plan and the accompanying material have been prepared and submitted in order to aid future discussions between ourselves and Ofgem in relation to the funding of the EMR enduring costs and implementation of proposed incentives.

3. The rules and regulations of EMR introduce a number of required outputs for our role which are based around two key mechanisms:

   (a) Contracts for Difference (CfD) – which provides long term price stabilisation to low carbon plant

   (b) The Capacity Market (CM) – which provides a regular payment to reliable forms of capacity in return for such capacity being available when the system is light

   These outputs mainly relate to supporting market participants through the annual end to end CfD and CM processes (including CfD qualification and allocation as well as CM pre-qualification and auction), undertaking modelling and analysis for DECC and the electricity market and supporting DECC with EMR regime changes and developments.

4. Prior to our role as Delivery Body we have already worked closely with DECC and Ofgem on the development of EMR. Since 2011, we have helped ensure that all arrangements have been put in place to ensure successful implementation and undertaken an extensive programme of industry stakeholder engagement and training. Over the last six months we have successfully run the first rounds of CM pre-qualification and four year ahead auction and CfD qualification and allocation processes, supporting market participants in all processes to positive feedback from industry stakeholders.

5. We want to continue to deliver our processes efficiently and attract positive feedback from our stakeholders in this role. This means continuing to work closely with DECC and Ofgem but also balancing responsiveness to customer and stakeholder wishes for improvements in market information and EMR regime with actions to ensure our processes are as lean as possible. Given that 2014 was the first year the CfD and CM processes have been run there will be changes that DECC and other stakeholders want to implement to make them better and broader. Indeed improvements and developments are already being discussed with DECC for delivery in 2015 and beyond.

6. Without these developments we would expect our costs of delivering the annual processes to reduce over the plan period as we and the market participants become more experienced in the role. However, our understanding of the type and level of change that DECC are considering will introduce an on-going level of change which will require us to engage with industry stakeholders, develop our IT systems and undertake further modelling – the costs of which will offset much of this expected efficiency.

7. As would be expected over a seven year period, not all of the potential changes to the rules and regulations are known at this point in time so there is an inherent uncertainty around the scope and timing of changes to the outputs required from our role. To ensure that the regulatory framework allows adequate funding for these probable extensions to our role we are proposing that an element of baseline funding is included in the regulatory allowances to cover this output change risk. In total £11m has been included over the period based on our current sizing of known changes. This represents a balance between the unnecessary cost burden of separate assessments of the changes and risk of under-funding and hence under-delivery of the required outputs.

8. This baseline funding for uncertainties has been included in our plan along with our forecasts for operating and capital costs required to deliver the existing outputs and known changes to the EMR regime. The resulting cost forecasts total £65.1m across the plan period or approximately £9.3m per annum. The split of this cost between the delivery of current outputs and our assumptions for the cost of regime developments is shown in the diagram below. This shows that the cost for delivering the current outputs reduces by 22% (~/3% p.a) over the period, but this is more than offset by the cost of expected additional outputs which will be required over the period:

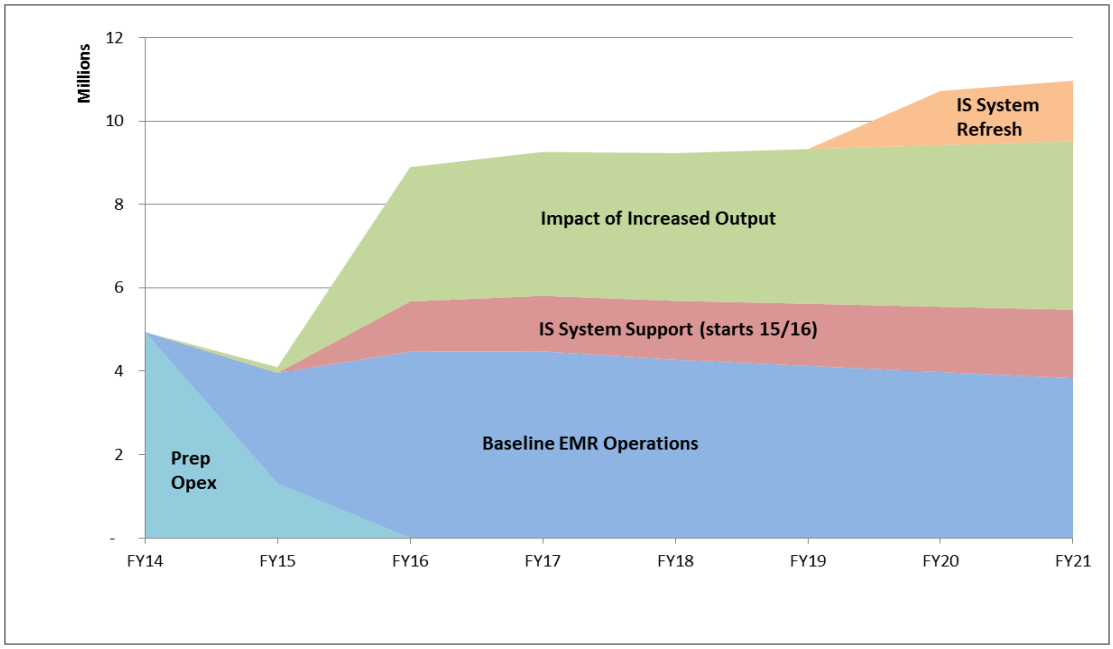

Figure 1 Enduring Total Cost Profile

9. In addition to the funding for our forecast totex, We are proposing three new incentives within this plan which would further align our delivery strategy with the interests of consumers and our customers by focusing on:

    (a) Customer and stakeholder satisfaction

    (b) The volume of Capacity Market capacity pre-qualified

    (c) Demand forecasting accuracy

10. These would be symmetric incentives which enable consumers and ourselves to share the benefit of improvements and stimulate further innovation in our delivery of customer and stakeholder outputs, but also give us financial penalties if we do not deliver to expectations.

11. As a whole, the plan proposes an efficient framework for funding the critical EMR Delivery Body role, balancing potential rewards for strong performance with penalties for poor performance and risks of under-funding necessary changes to the required outputs.

2. Background

Introduction

12. This section covers the background of the Electricity Market Reform (EMR) programme, our role within the set up and delivery of the programme and the scope and purpose of this document.. In addition, within this section we give a summary of the costs incurred and outputs delivered within the EMR preparatory phase (from 1 April 2013 until 1 August 2014) in order to summarise against the initial allowances for the preparatory phase. Note that for each of comparison purposes and to align to business plan cost tables all financial figures are quoted in 14/15 price base from this point on in the document, unless stated otherwise.

Document purpose

13. In December 2011, the Government announced that it intended to confer the EMR delivery body functions onto National Grid as part of our role as National Electricity Transmission System Operator (NETSO). These functions have been conferred onto us by amendments to our transmission licence and secondary legislation has been put in place made under relevant provisions of the Energy Act 2013. This Act came into force on 1 August 2014, formally conferring the enduring role onto National Grid.

14. Our role as EMR Delivery Body is fundamental to the transformation of the UK's electricity infrastructure at the lowest possible cost for consumers. EMR will provide incentives to the electricity market to stimulate future investment, support low carbon generation and help deliver the UK's carbon reduction targets. Our role is to help facilitate this transition as smoothly as possible, ensuring that the EMR processes are as efficient as they can be, deliver customer and stakeholder requirements and relevant market information is available at the right time to the right people.

15. Although it was understood that we would likely undertake the EMR Delivery Body role at the time of the main RIIO submission in 2012, the scope and nature of the role were not sufficiently developed for us to reasonably understand what the enduring outputs and costs of the role were going to be. As a result, the EMR activities, related costs and roles were specifically excluded from the RIIO business plan submissions, as outlined and discussed with Ofgem and stakeholders at the time of submission. This was to ring fence the activities from the (as then) current regulated activities and make future discussions regarding the incremental nature of the role simpler.

16. Since 2011, we have been working with Department of Energy and Climate Change (DECC) and Ofgem to ensure that all arrangements are put in place to ensure the successful delivery of EMR. The necessary costs incurred during these preparation phases have been recovered from DECC via a grant payment (for January 2012 to March 2013) and via an additional regulatory allowance to cover our forecast EMR preparation costs from 1 April 2013 until EMR Go live (1 August 2014)[1].

[1] Although formal Go Live was 1 August 2014, preparatory IS costs within this forecast included expenditure up to and including December 2014 to align to the first Capacity Mechanism auction.

17. The outputs we are required to deliver under the enduring EMR role and the costs for the enduring role are to be treated separately to the preparatory costs. The RIIO–T1 price control will be extended to include additional outputs, funding and incentives for EMR through adjustments to revenue allowances and the relevant price control documentation.

18. To date, license modifications have been made to allow the recovery of the EMR provisional enduring costs (i.e. those covering the first 20 months of EMR after Go Live between August 2014 and March 2016). This funding adds £5m of allowances across FY 2014/15 and FY 2015/16, which would then be adjusted following an assessment of the full EMR business plan

19. This document is the full EMR business plan for the RIIO-T1 price control period and sets out the additional outputs, proposed incentives and expected costs associated with us fulfilling our role of EMR delivery body for the period 1 August 2014 to the end of the RIIO-T1 price control period. This plan represents our required submission under the terms included within our license when the provisional enduring costs were funded. Assessment of this plan will enable Ofgem to:

    (a) Assess the final preparatory phase costs and outputs against original allowances

    (b) Adjust the provisional enduring costs for 1 August 2014 to 31 March 2016); and

    (c) Determine regulatory allowances for the period from 1 April 2016 to 31 March 2021

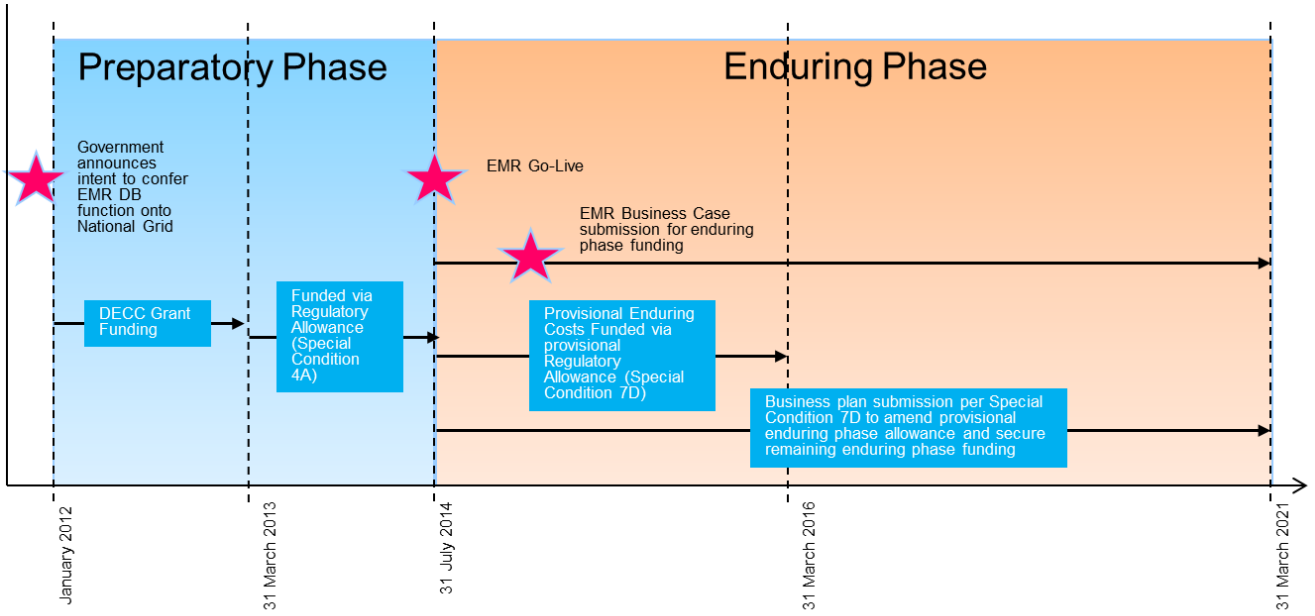

Figure 2 EMR Delivery Body Funding Timeline

EMR preparatory phase

20. Throughout the design and development phase of EMR we have provided input to the design of the mechanisms and articulated our understanding of the impact the mechanisms will have on the existing energy market. During this process we focused on building our own resources to ensure we had the capabilities in place to deliver our responsibilities as Delivery Body under the enduring regime once the necessary legislation had been passed. In addition, we have engaged widely with DECC, other Government departments, industry participants, project financiers and the devolved administrations to communicate our role in EMR during both project development and on an enduring basis.

21. In December 2013, Ofgem consulted with the industry on the proposals for funding of our preparatory costs for EMR. This was to ensure we were able to recover the costs we incurred to establish systems and processes to prepare for the enduring role as EMR Delivery Body.

22. It was recognised that it was important for us to prepare for the delivery of the EMR mechanisms ahead of the formal conferral of EMR license conditions to ensure effective, efficient and timely delivery of the mechanisms in the best interests of consumers. To facilitate these arrangements a specific cost recovery allowance was allowed for to deal with the unique circumstances of us having to prepare to deliver a significant new role.

23. The allowance was originally set at £17.5m[2] for the period 1 April 2013 to 1 August 2014. This mainly included the funding for resource costs, consultancy and legal costs and IT implementation costs. The scope and nature of EMR were still in development at the time, with a range of potential approaches and therefore costs for National Grid being considered. As a result, there was a real

[2] £17.7m in 14/15 price base

risk of over or under funding for the implementation costs. A regulatory true up was therefore included in the license to match our actual funding to actual cost incurred on an ex post basis (i.e. after the event). During this period, we have reported our actual expenditure through to Ofgem on a monthly basis, with the last preparatory costs being incurred in December 2014 for the Capacity Market auction IT system.

24. The table below summarises our expenditure against the regulatory allowances. It shows an underspend against allowances of £6.1m, this mainly relates to savings against IT implementation as well as the delay of some IT investment into the EMR enduring phase. This reduction in IT cost, along with the summary of IT systems delivered within the preparatory phase, is further explained in the next section.

Allowance £m	Allowance	Actual	Variance
Cost of Employment	2.9	2.4	0.5
Travel & Subsistence	0.2	0.2	0.0
External Legal Support	1.7	2.1	(0.4)
Consultancy	0.7	0.4	0.3
Business Support	1.2	1.0	0.2
Total OPEX	**6.7**	**6.1**	**0.6**
CAPEX	10.8	5.3	5.5
TOTEX	**17.5**	**11.3**	**6.1**

Current position on EMR delivery

Capacity Market

25. In August 2014, following an extensive programme of industry stakeholder engagement and training, we implemented IT Systems and Processes to enable the successful receipt and processing of CM pre-qualification applications and Tier 1 appeals IT systems to support pre-qualification and Appeals were fit for purpose and operated successful and securely, however they were built as transitional systems due to the time available to us to meet the deadlines for the regime.

26. In late October, the enduring IT Systems and Processes to support the first T-4 Auction[3] were successfully delivered and following an extensive training and awareness programme, the first mock auction was successfully run in early December 2014, followed by the full auction a week later. The Auction ran smoothly, with all bidders able to fully participate. The Auction was overseen by the Auction Monitor whose report to the Secretary of State concluded that the Delivery Body had run all processes in accordance with the Rules and Regulations. The Secretary of State found no reason to cancel the outcome of the Auction and so the final results were published in the CM Register and Capacity Agreements issued.

[3] Note that the IT systems to support CM pre-qualification are different from those implemented to support the CM Auction

27. Feedback from participants in both the pre-qualification and Auction processes has been very positive, with many attributing the success of these processes to the additional support and guidance provided by the Delivery Body.

Contracts for Difference

28. In October 2014, following an extensive programme of industry stakeholder engagement and training, we implemented IT systems and processes to enable the successful receipt and processing of CfD eligibility applications and Tier 1 reviews.. IT systems to support pre-qualification and Appeals were fit for purpose and operated successful and securely, however they were built as transitional systems due to the time available to us to meet the deadlines for the regime.

29. In late November 2014, we implemented additional transitional IT systems and processes to enable the first CfD Allocation Process to be successfully run in December 2014 as per the 'no reviews or appeals' timeline. However, a number of non-qualified applicants raised both Tier 1 Review and Tier 2 Appeal requests (as allowed for by the process) resulting in a revised planned start date for the Allocation Process (issuing the Auction Notice) of early February 2015. At the time of submission of this business plan, we have issued all qualified applicants with the templates required to submit sealed bids and have provided them with briefings, a user guide and other supporting documentation on the bidding process. The Independent Allocation Auditor, who will oversee the Allocation Process, has been appointed, briefed and had the format of their report approved by DECC. Along with our IT system readiness, everything is in place to run a successful Allocation Process once the Tier 2 Appeals process is concluded.

30. Feedback from participants in both the Eligibility Assessment and preparation for the Allocation Process has been very positive, with many attributing the success of these processes to the additional support and guidance provided by the Delivery Body.

Preparatory IS systems

31. As at 31 December 2014, we have successfully delivered all systems necessary to support fulfilment of our obligations for the completion of the 2014 EMR cycle. We have completed delivery of the CM Auction Solution and successfully run the first four year ahead auction using this system. This is an enduring system which will be used for all future CM auctions, subject to future maintenance upgrades and modifications required to enable future rules changes.

