



Department
of Energy &
Climate Change

Electricity Market Reform: Allocation of Contracts for Difference

A Government response on Competitive Allocation

13 May 2014

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Executive summary

Introduction

1. The Government's Electricity Market Reform (EMR) programme provides an ambitious package of measures to incentivise the investment needed to replace the UK's ageing electricity infrastructure with a more diverse and low-carbon energy mix. Up to £100 billion of capital investment is needed from now until the end of the decade.
2. The Government's objectives for EMR are to:
 - ensure a secure electricity supply;
 - ensure sufficient investment in sustainable low-carbon technologies;
 - minimise costs to, and ensure value for money for, consumers.
3. The decisions and policy set out in this document have been designed with State Aid¹ requirements in mind and we are in on-going dialogue with the Commission.

Overview

4. The EMR consultation on Competitive Allocation² was launched on 16 January 2014 and ran until 12 February 2014. This document summarises the Government response to this consultation and forms part of the progress towards the first CfD allocation round in October 2014 building on previous publications including the EMR Delivery Plan³, CfD contract terms⁴, and draft Allocation Framework.
5. The consultation set out detailed proposals for how Government intended to manage the first CfD allocation round and sought views on the following areas:
 - First Come First Served allocation would no longer apply and instead the process would move immediately to constrained allocation rounds.
 - Renewable technologies to be divided into two groups, classified as 'established' and 'less established' for the purpose of allocation (biomass plants and the Scottish islands were not included).
 - Competition through an auction to apply to the 'established' technology grouping at the start of allocation.

Structure of this Document

6. Part 1 provides an overview on the CfD budget allocation approach including the governance and management of the Levy Control Framework, budget allocation processes, auction design and operation under competitive allocation, the Offtaker of Last Resort and State Aid guidelines.

¹ http://ec.europa.eu/competition/sectors/energy/eeag_en.pdf

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/271919/Competitive_allocation_consultation_formatted.pdf

³ <https://www.gov.uk/government/publications/electricity-market-reform-delivery-plan>

⁴ <https://www.gov.uk/government/publications/electricity-market-reform-contracts-for-difference>

7. Part 2 sets out the Government response to the January consultation, including decisions and rationale on the technology groupings, the role of competition and budgeting implications.
8. Part 3 provides a detailed summary of stakeholder responses received.

Summary of responses

9. A total of 1348 consultation responses were received. We received 94 responses from industry, investors, consumer groups and individuals. Of these, seventy two percent (68 responses) were from generators and industry groups, 5% (5 responses) were from the investment community and 8% (8 responses with a campaign against Biofuels counted as a single return) from consumer groups and individuals. Other responses (13) accounted for 14%. We also received 1254 responses through a co-ordinated campaign in opposition to the use of Biofuels⁵. A full list of non-confidential respondents is provided at Annex B.
10. As part of the consultation process a workshop was held on 6 February, which was attended by 58 stakeholders including generators, suppliers, consumer groups, and investors. Feedback from this workshop further shaped our decisions on the treatment of technologies.
11. The majority of consultation responses agreed with the proposed technology groupings, although we also received representations with arguments for different treatment of particular technologies. Some respondents recommended that Government should work more closely with industry to set out greater detail on the criteria for grouping technologies as either established or less established, as well as how technologies would move to the established category over time. Some respondents requested further information about the relationship of these groupings to the 'deployed' and 'less deployed' categories proposed by the EU in the draft EEA guidelines.
12. In relation to proposals on the move to competition, responses were mixed, with a number of generators highlighting the increased allocation risk and uncertainty that this would cause. Consumer groups welcomed the introduction of competition as a way to ensure efficient management of the Levy Control Framework (LCF) and increase value for money for consumers. The majority of respondents acknowledged the need for a mechanism to control LCF budget allocation. Others indicated that further information is required on the level at which the CfD budget will be set as well as details of the CfD auction design under constrained allocation in order to evaluate the impact of competitive allocation for their technology or sector.

Policy decisions

13. Government's ambition remains to move to competitive price discovery processes for all technologies as soon as practicable.
14. The policy decisions taken in response to the January consultation are:
 - Contracts will be allocated through allocation rounds. The period of 'First Come First Served' (FCFS) allocation, that we had previously considered, will not apply.

⁵ These campaign responses are treated as one response in the percentages set out in this document, in order to convey the range of opinions received through the consultation. Two campaign responses which specifically requested to be treated as individual responses have been classified as such.

- the Allocation Framework for the first allocation round will divide the CfD budget into Groups including:
 - a) Group 1 - a group of 'established' technologies (Onshore Wind (>5 MW), Solar Photovoltaic (PV) (>5 MW), Energy from Waste with CHP, Hydro (>5 MW and <50 MW), Landfill Gas and Sewage Gas.
 - b) Group 2 - a group of 'less established' technologies (Offshore Wind, Wave, Tidal Stream, Advanced Conversion Technologies, Anaerobic Digestion, Dedicated biomass with Combined Heat and Power and Geothermal).
- The size of the budget in the CfD allocation rounds for Group 1 technologies will be set to ensure competition from the start of the CfD regime. At least the more established technologies will be subject to an auction process from the beginning of CfD allocation.
- Group 2 technologies will not automatically move to competition and will not compete on price directly with Group 1 technologies. If all the projects seeking support within Group 2 can be accommodated within the allocated budget, they will receive support at the administrative strike price.

15. The strike prices for a number of current and emerging technologies, including large hydro, tidal range (including tidal lagoon and tidal barrage), nuclear and CCS were not set in the Delivery Plan⁶. The intention is for competition to be built into the allocation arrangements for these technologies where this is feasible, although in this Delivery Plan period prices for these technologies will be determined on a case-by-case basis where projects are identified for support.

Linked consultations

16. Two other consultations published today alongside this document may be of interest to stakeholders.

Allocation of Contracts for Difference - further consultation on the use of technology groupings, minima and maxima

17. A follow-up consultation document⁷ that seeks views on proposals for:

- I. Biomass conversion plants - to be considered as an 'established' technology, and subject to competition if budget is available, but in a separate group (Group 3) to ensure competition is maximised in Group 1;
- II. Scottish island onshore wind projects – to be considered as a 'non-established' technology in either group 2 or in a separate group (Group 4); and
- III. Minima and Maxima – a 100MW minimum threshold for wave and tidal stream technologies (i.e. not including tidal lagoon or tidal barrage) across both the RO and CfD schemes for the duration of the first Delivery Plan period.

⁶https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/268221/181213_2013_EMR_Delivery_Plan_FINAL.pdf

⁷ <https://www.gov.uk/government/consultations/electricity-market-reform-further-consultation-on-allocation-of-contracts-for-difference>

Consultation on changes to financial support to Solar PV

18. Current projections suggest that large-scale solar PV deployment under the RO could be many years ahead of the potential deployment range identified in the EMR Delivery Plan and before any solar PV deployment through CfDs. At current trends we may meet our Delivery Plan 2020 deployment ambition by 2017 and we are concerned about the impact this speed of deployment under the RO could have on the Levy Control Framework (LCF). If spend in one area of the LCF increases it increases pressure on consumer bills unless matched by cost reductions elsewhere.
19. The proportion of the LCF available for deployment under CfDs would also be reduced as a higher proportion of the LCF would be allocated to the RO to cover the costs of the additional solar projects. Government considers that the CfD is a more cost-effective mechanism than the RO.

Next Steps

20. For further detail on the Contracts for Difference programme timetable please see the 'EMR Contracts for Difference Implementation Plan' published on 7 April, which sets out detailed implementation activities and milestones. We will continue to engage with stakeholders throughout this process
21. The planned dates are:
 - The CfD Allocation Framework, published in draft on 10 April, sets out the rules for the CfD Allocation and the auction process.
 - The final CfD Allocation Framework is expected to be published in June.
 - The indicative CfD budget available to National Grid for allocation under the enduring regime to be published in July 2014
 - The publication of the policy response in July 2014 to the issues raised in the further consultation on technology groupings and the use of minima and maxima.
 - CfD applicants will be able to submit applications to the Delivery Body in October 2014.
22. Our approach to CfD allocation forms part of our notification to the European Commission to secure State Aid approval. In the event that the Commission is unable to approve the Scheme as notified, we will make the necessary changes to our policies.

Part 1: CfD Allocation - Policy Overview

Introduction

1. This section includes an overview of budget management issues including the auction processes under competitive allocation. These details are intended to provide stakeholders with sufficient context to understand the policy position on technology groupings and competition, and to help evaluate the consultations published today⁸.
2. The Government retains discretion to set and manage the CfD budget as part of wider management of the Levy Control Framework (LCF). Details of the auction design have previously been subject to detailed stakeholder engagement.

