

**ELECTRICITY MARKET REFORM: CAPACITY
MARKET – DESIGN AND IMPLEMENTATION
UPDATE**

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EXECUTIVE SUMMARY

1. Changes to the electricity market mean that there are risks to the future security of electricity supplies. Government will therefore legislate to introduce a Capacity Market. The Capacity Market will provide an insurance policy against the possibility of future blackouts by providing financial incentives to ensure we have enough reliable electricity capacity to meet demand.
2. This annex describes the high-level design of the Capacity Market we will legislate for in the forthcoming energy bill; sets out the potential timing for introducing the Capacity Market; and provides more detail on the issues we are addressing to finalise the detailed design of the Capacity Market. We will publish emerging design choices on the issues most important to investors by the end of the year. We expect to have completed the design by March 2013 and will formally consult on the full detailed design later in 2013.
3. The proposed capacity mechanism, as set out in the December Technical Update, would work as follows:
 - a forecast of future peak demand will be made;
 - the total amount of capacity needed to ensure security of supply will be contracted through a competitive central auction a number of years ahead;
 - providers of capacity successful in the auction will enter into capacity agreements, committing to provide electricity when needed in the delivery year (in return for a steady capacity payment) or face penalties;
 - providers of capacity able to enter the auction will include existing providers and new providers, to incentivise extra investment now and in the future and to incentivise good repair and maintenance practices; and
 - the costs of the capacity payments will be shared between electricity suppliers in the delivery year.
4. We are proceeding with the detailed design of the Capacity Market in parallel with legislation being taken through Parliament. Our emerging thinking on key aspects of Capacity Market design is included in the Detailed Design of the Capacity Market section below, including that:
5.
 - we are minded to exclude plants in receipt of an administratively set Feed in Tariff with Contracts for Difference (FiT CfD) from the Capacity Market to avoid overcompensation of low carbon plants;
 - we expect to choose a Capacity Market that provides assurance that physical capacity is in place; and

- if making a distinction between the treatment of new and existing plants in the Capacity Market, we expect that plant that begin construction between now and the introduction of the Capacity Market would have the option of being treated as 'new'.
6. The need for and timing of the first capacity auction will be decided by Ministers based on advice on the security of supply outlook and analysis provided by the System Operator and possibly other technical experts (including Ofgem).¹ The Capacity Market will only be run if it is needed. Our analysis suggests that capacity margins will tighten significantly over the second half of this decade.² Under some scenarios a shortfall might not arise until the next decade, however other credible scenarios suggest a problem could occur toward the middle of this decade. Given this uncertainty, the legal framework for the Capacity Market will be put in place as soon as possible and the first capacity auction could, if needed, be run by the System Operator as early as 2014 for capacity to be in place by 2015/16 if necessary.
 7. The Capacity Market will operate within the institutional framework set out in Annex A: EMR Institutional Framework – Government, the System Operator and Ofgem.

WHY WE NEED A CAPACITY MARKET

8. Securing our electricity supplies – that is, ensuring there is sufficient reliable capacity in place to meet demand – is a key Government priority.
9. There is no immediate threat to security of electricity supply in the UK. At the end of 2010, we had a total of 83GW of electricity generating capacity connected to the high voltage transmission network, and peak demand was 61GW.³
10. However there is a risk to security of electricity supplies in the future, as around a fifth of existing capacity is expected to close over the next decade and more intermittent (wind) and less flexible (nuclear) generation is built to replace it.

¹ As required by the Energy Act 2011, Ofgem will produce its first annual capacity assessment this September. It may be necessary to make some amendments to these statutory reporting requirements to ensure that reports in future years provide Ministers with the best possible information.

² DECC, Dec 2011, *Planning our Electric Future: A Technical Update*:
http://www.decc.gov.uk/en/content/cms/legislation/white_papers/emr_wp_2011/tech_update/tech_update.aspx

³ DECC, July 2011, *United Kingdom Digest of Energy Statistics 2011*:
<http://www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx> .