32. As noted above, we have enabled all other capabilities (equivalent to the scope of the Administration solution funded by the preparatory allowances) through the development of transitional solutions. These have been fit for purpose to enable successful completion of the 2014 CM and CfD EMR cycles. These transitional solutions have been developed so as to maximise the opportunity for their re-use in development of the enduring Administration System.

33. Whilst the Delivery Body has spent within its original estimates across the preparatory IS systems it has exceeded its original expectation for the anove mentioned systems, reasons of which are outlined below:

(a) **Auction solution**: During the development phase of the project there were a number of changes to the rules which required modifications to the auction system specification. These changes were required by and agreed with DECC. They resulted in chargeable change requests from our system provider. In addition, they attracted additional resource costs associated with specification and testing of the changes. These change requests resulted in a small overspend against expectation.

(b) **Administration system**: As stated above we have pragmatically decided to develop transitional solutions to ensure that all regime deadlines could be met. These transitional solutions have caused us to incur additional costs over and above those that would have been incurred had we be able to deliver the planned enduring system. These costs are largely resource related and drive the remaining variance to original preparatory allowances.

It should be noted however that it remains necessary to develop an enduring Administration solution, re-using the transitional solution where appropriate. The cost of this enduring solution are included within our plan in the "Cost Structure" section of this document and will be incurred during 2014/15 (Q4) and 2015/16. As a result our total costs for the Administration solution (transitional plus enduring) will be higher than anticipated

34. At the time of our submission for preparatory costs we requested the inclusion of a risk margin to provide for late clarification or changes to the rules and challenges associated with the short delivery timescales for the project. Our proposed risk margin was £0.9m for these items which was disallowed in the discussions on preparatory costs. The eventual excess cost in respect of these risks was £0.5m which represents 55% of this risk margin and 10.4% of the agreed preparatory costs.

35. Preparatory costs for a range of IT systems were agreed, which totalled £10.8m of funding. The total funding originally included the expected costs of other systems in addition to the administration and auction solutions.

36. The range of systems anticipated at the time we forecast the preparatory costs in February 2014 was commensurate with the prevailing clarity on legislation, rules and regime timelines. In the intervening period, these external factors have become clearer and as a result the actual investments required have varied from those anticipated. As a result of our experience in EMR delivery thus far - and this greater clarity - the scope of the preparatory systems has changed. Some systems are no longer required and others are still to be delivered, including the Enduring Administration system, in order to complete the full Delivery Body solution architecture.

37. There were three other systems originally forecast (CM operation and settlement, Modelling and analysis tools and Integration) as well as a further level of resource cost to test and develop these systems. No expenditure has been incurred for these systems because they have not been required to date (and any expenditure would therefore have been inefficient in nature). Of these systems, the CM operations and settlement and the Modelling and analysis tools are still required over the plan period, however the Integration work is no longer needed. Resources have now been rolled into the individual investment lines for future investments. This results in our current planned expenditure

being £2.5m lower than the revised scope of the original Preparatory cost forecasts for IT systems:

3. Activities and outputs

Introduction

38. This section captures the role and associated outputs of the EMR Delivery Body from EMR Go Live (1 August 2014) and is based on the:

    (a) Capacity Market Regulations

    (b) Capacity Market Rules,

    (c) CfD Regulations,

    (d) CfD Allocation Framework and

    (e) DECC prepared document "National Grid's role in EMR" which has been prepared in support of ongoing EMR implementation activities.

39. More detail regarding the activities and outputs in relation to Contracts for Difference and Capacity Market can be found in **Error! Reference source not found.**.

Contracts for difference

Preparation of the delivery plan and annual update

40. The Delivery Body is responsible for providing modelling and analysis to DECC on strike price scenarios.

41. Following a Commission from the Secretary of State, the Delivery Body will provide an update on previous analysis to support the previous years' Annual Update. The Delivery Body will also issue a "call for evidence" in January of each year and provide modelling and analysis to DECC on strike price scenarios to inform the Draft Delivery Plan in July and annual update in December each year. The strike price process will be repeated for each five year delivery plan period with the potential for additional ad-hoc updates should DECC choose to respond to significant technology price changes.

CfD budget

42. The Delivery Body will be responsible for:

    (a) applying the calculation methodology and data for valuing a CfD during the allocation process;

    (b) providing DECC with updates on the value of applications in order to inform decisions on whether to increase the CfD budget (including amendments to minima and/or maxima); and

    (c) publishing information on the CfD budget available (including against any minima and/or maxima) for allocation in any subsequent allocation round(s).

Pre-Application

43. The Delivery Body will publish guidance to help CfD applicants through the application process.

Application - eligibility

44. The Delivery Body will determine whether applicants for a CfD are eligible, according to the criteria set in regulation. The Delivery Body will follow the process set out in regulation and the CfD Allocation Framework.

Application – allocation rounds (constrained and unconstrained)

45. The Delivery Body will be responsible for determining whether applicants can be allocated a CfD. To do this the Delivery Body will follow the allocation process set out in regulation and the Allocation Framework

Reviews and appeals

46. Delivery Body will be required to review an eligibility determination at the request of an applicant who has been deemed ineligible.

47. Delivery Body will be required to provide data to Ofgem to support their determination of appeals

Reporting and notifications

48. The Delivery Body is responsible for providing reports and notifications to Ofgem and DECC, either as part of the CfD processes, or as a summary of its delivery of EMR.

Regime Development

49. The Delivery Body will be expected to support new and emerging EMR delivery issues. An element of ongoing change has been assumed within the scope of this business plan, however other potential specific changes have been excluded from scope at this point e.g Development of CfDs for Northern Ireland. The 'Uncertainties and assumptions' section of the business plan below deals with the impact of such future regime developments. Currently there is an expectation that Delivery Body may be asked to support:

(a) Development of changes as a result of DECC's Evaluation and Review process (Group 3)
(b) Development of CfD Allocation Framework changes as a result of DECC's review process

Capacity market

Preparation of delivery plan and annual update (for CM)

50. Prepare an "Electricity Capacity Report" and send this to the Secretary of State by the end of May 2015 and at the end of May for each subsequent year. This will focus on the capacity required to deliver the reliability standard set by DECC, effectively translating this standard (expressed as Loss of Load Expectation) into a de-rated capacity requirement. The methodology to calculate de-rating factors by technology should be reviewed and updates recommended if necessary.

Prepare for auction

51. Prepare and publish Auction Guidelines which will contain all the information industry require to participate in CM auctions, to the extent that such information is not set out in the CM Rules.

Pre-qualification

52. Assess applications to the Capacity Market against criteria in Rules and Regulations; update the capacity market register as appropriate and make the relevant notifications to DECC and Ofgem.

53. In addition the Delivery Body will perform pre-qualification preparation activities in order to support stakeholders and deliver a liquid auction. This might take the form of providing information on the mechanism and associated processes, training on the admin and auction systems and / or account management functions.

Auction

54. The Delivery Body must hold an auction as per the CM Rules on the date set out in the Auction Guidelines and may subcontract this out. The Delivery Body remains responsible for the performance of the auction. This extends to Four Year ahead, One Year ahead and Demand Side Response (DSR) Transitional Auctions.

Appeals

55. Process Tier 1 appeals and support higher appeals processes (Ofgem Tier II, High Court Tier III).

Capacity agreement management

56. Delivery Body to issue capacity agreement notices to successful participants, update the capacity market register with relevant information, receive evidence of milestones, and confirm capacity providers continued eligibility for capacity payments.

Secondary market

57. Whilst this is not scheduled to start until 2017/18, some of the preparation tasks will be started in 2016.

58. Check and confirm eligibility of physical secondary trades and notify industry when the physical secondary trading window has opened. It is assumed that the delivery Body will not have a role in respect of “hybrid trading” or ‘Volume Reallocation’.

Delivery year

59. Scheduled to start in 2018, some of the preparation tasks will be started in 2016.

(a) Provide information to support Settlement Agent’s assessments of Capacity Market calculations.
(b) Provide (along with the System Operator) the Settlement Agent with data required to calculate providers’ load following obligations.
(c) Monitor performance (with the Settlement Body) of providers to ensure consumers are protected from routine poor performers.
(d) The System Operator (rather than the Delivery Body) will be responsible for preparing and issuing Capacity Market Warnings and Demand Control Instructions when required.

Reporting and notifications

60. The Delivery Body is responsible for providing reports and notifications to Ofgem and DECC, either as part of the CM processes or as a summary of its delivery of EMR.

Regime Development

61. The Delivery Body will be expected to support new and emerging EMR delivery issues. An element of ongoing change has been assumed within the scope of this business plan, however other potential changes have been excluded from scope at this point. The 'Uncertainties and assumptions' section of the business plan below deals with the impact of such future regime developments. Expectation that Delivery Body may be asked to support:

(a) Development and implementation of State Aid changes (Group 2)
(b) Development of changes as a result of DECC's Evaluation and Review process (Group 3)
(c) Development of CM Rules changes as a result of Ofgem's review process

Supporting Enforcement Actions

62. The Delivery Body will be expected to support Ofgem in providing information and assistance as required to support any investigations.

Summary Table of dates for some of the key Delivery Body Outputs

Output	Current planned date
An update on previous Delivery Plan analysis to support the DECC Annual Update	December 2014 and every December after
A "call for evidence" data collection exercise	January 2015 and January 2018 (or when DECC requests)
Modelling and Analysis work & initial report on Strike Price scenarios to inform DECC's draft Delivery Plan	October 2015, July 2018 + Ad-hoc as requested by DECC
Modelling and Analysis work & final report on Strike Price scenarios to inform DECC's final Delivery Plan	February 2016 and October 2018
CfD Guidance document to help applicants through the application process	September 2014 and every September after
CfD Valuation report to DECC on value of applications (after application window closes + after Appeal/review deadline date)	October + November/December 2014 and every October + November/December after
Completed CfD eligibility assessment for each CfD applicant	November 2014 and each November after
Completed CfD allocation process for CfD applications within an allocation round	December 2014 and each December after [or later if reviews and appeals]
Completed CfD eligibility Review process	December 2014 and each December after
CfD reports to DECC post allocation	December 2014 and each December after [or later if reviews and appeals]

Output	Current planned date
CfD allocation Auditor report for the Secretary of State	December 2014 and each December after [or later if reviews and appeals]
Electricity Capacity report for the Secretary of State	1 June 2015 and each 1 June after
CM T-4 Auction Guidelines (Initial & Final)	August 2014 (Final) June 2015 (Initial) + August 2015 (Final) and each June + August after
Completed pre-qualification for the CM T-4 auction	September 2014 and each September after
CM T-4 pre-qualification report to the Secretary of State	September 2014 and each September after
Completed CM T-4 Auction	December 2014 and each December after
CM T-4 Auction Monitor report for the Secretary of State	December 2014 and each December after
CM T-4 Auction Results published	January 2015 and each January after
Issue T-4 Capacity Agreements	January 2015 and each January after
Completed CM DSR Transitional pre-qualification, auction, reporting and agreement issue	August-December 2015 + August-December 2016
Completed CM T-1 pre-qualification, auction, reporting and agreement issue	August-December 2017 and each August-December after
Maintained/Updated Capacity Market Register	Ongoing from August 2014
Review of new & refurbishing plant milestones	Ongoing from January 2015
Confirmed eligibility of physical secondary trades	Ongoing from 2017/18
Information and data to the Settlement Agent before and during the CM Delivery Year	Ongoing from 2017/18

4. Uncertainties and assumptions

Introduction

63. In any business plan over a seven year period there will inevitably be assumptions that have to be made which are based on the latest information available. These assumptions determine a consistent baseline to work from and understand the impact of variations. This section sets out the key workload planning assumptions which underpin this plan and were used to determine the optimal cost structure, organisation structure and headcount numbers set out in the plan.

64. In addition, the section sets out the uncertainties we have considered in association with the delivery of our extended role into EMR. We provide narrative on the nature and likelihood of potential variations from our base assumptions, the options we have considered in managing the uncertainties and outline proposals to manage these uncertainties within the plan period. Given that the EMR role will be funded via an extension of our NETSO RIIO funding, we have considered these uncertainties with reference to the broader RIIO framework, as well as their potential impacts on our incentives to deliver economically and efficiently in the EMR Delivery Body role on behalf of consumers and DECC.

Managing uncertainty

65. The funding for our enduring EMR Delivery Body role will be based on forecasts of output and activity requirements, demand for our services over time and the cost of delivery (including input prices). The nature of the regime - for RIIO and specifically for EMR - whereby funding is agreed upfront (for the remaining seven years of the control) will mean that the certainty associated with cost forecasts and requirements will reduce over time. As a result, there is a risk that:

    (a) The outputs that we have set out in the 'Outputs and activities' section may turn out to be insufficient or inappropriate as the EMR Delivery Body role - and DECC's requirements of it - evolve over time; and

    (b) The revenues raised from consumers could be higher or lower than necessary to cover the costs of providing EMR services, with consumers paying more or less for EMR services than was necessary

66. The main sources of uncertainty for EMR relate to the level and delivery of outputs, the input prices and the volumes of activity required. As part of the broader RIIO-T1 framework, Ofgem and the relevant networks have utilised three main options to deal with this uncertainty, namely:

    (a) Risk sharing through the efficiency incentive rate;

    (b) Uncertainty mechanisms; and

    (c) A mid-period or trigger based review of the output requirements.

67. Additionally, network companies should bear their own business risk and Ofgem has stated that uncertainty mechanisms should only be used to manage risks that are outside of their control and could significantly impact costs.

68. We have therefore undertaken an exercise to better understand the uncertainty we face over the next seven years in relation to our EMR role, and have included our proposals for how this uncertainty should be managed within the paragraphs below. In addition, we outline alternative options for managing the uncertainty we have considered, including their impacts on our incentives to deliver the EMR role efficiently and effectively and the risk to consumers and ourselves.

Uncertainty scope

69. In the main, the uncertainties in relation to our EMR role over the next seven years relate to:

    (a) The evolution of the EMR Delivery Body role as the activities required by DECC grow and change (output uncertainty)

    (b) Changes in input prices, such as labour and IT costs, over the seven years (input price uncertainty)

    (c) Wholesale changes to the role of EMR Delivery Body role, triggered by for example the Government changing (wholesale change uncertainty)

70. Output uncertainty is considered the most pertinent risk we - and consumers – will face over the next seven years in terms of the cost forecasts in this plan not being sufficient or being too high. This is in part triggered by the Delivery Body activities being new, which brings with it more inherent change than existing processes, as well as by developments that are expected over the next seven years. As a result, this section will mostly consider this uncertainty.

71. For input price uncertainty, we have included in our baseline costs:

    (a) Assumptions for labour Real Price Effects (RPE) based on current external forecasts; and

    (b) An efficient level of IS costs based on current estimates for activities

72. More detail on both of these assumptions can be seen in the ‘Cost structure’ section of this document. There is risk that these assumptions do not bear out over the next seven years, resulting in higher or lower costs than forecast. However in sizing the risk, and using the work undertaken on our wider RIIO submission in relation to similar risks, we consider that risk sharing through the RIIO efficiency rate will be sufficient for managing the risk. This is because the:

    (a) Risk is broadly symmetrically balanced between ourselves and consumers;

    (b) Outcome of the broader RIIO framework review was to manage this risk using the efficiency rate; and

    (c) Materiality of the risk is limited to a low proportion of the annual costs forecast for the EMR role, so is unlikely to be high in comparison with the risk for the broader RIIO activities

73. Therefore, assuming the costs outlined in this plan are adequately funded, we are proposing that we bear the risk in relation to management of the input price uncertainty.

74. For wholesale change uncertainty, DECC has indicated that irrespective of the outcome of the 2015 election, any new government (including a re-elected coalition) may choose to implement wholesale changes to the existing EMR regime. Clearly the scope and scale of any change is unknown and unquantifiable at the current time. We expect that in the event of an announcement of any wholesale review the EMR funding framework would need to be reviewed at the same time to deal with any cost adjustments. This would be similar to broader RIIO uncertainty mechanisms which are used to manage the uncertainty of material legislative changes on NGET.

75. Our proposal is therefore that a license term is included in the EMR element of the license which would trigger a review of cost funding if a 'material' change to the regime occurred. This would trigger if the change materially increased or reduced our role. Our proposal for the trigger would be an externally driven review of the role with a cost materiality of greater than 20% of the totex allowances (based on the forecast included in this plan, this would equate to ~£13m)

Output assumptions and uncertainty

76. Having dealt with input price uncertainty and wholesale change uncertainty above, it remains to explore the output uncertainty that exists over the next seven years. Firstly, it is worth outlining that the business plan has been prepared on the assumption that all the outputs specified in the 'Activities and outputs' section have to be delivered within the timeframes set out in the associated Regulations, CM Rules or CfD Allocation Framework. Delivery of these outputs in an economic and efficient manner is the primary justification for our plan - and correspondingly the forecast headcount and cost levels - with most of the outputs being mandatory obligations.

77. The baseline assumption for the plan is that the level of output required will not reduce over the plan period and timescales for delivery for these outputs will not change. There is however an inherent uncertainty as to whether the level and scope of outputs will change over the period.