LCF Governance and Management

3. The Levy Control Framework (LCF) covers a range of policies including DECC's levy-funded policies. DECC's levy-funded policies comprise of the Renewables Obligation (RO), small scale Feed-in Tariffs (ssFIT), Investment Contracts for Final Investment Decisions Enabling for Renewables (FIDeR) and Contracts for Difference (CfDs). The spending cap within the LCF for levy-funded policies is £7.6bn in 2020/21 (in real 2011/12 prices).
4. Ahead of the implementation of Electricity Market Reform, Government has updated and improved the governance arrangements for the LCF to incorporate the new CfD scheme. These arrangements will oversee the strategy for all levy schemes within the low carbon electricity portion of the LCF, including the release of budget to National Grid for CfDs, and ensure that the RO and CfD budgets are set in parallel (see 'CfD budget allocation' below).
5. Stakeholders asked for clarity on the impact of the Capacity Market, Carbon Capture and Storage (CCS) and new nuclear generation on the LCF.
6. The strike prices for a number of current and emerging technologies including nuclear and CCS, large hydro and tidal range (including tidal lagoon and tidal barrage) were not set in the Delivery Plan. The intention is for competition to be built into the allocation arrangements for these technologies where this is feasible, although in the period of this Delivery Plan prices for these technologies will be determined on a case by case basis where projects are identified for support.
7. The Capacity Market will be included in the LCF but will not fall within the £7.6bn spending cap for low-carbon electricity. When there is greater certainty on the size of the levy its own, separate budget will be set. New nuclear generation is not due to commission in this LCF settlement period (i.e. before 2020/21). Funds to support CfDs

⁸ <https://www.gov.uk/government/consultations/electricity-market-reform-further-consultation-on-allocation-of-contracts-for-difference>; <https://www.gov.uk/government/consultations/consultation-on-changes-to-financial-support-for-solar-pv>; <https://www.gov.uk/government/consultations/support-for-community-energy-projects-under-the-feed-in-tariffs-scheme>

for nuclear would be allocated from any future LCF settlement period, after 2020/21. CfDs for CCS are intended to be funded from the existing LCF and the budget for these will be allocated separately from the CfD budget for renewables.

8. Alongside this document and the further consultation on technology groupings and minima and maxima published today is the 'Consultation on changes to financial support to Solar PV'⁹. Appropriately sited large-scale solar PV has the potential to play a significant role if there are continued cost reductions and innovation. A potential range of 2.4-4GW for large-scale solar by 2020, as per the EMR Delivery Plan 2013, was assessed as being affordable within the constraints of the LCF, and consistent with securing a diverse renewables mix.
9. Large scale solar PV is deploying much faster than previously expected and at current trends we may meet the potential Delivery Plan 2020 deployment range by 2017. We are concerned about the impact this speed of deployment under the RO could have on the Levy Control Framework (LCF) which sets annual limits on the overall cost of DECC's levy funded policies. If spend in one area of the LCF increases unsustainably, it will increase pressure on bills unless it is matched by cost reductions elsewhere. As the costs of the levy-funded schemes are paid for through consumers' energy bills, the Government takes potential risks to the LCF very seriously and will act where necessary to ensure that costs are contained and that consumers receive value for money from programmes supported by the LCF.
10. If industry's projections are correct, we could see around 3.2GW of large-scale solar PV deployment under the RO by April 2015. This means that solar could reach the mid-point of the potential deployment range for large-scale developments identified in the EMR Delivery Plan five years before the end of the period covered by the Delivery Plan and before any solar PV deployment through CfDs. Taking a conservative estimate of an additional 1GW of large-scale solar PV deployment in each of 2015/16 and 2016/17, we could see more than 5GW by 2017, which exceeds by some margin the upper end of the potential range set out in the Delivery Plan range for 2020.
11. This is more than can be afforded and would have adverse consequences for Government's management and use of the LCF as a whole. The proportion of the LCF which is available for deployment under CfDs would be reduced, as a higher proportion of the LCF would necessarily be allocated to the RO to cover the costs of the additional solar projects.

CfD Budget Allocation

Introduction

12. As set out in the January consultation, we are currently working to determine the level of the CfD budget available to National Grid for allocation under the enduring regime and will publish this in advance of the first CfD allocation by summer 2014. We plan to give stakeholders three months visibility of the indicative CfD budget allocations released to National Grid for allocation round one, prior to the opening of allocation in October.
13. The detail provided will:
 - confirm an indicative CfD budget envelope;

⁹ <https://www.gov.uk/government/consultations/consultation-on-changes-to-financial-support-for-solar-pv>

- set out indicative sizing for each group (Group 1 (established) and Group 2 (less established) and potentially Group 3 (biomass conversion) and/or Group 4 (Scottish islands) (subject to consultation) from within the indicative CfD budget envelope.
 - The budget allocations that are released to National Grid for delivery years 2014/15 to 2020/21
14. The budget allocations will be confirmed at the end of September in a budget notice, at the same time as the Renewables Obligation (RO) is set. As the Levy Control Framework limits are made up of the RO and the small scale Feed in Tariffs as well as the CfD spend these budgetary decisions need to be taken together.
15. The Government will set budget allocations that it considers best meets its policy objectives including achieving the renewables target, keeping consumers costs low, the total costs within the LCF and achieving value for money. Given our confirmed approach to competitive allocation, the CfD budget will be set to enable immediate competition in Group 1 established technologies.
16. In deciding the CfD budget allocation to release to National Grid for the first allocation round, the Government may decide to release only part of the overall CfD budget in order to manage the risks of overspending, to enable projects that are at an earlier stage of development to bid in in subsequent rounds (e.g. 2015 and 2016). It is possible that some technology groupings will have no budget released in the 2014 allocation round for some or all of the delivery years.

Setting Budgets

17. All of the Government's levy-funded policies need to be deliverable within the LCF. The level of the RO in 2015/2016 is not yet set (it is confirmed by 1 October each year). To publish an indicative CfD budget now, DECC would need to publish a range of scenarios for the RO alongside the implications for support available under CfDs. This would likely increase developer uncertainty rather than help such developers understand the level of 'allocation risk'.
18. In order to produce an indicative CfD budget in July we will therefore be engaging with industry over the next few months and assessing the likely intentions of developers' choices between the RO and CfD. This will allow CfD budget calculations (informed by the latest RO data) to be finalised and indicative budgets published. Both the CfD Budget and RO will be confirmed at the end of September in a budget notice.

Impact on consumer bills

19. DECC's latest analysis, set out in the Delivery Plan, suggests household electricity bills will on average be £41 (or 6%) lower per year over the period 2014 – 2030 under EMR compared to meeting the Government's objectives with existing policies. For businesses, bills are expected to be 7-8% lower.

CfD Auction Design

20. We have undertaken extensive stakeholder engagement to develop the design of the CfD auction under competitive allocation, including through collaborative development in autumn 2013, and more recent CfD expert group sessions. We have also used responses to publications in August 2013, and the October 2013 EMR consultation, as well as the January 2014 consultation on competitive allocation to further shape the design. We set out a further update to stakeholders through an open letter published on

12 February, and the CfD Allocation Framework setting out our design was published on 8 April 2014¹⁰.

21. We are adopting a pay-as-clear approach, whereby each project is paid the clearing price for its delivery year within the auction, capped at its Administrative Strike Price. Within this we have set out a design which includes the provision for flexibility on price, capacity and delivery year, for each applicant.
22. Full details of the auction design including treatment of any minima and maxima, tie-breaker rules and flexibility can be found in the Allocation Framework, and accompanying slide pack¹¹. These can be used as context to enable stakeholders to understand and respond to the consultation questions set out in this document. The key steps of the Auction process (see slides 31 onwards for worked examples) are summarised below:
 - Assigning the Budget and setting of minima and maxima
 - DECC will provide the Delivery Body with the available budget in advance of the allocation round and any minimum or maximum for individual technologies in advance of an auction.
 - If the minimum is set above the budget profile for any year, a project which is below the minimum may be excluded. If more than one minimum is set, they will be set such that they are both/all affordable within the budget profile. Any minima not fulfilled will be available in future allocation rounds.
 - If allocation is constrained an auction will be held:
 - If a technology grouping's budget is exceeded for any delivery year in the budget profile, an auction will be run for all delivery years.
 - If a maximum is exceeded but the budget is not, an auction will be run only for maxima technologies.
 - Sealed bids will only be requested once constrained allocation has been triggered, and then only for those projects to which constrained allocation applies.
 - Auction Clearing rules
 - A sealed bid system will be followed, where all bidders submit the lowest strike price they are willing to accept, and the auction system finds the cheapest projects affordable within the budget.
 - The payment rule is pay-as-clear, where all projects are paid the relevant clearing price, capped at its Administrative Strike Price.
 - Each delivery year has a separate clearing price.

Offtaker of Last Resort and route to market for independent generators

23. DECC recently consulted on the policy design of the Offtaker of Last Resort (OLR) which is intended to guarantee independent renewable CfD holders with a route-to-market, and provide certainty over the minimum price for their power. We are currently considering the feedback to the consultation, including any implications arising from competitive CfD allocation.

¹⁰https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/301968/Contract_for_Difference_Draft_Allocation_Framework.pdf

¹¹https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/302725/af_event__9_april_slides.pdf

24. With the introduction of the OLR, generators should have access to a wider range of contracting strategies and be able to secure project finance without the need for a long-term PPA, the availability of which has been of major concern to independent generators. Regardless of the method of CfD allocation, the OLR increases the confidence for generators that they will be able to develop their projects against a given strike price by significantly reducing their risks. The secondary legislation for the OLR is intended to come into force at the time the first CfDs are signed, giving generators the knowledge of the grandfathered terms of the Backstop PPA that they are eligible for.
28. Independent generators argue¹² that they have less certainty of their costs than Vertically Integrated Utilities (VIUs) and are therefore faced with a higher financial risk that undermines their ability to win a CfD through a competitive process, in particular if a sealed bid is required. However we argue that their cost uncertainty persists regardless of whether the Strike Price is set administratively or competitively, and hence is not a result of competitive CfD allocation.
25. We expect the market to address these concerns. PPAs could be signed on a conditional basis before a strike price needs to be submitted, allowing independent generators to receive indicative financing terms from lenders, and reducing their cost uncertainties. The OLR will continue to support generators by providing for the worst-case route-to-market. Together, these should give independent renewable generators confidence over their costs and enable them to compete with larger players.
26. A pay-as-clear auction will assist with smaller generators since they can bid their expected costs rather than requiring market information over the expected clearing price.