11. These changes to our market create an investment challenge, in particular for plant such as gas which can alter its output to meet demand. This is because low carbon plant has lower operating costs, meaning fossil-fuel plant will operate less often than now and be less certain of its revenues. This could lead to under-investment and uncomfortably low levels of reliable capacity. If we don't act, a central scenario we have modelled suggests that in some years we could see blackouts affecting up to 2.5 million homes.⁴
12. As set out in December 2011, the Government will therefore legislate to introduce a Capacity Market to provide an insurance policy against the possibility of future blackouts – for example, during periods of low wind and high demand – with the aim of ensuring that consumers continue to benefit from reliable electricity supplies at an affordable cost.
13. The Capacity Market, which will be administered by the System Operator, will ensure sufficient reliable capacity is available by providing payments to ensure investment in new capacity or for existing capacity to remain open.
14. Our modelling indicates that the introduction of a Capacity Market should have a limited impact on bills, and could even lead to a small reduction. This is because the costs of capacity agreements (effectively the cost of insuring society against the risk of blackouts) is offset by reductions in the electricity price as more capacity comes on stream and price spikes are avoided – though it should be noted that the impact will ultimately depend on the size of any capacity problem, and the detailed design of the mechanism.

CAPACITY MARKET: HOW IT WORKS

15. The draft primary legislation published alongside this paper will enable us to implement a Capacity Market as described in the December 2011 Technical Update. We propose that the Capacity Market will work as follows:
 - a forecast of future peak demand will be made as part of the capacity assessment provided to Government by Ofgem, the System Operator or other technical experts;
 - Ministers will decide the total amount of capacity needed to ensure security of supply. This will be contracted through a competitive central auction run by the System Operator (with approaches such as demand side response (DSR) and storage playing a fair and equivalent role alongside generation). The

⁴ DECC, Dec 2011, *Capacity Mechanism Impact Assessment*, p. 13:
http://www.decc.gov.uk/en/content/cms/legislation/white_papers/emr_wp_2011/tech_update/tech_update.aspx

auction will take place around 4-5 years ahead of the delivery year in which providers are required to make capacity available, though this lead time could be shorter for the first auction if required;

- providers of capacity who are successful in the auction will enter into capacity agreements. In the delivery year/s specified in these agreements, they will receive a predictable revenue stream to cover the costs of their capacity. In return, they commit to provide electricity when needed or face penalties;
- providers of capacity able to enter the auction will include existing providers and new providers, to incentivise extra investment now and in the future and to incentivise good repair and maintenance practices; and
- the costs of the capacity payments will be shared between electricity suppliers in the delivery year.

16. The options being considered for detailed design of the Capacity Market are discussed in more detail in the Detailed Design of the Capacity Market section below. We do not intend to set out the detailed design of the Capacity Market in primary legislation, both because a range of design decisions need to be taken in partnership with stakeholders, and because efficient operation of the mechanism will require the ability to amend the rules of the scheme to reflect evolving market conditions. We therefore expect the detailed design of the mechanism to be established through secondary legislation and changes to codes and licences.

TIMING FOR INTRODUCING A CAPACITY MARKET

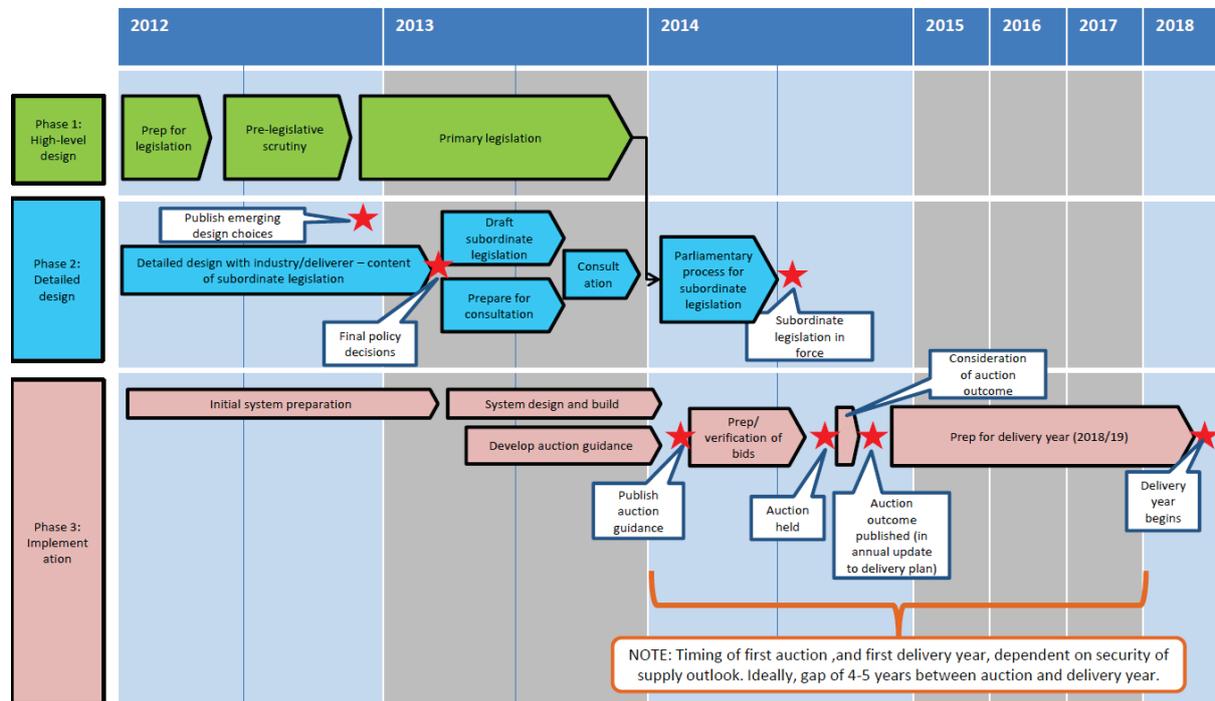
17. The draft primary legislation published alongside this document aims to establish the broad framework to enable a Capacity Market to be implemented in the GB electricity market. The next stage in the Department's work is to put in place the detailed design for the Capacity Market.