78. To illustrate this uncertainty, it was originally assumed that once EMR went live the level of legislative change in 2015 would be minimal. However, state aid changes, policy fixes, evaluation outcomes and new policy initiatives have led to a steady state of change being proposed for next year through discussions with DECC. These 'Group 2' and 'Group 3' developments are discussed in more detail below, but their existence shows that there will be change in the requirements of the role through the next few years, and gives a good indication that a general level of change will exist through the next seven years.

79. To further explain the output uncertainty we have split the potential changes to outputs into three different categories:

    (a) **Continuous improvement changes:** Including both:

        i. Changes to outputs or activities which are almost certain to occur, we can reasonably calculate the costs of the change and whilst the timing of that change is not yet known it is due in the next one to two years (mainly Group 2 and Group 3 changes); and

ii. A long run projection of (small level) annual continuous improvement changes which are expected following annual process reviews by DECC, Ofgem and the Panel of Technical Experts (PTE)

(b) **Specific known changes:** More material changes to the regime which are reasonably certain to occur at some point over the seven years (based on discussions with DECC, Ofgem and Industry) where we can reasonably ascertain the costs but we do not know when the changes will occur (cost reasonably certain in most cases, but timing unknown).

(c) **Unknowns:** Other specific output changes outside of continuous improvement items that have not been raised yet by DECC, Ofgem or Industry but coiuld easily be expected to occur over the seven years.

80. Given the different types of uncertainty, there are different models for managing the risk involved across the plan period which we will explore below. However, the key point here is that there will inevitably be changes to the outputs and activities we will be expected to undertake across the seven years - and that the change will only increase the requirements on us (outside of the wholesale change uncertainty). For example, any change to rules leads to:

(a) an increased requirement in stakeholder engagement;

(b) new market entrants (e.g. DSR) will need more support understanding and participating in the regime if Government ambitions are to be realised, and:

(c) as the regime matures, more detailed analysis (of changes and impact on markets) will be possible with an associated demand for change and necessary impact assessment of these changes.

81. There is therefore a risk that if we do not manage this uncertainty through the regulatory framework:

(a) The requirements of the Delivery Body role will be under funded, resulting in financial exposure;

(b) An incentive for the Delivery Body to try and minimise the amount and scope of change will be introduced. As a result, improvements to the processes which would save costs to consumers, could be delayed.

82. As a result, the next few paragraphs size the risk involved and discuss options for managing the risk.

Unknowns

83. Dealing with the ‘Unknowns’ section first, by definition there is no way of sufficiently articulating the level of risk here. Given the timescales involved (Government policy can change – and has historically changed – significantly over a seven year period) it is almost certain that known changes at this point of time will not be the limit of the uncertainty. However we recognise that;

(a) Including a broad reopener for every change in output to cover this risk completely would involve significant administration burden and costs

for consumers and would not be proportional to the level of cost risk involved;

(b) A proportion of the 'specific known changes' may not progress to full implementation over the seven years; and

(c) The mitigation given by any review of wholesale changes to the EMR role would cover the risk for large, material unknown changes

84. We will therefore only feed the management of risk for this type of uncertainty into the discussion of continuous improvement and specific known uncertainties below, rather than consider separately.

Continuous improvement changes

85. From a perspective of continuous improvement changes, secondary legislation to meet State Aid compliance requirements (Group 2) is planned to be introduced in early 2015 and in force by the end of March 2015. Whilst the impact on Delivery Body IT systems and processes has been identified at a high-level, detailed time, cost and resourcing impacts will only be known once policy is finalised at the end of February 2015. In addition, any associated CM Rules or CfD Allocation Framework changes may lead to IT System and Process changes, potentially impacting on CM pre-qualification (scheduled to start on 6th July 2015) or CfD qualification (scheduled to start in October 2015).

86. The business plan has been prepared and resourced on the assumption that these changes will require a modest level of Delivery Body resource to:

(a) Assist DECC with their understanding of the impact of policy choices on the operation of EMR;

(b) Develop and implement the required process and IT system changes; and

(c) To engage with participants to ensure they understand the new requirements and can fully participate in the 2015 processes.

87. DECC are due to publish their final evaluation report on the 2014 process along with any proposed changes to these processes in April 2015. This may result in further changes to legislation (Group 3), to the CM Rules or CfD Allocation Framework, with any changes due to come into force in September 2015. This timetable would mean implementation taking place between CM pre-qualification and the CM auction (with the potential to delay the auction until 2016). The timetable might also impact on applicant readiness for the 2015 CfD Application round due to open in October 2015. There may also be impacts on Delivery Body IT Systems and processes, though this will not be clear until the summer of 2015.

88. DECC has indicated that the timescales for these changes are challenging, both in terms of the parliamentary process (in an election year) and because changes could impact on pre-qualified applicants (who would be subject to rule changes post-prequalification). Whilst DECC is committed to conducting the evaluation, it has indicated that it will prioritise any changes, only implementing those that are critical to the 2015 process. Given this, we have assumed that DECC will implement minimal Group 3 changes and have based our resource and IT requirements on this.

89. Ofgem takes over responsibility for governance of the CM Rules from January 2015 and is due to consult on changes to the rules during the Spring of 2015 (with final proposals published in July 2015). Whilst this may result in changes which impact on Delivery Body IT Systems and processes, this will not be clear until April or May 2015.

90. We have assumed that Ofgem will make minimal changes to the rules in 2015, reflecting the relative 'immaturity' of the current rules and the fact that participants may express a desire to operate within these rules for a further year before fully understanding the changes required. We have also assumed that Ofgem will consider the time and cost of implementation of any changes in to account before making any changes to the CM Rules thus restricting changes to those with compelling benefits versus costs.

91. In considering the level of regulation, rules and CfD allocation framework changes which will be proposed post-2015, we have reflected on the extent of the proposals for 2015 and on the areas of policy which DECC has previously indicated may be open for development. Added to the likely 'ongoing' Ofgem led changes to CM Rules from 2016 onwards, we have assumed that the level of policy support, process and system change, stakeholder engagement and delivery partner interface will remain constant over the duration of the Business Plan.

92. Given the level of change anticipated above and our collective desire to incorporate the ongoing delivery of this change within the headcount and cost structure set out in this business plan (excluding those areas set out in the specific known changes section below) we have incorporated a trade-off between our increased resource needs for these continuous improvement changes and future headcount efficiencies.

93. In other words, if the requirements of our role were not changing over the next seven years we would expect to improve our efficiency of the processes by 1-2% per annum. The above however shows that we are expecting change in the requirements annually to a low level. We are therefore assuming that this efficiency will be offset by the incremental additional resource needed to deliver the level of change. Accordingly we have assumed a flat resource profile for the EMR team across the business plan period, which is in effect masking an underlying 1-2% per annum efficiency.

94. In this way we are inherently assuming that the annual change will require ~£60k per annum of resource to deliver. This level is based on the estimates for Group 2 and Group 3 changes which are likely to require the equivalent of one FTE working through the year (but delivered using the time of several of our EMR resource).

95. In addition, we have included within our IS capex plan ~£700k p.a. to cover the costs of a baseline level of change each year for the CfD administration (this includes both the CfD eligibility and allocation activities), CM administration and CM auction systems. This allows for several small changes each year through the three systems. Without this funding we are at risk of being non-compliant to DECC's requirements. This level of expenditure is outlined further in the 'Cost structure' section of this document.

Specific known changes

96. The final category of change relates to specific known changes, which are more material than the continuous improvement changes above. The below sections outline output changes that we would suggest are a logical progression of the current regime, or which have been discussed in Industry Forums. Our ability to accurately estimate costs and impacts of these changes is dependant upon obtaining clarity of the detailed rules changes. Similarly, for IT system changes, our abilty to deliver them efficiently may be compromised. For other internal systems we manage change efficiently by operating a release strategy which collects changes into projects where the scope and value are challenged prior to approval.

97. Our opportunity to do similar for EMR system is limited for a number of reasons;

    (a) Whilst involved in the change management process, unlike internal systems, we do not own the governance process and cannot therefore make decisions on changes based on efficiency or value

    (b) The CM and CfD business cycles run at different periods through the course of any given year. The change management processes for each of these instruments therefore run to different deadlines. Our ability to collect change into efficient projects of work is therefore lower than would be the case if the timings aligned.

    (c) The complexity of change is driven by two factors;

        i. The nature of the proposed change

        ii. The status of the systems to be changed at the time the change is required

    Any estimate of the cost of future change therefore has to make assumptions on the sequence in which change will be implemented. An example of this would be if Non-UK CfD's is implemented after a move to a multi round price discovery auction process for CfDs, the change would be much more complex than if the sequence was reversed.

98. The cost estimates of undertaking such uncertainties as

    a. CM delivery monitoring

    b. Zonal CM auctions

    c. CfD multi-round price discovery auctions

    d. CfD for Northern Ireland or other juristictions

CM delivery monitoring

99. Currently the Delivery Body has a minimal role in monitoring delivery milestones, restricted to receiving evidence of milestones being achieved and confirming capacity providers continued eligibility for capacity payments. Given that this process has yet to be run, DECC's future review process may identify and propose the need for a greater level of independent technical assessment of delivery, with the potential that this role is undertaken by the EMR Delivery Body.

Zonal CM auctions

100. DECC may choose to introduce zonal CM auctions, sub-dividing GB only or adding additional European zones, to create a hierarchy of auctions. In essence this could result in a series of independent, sequential zonal auctions being run until they clear, before then bringing them together into a final combined auction to clear the total capacity requirement.

CfD multi-round price discovery auction process

101. DECC may choose to change the CfD "auction" from a Single-Round Sealed Bid process to a Multi-Round Price Discovery or Zonal process, potentially including elements or mechanisms similar to those used in the Capacity Mechanism Descending Clock Auctions.

CfD for Northern Ireland

102. Whilst DECC has indicated that this is a confirmed requirement (with a consultation on the Delivery Body role due in January 2015), we have not included this activity in our business plan (and positioned it here as an uncertainty) due to the uncertainty over how we would be funded for the implementation and operational costs.

Non-UK CfD

103. Following implementation of CfD to Northern Ireland, DECC may extend CfD to include non-UK countries.

104. Across the plan period, changes as those highlighted above would cost c.£11m. This respresents 20% of the £54m baseline totex within this plan. Therefore, from an EMR perspective these potential changes are material. We do however note that from a broader NGET perspective, this £11m does not reach the 1% of revenue materiality set for reopeners and the mid-period review under the RIIO framework.

105. As discussed, there is uncertainty regarding the timing of these changes and, although DECC have discussed the changes they are not certain to occur over the period. This means the forecast could be high. However, as can be seen by the trajectory of costs the level of known changes drops off towards the end of the plan period. This is because the further we look into the future, the less certainty there is about material changes that could be triggered. This then means that we could be underestimating the level of change. Using the £11m as an 'average' therefore does not seem unreasonable.

106. Our base cost submission of £54m does not include any of this £11m. Given that it is very unlikely that the requirements of the EMR Delivery Body will reduce, without any regulatory mechanism to fund these potential changes there is a skewed risk profile between ourselves and consumers which means that consumers are likely not to bear the respresentative cost of the EMR role and services provided.

Options for funding specific known changes

107. There are several options for how this risk could be shared more equitably between ourselves and consumers. The options we have considered are:

    (a) **Just using the efficiency incentive rate**: which represents no baseline funding for the changes and no uncertainty mechanisms

(b) **Baseline funding of £11m**: As the £11m is a reasonable 'average' cost of the changes over the period an ex ante allowance could be given which acts as a 'fixed price' approach to dealing with the risks. This would on average cover the risk of the changes and its inclusion in the baseline funding would more equitably balance risk between ourselves and consumers than not including any funding.

(c) **Introducing a specific EMR uncertainty mechanism triggered at a £1m level of change (ex post basis)**: £1m would represent ~11% of the annual baseline EMR costs so could be used as a reasonable materiality level for a specific EMR uncertainty mechanism, based on a reopening of the funding for a specific change or group of changes (designed similar to RIIO reopeners). This version of the reopener would act on an ex post basis, whereby the costs of delivering the changes would be assessed after the event for efficient delivery.

(d) **Introducing a specific EMR uncertainty mechanism triggered at a £1m level of change (ex ante basis)**: This option would be the same as the last with the exception that assessment of the cost of change occurs before delivery of the change. In this way we would retain the delivery risk for the change (i.e. costs being higher or lower than the efficient level determined by regulatory review).

(e) **Incorporating EMR changes into the market facilitation review at the mid-period review of outputs**: This approach would more firmly link EMR to the broader NGET RIIO framework. If costs of change were above the NGET materiality level of 1% of revenue the mid period review could be used as a route to discuss additional funding. In essence, this approach only covers the risk of other broader NGET changes adding to those outlined above though, as the NGET materiality level is more than the £11m forecast.

108. These options are summarised in the table below, along with the potential financial risk for consumers (i.e. funding more than cost of delivery of these changes) and ourselves based on the three different scenarios being:

(a) None of these changes occurring (i.e. zero expenditure required)

(b) Changes occurring in line with the assumptions above (i.e. £11m expenditure required, rounded to £11m in the below)

(c) More changes occurring (assuming £16m of expenditure across the period, or a 50% increase in levels)

109. The results are then shown as Red, Amber or Green, based on

(a) Green rating for consumer risk meaning funding is in line with or less than the costs of service provided, and green rating for National Grid meaning financial exposure is <£5m (pre efficiency rate).

(b) Amber rating for consumer risk meaning funding is above cost of service by less than £10m, and amber rating for National Grid meaning financial exposure is <£10m (pre efficiency rate) but above £5m.

(c) Red rating for consumer risk meaning funding is above cost of service by more than £10m, and red rating for National Grid meaning financial exposure is >£10m (pre efficiency rate).

110. We then go on to outline the incentives that using each option introduces on ourselves and the potential administrative burden of each option. What we are looking to do in outlining the options is to decide on an option which represents an equitable risk balance between ourselves and consumers and aligns the incentives on ourselves with those of consumers.

Risk management option	£m	Consumer funded	National Grid funded
Just using efficiency incentive rate	-	Zero	Zero
	11	Zero*	£11m*
	16	Zero*	£16m*
Baseline funding of £11m	-	£11m*	Zero*
	11	£11m*	Zero*
	16	£11m*	£5m*
Specific UM triggers based on a materiality of £1m	-	Zero	Zero
	11	£11m	Zero
	16	£16m	Zero
Mid period review	-	Zero	Zero
	11	Zero*	£11m*
	16	Zero*	£16m*

* Before applying the efficiency rate

Proposal for funding specific known changes

111. Based on these ratings, only using the efficiency rating to manage this risk or using the mid-period review divert a skewed level of risk onto National Grid. We have therefore discounted these options.

112. The option which seems to balance risk equitably between ourselves and consumers is using a specific uncertainty mechanism for EMR. This ensures that we are funded for the work we will need to undertake and consumers are not going to pay more than the services they receive. However, this approach does add in a level of administrative burden and cost on ourselves, Ofgem and DECC, the costs of which would ultimately be borne by consumers. In addition, the time it would take to produce a submission for each uncertainty mechanism claim would have a delaying impact on any change proposed by DECC, which would not be in the best interests of consumers or the parties involved. These seem unneccesary burdens that could be avoided by using one of the options to fund these changes via ex-ante allowances.

113. We are therefore proposing that £11m of baseline funding is given to mitigate this change in output risk.

114. Using this baseline funding method is similar to the approach used in the SO capex funding under RIIO-T1, whereby a baseline allowance was included in the totex allowances to fund market and regulatory changes. This figure was based on a historical level of change during the Transmission Price Control Review 4 (TPCR4) period for the Electricity System Operator (ESO). The main differences here are that there are no long term baseline levels of activity to set a benchmark from (as EMR is a new activity) and (again because EMR is new) there is a higher likelihood of changes to the requirements.

115. We are mindful that including £11m of baseline funding does give an exposure to consumers for 'over-funding' the services they will receive, however the maximum exposure is ~£5.2m[4] across the plan period (post efficiency rate incentive) and this maximum exposure assumes none of the changes mentioned occur over the seven years. We believe this to be of very low likelihood. From the other perspective, our exposure is still higher than this – because more changes to the requirements could quite easily occur – and this approach does give us a strong incentive to find innovative ways to minimise the cost of the changes.

116. The table below summarises all the identified uncertainties over the plan period, any linked elements which have been included in the baseline submission and the proposed method for managing the uncertainty. This includes the different output uncertainties covered in the previous section, as well as input price and wholesale change uncertainty:

Uncertainty type	Elements included in plan	Proposed method to manage uncertainty
Input price uncertainty	• RPE forecasts for labour price • IS cost forecasts based on current benchmarks	Risk sharing through the efficiency incentive rate
Wholesale change uncertainty	None	Reopener triggered by any fundamental review which impacts costs by more than 20% of EMR allowances
Output uncertainty – Continuous improvement change	• Resource and IT costs for Group 1 and Group 2 changes in 2015-2018 • Flat resource profiles and annual level of IT costs to cover on-going continuous improvement thereafter	Risk sharing through the efficiency incentive rate
Output uncertainty – specific known changes	• Flat resource profiles • £11m costs of change across the plan period	Risk sharing through the efficiency incentive rate, based on ex ante funding for change costs
Output uncertainty – unknown changes	None	Risk sharing through the efficiency incentive rate

[4] Assuming a 47% efficiency rate is applied in line with NGET

5. Incentivisation

Introduction

117. As outlined in the 'Background' section, the EMR programme has introduced two new mechanisms – a Capacity Market to promote security of supply, and Contracts for Difference to support investment in new low carbon generation. By 2020, the schemes combined could process around £2bn to £4bn worth of transactions per annum. Delivering them efficiently is therefore critically important. As EMR Delivery Body, we have a significant role to play, and must decide how to invest in our people, skills and capabilities to support the most efficient outcome. We consider that this is best achieved through the implementation of financial incentives which align our delivery strategy firmly with the interests of consumers.