State Aid and new guidelines on environmental protection and energy (EEAG)

Overview

27. We have noted stakeholder requests for more information about how the process of State Aid approval has influenced our policy design. The policy, which is subject to State Aid approval, has been designed with the new State Aid guidelines on environmental protection and energy (EEAG) in mind, and we are in ongoing dialogue with the Commission with a view to obtaining approval where required.
28. The European Commission has sole competence on State Aid issues. As part of the EU State Aid modernisation programme¹³, the Commission consulted on revised EEAG which set out the common principles for assessing the compatibility of energy aid with the internal market. The final guidelines were adopted on 9 April 2014 and apply up to 2020. This followed earlier Commission guidance on State Intervention in the electricity market in November 2013¹⁴ which set out that, as technologies mature and investment costs fall, supported technologies should be gradually exposed to market prices. In this guidance, DG Energy also recommended that Member States should auction a certain amount of renewable energy production to the lowest bidder, in order to foster competition among generators and reward the most cost-effective projects.
29. Consistent with the November 2013 guidance, the new guidelines on State Aid for environmental protection and energy¹⁵ set out the principle of technology neutral

¹² Independent Renewables Generators Group (IREGG) consultation response

¹³ http://ec.europa.eu/competition/state_aid/modernisation/index_en.html

¹⁴ http://ec.europa.eu/energy/gas_electricity/doc/com_2013_public_intervention_en.pdf

¹⁵ http://ec.europa.eu/competition/sectors/energy/legislation_en.html

competition in awarding aid to renewable energy projects, in order to ensure 'proportionality of aid and to limit competition distortions'. They recognise the different stage of development for renewable technologies and allow for a transitional period for 2015 and 2016 where aid for at least 5% of the planned new electricity capacity from renewables should be granted in a 'competitive bidding process on the basis of clear, transparent and non-discriminatory criteria'. The guidelines indicate that from 2017, aid to all renewable technologies will then be subject to technology neutral competition subject to some exceptions.

30. There are a number of circumstances in which it is possible to depart from a competitive bidding process, where:

- only one or a limited number of projects would be eligible; or
- a competitive bidding process would lead to higher support levels (e.g. because of strategic bidding); or
- a competitive process would result in low project realisation rates (through underbidding).

31. The guidelines also describe the circumstances in which a technology or technologies specific bidding process can be established, where there would be a suboptimal result, in particular in order to:

- foster long term potential of a new and innovative technology; or
- achieve diversification; or
- address network constraints and grid stability; or
- address system integration costs; or
- address the need to avoid distortions on the raw material markets from biomass support.

32. The new guidelines require renewables projects over 250MW to be individually notified in the absence of a competitive bidding process (as defined). Should this be necessary for the CfD regime, we will clarify the additional information required to achieve State Aid approval.

The UK's approach

33. While the guidelines are prescriptive in requiring a move to competition, they allow Member States flexibility in the way in which they propose to achieve this. Our approach to CfD Allocation is designed to bring about a transition towards technology neutral competition, in a way which enables the UK to reach the European Union's (EU) 2020 Renewable Targets, while minimising the cost to the consumer. We have determined that the best way to achieve these aims is to consider the relative maturity of each technology and to implement competition depending on whether they are 'established' or 'less established'.

34. We expect there will be constrained allocation (competition) for the established technologies from the commencement of allocation. The 'less established' technologies will not automatically move to competition and will not compete directly with the established technologies. The rationale for this approach is that established technologies have achieved sufficient levels of deployment to develop the scale and maturity of their supply chains, which will reduce their costs. Exposing less established technologies to competition with more established, and lower cost, technologies could lead to reduced levels of investment in these new and innovative technologies that restricts their potential to deliver significant low-cost renewable generation in the future. It could also limit our

ability to secure a diverse renewables mix and, ultimately, could increase costs to consumers over the longer-term.

Update on non-UK Renewables Projects

35. As part of the EMR process, we are proposing that CfDs will be progressively opened to projects from outside the UK. We are having discussions with the Republic of Ireland and others about the issues that need to be resolved, including arrangements for the regulation of connections, which is being taken forward by Ofgem. A number of developers located outside the UK made proposals on how the CfD regime could apply for projects located outside the UK. The timeline and process for implementation has not yet been determined, and we expect to make further announcements in the coming months. It is our intention that access to CfDs for projects outside the UK will be fully integrated into the EMR competitive system as it evolves.

Part 2: Government Response to the January consultation

Introduction

1. This section sets out the Government response to the January consultation 'Allocation of Contracts for Difference: Competitive Allocation'.
2. We are consulting further on the treatment of biomass conversion and onshore wind projects on the Scottish islands in a further consultation on technology groupings and the use of minima and maxima published today¹⁶.

Summary of Government decisions

3. The following approach will be adopted:
 - First-Come-First-Served (FCFS) will not apply and allocation rounds will be deployed immediately, consistent with the previously published position that set out that a move to allocation rounds for any given delivery year would trigger the move to allocation rounds for all delivery years. This will allow orderly grouping of applications so that the CfD budget can be monitored and managed effectively.
 - The Allocation Framework for the first allocation round will divide the CfD budget into Groups including:
 - a) Group 1 - a group of 'established' technologies (Onshore Wind (> 5 MW), Solar Photovoltaic (PV) (>5 MW), Energy from Waste with CHP, Hydro (> 5 MW and < 50 MW), Landfill Gas and Sewage Gas.
 - b) Group 2 - a group of 'less established' technologies (Offshore Wind, Wave, Tidal Stream, Advanced Conversion Technologies, Anaerobic Digestion, Dedicated biomass with Combined Heat and Power and Geothermal).
 - The size of the budget in the CfD allocation rounds for Group 1 technologies will be set to ensure competition from the start of the CfD regime. At least the more established technologies will be subject to an auction process from the beginning of CfD allocation.
 - The Group 2 technologies will not automatically move to competition and will not be required to compete on price directly with Group 1 technologies. If all the projects seeking support within Group 2 can be accommodated within the allocated budget, they will receive support at the administrative strike price.

¹⁶ <https://www.gov.uk/government/consultations/electricity-market-reform-further-consultation-on-allocation-of-contracts-for-difference>

Feedback from responses

4. In relation to proposals on the move to competition, responses were mixed. A number of respondents highlighted the increased allocation risk and uncertainty that this would cause, whilst consumer groups welcomed the introduction of competition as a way to ensure efficient management of the Levy Control Framework (LCF) and increase value for money for consumers. Whilst the majority of respondents acknowledged the need for a mechanism to control LCF budget, some indicated that further information is required on the level at which the CfD budget will be set and final details of the CfD auction design under constrained allocation in order to evaluate the impact of competitive allocation for their technology or sector.

Policy Context

5. The Government's aims are to meet the 2020 renewable energy target, encourage low carbon generation, secure a diverse renewables mix and ensure value for consumers.
6. To ensure value for consumers, and in keeping with the new EEA guidelines, our ultimate aim is for technology neutral auctions across all low carbon generation and a move to competitive allocation as soon as it is appropriate to do so. It is recognised that not all technologies are currently at the same level of development. A technology neutral auction at this point would likely result in a sub-optimal outcome, with high levels of deployment of a small number of cheaper technologies and limited deployment of technologies which may be currently more expensive but which have long-term potential and could support further cost reduction.
7. It is recognised that CfD allocation decisions applicable to this LCF period will have long term consequences for the development of individual technologies in the UK and the longer term mix of renewable technologies. The Government considers that it may be appropriate to retain optionality for technologies on the basis that they may be required to make a contribution to the UK's decarbonisation goals in the decades beyond 2020. If technologies fail to secure support they could be more expensive to deploy at a later stage— particularly for technologies where the UK's leading position and deployment is a key driver for cost reduction.
8. We have considered which grouping each technology should sit within. In coming to our conclusions we have taken into account the:
 - contribution to meeting the 2020 renewable energy target;
 - maturity of the technology and potential for further technological development;
 - maturity of the industry including maturity of the supply chain;
 - levels of UK deployment, levels of global deployment and potential UK pipeline;
 - potential for further cost reduction and whether this depends upon levels of UK deployment;
 - potential for the technology to deliver significant low-cost renewable generation in the future; and
 - potential benefits for other sectors.

Government decision on defining Established and Less Established technologies

9. The January consultation document set out our rationale for which technologies we considered to be 'established' and 'less established', and that Government intends to move immediately to competition for at least those technologies judged to be 'established' from the first allocation round.

Feedback from responses

10. The majority of consultation responses broadly agreed with the proposed technology groupings, although we also received representations with arguments for different treatment of particular technologies, summarised in Part 4. Respondents recommended that Government should work with industry to set out greater detail on the criteria for grouping technologies as 'established' and 'less established', as well as on governance arrangements and further criteria for how technologies would move to the established category over time. Responses requested further information about the relationship of these groupings to the deployed and less deployed categories proposed by the EU in the draft EEA guidelines.

Rationale for technology groupings

11. The purpose of splitting CfD technologies into the two main groups is to implement a competitive process for mature technologies which will drive value-for-money and to provide confidence in support for 'less established' technologies in order to foster their long term potential and help secure a diverse renewables mix. The split reflects relative technology immaturity of Group 2 technologies, significant development costs and specific risk. We believe a sub-optimal auction process would result if technologies were not split in this way.
12. The new State Aid guidelines recognise different stages of development of renewable technologies and how competitive auctions should be applied, and sets out a number of conditions under which divergence from competition is possible. For established technologies, the move to competition reflects strong progress on cost reduction and the well-developed pipeline. The evidence on technologies will be kept under review and technologies may be moved between Groups if there is a strong case for doing so.

Rationale for inclusion of technologies in Group 1

Hydro

13. Hydro is a well-established technology which is already deployed at scale both in the UK and across Europe. The additional long term technical potential for hydro is limited, with only a handful of sites remaining in the UK.
14. The large majority of deployment is likely to be at small scale under the Feed in Tariff (FiT). The amount of deployment under the RO and CfD is likely to be limited in comparison to other renewable technologies. Therefore, the case for putting new-build small scale hydro projects greater than 5MW in the established technologies grouping is strong. There is limited potential for hydro to make a major additional contribution towards longer term decarbonisation targets and there is limited scope for further cost reductions, which are not driven by the UK market.