18. The timing of the first capacity auction will be decided by Ministers on the basis of the security of supply outlook. We are retaining this discretion on whether and when to run the auction, and when the first delivery year will be, to ensure we only intervene in the market if it is necessary and cost-effective to do so. Ministerial decisions on when to run the first auction will be taken with a view to striking a balance between providing certainty to industry and ensuring that the security of electricity supply outlook warrants intervention.

19. Our analysis suggests that capacity margins will tighten significantly over the second half of this decade. Under some scenarios a shortfall might not arise until the next decade, however other credible scenarios suggest a problem could occur toward the middle of this decade.

20. The different outputs from these scenarios illustrate the uncertainty of any projections of security of electricity supply and the amount these can vary given different assumptions, such as higher economic growth leading to higher electricity demand.
21. We will therefore continue to monitor the security of electricity supply outlook, but given this uncertainty we will legislate now to ensure we can respond if a capacity problem is likely to arise. We will proceed with the detailed design in parallel with legislation being taken through Parliament. We expect to share our emerging thinking with stakeholders as detailed design progresses, including through a publication before the end of the year, and to consult on the detailed design for a Capacity Market in 2013.
22. The indicative high-level timeline for implementation of a Capacity Market is set out below. This indicates that the first capacity auction could, if required, take place as early as Autumn 2014, for a delivery year of winter 2018-19. It is important to note that the first delivery year could be earlier than 2018-19 (as early as winter 2015/16) if security of supply estimates indicated this were necessary.
23. This timetable is indicative, and it is important to note that we intend to:
- share our developing thinking with stakeholders as it is developed, to enable a collaborative design process;
 - set out decisions on design issues, particularly those which are most helpful to enabling investment decisions, as early as possible in the process. We will be working with a stakeholder expert group we have established to identify these decisions and help develop recommendations; and
 - set out more detail on emerging design preferences later this year, and expect to formally consult on the full detailed design in late 2013.