118. This section therefore sets out some financial incentive proposals that we consider could be applied to our EMR Delivery Body role from FY 2015/16, covering both Capacity Market and CfD outputs. A distinction has been made between incentive schemes that may be more readily implemented in a shorter timeframe (primary incentive proposals) and those that may require further work prior to implementation (secondary incentive proposals). We have also given consideration as to how these incentives, along with our EMR role, might evolve in the medium term to bring greater cost optimisation for consumers.

119. The schemes proposed in this plan aim to represent a fair balance of risk and reward and operate in the interests of consumers. In order to deliver the low carbon energy and reliable energy supplies that the UK requires and deliver further benefit to consumers, it is important that strong incentives remain in place to ensure our interests and those of consumers remain fully aligned.

120. In line with the above princples, we also propose a review of the current EMR incentives (which were put in place in 2014) in order to reflect learning experience from processing reviews/appeals as part of the first CM and CfD application processes.

Engaging our stakeholders

121. We recognise the importance of stakeholder views when looking to develop these EMR incentive proposals further. Given the revised timescales for submission of this plan to Ofgem along with the timing of the CfD and CM auctions, the opportunity to engage with our stakeholders on this subject has been limited. However, we have given consideration as to how we will engage with stakeholders on incentives following initial bilateral discussion with Ofgem, in January 2015.

122. Given that the timeframe available between the plan submission date and the time that Ofgem is looking to consult formally with the industry on the content herein is relatively short, we would propose to undertake some joint stakeholder engagement with Ofgem on these incentive proposals. This might take the form of a dedicated industry workshop which may align to an already scheduled industry forum event such as National Grid's Operational Forum. We welcome Ofgem's views on this proposed approach.

Review of Current EMR Incentives

123. In 2014, Ofgem introduced new incentives with respect to National Grid's role as the EMR Delivery Body which are applicable to 2014/15 and 2015/16. These incentives relate to the decisions we are required to make to resolve EMR disputes effectively, as well as reputational incentives on our wider performance as EMR Delivery Body.

124. Three of the new incentives were financial incentives placed on decisions taken by the Delivery Body as part of the CM pre-qualification and CfD Eligibility assessment processes, Capacity Agreement Notices (CAN) and Capacity Market Register (CMR). They refer to decisions taken at Tier 1 appeals which are subsequently upheld or overturned by Ofgem at the Tier 2 Appeals stage.

125. For the CM and CfD qualification decisions, there is a maximum materiality of +/- £50k per annum and for CAN and CMR decisions, a maximum materiality of +/- £25k per annum (as per the summary table below). This equates to a maximum opportunity or risk across the incentives of +/- £125k per year.

Number of overturned decisions	CfD Qualification Decisions £k	CM Qualification Decisions £k	CAN and CMR Decisions £k
None	50	50	25
1	0	0	0
2	-10	-10	-5
3	-20	-20	-10
4	-30	-30	-15
5	-40	-40	-20
6 or more	-50	-50	-25

126. These incentives were set in the context of EMR as a brand new process and reflected the 'untested' nature of the regime. However, now that we have had experience of processing reviews/appeals as part of the first CM and CfD application processes we consider that a review of the parameters of these current incentives would be appropriate for the following reasons:

(a) Under estimation of effort involved - the 2014 processes have demonstrated the significant effort and resource (including external legal resource) required to consider all the evidence and make the correct qualification decisions, either due to the complexity and ambiguity of the 'rules' or the limited amount of time the process allows for them to be made, internally reviewed and communicated (1 week for CM, 2 weeks for CfD). The level and intensity of effort is greater than was anticipated when the current parameters were set and requires a corresponding increase in the potential reward that we may receive through the incentive mechanism.

(b) Increased impact from 2015 - In the 2014 CM Appeals process applicants were permitted to re-submit new evidence to support their application in the

appeals window, however, this will not be allowed in the 2015 process or in subsequent years. This will increase the impact of our initial pre-qualification decision and increase the complexity of Tier 1 appeals, due to the need to differentiate between 'new' evidence and 'clarification' evidence. These increases require an increase in both the risk and reward associated with the incentive mechanism.

(c) Increased volumes from 2015 – From 2015 onwards we expect the level of CM and CfD applications to increase significantly, either due to the addition of DSR Transitional or T-1 applications for CM or due to the phased closure of the Renewables Obligation (RO) leading to an increased interest in CfD. However, the processing and delivery time to manage this volume will not increase accordingly. This therefore increases the risk of the Delivery Body making incorrect decisions without a corresponding increase in the reward for getting them right through the existing incentives.Increased complexity from 2015 – In the second year of operation, a number of new checks will be required for both the CM and CfD qualification assessment processes (e.g. verifying applicants are not already CM/CfD contract holders) and this will increase the likelihood of incorrect decisions without a corresponding increase in the level of potential reward.

127. We therefore consider that the level of risk and reward associated with these decision making incentives needs to be re-calibrated and should be increased by a corresponding order of magnitude.

128. Given the increased risk and reward, we also consider that a more symmetrical upside and downside to the incentive regime would be more appropriate as this would remove the 'cliff edge' associated with getting a single decision overturned. Our proposal would overcome this whilst also reducing the 'slope' of the downside, meaning that the capped downside would be reached more quickly if there were multiple Tier 1 decisions overturned at Tier 2.

New Incentives - Short term proposals

129. The suite of new incentive proposals set out in this document have been categorised as either primary or secondary incentive proposals. The primary incentive proposals are those that we consider could be implemented from FY 2015/16 given that they more closely align with our current EMR duties. Thus the design of these schemes has been considered in more detail within this plan. The secondary incentive proposals are those that are more broadly consistent with our current duties but may be relatively more challenging to implement in the first instance. The secondary options are therefore set out at a higher level to the primary options and require further development prior to a proposed implementation in FY 2016/17.

Category	Scheme Name	Measure	Financial Cap / Collar
Primary Incentive Proposals	**EMR Customer & Stakeholder Satisfaction**	Annual customer & stakeholder satisfaction survey scores	+/-£2m
	Volume of Capacity Market Capacity Pre-Qualified	Volume of pre-qualified capacity against the capacity requirement	+/-£3m
	Demand Forecasting Accuracy	Peak demand forecasting error (for T-0 to T-4) against outturn	+/-£3.2m
Secondary Incentive Proposals	**Capacity Forecasting Accuracy**	Forecast of non-CM eligible capacity against outturn	tbc
	Calculation of Accurate De-rating Factors	Forecast of plant de-rating factors against outturn plant availability	tbc
	Forecasting CfD Allocation Outcomes	Forecast clearing price and volume of CfD generation for a given value of CfD budget against auction outturn results	tbc
	Outturn Capacity Requirement	Excess or deficit capacity against the outturn capacity requirement	tbc
	Net CONE Forecasting	Forecast of net CONE against outturn	tbc

130. For each of the above primary incentive proposals, we detail:

(a) The value of the incentivised output to consumers and therefore how this relates to the proposed materiality of the scheme up-side and down-side (cap and collar);

(b) How the incentive would be set up, implemented and measured;

(c) The incentive parameters, including the proposed target, cap/collar and associated materiality(for the primary incentive proposals only); and

(d) Potential variations that could be considered as alternatives to the design of the main proposal.

Medium term incentives and the Delivery Body role

131. We have also given consideration to some potential wider, medium term incentive options to be taken forward in future discussions with Ofgem which would potentially expand our role under EMR and seek to realise further cost optimisation benefits to consumers by leveraging synergies across our wider System Operator role. It is likely that these options would take in the order of 18 to 24 months to develop and implement and are therefore not detailed within

this submission. We do however look forward to discussing these further with Ofgem and stakeholders.

Principles of incentive development

132. The incentive proposals set out herein have been developed in accordance with the following principles:

1. Delivering customer value

(a) Incentives should align our commercial interests with those of consumers; and

(b) Incentives should reflect our ability to deliver improvements to key outputs that are valued by customers.

2. Balance of risk and reward

(a) The materiality levels of the incentives are set relative to the potential value to consumers of delivering against the incentive rather than the size of the Delivery Body role. Where appropriate, we have applied a 25% 'sharing factor' to the overall value that each incentive area brings to consumers in order to determine the maximum materiality (financial cap and collar) of the scheme. This sharing factor value is consistent with the current SO cost incentive (Balancing System Incentive Scheme);

(b) Incentives should provide a fair balance of the potential reward for the additional risk that we take; and

(c) Appropriate mechanisms may be required to ensure that windfall gains or losses are minimized through the use of uncertainty mechanisms that mitigate against market factors outside of our control.

3. New incentive design

(a) Incentives should be set, where possible, in relation to an established baseline, with National Grid sharing a proportion of the financial upside from improved performance, and a proportion of the costs associated with deteriorating performance;

(b) Incentives should be applied in areas where we can deploy our existing skills and capabilities, or in areas where we are best placed (relative to other industry participants) to deliver a performance improvement through investing further in these capabilities; and

(c) Incentives should avoid creating conflicts of interest with our wider SO or TO roles and existing incentive schemes.

Primary incentive proposals

EMR Customer and Stakeholder Satisfaction

Overview

Incentive	Customer and stakeholder satisfaction
Measure	Financial incentive based on the scores from an annual customer / stakeholder survey
Financial max/min	+/-£2m

133. In order to reflect our ongoing commitment to, and the importance of, customer and stakeholder satisfaction, we propose a financial incentive based on an annual EMR satisfaction survey. The survey would be discreet from and separate to the existing survey for NGET customers and stakeholders within the broader RIIO-T1 framework. This is to reflect the unique nature and importance of the EMR role. It is proposed that the incentive value is reflective of a small percentage (+/- 0.1%) of the total annual EMR funding which equates to approximately +/-£2m per annum in 2014/15 prices. This would drive us to provide increasingly excellent service to our EMR customers and stakeholders with regard to the processes and outputs specifically relating to our EMR Delivery Body role.

134. It is our intention to undertake an initial satisfaction survey in early 2015 in order to understand customer and stakeholder views on our efforts to date and to inform the final design of this customer satisfaction incentive scheme.

Value for customers

135. As the EMR Delivery Body we believe that the views of our customers and stakeholders are crucial to meeting the UK energy challenge of providing secure and affordable energy. This incentive will drive improved levels of engagement with EMR customers and stakeholders and provision of a service that more closely aligns with customer needs and expectations.

136. For the current RIIO-T1 customer satisfaction incentive, the associated financial reward/penalty is set as +/-1% of annual revenue where revenue provides a proxy for the benefit delivered to consumers. For EMR, the annual value of the Capacity Market (CM) and CfD mechanisms is the relevant equivalent proxy. Depending on the clearing price, from 2018/19 the Capacity Market will cost GB consumers in the region of £1.25bn to £2.5bn annually. Under the Contracts for Difference (CfD) regime, approximately £300m of annual budget will be allocated each year on average[5].

[6] In outturn, the T-1 clearing price could be higher or lower than the T-4 price. However, we have a assumed that with fewer options available in T-1 (i.e. no new build), prices are likely to be higher, particularly if capacity has been under-procured in T-4.

137. Applying the +/1% precedent from RIIO-T1 to this new EMR incentive would imply an incentive range of approximately +/- £20m. However, we consider that it is reasonable to propose the percentage should be a smaller number as EMR outcomes are less directly controlled by National Grid than those of RIIO. Therefore we consider an incentive in the region of +/-£2m to be appropriate as the cap/collar value which equates to around +/-0.1% of the annual EMR value. We consider that this strength of incentive is appropriate, in particular to incentivise ongoing development and enhancement of processes and systems which will in turn enhance the customer experience.

Proposed Approach

138. We propose a financial incentive on the EMR Delivery Body function to drive improved customer and stakeholder satisfaction. This would be achieved through the development of a survey with questions relating to outputs for both CfD and Capacity Market (CM) processes, including (but not limited to):

139. For CfD:

    (a) Pre-application process

    (b) Allocation process

    (c) Reviews and appeals

140. For Capacity Market:

    (a) Pre-qualification process

    (b) Auction process

    (c) Appeals

    (d) Capacity Agreement Management

141. Whilst the existing RIIO-T1 satisfaction survey covers overall customer satisfaction across NGET and NGGT, the activities associated with our EMR role may have an influence on customer scoring but would not be explicitly recognised. We therefore consider that the EMR Delivery Body function would benefit from being separately assessed using a separate survey for the following reasons:

    (a) The EMR customer base is even more diverse and subject to future change than that of our main Transmission business, including those only ever DNO connected, those with no network connection and generators outside of the UK;

    (b) A separate survey would allow specific focus on the EMR related services which are new roles to National Grid; and

    (c) It allows greater freedom in the design of the incentive, and the focus of and timing of the survey.

142. The survey recipients each year would include:

    (a) CM and CfD applicants - the survey would initially include GB applicants only (potential NI or non-UK CfD applicants and interconnector CM applicants could be considered at a later stage);

    (b) Parties who expressed interest / attended stakeholder events but who did not apply (potentially with a lower weighting applied); and

    (c) DECC and Ofgem (potentially with a higher weighting applied).

143. The survey would direct participants to only respond to sections for which they have a relevant experience. It would also include an introduction clarifying our Delivery Body roles and responsibilities under EMR, separate from policy decisions made by DECC. The results of the survey would provide detailed feedback to drive continued improvement.

144. The timing of the survey would need to be aligned with the EMR timetable, but take account of the specific events associated with both CfD and CM processes. For example, undertaking the survey just before the CM auction may be considered a distraction by participants, whereas undertaking it just after an auction may overlap with the CfD allocation or appeals process. Given the timing of CM and CfD processes, an annual survey in March would seem most appropriate, once the annual CM and CfD allocation processes have all concluded.

145. We propose that the scoring process would be very similar to that for the RIIO survey where a simple numerical score from 1 to 10 is placed on a final overall satisfaction question (although a variant based on weighted scores across all questions is a possible alternative). For example:

    "On a scale of 1 to 10, with 1 being completely dissatisfied and 10 being completely satisfied….

    Over the last 12 months, taking into account all your experiences, please rate your overall satisfaction with National Grid's performance of its EMR Delivery role with respect to your application(s) under the Capacity Market and/or Contract for Difference schemes"

Incentive Structure

146. We propose that the customer satisfaction incentive comprises a simple and symmetric linear relationship between the weighted average score and the achieved level of the incentive.

147. It is our intention to undertake an initial satisfaction survey in early 2015, based on the work that we have undertaken to date with customers and stakeholders, to understand what customers are feeling about our performance with respect to our EMR role. It is hoped that the results from this initial survey will not only provide us with valuable feedback on the level of service that we are providing but should also allow us to develop an incentive with a more informed target satisfaction score.

148. In the meantime, in the absence of any prior evidence of survey responses in relation to our EMR activity, the target (or break-even point) for the incentive is proposed to be set at a score of 5 in first instance. This aligns with the RIIO-T1

target related to the stakeholder aspect of the satisfaction survey where there was no historic evidence of previous scores upon which to determine scheme parameters. Similarly, it is proposed that the cap and collar for the scheme also mirror the current RIIO-T1 stakeholder satisfaction aspect of the incentive which are set at 8 and 2 respectively. Figure 3 below illustrates our proposal which, as set out above, uses a maximum incentive value of +/-£2m.

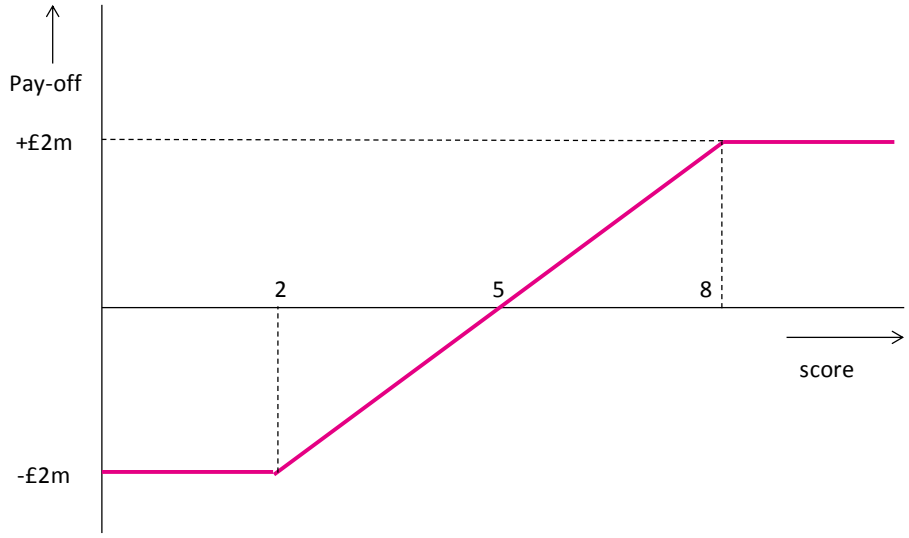

Figure 3 Customer satisfaction incentive proposal

Potential Scheme Variation

149. A potential variant to this scheme would be to base the measure of overall satisfaction from the survey on a set of questions rather than a single question, with weightings being considered along with the questionnaire. An average score out of 10 would be calculated and the incentive applied to the weighted average score across all respondents. The survey questions would need careful consideration and should be focused on the EMR related services and our performance of these.