Onshore wind

15. Onshore wind is a well-established technology which has been deployed at scale in the UK for over 20 years, with some of the first commercial projects now being repowered. The actual technology and industry can be considered to be relatively mature and the supply chain well developed both in the UK and around the world. Current installed capacity in the UK is 7.3GW, with a further 1.5GW under construction and there are significant levels of deployment around the world.

16. There is also a large potential pipeline of UK projects with 5.41GW having received planning consent and a further 6.5GW currently in the planning system¹⁷. This means we are well on our way to reaching our ambition for 11-13GW of onshore wind by 2020 and that this ambition, and the potential longer-term contribution of onshore wind to decarbonisation, is unlikely to be jeopardised by a move to competitive allocation.
17. The trajectory of published strike prices reflects our view that there is some scope for further cost reduction in this sector. However, the available evidence suggests that drivers for cost reduction in the UK are more limited in the near term, and will not be held back by a move to competitive allocation. Technological developments, including the use of larger turbines, may contribute to reducing the levelised cost of energy, but these developments will be driven by global deployment.
18. At the same time, evidence from UK developers suggests that operation and maintenance costs have been increasing. Therefore in the years to 2020, the most significant contributor to reduced costs in the UK is likely to be a constrained and competitive allocation framework under which only the lower-cost projects come forward. The pipeline of onshore wind projects likely to commission before 2020, in an unconstrained scenario, is significantly larger than our stated ambition for onshore wind. By requiring projects to compete on cost, we will ensure that the projects which receive support are the lowest-cost and represent best value for consumers.

Solar

19. We consider solar PV now to be an established technology in the UK. Approximately 1GW of capacity was installed in 2013¹⁸, with approximately 0.7GW in 2012, 0.9GW in 2011, and 0.1GW in 2010. The large scale pipeline (≥ 5 MW), according to the Renewable Energy Planning database (REPD) estimates continued growth in coming years. The increase in deployment of solar PV, particularly at large scale under the RO has been rapid and difficult to predict. This has resulted in budgetary pressures on the RO but the Government is consulting separately on changes to the RO to address this higher than anticipated deployment. The Government is also consulting on changes to the FiT to stimulate deployment of PV on larger commercial and industrial roofs.
20. The European Investment Bank has noted that installed solar PV capacity in the EU increased from 10GW in 2008 to over 60GW in 2012, and investment costs decreased by more than 50% over the same period. Deployment in the UK solar sector will continue to be supported in the longer term by projected reduction in the cost of solar PV in the global market. This reduction in panel prices will be largely driven by manufacturing at scale in the Far East not by deployment in the UK.
21. There is a growing UK-based supply chain in Building Integrated PV (BIPV) products. R&D is vibrant in the BIPV sector, with novel new panel technologies becoming increasingly mature, including the ability to deploy generation integrated directly into buildings. There may be opportunities for the UK supply chain in BIPV, and it is possible that UK can drive down costs in the large scale building mounted sector though it is difficult to quantify by how much.
22. Solar PV is a technology which can be deployed quickly even at large scale. Deploying quickly over a short time period or at scale in the decades beyond 2020 is not dependent upon a certain volume of deployment in the UK. This is because of the significant

¹⁷ Source: Renewable Energy Planning database (REPD)

¹⁸ Some industry sources claim more than 1GW was installed in 2013 although this has not been verified.

deployment levels elsewhere and the fact that cost reductions are being driven outside the UK.

23. There is limited scope for further cost reduction through innovation/technological development in solar PV technologies in the large scale sector. There are opportunities for the UK supply chain in building integrated solar PV (BIPV), and there is significant scope for innovation in this sub-section. However, it is likely that this would mostly affect deployment under the FIT regime, except for some opportunities in the large scale building sector. Another opportunity for technology to influence solar PV at large scale would be in using energy storage to shift demand from PV from the brightest periods of the day, to all day. However, it is impossible to estimate the scale or significance of either of these.
24. While solar costs and support are currently higher than other technologies in Group 1, there is significant potential for cost reduction, particularly when the EU Anti-Dumping measures are removed in early 2016. Solar is anticipated to be the first large-scale renewable technology to be able to deploy without financial support at some point in the mid-to-late 2020s. However, because solar is a global market, and because the UK is a small part of the global market, it is likely that these cost reductions will largely occur independently of what the UK does. For these reasons the Government considers that there is a strong rationale for solar PV projects to compete on cost from the start of the CfD allocation process.

Sewage gas and Landfill gas

25. Sewage gas and landfill gas are both well-established technologies with substantial deployment globally.
26. Their respective strike prices are low, and there is limited scope for further cost-reductions. There is also limited scope for these technologies to make a significant additional contribution to decarbonisation in the longer term, and so they are included in Group 1. Therefore the Government considers there is a strong rationale for sewage gas and landfill gas projects to compete on cost from the start of the CfD allocation process to ensure value for consumers.

Energy from waste with CHP

27. Energy from waste (EfW) with CHP is a well-established technology with substantial deployment globally. There is limited scope for further cost-reductions and limited scope for these technologies to make a significant contribution to decarbonisation in the longer term.
28. Energy from Waste is well established in the UK with a significant number of projects already in operation. There are still barriers to the use of heat from EfW plants, as with other forms of CHP. Some consultation responses argued that EfW with CHP should not be subject to competitive allocation for these reasons. Government is working to address these barriers and to promote opportunities for supply of heat, for example via its heat maps and the work of the Heat Network Development Unit. Payment of gate fees for waste used by EfW CHP plants make them more able to compete on costs with more mature technologies, and reduce the impact of risks associated with loss of heat customers, compared with other CHP technologies. The Government considers there is a strong rationale for requiring Energy from waste with CHP projects to compete on cost from the start of the CfD allocation process to ensure value for consumers.

Rationale for inclusion of technologies in Group 2

Offshore wind

29. Offshore wind is the most scalable of the renewable technologies, and it is the renewable technology that has the most potential to make a significant contribution to decarbonisation goals, if required. There is significant long-term potential for cost reduction and it is at an early stage of deployment – DECC’s central estimate is a 25-30% reduction in central costs by 2030¹⁹, which could be higher depending on the level of deployment between now and then. The UK is the market leader for offshore wind, with the biggest pipeline to 2020, and deployment in the UK is therefore a key driver of cost reduction to 2020. In the absence of the UK continuing to invest, it is likely that potential cost reductions would not be realised in the short term, and the potential for further deployment beyond 2020, if required, would be limited.
30. The industry-led Cost Reduction Task Force²⁰ identified the potential for significant cost reductions by the end of the decade. Innovation (for example, support for next generation concepts such as new foundations types and larger, more efficient turbines) will play an important role in this, as will developers learning-by-doing and becoming more efficient (optimising installation, operation and maintenance). Increased deployment in UK waters will enable this innovation and learning, as well as driving supply chain investment through new entrants and expansion. This will bring competitive benefits, again adding downward pressure to costs.
31. Early investment in offshore wind is necessary to help provide the deployment to ensure longer term cost reductions, helping to minimise costs to consumers. The Government therefore considers there is a strong rationale to place offshore wind in Group 2.

Wave and tidal stream

32. Wave and tidal stream technologies are still at the demonstration stage and are not currently competing in the mainstream market. There are currently around c.10MW of wave and tidal stream capacity deployed in sea trial around the UK – more than the rest of the world combined²¹. We anticipate that by 2020, wave and tidal stream could reach 100-150MW in the UK alone. This deployment could then increase quickly beyond 2020 to reach GW-levels in the late 2020s-early 2030s; the Crown Estate have currently leased around 40 sites with a cumulative potential of around 2GW of wave and tidal stream deployment²². The UK is therefore a critical location to develop the long-term potential of this innovative technology.
33. The first arrays deployed within the first Delivery Plan period will constitute first-of-a-kind projects. While they are currently expensive, we anticipate that learning and economies of scale will allow significant cost reduction for the sector once a certain level of deployment has been reached (c. 200MW). Furthermore the European Commission recently published a Communication on Ocean Energy highlighting the need to encourage the development of wave and tidal stream technologies across Europe. The

¹⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/269888/131217_Electricity_Generation_costs_report_December_2013_Final.pdf

²⁰ 2012, Offshore Wind Cost Reduction Task Force Report, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/66776/5584-offshore-wind-cost-reduction-task-force-report.pdf

²¹ <http://www.iea.org/media/openbulletin/OES2012.pdf>

²² <http://www.thecrownestate.co.uk/energy-infrastructure/wave-and-tidal/our-portfolio/>

UK is thought to have around 50% of available wave resource in Europe, and around 25% of European tidal resource, and so deployment in the UK could be a large driver in global trends²³. Given that wave and tidal stream technologies currently have higher costs compared to other technologies, including those in Group 2, wave and tidal stream technology is very unlikely to develop and reach commercial deployment without a protected allocation. The Government therefore intends to place wave and tidal stream in Group 2 as well as define a 100MW minimum allocation, to support the long-term potential of these technologies in helping meet long term decarbonisation objectives as part of a diversified energy mix.