Figure 1: Indicative high-level timeline for implementation of a Capacity Market



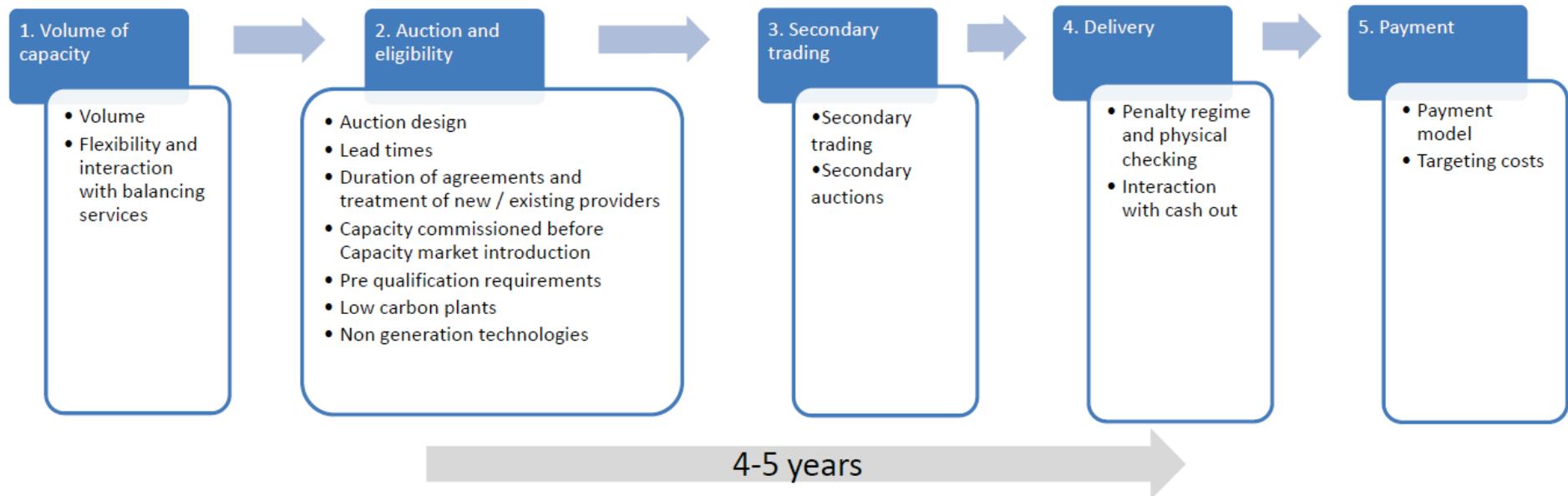
DETAILED DESIGN OF THE CAPACITY MARKET

24. The high-level framework we propose to set out in primary legislation provides the broad parameters for the Capacity Market. However we need to do significant further work to provide detail on how the Capacity Market will work in practice. This work is underway, led by DECC, working closely with Ofgem, National Grid, an expert industry group and other stakeholders.

25. The objective of our detailed design work is to design a Capacity Market which:

- enables the provision of adequate reliable capacity in the GB electricity market at minimum cost to consumers;
- minimises unintended consequences and risks, and supports delivery of wider Government objectives; and
- can be implemented to deliver a capacity auction as early as 2014 if required.

Figure 2: Phases of Capacity Market operation and key design areas:



26. This section outlines the various design issues that we are addressing in order to finalise the design of the Capacity Market. These are summarised in Figure 2.

27. This section also sets out our emerging thinking on key issues including the participation of low carbon capacity; the most suitable penalty regime for ensuring providers of capacity provide electricity when required; and whether the Capacity Market will differentiate between new and existing capacity. We will explore these issues with our expert stakeholder group and publish preferred design choices by the end of the year. We expect to consult on the full detailed design in late 2013.

1. Deciding the volume of capacity to contract for

Volume of capacity

- The decision on the volume of capacity to contract for and how this will be taken.
- Whether there should be an enduring reliability standard.

Requirement for flexibility and interaction with balancing services

- Whether the Capacity Market should specifically reward flexibility.
- Whether there are advantages in linking the procurement of balancing services with the Capacity Market.

Volume of capacity

28. The primary objective of the Capacity Market is to ensure sufficient reliable capacity in the GB electricity market at minimum cost to consumers.

29. If the Capacity Market is run, the decision on the volume of capacity to be contracted through each auction process will be taken by Ministers. Ministers will take the final decision on the volume of capacity to contract for after the auction has been run so they can consider the trade-off between system reliability and overall cost, and determine the efficient volume of capacity to contract for.

30. We anticipate that this decision will be supported by evidence and analysis from the System Operator and possibly other technical experts (including Ofgem). As required by the Energy Act 2011, Ofgem will produce its first annual capacity assessment this September. It may be necessary to make some amendments to these statutory reporting requirements to ensure that reports in future years provide Ministers with the best possible information.

31. We are considering whether this decision should be based on an enduring “reliability standard”. This would be similar to the approach taken in some US

markets, which base decisions on the level of capacity on achieving a specified minimum level of reliability – for example, interruption of electricity supplies because of insufficient capacity on no more than 0.1 days per year.

32. However, if we did adopt a reliability standard, we would expect Ministers to retain scope for their annual decision on the amount of capacity to contract for to vary from the reliability standard to ensure that costs and reliability can be balanced – so if, for example, the costs of achieving the standard were perceived to be disproportionately high, Ministers would retain the option of procuring less capacity in a particular year to ensure that consumers are protected from excessively high costs.
33. We expect that, if such a standard is included as part of the Capacity Market, it would be included in the delivery plan (see Institutional Framework section below).