Volume of Capacity Market Capacity Conditionally Pre-Qualified and Pre-Qualified

Overview

Incentive	Volume of CM capacity conditionally pre-qualified and pre-qualified
Measure	% of excess capacity conditionally pre-qualified and pre-qualified against the capacity requirement at T-4 and volume of pre-qualified DSR at T-1
Financial max/min	+/- £2m for the T-4 auction and [+/-£1m for the T-1 auction]

150. We have an important role to play in the Capacity Market (CM) process in terms of ensuring that the volume of capacity entering the process is maximised. Increased liquidity and higher competition in the CM auction should have the effect of lowering costs to end consumers through lower prices. A financial incentive is therefore proposed to reward or penalise us for the excess capacity that pre-qualifies in the CM against the set capacity requirement. It is split into two sub-incentives; one on the total pre-qualified capacity at the T-4 auction, and another focussed on the level of Demand Side Response (DSR) pre-qualifying for the T-1 auction.

151. The incentive would form a measure of how effectively we support applicants through the CM process, from proactively 'marketing' the CM through to facilitating readiness for auction participation, ensuring that the application procedures are streamlined, and that participants receive high quality information. The scheme has a proposed cap and collar of +/-£3m in total across the two sub-elements.

Value for consumers

152. A 5% reduction in prices driven by greater competition in the CM could save GB consumers in the region of £50-£100m annually. Furthermore, greater participation from existing resources, such as demand side response, can obviate the need for expensive new plant that is awarded 15 year agreements under the CM design, thus potentially reducing costs to consumers in the long term as well as the near term.

153. It is therefore proposed that a small fraction of this potential cost saving to consumers, of +/-£2m, is applied as the financial cap/collar for the first year of this incentive scheme. This would reward National Grid for acting over and above its Delivery Body role by proactively engaging and supporting parties through the CM process that otherwise may not have participated.

Proposed Approach

154. There are two sub-elements to this proposed scheme. The first would apply to the total capacity pre-qualified and conditionally pre-qualified against the capacity requirement in the T-4 auction. A separate scheme on the amount of Demand Side Response (DSR) pre-qualified and conditionally pre-qualified would then be applied to the T-1 auction. This approach reflects the expectation that DSR would be more able and likely to participate at the year-ahead stage.

155. These two sub-elements are explained further in the 'Incentive Structure' section below.

Incentive Structure

<u>T-4 Auction Scheme – Total volume of capacity conditionally pre-qualified and pre-qualified</u>

156. This scheme would be based on a simple ratio of the excess of volume applied in pre-qualification for each annual capacity auction relative to the T-4 capacity requirement as specified by the Secretary of State. The sum of conditionally pre-qualified and pre-qualified volume, with relevant de-rating factors applied, rather than the pre-qualified volume only would be used. This is because we would have more influence over this, whereas pre-qualified volumes are impacted by applicants not fulfilling the required conditions, such as receiving planning permission. The total volume value would be extracted from the

Capacity Market Register, for example after Tier 1 dispute outcomes have been announced.

157. In order to calculate the excess capacity volume, the following formula would be used:

Excess capacity % = ((Volume of de-rated capacity conditionally pre-qualified + Volume of de-rated capacity pre-qualified) – (capacity requirement))/(capacity requirement)

158. The proposed scheme parameters for the T-4 incentive are shown in Figure 4 below.

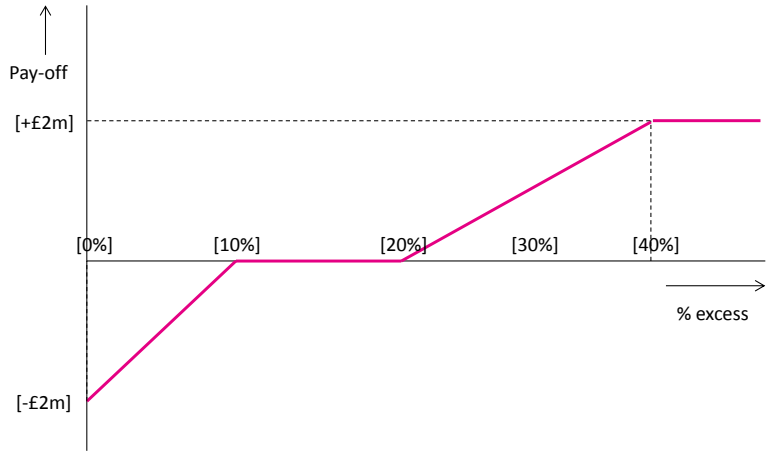

Figure 4 Volume of CM capacity conditionally pre-qualified and pre-qualified (T-4) incentive

159. The proposed structure is based on a 5 part function with cap and collar, deadband and upside and downside 'sharing' factors. The cap and collar are proposed at +/-£2m.

T-1 Auction Scheme – Volume of pre-qualified Demand Side Response

160. The T-1 scheme would target DSR participation specifically. In the T-4 incentive above, where the incentive value of £2m is spread across 20% excess capacity, there is an incentive rate of approximately £0.2m/GW of excess capacity. However, it is recognised that the DSR market is still emerging and such participants are typically smaller in size and less familiar with electricity market arrangements. As a result, the resource effort required to engage and facilitate CM participation is much higher for DSR parties than for other types of potential CM participants. We therefore propose applying a higher incentive rate of £0.5m/GW for the DSR incentive to reflect the additional effort required to proactively 'market' the CM to DSR participants. The proposed cap and collar of the scheme is +/-£1m.

161. The de-rated capacity of conditionally pre-qualified and pre-qualified DSR will be used directly within the incentive. In the 2014 auction for FY 2018/19, approximately 1 GW of de-rated DSR capacity pre-qualified. Since there is a view that DSR is expected to be more able to participate in the T-1 auction,

1GW should sit within the downside of the incentive. The proposed incentive parameters are shown in Figure 5 below.

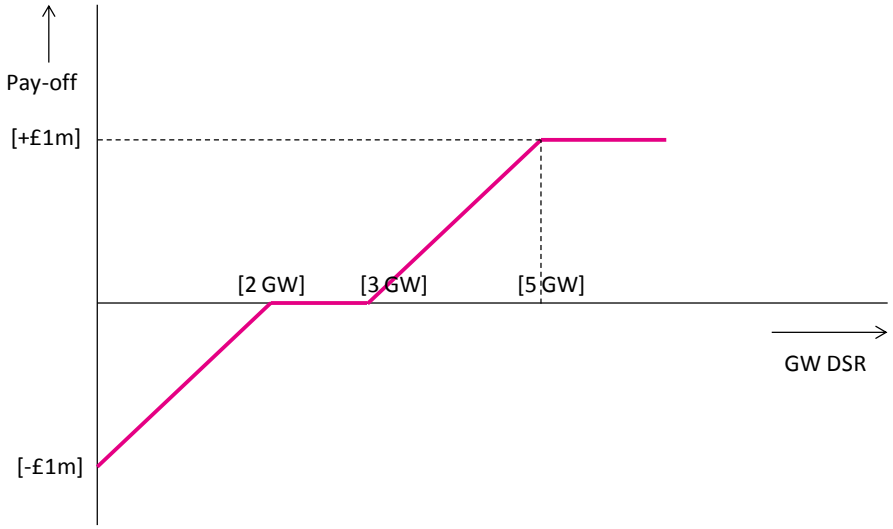

Figure 5 Volume of CM DSR capacity conditionally prequalified and pre-qualified (T-1) incentive

162. There is inherently a degree of risk for us with this scheme, particularly for the T-1 scheme since there is no historic evidence for setting a baseline other than DSR participation at T-4. One option would be to defer the setting of the T-1 scheme until the year after the first T-1 auction.

Managing Scheme Uncertainty

163. The key uncertainties associated with this scheme include the possibility of policy change with respect to the capacity requirement and CM penalty arrangements. These factors cannot easily be captured within the scheme design.

Demand Forecasting Accuracy

Overview

Incentive	Demand forecasting accuracy
Measure	Peak demand forecast against outturn demand
Financial max/min	+/- £3.2m

164. Peak demand forecasting accuracy is a critical factor in determining the level of capacity to be procured in the Capacity Market (CM) and reduces the risk of either over or under procuring future capacity. This financial incentive would incentivise us to forecast future peak electricity demand more accurately, from the upcoming winter to the winter four years ahead which have the potential to bring significant cost savings to consumers.

165. The incentive design recognises that the accuracy of forecasting decreases further ahead of time. The cap/collar values associated with T-2-4 forecasts are therefore proposed to be lower (at +/-£400k per forecast) than the T-0 & T-1 cap/collar values of +/-£1m.

Value for Consumers

166. The benefits to consumers of more accurate peak demand forecasting are:

    (a) Reduced risk of under-procuring or over-procuring capacity in the T-4 and T-1 CM auctions to meet the reliability standard; and

    (b) Reduced risk of under-procuring or over-procuring capacity for the new balancing services Demand Side Balancing Reserve (DSBR) and Supplemental Balancing Reserve (SBR).

167. The costs of over or under-procurement of capacity can be relatively easily assessed in relation to the costs of capacity from relevant auctions (in the case of over-procurement) and the value of additional lost load (in the case of under-procurement). This assessment is carried out in more detail below.

168. There are also wider benefits of more accurate peak demand forecasts to the industry in terms of the ability to plan future generation projects and participation in the CM.

169. We recognise that a demand forecasting exercise is already currently undertaken within National Grid which is then indirectly incentivised as part of the overall SO Balancing Services Incentive Scheme (BSIS). However, we do not consider that this new EMR demand forecasting incentive would constitute 'double-counting'. This is because the EMR demand forecast is derived in a very different way to the BSIS dataset (which is derived primarily from historic data). In addition, for BSIS, the current forecasts cover, at a maximum, 2 years ahead of time whereas this new incentive covers a longer timeframe (up to T-4). Lastly the BSIS demand data is used only within National Grid to determine a cost target for the BSIS scheme whereas the EMR demand forecast would be publically available to the industry for its use and benefit.

<u>Value of the T-4 demand forecast to consumers</u>

170. There is an inherent asymmetry at the T-4 stage versus the T-1 stage, since the implications of over-procurement are more material than under-procurement because there is an option to make up any capacity shortfalls in the T-1 auctions (whereas it is not possible to sell back any unwanted capacity once procured). The outturn clearing price in the T-1 auction may be higher or lower than the T-4 clearing price, and will depend both on the availability of capacity and the final size of the T-1 capacity requirement. However, it is potentially more likely that in a case where significant additional capacity is required at T-1, the clearing price may be higher than at T-4.

171. We have calculated an illustrative example of the value to consumers of more accurate capacity procurement at T-4, where we assume that capacity procured

in the T-1 auction will cost an additional 25 £/kW[6] over procuring in the T-4 auction. We use this to estimate the value to consumers of forecasting demand correctly at T-4 and avoiding the need for more expensive capacity. This is shown in Figure 6 below, where the left hand side of the graph assumes that capacity can be 'topped up' at T-1 if required (at a cost premium).

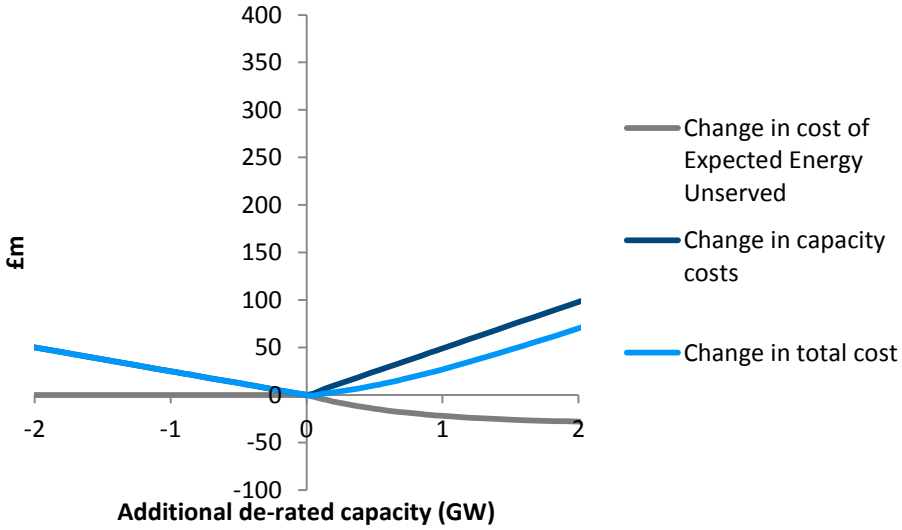

Figure 6 Theoretical value to customers of T-4 demand forecast accuracy[7]

172. The historical error in our peak demand forecasts were in the order of 1-2GW for FY 2012/13 and FY 2013/14 (see table below in the 'Incentive Structure' section for an indication of historic outturns). However, prior to this it was significantly greater with an over estimate of approximate 4-5GW being typical for FY 2008/09 to FY 2011/12 due to the impact of the unforeseeable recession not being captured in the forecasts.

173. With reference to the graph above, in the event of 2GW under-procurement, the cost to consumers would be £50m per annum. Conversely, if capacity is over-procured at T-4, the additional cost to consumers is the cost of the over-procured capacity (which we assume is priced at net Cost of New Entrants (CONE) at £49/kW) minus the savings in unserved energy (priced at Volume of Lost Load (VoLL)). In this instance, over-procurement of 2GW would cost consumers approximately £70m.

174. We recognise that any overall error in the level of capacity procurement will not solely be attributable to the peak demand forecast error but also any error in the calculation of de-rating factors and forecast of installed capacity of non-eligible plant such as CfD/Renewable Obligation generators not yet built. Therefore in order to determine a level of materiality for this demand forecasting accuracy incentive scheme, and as a very conservative estimate, we assume that the value of greater accuracy is equally split between the three components.

[6] In outturn, the T-1 clearing price could be higher or lower than the T-4 price. However, we have a assumed that with fewer options available in T-1 (i.e. no new build), prices are likely to be higher, particularly if capacity has been under-procured in T-4.

[7] Based on relationship between Expected Energy Unserved and de-rated capacity from Ofgem's Capacity Assessment 2012 (essentially the same Loss Of Load Expectation model as used in DECC's Dynamic Despatch Model).

Therefore the value to consumers of more accurate demand forecasting at T-4 is likely to be of the order of £10-20m for an expected error in the range 1-2GW.

Value of demand T-1 forecast to consumers

175. The value of an accurate forecast at T-1 may be higher than the value at T-4, because we have has a reduced range of mitigation options available following under-procurement at this stage. An example outcome of the calculation for T-1 is shown in Figure 7 below.

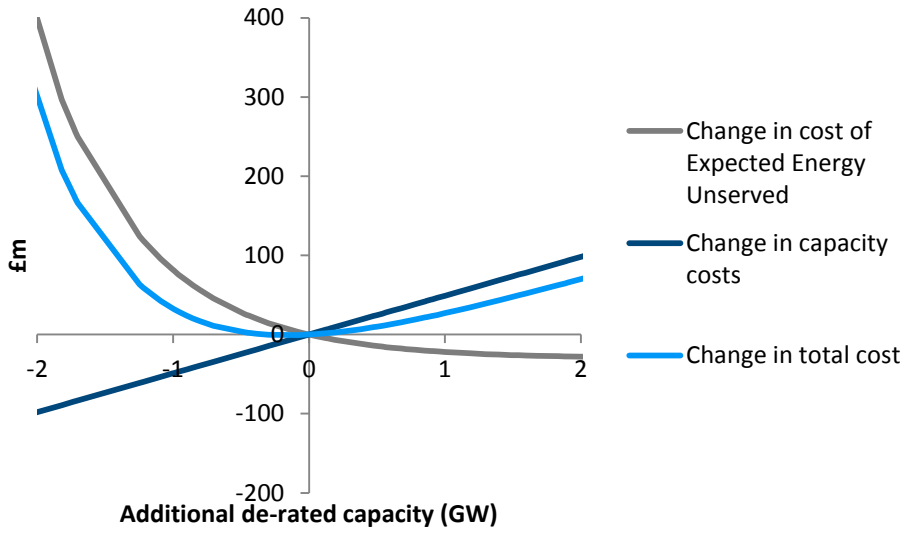

Figure 7 The theoretical value to consumers of achieving reliability standard[8]

176. For a de-rated capacity deficit of 1GW following the T-1 auction, the cost of additional unserved energy minus the savings in capacity costs would be £30m annually. This would increase steeply to approximately £250m for under procurement of 2GW. On the other hand, if de-rated capacity exceeds that to meet the security standard by 1GW, the additional cost to consumers is the cost of the over-procured capacity minus the savings in unserved energy (priced at VoLL). In this case, over-procurement of 1GW would cost consumers approximately £30m, increasing to £70m for over-procurement of 2GW.