Advanced Conversion Technologies (ACT)

34. ACT supports electricity generated through the technologies of gasification and pyrolysis. Whilst the gasification of non-renewable fuels has been in use for decades, the UK is developing the innovative, new and more technically challenging gasification of waste to produce low carbon electricity.
35. Deployment so far has been at the demonstration phase, with the first commercial scale projects under construction or in the early stages of operation. Although gasification plants are in operation globally, the UK is leading the development of the gasification of mixed waste for energy.
36. ACTs are able to process a wide range of biomass and waste feedstock, and are scalable to the availability of the feedstock. While the Delivery Plan set out relatively low potential levels of deployment by 2020 (0.2-0.3GW), ACT has considerably long-term deployment potential - the TINA suggested 1-10% of energy demand by 2050²⁴, though this is highly uncertain and dependent on a wider range of factors.
37. Cost reductions are expected in the ACT sector, predicted to be in the region of 10-12% to 2030²⁵. There is potential for additional cost reductions to be achieved through innovations, and the bioenergy TINA estimated 12-33% cost reduction by 2050. Given that the UK is at the forefront of the gasification of waste to produce fuels and energy from waste²⁶, it is possible that cost reductions may not happen without UK deployment.
38. ACT also has uses beyond electricity and could be particularly important for the transport sector, or for industrial heat use, where the options for decarbonisation are currently more limited. Although fuels made from ACT are eligible for support under the Renewable Transport Fuel Obligation and the Renewable Heat Incentive, no deployment of ACT in heat or transport has taken place. The process by which ACT could produce transport fuel is currently at an early stage of development, and requires the first stages of processing as per producing gases for electricity generation. Therefore, further developing this early stage of the process has potential impacts for transport or heat as well, especially if significant cost reductions can be delivered through the electricity sector. Given that this could potentially be used in (for example) aeroplane fuels – where there are few alternative sources of decarbonisation – the potential is significant.

²³ Low Carbon Innovation Coordination Group (2012) 'Technology Innovation Needs Assessment: Marine Energy', available from: <http://www.carbontrust.com/media/168547/tina-marine-energy-summary-report.pdf>

²⁴ Technology Innovation Needs Assessment (TINA), Bioenergy Summary report, September 2012, <http://www.carbontrust.com/our-clients/b/bioenergy-tina>

²⁵ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/269888/131217_Electricity_Generation_costs_report_December_2013_Final.pdf

²⁶ It is believed there is only one other similar plant in the world, in the US. Other countries – e.g. Germany – are predominantly focused on using wood, technologically a more straightforward approach.

39. This means there is a potential benefit in supporting the electricity ACT sector now, to achieve diversification in technology and provide longer term decarbonisation in heat and transport as well as electricity, though the size of this potential is unclear at this stage. For these reasons the Government believes there is a strong rationale for placing ACT in Group 2.

Anaerobic Digestion (AD)

40. By 2020, as set out in the DECC AD Strategy and Action Plan between 3 to 5TWh of electricity generation was considered achievable. The final Delivery Plan set out an aspiration of around 0.5-0.6GW of AD deployment, of which 0.2GW would be funded through FITs. The majority of AD – including that funded through the RO or potentially through CfDs – is likely to be small scale (below 5MW), although around one third of the capacity of consented or operational plants is 5MW or over. Larger plants may offer economies of scale if there is sufficient available feedstock.
41. AD could a significant contribution to low carbon energy in the future. Whilst the cost reduction potential is likely to be limited over the current Delivery Plan, due to the limited scope for deployment of large scale AD, and to 2030 (as per DECC cost projections) the TINA suggests there is scope for cost reductions up to one third by 2050.
42. Ultimately the Government expects biomethane to contribute to the decarbonisation of heat and transport fuel but it is expected that the deployment of AD in the electricity sector will provide an alternative option while the barriers to delivering biomethane as a heat and transport fuel are addressed. The initial stages of the AD process convert wet wastes into biomethane; this can be used in industrial heating, or be converted to HGV fuel in the longer term. Therefore, support for AD electricity generation could help realise the potential in heat and transport in future years. Processing waste in AD plants also contributes to the Government's objectives on carbon reduction and waste management in the farming and waste sectors.
43. For these reasons the Government believes there is a strong case for placing AD in Group 2.

Dedicated biomass with CHP

44. The 2012 UK Bioenergy strategy²⁷ identified biomass combined heat and power as an important low-risk energy deployment pathway that will contribute both to our 2020 renewables target as well as longer term decarbonisation objectives. In terms of carbon saving, CHP offers greater value for money compared to power-only biomass plant due to its higher resource efficiency and potential to deliver cost effective renewable energy in the longer term. It is also one of the few technologies which are suitable as a replacement for fossil fuel where base load electricity and high heat loads are required, such as in industrial applications.
45. Analysis from the Bioenergy TINA²⁸ suggests that technology innovation will be needed which focuses on improvements to current systems, increasing efficiencies and developing boilers which are robust to a wider range of feedstocks. The report highlighted that there are significant market failures to innovation and that the UK, given the design of its energy infrastructure (limited local heat network coverage), cannot rely

²⁷ UK Bioenergy Strategy, April 2012

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48337/5142-bioenergy-strategy-.pdf

²⁸ Low Carbon Innovation Coordination Group (2012) Technology Innovation Needs Assessment (TINA) Bioenergy Summary report September 2012

on other countries to develop the technologies which could then be utilised. It also identified biomass CHP as one of the few renewable technologies suitable for large scale industrial heat applications.

46. There are only eight good quality solid biomass CHP plants (totalling 130MW) currently operational²⁹ in the UK, although more are under construction/commissioning. Total deployment by 2020 is projected to be in the range 300-600 MW. However, this capacity will make a disproportionately higher contribution to the UK's 2020 renewables targets, due to the corresponding contribution it makes to renewable heat.
47. Significant potential remains for technological improvements in biomass CHP, in particular in boiler design. The most efficient plant currently under commissioning are the first in the UK to use fluidised bed, rather than moving grate, boilers. Electrical efficiencies of these plants are expected to be up to 10% higher than plant deployed five years ago and developers anticipate further increases in electrical efficiency for projects currently in the early stages of development based on data submitted to the CHPQA programme. Unlike other technologies, we proposed that the strike price for biomass CHP should remain stable over the LCF period; this recognises that while we expect to see a reduction in capital costs over time, including the heat infrastructure, we expect that feedstock prices will rise with inflation and are likely to track global wood prices.
48. Although biomass CHP technologies are similar to those of biomass power only plant, biomass CHP faces greater challenges in securing investment, which has limited its deployment. CHP inherently operates in both electricity and heat markets. The lack of a liquid market for heat in the UK e.g. in the absence of widespread heat networks, means that biomass CHP projects need to secure long-term heat supply contracts with creditworthy counterparties in order to secure investment. This means that they face higher project hurdle rates than power-only projects.
49. Biomass CHP is therefore included within Group 2, given its potential contribution to both the power and heat sectors and its use in large scale industrial heat applications.
50. Some consultation responses expressed concerns over the inclusion of biomass CHP in the list of less established technologies and feared that plant with low efficiencies might be brought forward under these arrangements. Plants will be required to meet CHP Quality Assurance requirements in order to be eligible for the biomass CfD strike price. These requirements are designed to ensure that plants deliver primary energy savings of at least 10%³⁰ relative to separate generation of heat and power and were updated, for new plant, as of 1st January 2014 to reflect improvements in plant electrical generation efficiencies. We will keep the need for further updates of these requirements under review for new plant to reflect technological improvements.

Geothermal

51. Whilst electricity generation from geothermal is well established in active tectonic zones such as Iceland and New Zealand, there are currently no deep geothermal power plants in the UK. A recent report by Atkins (2013)³¹ on deep geothermal power suggested a possible best case potential of up to 3-4% of current average UK electricity demand. The major barrier facing the sector's development is the upfront risk and the uncertainty of the

²⁹ Data from CHP Quality Assurance certification database

³⁰ For all plant of 1 MW electrical capacity and above

³¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/251943/Deep_Geothermal_Review_Study_Final_Report_Final.pdf

resource. The Government has prioritised support for the development of deep geothermal heat schemes which supports the Government's ambition for heat network development. Heat only schemes may contribute to cost and risk reductions across the geothermal sector. Although the sector overall is judged by the European Commission as having "huge potential", the Atkins report concluded that the UK does not have a natural comparative advantage in the sector.

52. The Atkins report notes that capital costs are expected to reduce over time if the technology becomes more commonly deployed. This will be due to increased business efficiencies from competition entering the market. The increased volume of production and supply of capital plant will also reduce costs. The Atkins report also considered the supply chain benefits of the deep geothermal power sector. Based on the estimated potential development of plants between now and 2050 and the average cost figures in the report, the capital value for the industry was estimated at £250 million per annum.
53. It can be anticipated that as the technology matures, and the global geothermal market grows, the cost base will decrease and projects will become increasingly affordable. Some of the innovations considered in the Atkins report will develop naturally as part of the global evolution of deep geothermal for power generation. Other innovations include UK-focussed financial modelling and the improvement of the UK geological understanding and associated targeted drilling.
54. Deep geothermal power may be spurred by the development of heat only schemes in the UK (there are a number of heat projects in planning or proposed following the recent uplift in the Renewable Heat Incentive) and the capacity for power plants to also supply heat, where suitable heat loads are present.
55. Given the embryonic nature of this technology in the UK, and its long-term potential, geothermal is included in Group 2.

Part 3: Detailed analysis of the January consultation responses

1. The consultation asked two key questions:

Question 1: “Do you agree with the Government’s proposed list of “established” and “less established” technologies?”

Question 2: Do you agree that the “established” list of technologies should be subject to competition from the outset of an allocation process as part of helping to manage the LCF and delivering value for money?

2. It also set out ‘other considerations’ that stakeholders should consider when responding:

This document has set out how competition might operate for more established technologies in order to manage calls on the overall budget and the likely requirements of State Aid rules. We would welcome comments from respondents on whether and how they would amend their responses to the questions asked in this consultation if, in light of those factors, the Government was also required to amend the RO for more established technologies as a result.