Requirement for flexibility and interaction with balancing services

34. A number of stakeholders have raised the issue of whether the Capacity Market will seek to specifically incentivise flexibility, or will focus instead on contracting for an adequate volume of total capacity.
35. The Capacity Market will be based on ensuring the total required volume of capacity is available when needed, and will not specifically contract for flexibility. This will ensure an adequate volume of total capacity to ensure security of electricity supply, but should not reduce the incentives to offer a particular level of flexibility (e.g. being able to start generating within a short time period).
36. We anticipate that the electricity market will continue to provide adequate signals to bring forward the right mix of flexibility to ensure the system remains in balance at any given period. Beyond gate closure (i.e. the very short-term), the balancing mechanism will, as at present, ensure moment to moment balancing of the system. This will include the continued use of balancing services such as Short Term Operating Reserve (STOR). Balancing of the system would remain the responsibility of the System Operator.
37. We intend to further consider this as we develop the design of a Capacity Market, including the interaction with the procurement of the various balancing services. In particular we will consider where participation in the electricity market (and therefore Capacity Market) is required to provide particular balancing services. We will also look at when balancing services are typically procured and how this fits with the auction process for the Capacity Market.

2. Auction and eligibility

Auction design

- Selecting the most appropriate auction model.

Auction lead times

- What the auction lead time (i.e. the gap between the auction and delivery year) should be.

Duration of capacity agreements and treatment of new and existing providers

- The length of capacity agreements that should be offered.
- Whether new and existing providers of capacity should be treated differently.

Treatment of capacity commissioned before the introduction of the Capacity Market

- How plants becoming operational between now and the first capacity auction should be treated if a distinction between new and existing is made.

Pre-qualification requirements

- The pre-qualification criteria that should apply to providers of capacity wishing to participate in the auction.

Participation of low carbon capacity

- How low carbon capacity receiving support under the FiT CfD and Renewables Obligation (RO) should be treated in the Capacity Market.

Participation of non-generation technologies

- How non-generation technologies and interconnected capacity should be treated in the Capacity Market.

Auction design

38. The level of revenue that holders of capacity agreements receive will depend on the outcome of the auction process. This means that the auction design will need to strike a balance between providing sufficient revenue certainty for capacity providers to participate, and ensuring that consumers do not pay more than is necessary to ensure security of supply.

39. We are considering a number of design options for the Capacity Market auction – for example “pay as bid” auctions and “descending clock” approaches, taking into account international experience of capacity mechanisms and auctions in other sectors.

40. As part of this work, we are considering whether new and existing plants should participate in the auction on the same basis, and receive the same revenue, or whether they should be treated differently in order to minimise costs to consumers.
41. This decision is in part dependent on the type of auction we implement. We will therefore consider this issue further as part of detailed auction design.

Auction lead times

42. The auction lead time is the time between the auction and delivery year(s) in which holders of capacity agreements must make capacity available. A short lead time has the advantage of enabling estimates of the required volume of capacity to be made with greater accuracy. But a short lead time may preclude new capacity from entering an auction, as it may not have enough time between the auction and delivery year to become operational.
43. A long lead time is likely to lead to less accurate demand forecasts, which could lead to under procurement of capacity (risking security of supply), or an over procurement of capacity (unnecessarily increasing consumer costs). However, a longer lead time also increases the number of new projects which may be able to become operational, reducing investor risk and increasing competition in the capacity auction.
44. At this stage, we favour a lead time of around four or five years between the capacity auction and the delivery year. We believe that this duration will strike a balance between accuracy of security of supply projections, and lead times for new plant. However we retain the option of different lead times if necessary to maintain security of electricity supply. In particular, for the first auction a shorter lead time may be needed.

Duration of capacity agreements and treatment of new and existing capacity

45. Capacity agreements could apply to one or more delivery years. The key issues are (a) what length of capacity agreement should normally be available; and (b) whether different lengths of contract should be available to different types of capacity – for example, whether new plants can receive longer contracts than existing plant.
46. The advantage of offering short, uniform contracts (e.g. one year) is that such contracts are more easily tradable, and consumers are not tied in to long-term agreements. However longer contracts offer a number of advantages, in particular by enabling the costs of capacity to be spread over a longer period,

potentially reducing the cost of capital for new investments and avoiding “boom and bust” cycles in the capacity auction.

47. Given the potential difficulties in determining a uniform optimal contract length for all capacity, we are considering treating new and existing capacity differently, including for example providing a one year contract for existing capacity and longer contracts for new capacity (potentially including substantial refurbishment of existing plant).
48. We are aware that this is a particularly important issue for investors considering new generation in the GB market and will aim to take a decision on this issue before the end of the year.