177. However, the true value to consumers may be somewhat lower because we have access to options to mitigate the theoretical cost of unserved energy, including the Maximum Generation service, SO-SO emergency actions, and voltage control. Although these actions have associated costs, they are likely to significantly lower the impact to consumers. Therefore the outturn value to consumers is more likely to be towards the lower end of the range of £70-250m.

178. Again, the overall error in procurement will be the net error in forecasting of demand, de-rating factors and installed capacity. Using our very conservative approach of assuming that the value is equally split between the three

[8] Based on the relationship between Expected Energy Unserved and de-rated capacity from Ofgem's Capacity Assessment 2012 (essentially the same model as used in DECC's DDM) and a Net CONE of £49/kW).

components, demand forecasting in T-1 is likely to have a materiality of £10-20m.

Proposed Approach

179. The incentive would be set on the accuracy of our peak demand forecast for the delivery year in question. Each year, we would produce peak demand forecasts for the upcoming winter (T-0), the year ahead winter (corresponding to the T-1 auction) and the following winters through to four years ahead (corresponding to the T-4 auction). The outturn peak demand would be defined as the metered peak demand on the transmission system, with the following adjustments:

    (a) A weather correction to adjust to an Average Cold Spell (ACS) value;

    (b) Any adjustment required to ensure that interconnection does not feature as demand (or as negative demand); and

    (c) Adjusted upwards for the generation met by embedded generation that has a capacity agreement, or by DSR with a capacity agreement. This is to avoid the effect that a significant increase in embedded small gas plant could reduce the apparent demand relative to case in which the same volume of new Combined Cycle Gas Turbine (CCGT) capacity is commissioned.

180. Ideally, the incentive would be set based on total demand including demand met by embedded generation, and be consistent with the demand definition used in calculating the capacity requirement. However, this demand cannot be directly measured and must be estimated. An incentive set on transmission system demand, however, is measurable and does place an incentive on us to better understand embedded generation as an assumption on the capacity and output of embedded generation must be made in order to produce a transmission system demand forecast.

181. Currently, we publish four forecasts as part of our annual Future Energy Scenarios process. We would therefore be required to define an 'incentive' forecast, either by defining one of the four scenarios as the incentive forecast, or creating a separate incentive forecast (e.g. through averaging of scenarios)[9].

Incentive Structure

182. Once an outturn ACS peak value (adjusted as per above) has been calculated for the historic winter just passed, our performance would be calculated. For each forecast (T-4 through to T-0), the delta between the forecast values and outturn value would be calculated as a percentage difference, as shown by the following formula:

$$Error(T\text{-}x) = (Forecast\ (T\text{-}x) - Outturn\ (T)) / Outturn\ (T)$$

183. Each error (in absolute terms) could then be matched against the incentive scheme for each year. Based on a total annual value to consumers of £10-20m, and applying a sharing factor of 25%, it is proposed that a total maximum

[9] Note that in theory this forecast should be the one used in the capacity requirement (via the least regrets approach). This may not be possible, depending on the capacity requirement methodology and any incentives schemes on the other elements, or a combined scheme.

annual cap/collar of +/-£2-5m for this scheme would be appropriate. An illustrative example is shown in Figure 8 below, based on a maximum incentive payment of £1m in T-0 and T-1 (potentially higher value years), and £0.4m in T-2, T-3 and T-4. This creates a total annual maximum incentive payment of £3.2m.

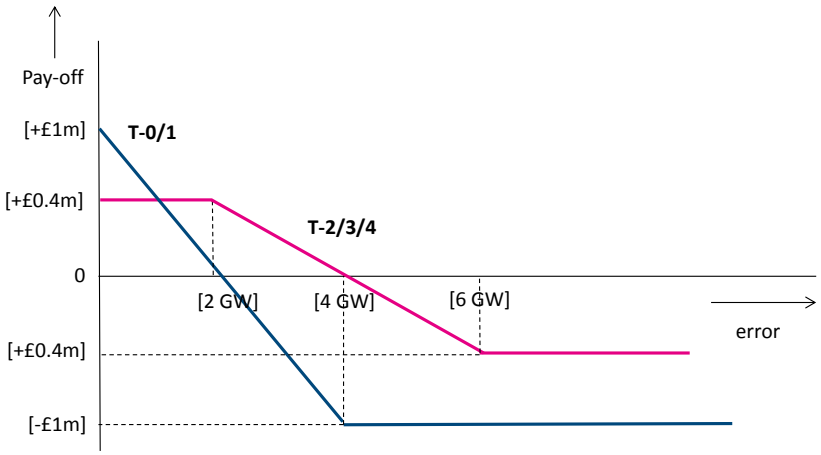

Figure 8 Demand forecasting accuracy incentive scheme parameters

184. The forecast error thresholds tighten closer to delivery since forecasting uncertainty should diminish. We have looked to use our historic demand forecasting performance as an indication for determining the incentive target error values for each timeframe. This dataset includes outturns for forecasts which were created pre-recession looking at periods post-recession which we have included for the purposes of designing this scheme. This ensures that scheme uncertainty, such as a recession, is captured within the design of the incentive rather than through the use of complex uncertainty mechanisms.

185. Under this proposed incentive approach, there would be a delay between a forecast being produced and the payment received of up to four years in the case of T-4 forecasts.

Managing Scheme Uncertainty

186. Given that this is a four year incentive, there may be events that occur which are wholly outside of our control that significantly impact upon outturn demand. For example, significant changes to EU or UK energy efficiency policy or regulations could have an impact within a four year timeframe which are not forecastable by National Grid. We have therefore sought to include this level of uncertainty as much as possible within the scheme design.

Potential Scheme Variation

187. A potential alternative to this scheme design would be an incentive based on a range of demand forecasts specified by us. This could be set as a known range around a central value.

6. Cost structure

Introduction

188. This section sets out our total forecast costs associated with performing an enduring EMR Delivery Body role from EMR Go Live (1 August 2014) through to the end of March 2021. The cost values quoted are based on an assumption driven cost model driven by inputs contained in other relevant sections of this document such as the 'Organisation structure' and 'Uncertainties and assumptions' sections.

Cost summary

189. The following table shows a summary of the £65.1m forecast Totex costs phased across the seven financial years. Please note that all future year costs are in FY 2014/15 prices with appropriate costs adjusted for Real Price Effects (RPE).

	FY15* £m	FY16 £m	FY17 £m	FY18 £m	FY19 £m	FY20 £m	FY21 £m	Total £m
Total Cost of Employment	2.0	3.6	3.7	3.6	3.7	3.7	3.7	24.0
Other direct costs	0.6	1.0	0.9	0.8	0.8	0.8	0.8	5.8
I.S. OPEX	0.0	1.2	1.3	1.4	1.5	1.6	1.6	8.6
Business Support	0.4	0.8	0.8	0.8	0.8	0.9	0.9	5.5
Total OPEX	3.1	6.6	6.7	6.7	6.8	7.0	7.0	43.9
CAPEX	0.4	3.0	1.0	0.8	0.8	2.1	2.2	10.2
CAPEX - Uncertainties	0.0	1.8	1.8	1.8	1.8	1.8	1.8	11.0
TOTEX	3.5	11.4	9.6	9.3	9.4	10.9	11.0	65.1

190. The graph below, splits this trajectory of costs between 'baseline' funding and the £1.8m per annum proposed funding for specific known changes to the rules and regulations, as discussed in the 'Uncertainties and assumptions' section:

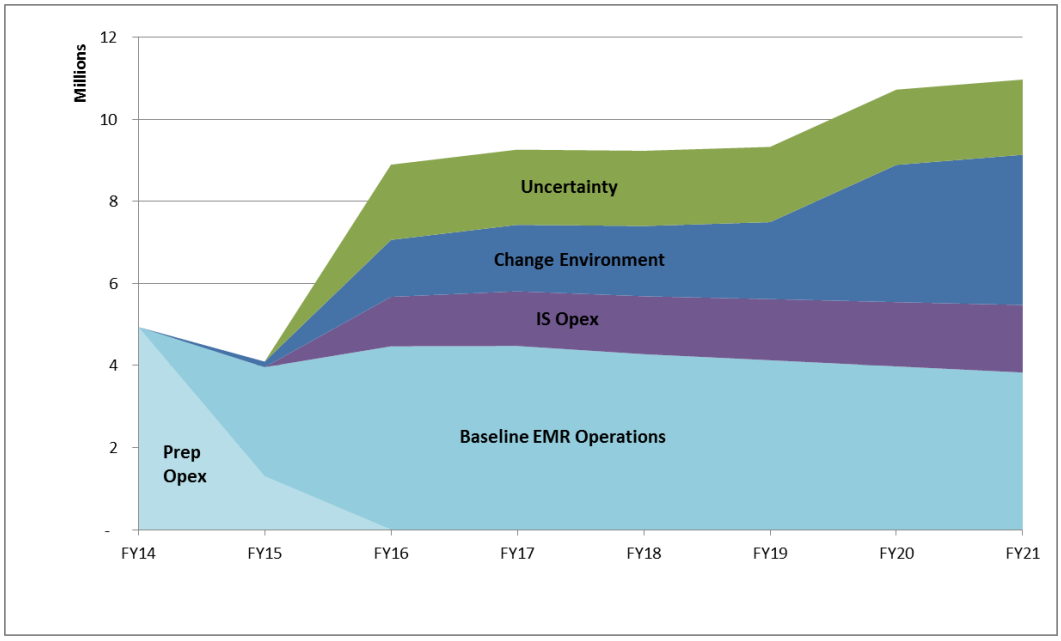

Figure 9 Enduring Cost Profile

191. The main elements of the forecasts costs are:

(a) Cost of employment – includes salary costs as well as all relevant taxes, pension costs and other benefits

(b) Staff related costs – travel and subsistence costs including company car benefit

(c) Legal support - externally sourced legal support

(d) Consultancy costs – procurement of external professional services

(e) Marketing events – stakeholder events in relation to CM, CfD and DSR

(f) IT capex and support costs – Costs associated with running IS systems used by EMR, including the development of these systems to support future CM and CfD Legislation and Rules changes

(g) Business support costs – general cost of doing business which Delviery Body demands but which are incurred outside of the Delivery Body

192. The remainder of this section outlines the forecasts in each of these areas in more detail, with further information on the assumed organisation structure included in the next section of the document.

Cost of employment

193. The total cost of employment of £24.0m is driven using FTE headcount numbers with standard annualised cost rates for each salary band. Full details of headcount requirements across each of the lines of business can be found in the 'Organisation structure' section.,

194. The rates used are based on National Grid standard rates for Electricity System Operator staff / managers, adjusted downwards for items that are not relevant to EMR such as shift allowances and London allowances.

195. A baseline of 5% (time) of overtime has been applied against the total staff payroll costs for all staff grades and management grade D. The cost of this overtime is included at a 1.5 times cost multiplier to the standard costs, in line with our overtime regulations. The 5% is based on the level seen in our other SO operations outside of the Electricity National Control Centre. These areas represent a good benchmark for the EMR roles due to the similar nature of the roles.

196. Additional overtime, totalling 1,050 hours (or the equivalent of 0.7 FTEs), has been included in FY 2015/16 and FY 2016/17 to cover the parallel running of the DSR Transitional Arrangements and the T-4 pre-qualification processes in FY 2015/16 and FY 2016/17, as discussed in the 'Organisation structure' section.

Real price effects - labour

197. As would be expected over a seven year period, we have considered the impact of non-RPI based price movements (i.e. RPE) on the labour cost included in our plan. As a result, we have used a multiplying factor on the employment costs in each of the years of the plan. The effect of this is included in the employee rates stated above and the financial tables submitted.

Travel and subsistence costs

198. The total travel and subsistence cost is derived from using the average annual spend for our staff within the Commercial Operations function, multiplied by the average EMR headcount for each year. Commercial Operations has been used as the benchmark here due to the similar mix of roles between modellers and commercial roles. This is believed to be a more appropriate benchmark than the average spend within the EMR team during the preparatory phase due to the changing mix in roles and activity focus.

External legal costs

199. Whilst EMR will have a part timein-house legal advisor, external legal support will be required on an enduring basis due to the complexity of the Regulations, Licence requirements, CM Rules and CfD Allocation Framework, all of which make up the EMR Legal Framework.

200. During the first six months of the year when DECC and Ofgem are identifying and drafting the detail of changes to regulations, rules and CfD allocation framework external legal support will be required to assist with the specialised identification of the impacts of the changes on the Delivery Body's role, risk exposure and associated liability position.

201. During the last six months of the year when we are running the CM and CfD processes we will need external legalsupport to assist with standard process activities (Reviews/Appeals), non-standard process occurences or requests for information from DECC or 3rd parties, the degree to which fairness and equity should be applied in a process that is akin to a procurement process, whether evidence provided demonstrated that an applicant had planning permission and the ownership of a CMU where a complex corporate structure existed.

202. During the preparation phase the we took legal services from a panel of external solicitors, under framework agreements, following an extensive and rigourous procurement process. As these framework agreements have now expired we will follow our normal procurement processes to competitively tender for ongoing external legal support.

Legal cost efficiencies

203. From FY2016/17 an ongoing reduction of external legal support has been included in the cost structure. This reduction is a result of efficiencies gained as fewer unique legal issues are encountered and the skill-set of the in-house legal resource increases.

Consultancy costs

204. External Consultant support will be required on an enduring basis to support specific activities, either because we do not have the skill or capability to do the work, or because the work is of a short duration meaning that it would be inefficient for us to appoint permanent headcount. We have based our forecast costs on experience gained during EMR preparatory phases. on the following:

Marketing costs

205. Marketing costs have been included in the business plan to cover events and collateral for external Stakeholders. The expected number of events each year are:

    (a) 8 x CM events

    (b) 5 x CfD events

    (c) 2 x DSR events (FY16 only)

206. This volume and individual cost of events is based on our experience of the events staged during the implementation of the 2014 Capacity Market and CfD mechanisms. For the Capacity Market we ran one event per month from January to June, two events were hosted in July to ensure final preparedness of participants ahead of the Pre-qualification window opening. For 2015 and future delivery years we expect to run a similar programme of events. The CfD implementation events are hosted jointly between National Grid and the Low Carbon Contracts Company. Approximately 10 events in total will take place, with National Grid's Application, Qualification and Allocation activity accounting for half of the material covered. The Transitional Arrangements auction will take place in December 2015 and 2016, this mechanism will be aimed primarily at DSR providers, two DSR specific events have been included to provide application and auction support for anticipated new market entrants.

207. In addition to the marketing events an annual cost has been included from FY 2015/16 onwards to cover the printing and distribution of EMR marketing collateral.

IS costs – Opex and capex

Context

208. Our responsibilities as EMR Delivery Body are enabled by the use of Information systems which have been developed during the preparatory phase

and will continue to be developed through the plan period. Simplistically these systems include;

(a) **Administration system**; This system provides secure and controlled access to EMR Delivery Body information and processes by all external interested parties including the Public, Participants, Delivery Partners and the Delivery Body. This supports all processes associated with;

- Publication of information and guidance
- User and Company Registration
- CM and CfD pre-qualification and eligibility
- Reviews and appeals
- CfD Valuation, Sealed Bids and Allocation
- CM Agreement Management and Trading
- All associated CM and CfD Reporting

(b) **Auction System**; this system manages all aspects of the CM descending clock auction

Preparatory systems not yet delivered

209. As at 31 December 2014 (as outlined in the 'Background' section) we have successfully delivered all systems necessary to support fulfilment of our Delivery Body obligations for the completion of the 2014 EMR cycle. However, there were some system developments which were originally funded as part of the Preparatory costs, which were not required in this period.

210. In February 2014, preparatory costs for a range of IT systems were agreed. The range of systems anticipated at that time was commensurate with the prevailing clarity on legislation, rules and regime timelines. In the intervening period these things have crystallised and as a result the actual investments have varied significantly from those anticipated. As a result of our experience thus far, and this greater clarity the scope of the preparatory systems has changed. Some are not required and others are still to be delivered in order to complete the full Delivery Body solution architecture. The section below explains the movements between our original Preparatory forecasts, to the forecasts in this business plan for the same systems.

System Operator Solution:

211. The System Operator is required to fulfil certain roles within EMR. These include;

(a) Issue of Capacity Market Warnings including monitoring to identify the need for a warning

(b) Provision of data to the EMR Settlement Body for the purpose of Capacity Market settlement and penalties for non-performance

212. These CM operation and settlement systems ensure that generators and Demand Side Response providers that hold Capacity Agreements are alerted that a Capacity Market Warning is in place and they should fulfil their obligation

under the agreement. They also provide the Capacity Market Settlement Agent with the data necessary to appropriate CM over supply payments and raise penalties. They are required for first use in mid-2016 to support the first year of the DSR transitional arrangements.

213. We have taken the view that it would have been inefficient to develop these systems as part of the preparatory phase as they would lay dormant and likely require future investment for maintenance or rule change purposes in the intervening period. It is therefore our intention to develop these systems during FY 2015/16 in readiness for first use. This investment has therefore been included within the future Business Plan.