3. We received 94 responses from industry, investors, consumer groups and individuals. We also received 1254 responses through a co-ordinated campaign in opposition to the use of Biofuels³². 72.3% (68 responses) were from generators and industry groups, 5.3% (5 responses) were from the investment community, and about 8.5% (8 responses and the Biofuels campaign) from consumer groups and individuals. Other responses (13) accounted for 13.8%. A full list of non-confidential respondents is provided at Annex B.
4. Responses covered these key questions, but also ranged more widely covering suggestions on treatment of technologies, minima and maxima, auction design, CfD budget setting and management, LCF management, and State Aid and EU engagement. Respondents also gave detailed comments and suggestions for how Biomass conversion and Scottish islands projects should be treated.
5. These wider ranging responses are also summarised in this document, and have been considered as we develop our future policy approach on these issues. This is without prejudice to consultation responses to the present document on minima and maxima within technology groupings and treatment of biomass and Scottish islands projects, through which all stakeholders will have the opportunity to comment on our detailed policy proposals.

Question 1: Established or less established?

Question 1: Do you agree with the Government’s proposed list of “established” and “less established” technologies?

³² These campaign responses, are treated as one response in the percentages set out in this document, in order to convey the range of opinions received through the consultation. Two campaign responses which specifically requested to be treated as individual responses have been classified as such.

6. Of the 94 responses received, 51 (54%) agreed or agreed with qualifications; 27 (29%) disagreed and 16 (17%) did not respond to this question or felt unable to comment.
7. The majority of respondents indicated in their responses that they broadly accept the technology groupings as set out. A number also indicated that their view was provisional until final details of treatment of biomass conversion, Scottish islands and any minima or maxima for technologies to apply within Groups had been publicised, and with the caveat that limited information on how the competitive process will operate makes it difficult to understand what the true impacts of the proposals will be.
8. Consumer groups agreed that all the technologies on the 'established' list should be in this grouping. However, they felt that offshore wind should also be in the 'established' grouping, since the expected volume of offshore wind projects should provide sufficient liquidity for a competitive bidding process. The point was raised that the proposed design could favour a more expensive technology (Offshore) over less expensive technologies, and therefore results in less value for consumers.
9. There was concern that Offshore Wind could disadvantage other less established technologies such as ACT. Unless the less established grouping is managed between technologies, stakeholders perceived danger of less established technologies promoted by small independent generators being crowded out.
10. Non-GB developers suggested that a separate Group for these projects could be created under the Intergovernmental Agreement currently being developed between the UK and Republic of Ireland.
11. A number of respondents also commented on treatment of biomass and Scottish islands projects and offered suggestions as to how these should be treated, as well as making comments on individual technologies, including suggestions on how minima or maxima could apply to technologies within groupings. We also received detailed comments on treatment of particular technologies.

Nuclear and Carbon Capture and Storage

12. Consumer groups stated that nuclear should be added to the established group due to fact that it provides a higher proportion of EU power than any other generation technology. It was also suggested that Carbon Capture and Storage (CCS) should be added to less established group.
13. Generators highlighted the significant impact CCS could have on LCF budget and asked for clarity as to where funds for these projects will come from and in what delivery year these would impact on the LCF.

Wave and Tidal Stream

14. The proposed 100MW minimum for wave and tidal stream was raised and endorsed by developers in that sector and other renewable industry organisations. Developers note that wave and tidal stream should be treated differently as tidal stream will likely reach scale before wave alone in first Delivery Plan period. It was recommended that an additional ~40MW minimum for wave energy could be introduced in parallel with 100MW for tidal stream. Developers would like Government to keep any such minimum under review and develop plans for ensuring further investment once this is reached.
15. There was some argument that more tidal stream power could come forward than anticipated by Government in the Delivery Plan projections before 2020 and questions about what would happen if the proposed minimum is exceeded.
16. Wave and tidal stream technologies currently have higher costs compared to other technologies. Without a protected allocation wave and tidal stream are very unlikely to

develop and have the potential to reach commercial deployment. For this reason, the Government intends to place wave and tidal stream in Group 2 and have a 100MW minimum allocation, to give the technologies the chance to develop and to get a better sense of what potential contribution they could make to longer term decarbonisation objectives. We do not consider that the current pipeline warrants the complexity of two separate reserved allocations. The Government therefore intends for the minimum allocation to apply across both wave and tidal stream technologies.

Hydro Power

17. A suggestion was put forward that there is merit in providing support to large scale refurbished hydro and request for clarity on where this would sit.
18. There is currently no provision for repowering of large-scale hydro power plants under the CfD. However, the Government will continue to engage with the sector to consider whether there may be a need for such provisions in the future.

Solar PV and Onshore Wind

19. Some solar PV and onshore wind developers, as well as other industry respondents suggested that these technologies should be considered less established or placed within the same Group as less established technologies. Detailed arguments included that:
 - There is evidence of declining costs, and further cost reduction potential for these technologies.
 - Achieving a greater proportion of the renewables mix from these cheaper technologies would result in reduced pressure on LCF and better value for money for consumers.
 - There is potential for these quicker deploying technologies to contribute to mitigating capacity margin shortfall.
20. We accept that there can be further cost reductions in both onshore and solar – indeed the introduction of competition should incentivise this. However these technologies do not meet the other criteria for Group 2 – in particular further cost reduction is unlikely to be driven by deployment in the UK as both of these technologies are well established in other parts of the world.

Offshore Wind

21. The majority of respondents agreed with the classification of Offshore wind as a less established technology or did not express an opinion. However other views included:
 - Consumer groups believe that Offshore wind should be moved to the established list due to fact that it may be the highest volume source of UK renewable electricity in future, and that the volume of Offshore Wind projects should provide liquidity for a competitive bidding process. However they recognise that Offshore is less mature than others in the established list. They suggest opportunities for halfway-house arrangements, for example a protected auction for Offshore wind only but with a maximum bid still subject to the admin price cap.
 - Some generators, including in the Offshore sector consider that Offshore should not be classed as less established. Arguments put forward include that there is no evidence that costs will be coming down in the near future, and that improvements in foundation design, construction processes and maintenance efficiencies, coupled with

a strong pipeline and the entry of financial backers into the sector suggest a stable established technology.

- There was challenge to the definition of Offshore as less established on the basis that it is more deployed than solar PV, and should compete under the emerging EU guidelines.
- It was suggested that a separate budget Group could be developed for Offshore wind to avoid it squeezing out other technologies in the less established grouping.
- Concern was expressed that under the European Commission's current definitions expressed in the draft EEA guidelines, offshore wind could move into the 'mature' category in a short period of time, exposing it to competition with other sectors at an early stage, and potentially stifling development of an emerging sector.

22. The Government considers that there is significant potential for cost reduction in offshore wind; a view which was endorsed by the industry led Cost Reduction Task Force in 2012³³. The Government also considers that deployment in the UK is necessary and a key driver of cost reduction to 2020 because of the UK's leading role in offshore wind deployment. In the absence of the UK continuing to invest and deploying a sufficient volume, it is likely that potential cost reductions would not be realised in the short term, and the potential for further deployment beyond 2020 would be limited and more expensive than it otherwise would be.

Biomass CHP

23. We received 1254 responses from individuals through a co-ordinated campaign which stated that biomass CHP and other biomass technologies should not be considered less established, and should not be enabled to participate in Government support schemes on the grounds that these technologies cause high carbon emissions and are reliant on imports of wood pellets which are sourced from wetland forests in the southern United States. These responses claimed that biomass is less efficient than other renewable technologies and referred to the Government's 2012 UK Bioenergy Strategy.

24. Representation from the Wood Panel industry argued that biomass CHP should be listed as an established technology to ensure only a limited number of plant comes on stream and thus reducing risk of damaging sectors like the wood panel industry. Some consultation responses expressed concerns over the inclusion of biomass CHP in the list of less established technologies and feared that plant with low efficiencies might be brought forward under these arrangements.

25. Plants will be required to meet CHP Quality Assurance requirements in order to be eligible for the biomass CfD strike price. These requirements are designed to ensure that plants deliver primary energy savings of at least 10%³⁴ relative to separate generation of heat and power and were updated, for new plant, as of 1st January 2014 to reflect improvements in plant electrical generation efficiencies. The Government will keep the need for further updates of these requirements under review for new plant to reflect technological improvements.

³³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/66776/5584-offshore-wind-cost-reduction-task-force-report.pdf

³⁴ For all plant of 1 MW electrical capacity and above

Comments on technologies yet to be assigned to a technology grouping

26. We set out in the consultation that we are currently considering our approach to biomass and Scottish islands in relation to the technology groupings. A number of consultation responses chose to offer views on these issues which are summarised here.