Treatment of capacity commissioned before the introduction of the Capacity Market

49. As noted above, there are a number of ways in which new and existing plants could be treated differently in the Capacity Market – in particular, in terms of capacity agreement revenue, and duration of capacity agreements.
50. If the Capacity Market does differentiate between new and existing capacity then it raises the issue that investors who begin construction between now and the first auction would be treated as existing plants, which may lead them to prefer to withhold new investment until a Capacity Market is introduced.
51. To help mitigate this risk, we are considering whether to allow such plants to be treated as “new” if a distinction between new and existing plants is made in order to reduce disincentives to invest. If a distinction is made, we are minded to allow such plants to be treated as new. We will consider this issue further and aim to set out our decision on the relative treatment of new and existing plant before the end of the year. Our aim will be to ensure that there is no disincentive for plants to be built before a Capacity Market is introduced.

Pre-qualification requirements

52. We are considering whether capacity providers should be required to satisfy pre-qualification criteria in advance of bidding into the capacity auction. In particular we are still considering the extent to which capacity providers need to demonstrate before the auction that capacity will be in place in the delivery year.
53. The type (and extent) of verification required depends on a number of factors, including the preferred penalty regime, and would be designed to mitigate the risk of capacity agreements being awarded to providers subsequently unable to deliver capacity when needed (or to cover any penalty payments incurred).

54. Specific, tailored pre-qualification criteria may be required for different types of capacity such as GB-based generation, interconnected (overseas) capacity, and non-generation technologies such as DSR.

Participation of low carbon capacity

55. We need to consider how existing support mechanisms for low carbon generating capacity interact with the Capacity Market to ensure that we:

- avoid overpayment of low carbon plants;
- avoid negative impacts on our ability to meet renewables targets;
- ensure all plants have appropriate incentives to be available when required; and
- accurately predict how much reliable capacity low carbon plants can provide when setting the volume of capacity to contract for.

56. In light of these issues, we are minded that any plant that receives an administratively set FiT CfD will not be eligible to participate in the Capacity Market – that is, will not be eligible to receive capacity payments and will not be required to hold capacity obligations.

57. This is because the initial FiT CfDs should provide sufficiently strong incentives to bring forward investment in low carbon capacity and for FiT CfD plants to be available when required. As a result, there is a risk that if FiT CfD-funded plants were to participate in a Capacity Market, receiving capacity payments as well as support through the FiT CfD, it would be paid twice for providing capacity.

58. This position should be appropriate for as long as FiT CfD prices are set administratively as it is difficult to assess the value a provider would receive from the Capacity Market. In the future, when the strike price for FiT CfDs is determined through technology neutral auctions, the treatment of FiT CfD funded plants in the Capacity Market may need to be revisited for investors signing FiT CfDs after that point. In particular, it may be desirable to ensure low carbon plants that can provide reliable capacity (such as biomass and carbon capture and storage plants) are rewarded through the Capacity Market.

59. Further work will be undertaken on this issue, and on whether RO-funded plants should be eligible to participate in the Capacity Market. Final decisions on these issues will be taken later this year, taking into account the criteria in paragraph 56.

60. Some stakeholders have raised the question of how energy and capacity payments will interact and suggested that we should consider whether we could

integrate capacity and energy payments more effectively – possibly by using CfDs to ensure reliable capacity. We, and the System Operator, are looking closely at how the different mechanisms will interact and will ensure that the Capacity Market and the CfD work in an integrated and complementary manner to deliver our goals of ensuring security of supply, decarbonisation of the electricity system and minimising costs to the consumer.

Participation of non-generation technologies

61. We are keen that non-generation technologies and approaches, such as verifiable DSR, interconnected capacity and storage capacity, can play a fair and equivalent role to generation in a Capacity Market. Such approaches can reduce the overall volume of generating capacity required and ensure that generation assets are used efficiently – helping to contribute to decarbonisation objectives, and reduce costs to consumers.

62. There are a series of issues being considered as part of the detailed design work which require resolution to enable such comparable treatment, for example the ability to set and verify reliable baselines.

63. We are working with our expert stakeholder group on these issues, and will be considering international comparisons to inform our thinking.

3. Secondary auctions and trading

Secondary trading

- Whether there should be any restrictions on secondary market trading.

Secondary auctions

- Whether there should be secondary auctions. If so, when these should be held and for how much capacity.

Secondary trading

64. We are keen to enable trading of capacity agreements between the initial issuing of capacity agreements through the primary auction, and the point of delivery, which could allow capacity providers to manage the level of risk they are exposed to by increasing or reducing their capacity obligations. We intend to introduce capacity agreements that can be traded on a secondary market.