214. The revised cost compared to the preparatory cost funding reflects the increased understanding we now have of these requirements and the likely approach we will take to meeting them. The revised planned expenditure recognises that part of this requirement will be supported by the EBS system. This is the Critical National Infrastructure (CNI) system used to balance the electricity transmission network. The CNI classification of this system brings with it significantly higher rigour in planning, testing and delivery than for non-CNI systems. However CM Operation & Settlement requirement are estimated at £1m across the plan period a reduction of £1.5m from that anticipated during the preparatory phase.

Modelling and Analysis Tools:

215. We employed a suite of our existing tactical tools to support development of the first Delivery Plan for DECC and a range of subsequent analysis to support the regime including the Capacity Market. Whilst many of these tactical solutions are fit for purpose to support future Delivery Plan and Annual Updates, there is a need to improve, formalise or develop replacement tools for parts of the suite in order to ensure that they are of an enduring market standard.

216. This work was not undertaken as part of the preparatory phase as it was felt appropriate to complete a full cycle of analysis before scoping and delivering this work. It is also anticipated that this modelling suite will be subject to regular updates to align with changes to the rules. This work has already started and has considered the enduring functional fit, scalability, supportability and resilience of each tool in the suite. This work will deliver a forward strategy and the detail of the required investment in this suite of tools.

217. Furthermore it is anticipated that the nature and detail of the analysis required to support EMR will evolve over time to reflect the evolution of the regime. Item lines have therefore been included in the future Business Plan to reflect the initial review, subsequent delivery of the strategy and on-going evolution (£0.9m).

Integration:

218. At the time of our preparatory cost submission there was an expectation of a high level of automated integration between the administration system, auction system and the System Operator systems. As Regulations, Rules and resulting operating process have developed it has become clear that such integration is unnecessary. To the extent that there are process dependencies or data

transfer requirements we are firmly of the view that to manage this with automation would be inefficient. We have therefore designed and implemented manual processes and file transfer mechanisms which meet these requirements without the expense of developing and supporting automated integration. We have not incurred, and do not propose to incur, cost against this preparatory cost item.

Future Investment

219. It is already clear that both the CM and the CfD Legislation and Rules will evolve over time. Similarly technology will upgrade over time and it will be necessary to upgrade our systems to ensure we can support access by all participants. These things will drive a level of change in our systems. We expect this change to be in three forms;

Enduring Administration System:

220. As the 2014 regime cycle has been enabled by transitional solutions there remains a need to develop an enduring solution. This work will start in January 2015 and has therefore been included in the future Business Plan.

221. Our intent is to maximise re-use of the transitional solutions thereby reducing time, cost and risk in delivery of the enduring system. The planned costs are based on “Rough Order of Magnitude” (ROM) estimates from potential solution suppliers (£1.25m).

European Market Model:

222. The 2014 EMR Electricity Capacity Report was challenged by the EMR Panel of Technical Experts and DECC for not having sufficiently sophisticated interconnector analysis and for being too conservative. Views were expressed that analysis should be based on a European market model and DECC have specifically expressed a desire to model European interconnector flows. We are planning to purchase one European Market Model to meet the additional needs for European market and network modelling for EMR and Integrated Tranmission Planning and Regulation (ITPR). The cost of this is estimated at £1m to produce a toolset which models both European countries and GB network boundaries. It is appreciated that this full network model goes beyond an energy model needed to meeting EMR requirements. A value of £250k has been included within this business plan as an estimate to meet the EMR modelling requirements only. The additional funding requirement will be met via ITPR activities. Funding from these two sources will be combined to purchase one model for consistency and efficiency purposes. In addition there will be enduring costs associated with model licences etc. of around £50k pa.

223. As an interim measure, for 2015 EMR analysis, an existing internal model is being utilised (ELSI). This enhances the approach taken previously but does not address all of the concerns of the Panel of Technical Experts. DECC and the PTE have responded positively to the proposal to use ELSI as an interim measure before moving to a fuller European market model.

Baseline continuous improvement changes:

224. There is already strong evidence that there will be a level of change to the Rules, CfD Allocation Framework, etc, as DECC, Delivery Partners and Participants reflect and learn from the experiences of each year of the regime. From a systems impact perspective, these are less complex than those

described in the Uncertainties section of this plan. Current examples of this include the anticipated changes resulting from State Aid Approval (Group 2) and those emerging from DECC's Evaluation and Review Process (Group 3) Many of these updates are likely to require changes to our systems and we risk non-compliance if we do not modify our systems in line with the rules.

225. In addition to these "regime" based changes we expect technology driven changes as well. As an example, our EMR systems are accessed and used by external Industry Participants and Delivery Partners in order to participate and administer the regime. This access is via web browser over the internet. Parties accessing our systems will use a wide range of different browser products and versions. These will change over time as participant companies upgrade, new companies enter the regime and browser supplies upgrade or "fix" their products. Many of these "fixes" will be to ensure the ongoing security of their products. It will therefore be necessary to upgrade our systems to be compatible with these browser upgrades so as to ensure that our systems continue to be secure and are not a barrier to entry for participants in the regime. Our policy here is to be compatible with the latest, and two previous versions of Microsoft Internet Explorer, Mozilla Firefox and Google Chrome. This scenario is true for all baseline (operating system) components of our systems.

226. Furthermore, in the Uncertainties section of this document, we have described the external timing and governance factors which restrict our ability to maximise efficiency in delivery of these changes. We have therefore made provision to fund a low level of system change for each year of the plan. This is structured as;

    (a) Funding of £225k pa for changes to our Administration system for each of the CfD and CM. This is to reflect the different change and business cycles of the CM and CfD and our limited ability to influence change for more efficient delivery.

    (b) Funding of £225k per annum for changes to our CM Auction system. This is a separate and more complex system and similarly is on a different change and business cycle to both the CM and CfD Adminstration system.

Refresh

227. Our EMR Administration and Auction systems are provided to us on a "Software as a Service" (SaaS) basis. As such, asset health of the associated infrastructure is the responsibility of the service providers. Notwithstanding this, much of the rationale discussed and agreed during the main RIIO-T1 review with regard to Asset:

    (a) Whilst physical infrastructure upgrades will be the responsibility of our SaaS provider, it will be necessary to maintain our applications compatiblility with infrastructure operating system upgrades. This will need to be aligned with infrastructure upgrades

    (b) As illustrated above we expect our EMR systems to be subject to much higher levels of functional and compatibility based change than many of our traditional systems. Whilst this specific change will be funded by the business plan entries described, there will come a point where the

level of historic change undermines their supportability and resilience, putting operation of the regime at risk.

(c) The level of incremental change anticipated is also likely to render our systems increasingly inefficient to support and maintain over time. Each change has the potential to bring additional support costs as the systems are configured or developed to meet the rule requirements. These increments will add up over time to a point where application refresh is not only sensible from a resilience perspective but also efficient.

228. System refresh will include all of our EMR systems. Where possible we will seek to time investment in any refresh so as to incorporate coincident changes driven by rules or component upgrade requirements. In so doing we would expect to achieve any refresh as efficiently as possible. On this basis we have forecast a system refresh for 5 years after initial implementation of each system. We have also estimated the cost of such a refresh at 85% of the initial build cost. This estimated cost would then be supplemented by the business plan items for regime evolution in the year of the refresh. This estimate assumes that the significant Uncertainty events (eg, Multi-round Price Discovery Auctions for CfD) have occurred.

Operating Costs

229. **Preparation and operation of each Auction**: Each CM Auction attracts a cost for the set-up, running and close-down of the system. This includes cost for the Auctioneer service which is provided under contract by the Auction system provider. This charge is per auction event and is an opex charge.

230. **Managing Change:** As previously illustrated the Regulations and Rules of the EMR regime will evolve and change year on year. This creates a perpetual cycle illustrated in the Figure 10 below;

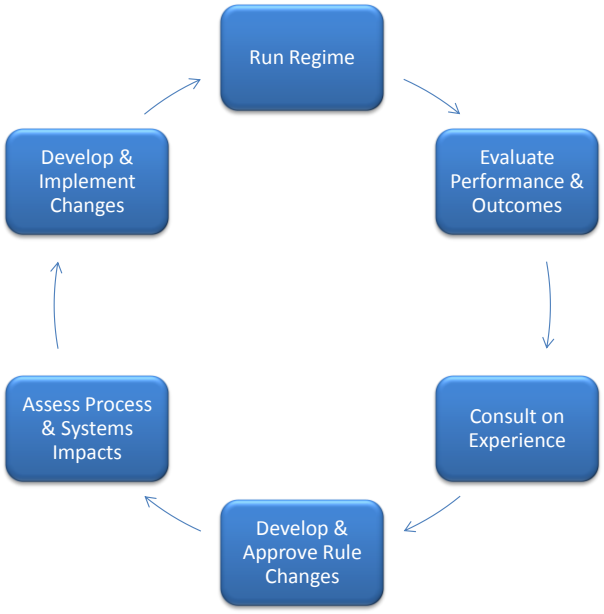

Figure 10 IS Perpetual Investment Cycle

231. To support this cycle it is necessary to maintain and ensure availability of resource with a deep understanding of the Regulations and Rules and the processes and system which enable them. Our experience throughout the development and implementation of EMR over the last 3 years has shown the value of retaining process and system expertise within the project even before we reached the stage of systems design and build.

232. It is therefore intended to retain a full-time IS representative to support the EMR Delivery Body function. This representative will be part of the National Grid UK IS Function to ensure continued compliance with IS Strategy, methodology and governance, however will work full time with the EMR Delivery body to support the cycle illustrated above. Key responsibilities of this representative will include;

    (a) Maintain and proliferate knowledge of EMR Regulations, Rules, Processes and Systems

    (b) Advise on implications of proposed changes and conduct associated IS impact assessments

    (c) Manage all necessary IS Governance associated with future EMR systems investment and change

    (d) Mobilise project teams to deliver IS system change

    (e) Initiate IS activities linked to regime cycles

System Support & Maintenance:

233. In addition it is necessary to support and maintain our EMR systems. The base Administration and Auction system support costs reflect our contractual agreements which have been competitively agreed. Support costs for CM Operation and Settlement is estimated at 15% of the development cost. This reflects a balance of the support rates of the components that will be used for this requirement. The Modelling tools have similalrly been estimated at 15% of the initial development cost per annum, plus increments of 10% for each year of change. No support and maintenance costs have been incurred in FY 2014/15 as such services were within the system development contracts.

Business Support Costs

234. The EMR activities are separate to the RIIO funded business activities and, as discussed in the 'Background' section, the costs and FTEs related to EMR were specifically excluded from our RIIO submission. This means that the assessment of business support costs within the RIIO discussions did not include the business support costs required to undertake the preparatory or delivery elements of our EMR role.

235. An overhead recovery has been included within this submission designed to cover the general cost of doing business which the EMR contract would demand. This includes the costs of Finance, Audit and Regulation, HR, Procurement, Legal, IT and Telecom costs, Insurance and CEO and Group Management costs.

236. We have calculated the expected overhead attributable to EMR activity based on the service areas where benefit is taken. This is thus specific to the activities

of the Delivery Body and reflects funding which may have already been received through other mechanisms.

237. The main areas of overhead are outlined below:

(a) Audit, Finance and Regulation – costs in this are reflect the provision of ongoing support to ensure the cost effective management of the Delivery Body and will include: invoice processing, credit control, financial partnering support, regulatory reporting and statutory reporting

(b) Property – it is deemed that all property costs have been funded via other arrangements.

(c) IS – overhead reflects the costs of providing devices, software, network services and ongoing maintenance of these standard services. It does not include the provision or maintenance of specific EMR related toolsets which are highlighted as a direct cost. Nor does it include any IS project costs or IS costs associated with running our systems which do not apply to EMR e.g. Balancing Mechanisms and integrated Electricity Management System

(d) CEO and group management – includes costs in relation to running other central functions e.g communications, safety and crisis management. No corporate cost centre allocations are included as assumed to be funded via other mechanisms, nor have any legal costs been included in the overhead allocation

(e) HR and non-operational training – this reflects services provided in relation to resource management, recruitment support and general HR partner support. This does not include any costs associated with running specific apprentice or graduate schemes although EMR may benefit from these.

(f) Procurement – an apportionment of procurement functions cost to administer the procurement processes and toolsets and to manage strategic supplier relationships

(g) Insurance – no insurance costs have been included as all are deemed to have been funded via alternate funding arrangements.

Overhead cost reporting

238. It has been agreed with Ofgem's Head of Network Business Support that all delivery body overhead costs will be allocated using existing standard processes and reported within the Electricity System Operator tables as part of the annual RIGs process, please see Appendix E for more detail.

7. Organisation Structure

Introduction

239. This section sets out the proposed structure for the EMR Delivery Body along with the type and number of job roles required through the business plan period. Many of these roles have already been filled as part of the transition of the EMR Project team into an enduring structure, whilst recruitment for the remaining posts is due to start (internally and externally) in early January 2015, with a view to all posts being filled by 1st April 2015. All the roles are additional to those submitted as part of the RIIO process and are dedicated to the EMR Delivery Body function.

Organisation Design Principles

240. The proposed enduring structure, roles, grades and resource numbers have been developed as an output from the EMR Project and have been based on a number of organisation design principles, specifically:

- **Outputs and assumptions** – The Organisation has been designed and sized so that it is capable of delivering all the proposed EMR outputs (as set out in the 'Outputs and activities' section) and reflect the business plan assumptions and uncertainties (as set out in the 'Uncertainties and assumptions' section).
- **Experience** - The Organisation design and resource numbers have been based on our experience of operating the 2014 processes.
- **Business Separation** – The Organisation is compliant with the Business Separation requirements within Licence condition 2N, specifically those which relate to restrictions on the EMR team undertaking other activities and those which restrict the movement of resources into the team, both of which minimise the opportunities for resource synergies with other departments.
- **National Grid's Core Organisation Design Principles** - unless prevented or restricted by 2N, the Organisation reflects National Grid's standard design principles, including:
    (a) **Safe and reliable operations** – Should reinforce our focus on safety culture, both for the individual and the organisation. Should enhance reliability.
    (b) **People** – Should provide opportunities for personal development and clear career paths. Should ensure people have clear accountabilities that do not create overlap or duplication of effort.
    (c) **Structure** – Should meet spans and layers guidelines. Should meet business separation requirements.
    (d) **Creates total value** – Should enable performance against regulatory outputs and incentives. Should enable effective stakeholder engagement and delivery against stakeholder commitments.
    (e) **Process excellence** – Should enable clear working practices within the matrix, which prevents silo working. Should align common practices and create efficient, effective processes that minimise waste.
    (f) **Performance excellence** – Should ensure ownership of business objectives is clearly defined at each level. Should allow for clear measurement of performance and targets through KPIs.

Overall Structure

241. During the preparatory phases the EMR delivery body has operated as a discrete project team within the System Operator entity of National Grid. Moving into the enduring phase the Delivery Body will continue to remain with the System Operator entity but reporting through the Market Operation organisation.

242. National Grid's current operating model is set out in Figure 11 below.

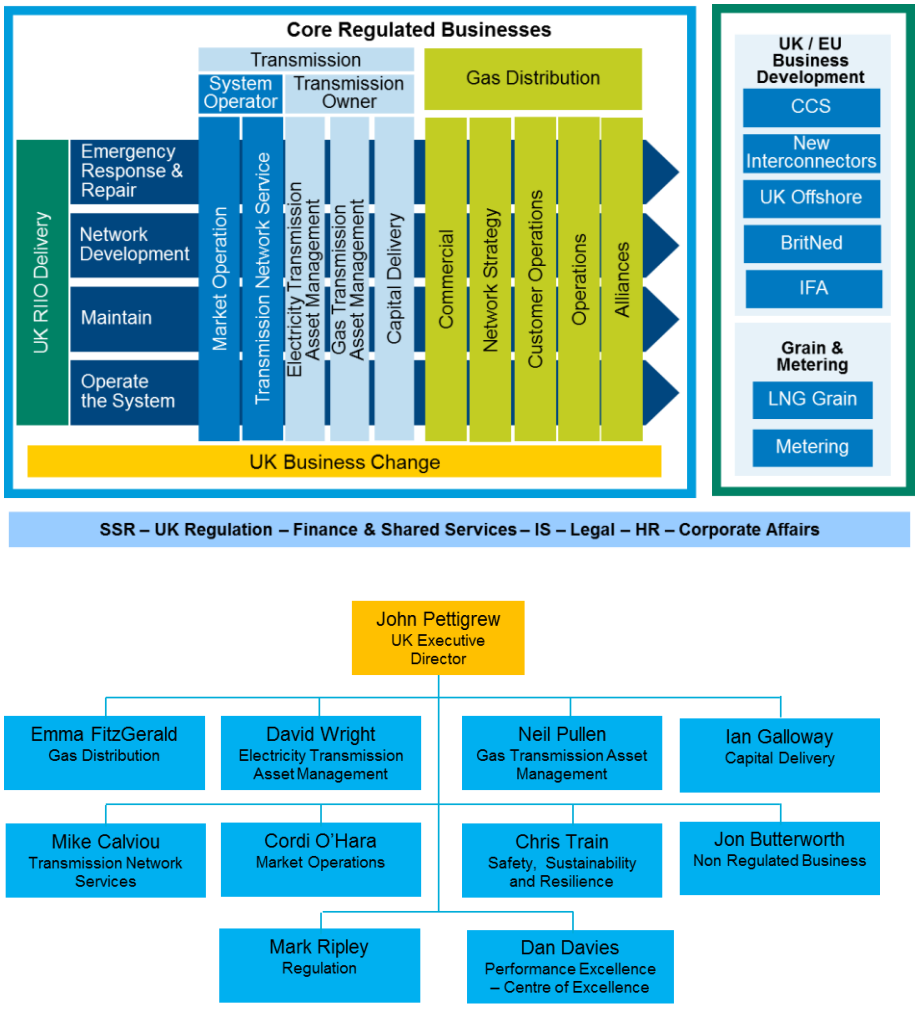

Figure 11 National Grid Operating Model

Delivery Body Structure

243. The EMR Delivery Body sits within the System Operator entity within National Grid and is subject to a number of business separation requirements as set out in condition 2N of the Licence. The EMR Administration Team (EMRAT) is a full-time team made up of all EMR team members who will have access to Confidential EMR Administrative Information (CEMRAI) as part of their role. For some specific purposes, as set out in the EMR Compliance Statement in

respect of Special Condition 2N[10] some individuals may be seconded into the EMR Administrative Team for short periods: such individuals may have limited access to CEMRAI. CEMRAI includes the following types of information:

(a) Applicant specific CM pre-qualification application data

(b) Applicant specific CfD eligibility data

(c) Applicant specific CM or CfD Review or Appeal data

(d) Applicant specific CM Auction data inc. Exit bids

(e) Applicant specific CfD Sealed Bid data

244. EMRAT members are subject to a number of restrictions (including the information they can share, the roles they can undertake whilst members of the team and the areas of NGET they can move to once they leave the team) all of which minimise opportunities for delivering sysnergies with other System Operator departments. For this reason, EMRAT has to have its own dedicated Stakeholder, Legal, Administrative and Support resources rather than utilising System Operator resources.