Biomass

27. Some support was expressed for biomass conversion being treated differently from other biomass technologies.
28. One response suggested that biomass could be placed within a third, or transitional technology category and recommended that Government undertakes scenario modelling of the impact of each of the options for biomass conversions (established grouping, less established grouping or separate budget Group) prior to presenting their proposals for consultation. The rationale for this included that biomass conversion costs and strike prices fall between the established and less established technologies. The inclusion of biomass as an established technology would place it as the highest cost out of these technologies. For example, biomass conversion is only available in relatively large projects, as an entire unit of an existing power station must be converted. Investors may not proceed if they judge that biomass conversion is unlikely to secure a sufficient volume under competitive allocation, given that it has the highest cost of the competing technologies. Placing biomass conversion in the established technologies category may limit investment because of the perceived allocation risks. Respondents also highlight the supply chain challenges biomass must overcome to become more deployed including limited biomass feedstock (pellet) availability and lack of rail and port infrastructure.
29. One response from the biomass conversion sector argued that Government should aim to bring forward 3.4 GW of biomass in line with the high deployment scenario set out in the Delivery plan. Views differed as to whether this should take into account existing deployment under RO and planned deployment under FID Enabling for Renewables.
30. Another view put forward was that biomass should be considered less established, as this sector does not yet demonstrate an established responsive supply chain, and has not realised the benefits of early R&D. It was also noted that although there is little further scope for cost reductions in biomass conversion technology, conversions will help to deliver significant reductions in biomass fuel costs for future use.
31. Independent generators argued that biomass conversion should be included in the “established” category on the basis that it is relatively well understood, has experience of managing international supply chains & developing plant specific infrastructure and is not expected to provide significant cost reductions. The strike price for biomass is comparable to those technologies included in the established category, and therefore it would contribute to competitive tensions within that Group (driving value for money).
32. Other responses which set out points in favour of grouping with established technologies, argued that biomass conversion uses an established technology and pre-existing installations from a mature industry. It was noted that biomass conversion should be treated as a mature technology to ensure consistency with approach at EU level, as biomass supplies more than 1-3% of EU electricity production and so would be classed as “deployed” under the EEA Guidelines.
33. There was a suggestion that a cap should be introduced on the maximum amount of capacity any biomass conversion project can secure in an allocation round, or that biomass should be otherwise handicapped through the CfD auction design to avoid the risk that these projects use up a significant proportion of CfD budget, thereby disadvantaging other technologies.

34. Currently the UK has 580MW of biomass conversion in operation and a further 900MW which is being trialled at Ironbridge. The FID Enabling for Renewables process is expected to deliver a further 1GW of conversion. The Government considers that this should be a sufficient level of deployment to provide industry will sufficient learning such that subsequent projects can be delivered at lower risk and cost. For these reasons the Government therefore considers that biomass conversion should be placed in a separate Group and subject to an immediate competitive process of CfD allocation.

Scottish islands

35. Comments against including Scottish islands projects in the established category noted that:

- There may not be potential for significant cost reduction.
- It could set a precedent for treatment of non-UK projects, thereby limiting budget for UK projects.
- The higher costs for Scottish islands projects as reflected in existing strike price proposals.

36. Some generators suggested that Scottish islands should be included in the established category as they are effectively the same technology as mainland onshore wind.

37. Other suggestions were that Scottish islands projects could be placed in the established category, with a minimum to support transition to competitive allocation at a later date, once the technology had reached sufficient scale and the effects of grid costs reduced or by decoupling the cost of HVDC connection investment.

38. Alternative responses noted that Scottish islands could be placed in a separate 'transitional' category as these projects do not easily fit within the established or less established groupings. The unique characteristics of these projects that responses noted include: higher cost transmission than other onshore projects, possibility of island specific modification to larger turbine design to address weather conditions, deployment will always be at a relatively lower volume meaning that potential for cost reduction is less than mature technologies.

39. The Government proposes to continue to treat wind generation on the Scottish islands as a separate technology grouping from onshore wind located elsewhere in the UK. The Government considers that development of onshore wind projects on the Scottish islands will facilitate the construction of transmission links that can deliver a considerable range of longer term benefits and cost savings to the renewables industry in other technologies in the UK and beyond. We are consulting today on including these projects in the less established technology grouping³⁵. However, the Government notes that there are key differences with the other technologies proposed for Group 2; principally in that the cost reduction benefits will not accrue directly and only for the projects themselves, but will have broader benefits. The Government is therefore seeking views on an alternative option on including these projects in a separate Group (Group 4).

Generation outside of the UK

40. Responses from wind developers based in the Republic of Ireland indicated that Non-GB generation should be permitted to operate in the same technology grouping as eventually finalised for the Scottish Islands projects. They suggest that innovative projects utilising

³⁵ <https://www.gov.uk/government/consultations/electricity-market-reform-further-consultation-on-allocation-of-contracts-for-difference>

HVDC transmission should be included within the less established grouping of technologies and allowed to compete on a level playing field; similar points were made by Interconnector developers. Alternatively, these could compete as an onshore technology with an allowances made to cover for the increased costs of transmission.

41. Responses also suggested that technology groupings as they stand could also apply to non-domestic projects – i.e. offshore non GB projects could fall within the grouping with UK offshore, and onshore projects compete alongside GB onshore projects.
42. The timeline and process for dealing with projects located outside the UK has not yet been determined, and the Government expects to make further announcements in the coming months. It is our intention that access to CfDs for projects located outside of the UK will be fully integrated into the EMR competitive system as it evolves.

Question 2: Competition for established technologies from the outset?

Question 2: Do you agree that the “established” list of technologies should be subject to competition from the outset of an allocation process as part of helping to manage the LCF and delivering value for money?

43. Of 94 responses received, 37 (39%) agreed or agreed with qualifications; 30 (32%) disagreed and 27 (29%) did not respond or felt unable to comment.
44. The majority of respondents acknowledged the need to control the LCF budget. A high number of generators raised concerns about the earlier move to competition and the impact this would have on project and investment risk.
45. Some responses indicated that industry was aware that there was potential for a move to competitive allocation for some forms of technology, as set out in the October EMR consultation and December Delivery Plan and many welcomed the clarification given. Many recognised that it was unlikely that First Come First Served (FCFS) would be possible due to budget pressure.
46. Of those that agreed, a number of generators support the principle of a move to earlier competition in general, whilst some responses from larger generators indicated support on the basis of move to early competition for established technologies in particular (as opposed to wider competition).
47. Groups representing heavy industry generally welcomed the move to immediate competition for ‘established’ technologies. This was caveated with the point that the size of the budgets will ultimately determine their support. Energy Intensive Industries were very supportive of the move to competition and want to see consistency between the competitive CfD regime and the RO and ssFITs. Consumer groups welcomed the move to competition, which should lead to efficient use of the LCF budget, and better value for money for consumers. They argue that the majority of the budget should be allocated to the ‘established’ grouping, since these are cheaper technologies.
48. Within the responses that disagreed, Independent generators were very concerned about the move to immediate competition, and a number indicated that the proposed move away from First Come First Served had not been anticipated. Moreover, Independent Generators considered that the move to immediate competition could put them at a disadvantage in comparison to vertically integrated utilities. It was also noted that smaller, community-sized projects could be less likely to come forward under competition as they are far less able to manage the increased allocation risk. One suggestion for combating this was to increase the threshold for introducing competition from 5 to 10 MW to encourage smaller sites coming through.

49. Other Generators who disagreed urged Government to keep either a period of 'First-Come-First Served' process, or a period of unconstrained allocation with a view to moving to competition over time on the basis that this would provide minimum disruption to investor certainty, especially for projects that are currently being developed. A number of developers including those in the onshore sector indicated that they have invested significantly on the basis of the RO and latterly on expectation of FCFS.
50. A small number of generators mentioned the possibility of competition for the less established grouping and requested clarity on this. Offshore Wind developers highlight that projects are already making major procurement decisions which will impact the prices that they could eventually quote. Many of these decisions are being made prior to the supply chain plan submission opening in July 2014, and they therefore expressed concern about the possibility of competition.
51. Investors disagreed with the proposals and are concerned about the uncertainty created by the move to early competition for 'established' technologies at such an early stage. This concern is only magnified by the uncertainty around the RO. It is argued that, in the long term, the move to competition will create additional pressure on the LCF, since there will be a reduction of early stage development of onshore wind and solar projects, and an increase in development of more expensive, less mature technologies.
52. There were requests that DECC provide greater clarity on when technologies would become established and for a timetable for merging the two groupings, moving to a technology neutral approach to competition.

Other considerations

53. The January consultation also set out 'other considerations' that stakeholders should consider when responding:

This document has set out how competition might operate for more established technologies in order to manage calls on the overall budget and the likely requirements of State Aid rules. We would welcome comments from respondents on whether and how they would amend their responses to the questions asked in this consultation if, in light of those factors, the Government was also required to amend the RO for more established technologies as a result.

54. A high number of generators responses considered that the transition process for the Renewables Obligation (RO), as set out in consultation in 2013, should be protected and remain stable. Generators are concerned that significant investment decisions have been taken under the confidence that projects will be able to secure RO support as currently offered under Government policy. They argue any change to this will result in a retroactive shift in renewables policy and risk damaging the UK's reputation among investors. They also highlight that the transition proposals have already been extensively consulted on and that this would be a substantial reversal of policy. Offshore wind developers indicated that there could be particular difficulties for this sector given long lead times to development and suggest that any changes should be restricted to the grouping of established technologies.
55. Investors feel that the RO is a stable support mechanism, and any unforeseen change to it would affect the whole industry, and not just 'established' technologies. They believe that the ROC regime needs to be maintained to provide stability and certainty for near term projects.
56. A number of generators called attention to the risk that an early move to competition could lead developers into choosing the RO for eligible projects rather than opting for

CfD during the period of transition. They indicated that this would be considered a significant change in the arrangements and would appear to go against the original policy intent to have two equally attractive instruments in parallel during transition. There was some argument that competitive auction would endanger its success if it co-existed with other support for Government (i.e. in favour of action on RO). It was suggested that constraining CfD without restricting access to the RO could lead to gaming between support schemes.

57. One suggestion for mitigation of the challenges arising from transition was that developers who wish to accredit under the RO should be required to pre-notify DECC of choice of scheme before December 2014. It was noted that without a pre-notification regime, there is a risk that a project could be sanctioned under the RO but the government subsequently intervenes and closes the scheme before it is able to accredit, and that this issue could be exacerbated if the opportunity to secure a CfD is no longer available due to budgetary constraints.
58. Respondents queried whether the new EU guidelines could mean that earlier constraint to the RO was required- pointing to previous EU policy that transition schemes would not be affected. A number suggest that the EU Commission guidelines as currently drafted would not require amendment to the RO as it is an existing scheme- and therefore question this as a rationale for competition.
59. Consumer groups encouraged the Government to set out how the RO transition will work, and how it will ensure developers do not simply take up the RO to avoid competitive CfD allocation as this could undermine the approach proposed in this consultation.
60. Northern Irish (NI) generators flagged that RO transition is critical for NI projects that will come on-stream later on in the Delivery Plan period.