65. Secondary trading will be influenced by the pre-qualification criteria for participation of capacity in the auction. We anticipate that any actor taking on a

capacity agreement through secondary trading would need to demonstrate that they could meet the pre-qualification criteria set out for the primary auction e.g. they can deliver the requisite volume of capacity (either by generating or reducing demand).

Secondary auctions

66. We are also considering the introduction of secondary capacity auctions, which could augment secondary capacity trading. This could mean holding back some of the required capacity from the primary auction and auctioning it later, closer to the delivery year, or potentially auctioning additional capacity closer to delivery if the most recent security of supply projections suggest additional capacity will be needed. Secondary auctions and trading could provide opportunities for technologies with shorter lead times, such as DSR.

4. Delivery

Penalty regime and physical checking

- Selecting the most appropriate penalty model.
- The physical and financial backing that should be required by capacity providers.
- Who decides how much capacity providers can offer. If a central determination is required, the process for decision.
- Whether penalties should be capped, and if so how.

Interaction with cash out

- The need to ensure consistency between the EMR proposals, including the Capacity Market, and Ofgem's work on cash out.

Penalty regime and physical checking

67. Providers of capacity who hold capacity agreements receive capacity payments. In exchange, they guarantee to provide capacity when required. The financial penalties that result when holders of capacity agreements fail to meet their obligations to provide reliable capacity provide the incentive to ensure capacity is available when needed and are therefore integral to the effective operation of the Capacity Market.

68. There is a spectrum of options available for the penalty model in a Capacity Market. At one end is an administrative approach. Under this model, the type and size of penalties are defined by fixed rules which are applied when holders of capacity agreements are not available when needed.

69. This model has a number of advantages. In particular, it potentially enables providers of capacity to more accurately predict the level of penalty to which they will be subject, helping them to price risk. However it also has a number of drawbacks – in particular, this approach is likely to involve a higher proportion of administrative decisions (for example, the volume of capacity a provider can offer into an auction may need to be decided centrally rather than by the capacity provider themselves); and the definition of system scarcity (i.e. the periods in which capacity providers would need to be available) may have to be set administratively rather than determined by the market, meaning it may not reflect the true market cost. The model would also require a degree of physical checking to ensure that the volume of capacity contracted for is in fact in place.

70. At the other end of the spectrum is a market-based penalty model. One version of this model is the ‘reliability option’ approach we described in the July 2011 EMR White Paper.⁵ Under this approach, the capacity agreement commits the holder to a financial obligation to pay back the difference between the price of electricity in a close to real time reference market (such as an intraday energy exchange market) and a pre-set price in that market – the ‘strike price’. The strike price would be set at a level between normal conditions and scarcity, e.g. £500/MWh, to limit the extent to which the Capacity Market interferes with the electricity market. This means that holders of capacity agreements have a strong incentive to be available in scarcity periods, and that in return for paying for the Capacity Market consumers are protected from market prices going above the strike price.

71. The benefit of this approach is that it avoids administrative checks and creates a relatively simple and easily tradeable capacity agreement. This approach is also theoretically the most economically efficient. But there are a number of drawbacks:

- While there may be some scope to provide for consumers who suffer blackouts to receive some compensation, this model offers less assurance that blackouts will be prevented – that is, there would be no checks to ensure that capacity providers have sufficient capacity and will be available when required.
- The potential level of liabilities that providers are exposed to are in effect “uncapped” – which could increase the risk to which holders of capacity agreements are subject, increasing participants’ costs and therefore the overall costs of the Capacity Market.

⁵ DECC, July 2011, *Planning our Electric Future: A White Paper for Secure, Affordable and Low-Carbon Electricity*:
http://www.decc.gov.uk/en/content/cms/legislation/white_papers/emr_wp_2011/emr_wp_2011.aspx

- This model may have a greater impact on liquidity in the forward electricity market as capacity providers may seek to hedge the risk they are exposed to in the Capacity Market by selling electricity in the reference market.

72. Given these drawbacks, we believe it is unlikely that a purely market-based penalty model will be appropriate and are therefore also developing a model which retains market based incentives, but avoids some of the downsides of a pure market-based approach. This would combine market-based incentives (i.e. basing penalties on the price in a reference market) with physical checks to ensure capacity is in place. Physical checking provides more guarantees of reliable capacity being in place and therefore, if deemed necessary, potentially allows for capping of the financial liabilities providers would be exposed to in the reliability option approach. With respect to the potential impact on liquidity, we believe this issue can be overcome and will work further with our expert stakeholder group to develop this model.