245. The EMR Data Handling Team is a part-time team, formed as required in order to receive, process and aggregate/anonymise industry data received via the "Call for Evidence" process associated with the Strike Price analysis. As this team is only formed for a 1 – 2 month period, for the remainder of the year its team members are able to integrate with other members of the EMR Modelling team and the wider SO Modelling team. This enables the delivery of a number of synergies, both across Modelling resources and Legal, Administrative and support functions, reducing the headcount requirements for this team.

246. The following chart (Figure 12) shows the overall structure of the dedicated EMR teams required to fulfil the obligations of the EMR Delivery Body. For clarity, both the existing Commercial Operations Manager and Energy Strategy & Policy Manager have other non-EMR teams working for them which are not shown here.

[10] See page 14 of the EMR Compliance Statement in Respect of Special Condition 2N dated 1 September 2014

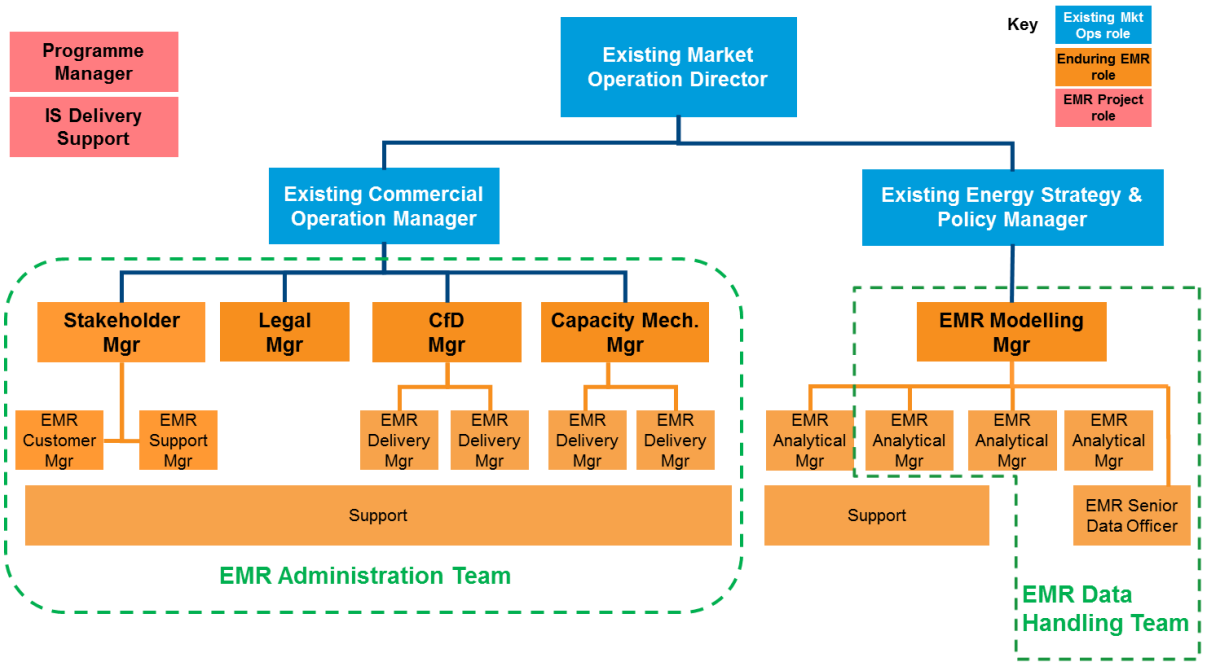

Figure 12 EMR Organisation Structure

247. Using the Design Principles identified above, the structure includes a number of design elements:

(a) Integration into Market Operations existing structure – Rather than creating an "EMR Manager", the structure sits under two existing Market Operations managers alongside their other teams. This "synergy" effectively saves a senior management post, whilst ensuring EMR is positioned within the SO and still provides for the required levels of separation.

(b) Two distinct EMR teams – As required by the licence, separation of the EMR Administrative team and the EMR Data Handling team is achieved by separating all Administration and Modelling resources.

(c) Modelling Synergies – As allowed by the Licence, the EMR Modelling team is additional to, but fully integrated into the SO Modelling team. This allows additional SO modelling resources to be added to the Support staff to cover "peak" work periods. The Data Handling team is a distinct sub-team, dedicated to EMR and subject to restrictions associated with the Licence condition.

(d) Process alignment – Within the Administration team, sub-teams have been aligned to key EMR processes (CM, CfD and Stakeholder) to ensure the correct focus. Synergies between the teams are difficult due to the parallel timeframes for the team's peak work periods (Pre-Qualification/Eligibility and Auction/Allocation), however, resource levels reflect some level of cross-team working at staff level.

(e) Dedicated support – A level of Legal, Compliance and general admin staff needs to be dedicated to EMR (rather than being shared across Market Operation) due to the Licence restrictions on EMR

Administration staff working on non-EMR related activities and the level of support required.

(f) Extended EMR Project Team resources – Programme Management and IS Delivery Support resource is included (until June 2015) to ensure the extensive 2015 programme of work (over and above the base EMR workload) is identified, planned and initiated.

Stakeholder and Legal

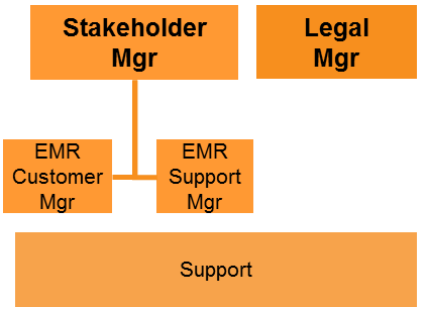

Figure 13 Stakeholder and Legal team

248. The Stakeholder team is primarily responsible for building, developing and enhancing long-term strategic relationships with EMR Stakeholders including individual organisations, trade associations, Government, delivery partners and academic institutions. This activity is "ring-fenced" within the EMR Administration team (rather than integrated into the equivalent SO team) due to the nature of the company specific EMR information which might need to be discussed with Stakeholders.

249. The Stakeholder team will also provide a number of support activities for the other Administration teams; including Programme Planning, Compliance Management, Facilities Management, Process Excellence support and General Admin support. The level of ongoing legal advice and support required by the EMR team is dictated by a number of factors including; the level of policy development by DECC, level of Rule change by Ofgem, level of Reviews/Appeals, level of interpretation of the Licence/Regulations to support information requests and the complexity of the EMR regime. Based on our experience of the 2014 processes we have allowed for some dedicated resource to provide this support. This resource will have access to sensitive EMR Confidential Administration Information (EMRCAI) and will therefore need to be dedicated to EMR and cannot be shared with other Market Operations teams.

250. As with the other sub-teams, the resource numbers for this team are constant across the Business Plan period, reflecting the ongoing development of EMR policy and the corresponding level of regime change which will require resources over and above those required to just run the standard EMR processes.

Contracts for Difference team

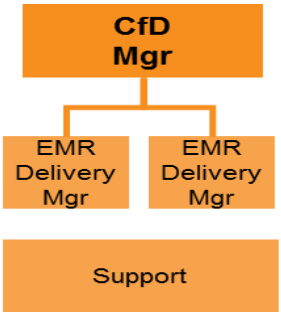

Figure 14 Contracts for Difference Team

251. This team is responsible for delivering the key CfD processes and outputs, for providing day-to-day "tactical" stakeholder support, for direct engagement with other CfD delivery partners and for supporting the ongoing development of CfD policy (led by DECC). Tactical Stakeholder support includes the activities previously delivered as part of "Implementation Co-ordination" process, specifically the hosting/running of regular "practical" stakeholder events, publication of stakeholder bulletins and User Guides, extensive telephone support/helplines to support individual stakeholder queries and site visits to smaller participants to provide technical support. In addition, CfD resources will provide Customer Account Management support on an applicant specific basis.

252. The CfD Manager will take a primary role in supporting DECC in the development of future policy and the practical delivery implications of the various design choices. The two Delivery Managers will be responsible for separate CfD sub-processes (one for Application/Eligibility, the other for Valuation/Allocation) and will assist the CfD Manager on specific policy advice, whilst leading the processing activities of the team of staff.

253. Staff grades reflect the specific analytical skills required within the team, they have been evaluated using our formal grading process and match with job grades of similar roles elsewhere within Market Operation. This will facilitate future "movement" of staff between the EMR and Market Operation teams, enabling skills transfer and staff development. The resource numbers for this team are constant across the Business Plan period, reflecting the ongoing development of CfD policy and the corresponding level of regime change which will require resources over and above those required to just run the standard EMR processes.

Capacity Mechanism team

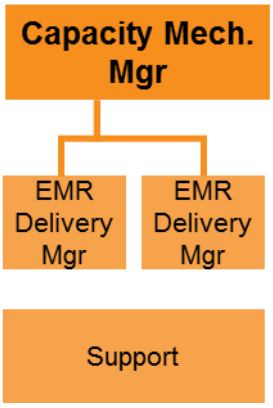

Figure 15 Capacity Mechanism Team

254. Similar to the CfD team, this team is responsible for delivering the key CM processes and outputs, for providing day-to-day "tactical" stakeholder support (as described in the CfD section), for direct engagement with other CM delivery partners and for supporting the ongoing development of CM policy (led by DECC).

255. The CM Manager will take a primary role in supporting DECC in the development of future policy and the practical delivery implications of the various design choices. The two Delivery Managers will be responsible for separate CM sub-processes (one for Registration/Pre-qualification, the other for Auctioning) and will assist the CM Manager on specific policy advice, whilst leading the processing activities of the team of staff. Staff grades reflect the specific analytical skills required within the team, they have been evaluated using our formal grading process and match with job grades of similar roles elsewhere within Market Operation. This will facilitate future movement of staff between the EMR and Market Operation teams, enabling skills transfer and staff development.

256. The resource numbers for this team are constant across the Business Plan period, reflecting the ongoing development of CM policy and the corresponding level of regime change which will require resources over and above those required to just run the standard EMR processes.

Modelling team

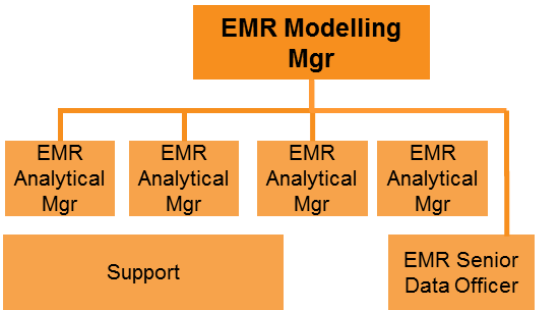

Figure 16 Modelling Team

257. This team is responsible for the analytical modelling to support a number of key EMR processes/outputs, specifically the development of advice to the Secretary of State on CfD Strike Prices, the delivery of advice on Capacity volumes required to meet the DECC Security of Supply standard via the Electricity Capacity report and the provision of the CM Auction "Demand Curve" based on Auction parameters provided by the Secretary of State.

258. The structure and sizing of this team is largely based on the McKinseys report, commissioned by DECC and National Grid and widely acknowledged as being the definitive description of the modelling requirements to support EMR modelling requirements for the enduring regime.

259. Three roles have been included in addition to that identified by McKinseys to undertake the development of European Scenarios and production of market data assumptions (including extensive liaison across Europe) as set out in paragraph 257. This comprehensive modelling was not anticipated within the McKinsey report. The scenarios are needed to feed into the new European Market Model to get the required level of detail and are updated regularly to reflect the current view They will be supported by a virtual team of resources in a similar way to the existing EMR modelling team.

260. Whilst there is currently a number of people across the SO involved in European activities via the various ENTSOE groups, the activity outlined above is new and will require additional resources to those currently employed. This is in addition to new resources to support aspects of European modelling requirements for ITPR purposes and would focus on:

    (a) Demand and generation scenario analysis across Europe

    (b) Input into existing processes e.g. FES

    (c) Generation Adequacy analysis (European focus) - note GB focus covered by existing activities

    (d) Engagement with DECC, PTE and Ofgem around new scenarios and modelling methodologies

    (e) Input into new processes e.g. ITPR

    (f) Development of ENTSOE European market model

EMR roles and RIIO

261. As described in the 'Background' section the EMR activities, related costs and roles were specifically excluded from the RIIO business plan submissions. There are however synergies between our role as the National Electricity Transmission System Operator and the EMR role, some of which are realised in the reduced level of resource required in the EMR team than would otherwise be the case. These synergies are realised in our plans through either reducing the level of resource required on EMR actitivies or by sharing resource across the two different types of activities (EMR and already funded), and not including the EMR element of the shared resource in this plan. This means that the team who work on EMR are incremental to the teams who work on activities which are funded by the RIIO allowances.

262. To take an example, there are synergies between the activities we undertake in relation to Short Term Operating Reserve (STOR) and EMR activities. This takes the form of experience in these commercial activities which we can use in

delivering the EMR role, thus minimising the need for resources that would otherwise be the case if we did not already undertake the STOR activity. A new delivery body would have to spend some time more thoroughly understanding the relevant markets – an activity that would inherently require resources, at least in the short term - whereas we already have this experience and do not need to include these resources in our structures. However, the requirement to undertake our SO role in relation to STOR still exists the same today as it did before we entered into our EMR role (either preparatory or enduring). This means we are still undertaking the same activities

Appendix A: Glossary and definitions

ACS	Average Cold Spell
BMU	Balancing Mechanism Unit
CA	Capacity Agreement
CCGT	Combined Cycle Gas Turbine
CfD	Contracts for Difference
CM	Capacity Market
CMU	Capacity Market Unit
CMW	Capacity Market Warning
CONE	Cost Of New Entry
CPB	Counterparty Body
DCI	Demand Control Instruction
DDM	Dynamic Dispatch Model
DECC	Department of Energy and Climate Change
DNO	Distribution Network Owner
DSBR	Demand Side Balancing Reserve
DSR	Demand Side Response
ECP	Electricity Capacity Report
EDR	Electricity Demand Reduction
EMR	Electricity Market Reform
EMRAT	EMR Administration Team
EMRCAI	EMR Confidential Administrative Information
FES	Future Energy Scenarios
FIDeR	Final Investment Decision evaluation for Renewables
GW	Giga Watt
ITPR	Integrated Transmission Planning and Regulation
LCF	Levy Control Framework
LOLE	Loss Of Load Expectation
LCOE	Levelised Cost Of Energy
MW	Mega Watt
NETSO	National Electricity Transmission System Operator
NGET	National Grid Electricity Transmission plc
NGGT	National Grid Gas Transmission plc
NFPA	Non Fossil Purchasing Agency
NFFO	Non Fossil Fuel Obligation
NISM	Notice of InSufficient Margin

PCFM	Price Control Financial Model
PTE	Panel of Technical Experts
RPE	Real Price Effects
RIG	Regulatory Information and Guidance
RO	Renewables Obligation
ROC	Renewables Obligation Certificate
SaaS	Software as a Service
SBR	Supplemental Balancing Reserve (SBR).
SO	System Operator
SO-SO	System Operator to System Operator
STOR	Short Term Operating Reserve
TA	Transitional Auctions
TEC	Transmission Entry Capacity
TO	Transmission Owner
VoLL	Value of Loss of Load