Other key themes

Comments on process for developing rationale for technology groupings

61. A number of industry stakeholders called for more detail on the criteria for the established and less established groupings. They also suggested that Government should make clear on what basis technologies would move from the less established category to the established category. Independent Generators suggested that a target date should be set for the reclassification of each “less established” technology as “established” to encourage progress towards technology neutral auctions along a clear trajectory, and to ensure a level playing field for technologies to compete. This transparency was viewed as important for investor confidence.
62. It was proposed that Government should develop and publish criteria which would make this more explicit, with examples put forward including the deployment levels of a certain technology (both national and international), the maturity of the supply chain, and possibilities for further cost reductions. Other potential tests for movement of technologies from the less established to established category included: contracted capacity targets per technology, numbers of participants in the sector, technology convergence, numbers of successfully operating installations, bankability and cost per MWh and cost trajectory.
63. Some respondents suggested that Government should use a percentage deployment definition- as under the deployed and less deployed definitions currently in development by the EU and set out in the draft EEA guidelines. Other responses indicated that the UK

should follow EU definitions in the draft guidelines more closely rather than using member state specific definitions.

64. Independent Generators asked for clarity on the controls that will be in place to avoid over-deployment of “less established” technologies if those technologies fail to achieve cost reductions which would enable them to compete with “established” technologies within a given time period.

Comments on Minima and Maxima

65. We set out in January that we will consult further on any proposals to introduce technology specific minimums or maximums. Please see the further consultation on technology groupings and the use of minima and maxima published today³⁶.

66. However, a number of respondents to the January consultation offered suggestions as to how we could use minima or maxima to achieve objectives for specific technologies, or manage the budget. These comments, along with other comments on this topic received through the October 2013 EMR consultation, have been fed into development of our policy position set out for consultation in this document. However, this is without prejudice to further responses we receive on this topic before confirming our policy position in a Government response in July.

67. Detailed comments on minima and maxima included:

- Argument in favour of a minimum for all technologies, including established technologies to increase investor confidence
- No maxima for any cheaper technology to maintain value for money for the consumer
- Arguments for a minimum for individual technologies:
 - A clear definition of minima for technologies within the “less established” grouping, providing some degree of certainty to investors to facilitate the high up-front costs, is essential as it is not clear how long unconstrained allocation will last.
 - Concern that biomass CHP cannot compete with Offshore wind- and therefore argument for a minimum for biomass.
 - A minimum for Offshore wind to increase certainty and ensure deployment. It was recognised that the setting of the budget level for less established technologies could have the same effect.
 - Argument for an ACT minimum across CfD & RO of 1 GW on the basis that the current 300MW prediction for ACT that has been included in other documentation on EMR would not be sufficient to cover projects currently in operation or development that will be supported by the RO, and concerns about Offshore wind using up the budget within the less established grouping.
- Suggestion of a minimum for smaller generation sites (5MW to 50MW) to ensure diversity of generation away from the current small number of portfolio-generation owners to a wider ownership structure, which in turn could support the development of a wider pool of retail market participants.

Comments on auction design

68. Some consultation responses also included proposals and comments on the design of auction under competitive allocation. We are currently finalising design of the auction

³⁶ <https://www.gov.uk/government/consultations/electricity-market-reform-further-consultation-on-allocation-of-contracts-for-difference>

following detailed stakeholder engagement. We set out further details to stakeholders in an open letter on 12 February. The draft allocation framework, published on 8 April³⁷ set out the final design and gave an opportunity for comment before this is finalised ahead of the first CfD allocation round in October 2014.

69. A key theme which emerged was concern that independent generators could be disadvantaged in relation to larger companies which could spread risk across a profile.

70. Generators requested clarity on elements of auction design including:

- How will the capacity be allocated (if at all) between competing technologies?
- Whether the auction will be run on a pay as bid or pay as clear basis?
- How will budget allocation for established and less established technologies will be set and how much visibility over the longer term participants will have of this process?
- How the budget for each Group will be split between allocation rounds and consequently how much of the budget will be held back for future allocation rounds covering the same commissioning year?

Comments on CfD/LCF Budget

71. Respondents referred to the challenges inherent in setting the CfD budget- including the interaction with the RO and ssFIT schemes within the LCF, and the impact that any future changes to the Carbon Price Floor could have. It was emphasised that investors need to have visibility on how all these different components fit together into the overall LCF Governance framework in order to understand the impact this will have on investment decisions.

72. Generators noted that information on Government policy for CfD budget allocation and budget management is critical for assessing allocation risk and to reduce the likelihood of a hiatus in development. Information on the budgets for “established” and “less established” technologies (i.e. budget levels for technology groupings) is important to enable stakeholders to better quantify the impact of different deployment and budget constraint scenarios.

73. The frequency of CfD auction rounds was raised by a number of respondents who asked for clarity on this. Independent Generators noted that DECC should consider holding allocation rounds more frequently than twice a year for the established technologies to mitigate the risk of project delays. As the planning system is highly unpredictable, minimising as far as possible the interval between a project receiving planning permission and securing a CfD would speed up the development process.

74. Non GB developers expressed concern that allocating CfD budget too quickly could disadvantage projects targeting completion later in the Delivery Plan period, if there is less available budget by the time they come to apply. They argue for staggering release over a number of allocation rounds to prevent this. Northern Irish developers raised similar points noting that the allocation and auction framework, as well as the rules around the management of the CfD budget should take into account the fact that CfDs will not be available to generators in NI until approximately 2016.

³⁷https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/301968/Contract_for_Difference_Draft_Allocation_Framework.pdf

Comments on consultation process onward EMR programme, and State Aid

75. Some concern was expressed at the indicative timetable for sharing budget information in summer 2014 on the basis that this is too late for projects which need to take investment decisions now. Responses also requested clarity for projects commissioning in the next Delivery Plan period.
76. A number of respondents queried whether clearance of our State Aid Case would require early competition. Respondents also point to previous EU policy positions that support a transition to competition and query whether the Commission would require early RO closure in order to demonstrate early competition in CfD. Respondents indicated that Government should seek to defend the planned RO transition arrangements in the revision of the EU State Aid guidelines as any amendments would significantly undermine developer and investor confidence.

Annex A List of Respondents to the January Consultation on competitive allocation

The following table lists all non-confidential companies and organisations which have responded to the consultation.

AB Sugar
ABO Wind AG
ABO Wind NI Ltd
Air Products
Airvolution Energy
AMEC Wind Developments
Banks Group
Bellenden / Independent Renewable Energy Generators Group (IREGG)
Brandis Ltd
Broadview Energy Limited
Chemical Industries Association
CLG Energy Consltants Ltd
Combined Heat and Power Association
Community Windpower Ltd
Consumer Futures
Coriolis Energy
Digital Derbyshire, Derbyshire County Council
DONG Energy UK
Drax
E.On
Ecofin Research Foundation
Ecotricity
EDF Energy
EDP Renewables
EEF The Manufacturers' Organisation
Eggborough Power Ltd
Element Power
Ener-G
Energy Intensive Users Group
Energy UK
Environmental Services Association
ESB
FME Training Ltd
Forth Energy
Gaelectric

GDF Suez
Gent-Fairhead &Co Ltd
Good Energy
Greenpeace UK
Helius Energy
Hi Energy
Infinergy
Infinis
InfraRed Capital Partners
Invensys / Imserv Europe (??)
Livos Energy
Low Carbon Finance Group - Chatham House
Mainstream Renewable Power (Near Na Gaoithe)
Marine Current Turbines Ltd
National Grid
Navitus Bay Wind Park
NEAS Energy
New Earth Solutions/ NEAT Technology Group Ltd
NRGECO Ltd
Optimum Energy
Oriel Windfarm Limited
Peel Energy Limited
Pelamis Wave Power Ltd
Pelamis Wave Power Ltd on behalf of the Marine Energy Programme Board
Pennant Waters
REA
Regen SW
Renewable Energy Foundation
Renewable Energy Systems Ltd
Renewables UK and Scottish Renewables Joint Response
Repsol Nuevas Energias UK Ltd
RWE Innogy UK Ltd
Scottish Power
Scottish Renewables (supplimentary response)
Shanks Group Plc

Annex A List of Respondents to the January Consultation on competitive allocation

Solar Trade Association
Solarcentury
SSE
Statkraft AS
Statoil
Tata Chemicals Europe
Tees Valley Unlimited
TGC Renewables
The Carbon Capture & Storage Association
The Crown Estate
The Whitehouse Consultancy on behalf of REG Windpower
TMA Data Management
University of Exeter
US Industrial Pellet Association
Vattenfall AB
Velocita Energy Developments Ltd
Vestas Wind Systems
West Coast Energy Ltd
Which?
Wood Panel Industries Federation

Glossary

ACT	Advanced Conversion Technologies
AD	Anaerobic Digestion
Allocation	The process by which CfD contracts will be awarded to applicants
AF	Allocation Framework
CfD	Contract for Difference
CHP	Combined Heat and Power
DECC	Department of Energy and Climate Change
EC	European Council
EU	European Union
EMR	Electricity Market Reform
EU	European Union
FCFS	First Come First Served
FID	Final Investment Decisions
FITs	Feed-in Tariffs
LCF	Levy Control Framework
MW	Megawatt
PV	Photovoltaic
R&D	Research & Development
RO	Renewables Obligation
SA	State Aid
ssFITs	small scale Feed In Tariffs
SO	System Operator, National Grid

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