73. The decision on the penalty regime informs a number of other aspects of Capacity Market design – from the participation of DSR, to the setting of pre-qualification criteria. Given the range of options, and the centrality of this decision to efficient design, we intend to work with an expert industry group in order to narrow down the decision on the preferred penalty model in a timely manner.

Interaction with cash out

74. We welcome Ofgem's decision on 28 March 2012 to conduct a Significant Code Review (SCR) on electricity cash out arrangements, which could provide better signals for investment and increase security of supply, and could also provide a useful reference price for the penalty models that employ market-based penalties.⁶ We will continue to work closely with Ofgem to ensure consistency between the EMR policy proposals and the electricity cash out SCR, and will carefully consider the interactions between the EMR Capacity Market and any electricity cash-out reforms.

⁶ Ofgem, March 2012, 'Open letter Ofgem decision to launch a Significant Code Review (SCR) of the electricity cash-out arrangements': <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=174&refer=Markets/WhIMkts/CompanEff/CashoutRev>

5. Paying for capacity agreements

Payment model

- Selecting the most appropriate payment model for the Capacity Market.

Targeting costs

- How the costs of capacity should be allocated to suppliers.

Payment model

75. We intend that the costs of capacity will be shared among suppliers. Penalty payments from capacity providers will be returned to suppliers.

76. We are currently considering two lead options for the model by which capacity payments would flow between suppliers and capacity providers.

77. One option is for suppliers and capacity providers to be required to make payments directly to each other, under a multiparty agreement, e.g. the Balancing and Settlement Code (BSC). These payments would be administered by a settlement agent under the terms of that agreement.

78. Another option is for suppliers and capacity providers to be required to make payments to an intermediary, which is then required to pass those payments on.

79. We are working with the System Operator and Ofgem to further consider which of these models would be preferable, taking into account the need to provide an appropriate level of certainty to capacity providers and investors.

Targeting costs

80. We are also considering how costs of capacity agreements should be shared between suppliers. This could be on the basis of a suppliers' peak load in order to provide incentives for suppliers to reduce their share of peak load – thereby reducing the overall requirements for capacity, and ensuring that capacity is used more efficiently.

INSTITUTIONAL FRAMEWORK

81. The Capacity Market will operate within the institutional framework described in the December 2011 Technical Update and in Annex A: EMR Institutional Framework – Government, the System Operator and Ofgem:

- **Government** will set the policy approach and objectives, and take final decisions on key rules and parameters, including the volume of capacity to contract for;
- The **System Operator** will provide expert independent advice to Government on key rules and parameters and administer the Capacity Market; and
- **Ofgem** will continue its independent regulation of the electricity market and will regulate the Capacity Market.

82. Government will publish a five-yearly delivery plan containing Government's objectives, key policy decisions and supporting analysis. The delivery plan will include illustrative scenarios for the electricity market to meet these objectives, taking account of the impact of other EMR policies, including on security of electricity supply. Government will take key decisions informed by evidence and analysis from the System Operator, a Panel of Technical Experts, and Ofgem as appropriate. We expect that these decisions, including on whether to hold an auction and the volume of capacity to contract for, will be published annually (in either the delivery plan or an annual update to it).

83. Annex A: EMR Institutional Framework – Government, the System Operator and Ofgem contains further detail on the process and intended content of the delivery plan (particularly the first) and annual updates.

DEVOLVED ADMINISTRATIONS

84. The Capacity Market will not apply in Northern Ireland, since Northern Ireland is part of a separate capacity mechanism covering Ireland and Northern Ireland. We will however continue to work with colleagues in Northern Ireland on relevant design issues, such as how interconnected capacity will participate in the Capacity Market, and how to ensure the Capacity Market is compatible with the Single Electricity Market.

85. The Capacity Market will extend to Scotland and Wales. We will continue work with colleagues in the Scottish and Welsh Governments to ensure we develop the best possible design for the GB market as a whole.

NEXT STEPS

86. Government will set out decisions on design issues, particularly those which are most helpful to enabling investment decisions, as early as possible in the process. We will be working with a stakeholder expert group we have established to identify these decisions and help develop recommendations on the various issues identified above.
87. We intend to set out more detail on key design decisions by the end of the year, including the preferred penalty regime, and the treatment of low carbon and new and existing plants in the Capacity Market. We expect to have completed the design by March 2013 and will formally consult on the full detailed design later in 2013.