Department of Energy & Climate Change

Swansea Bay Tidal Lagoon: potential support for the project through the CFD mechanism

Stakeholder Engagement Document

January 2015

URN 15D/015

Any views in relation to this document should be sent to us at ORED.Stakeholderengagement@decc.gsi.gov.uk

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General information

Purpose of this document

Tidal Lagoon Power Ltd (TLP) has a well-developed proposal for a tidal lagoon project in Swansea Bay and is seeking a Contract for Difference (CFD) for the project to enable it to proceed. DECC is considering entering into a bilateral negotiation for a CFD with TLP.

In line with the Electricity Market Reform (EMR) Delivery Plan and the Government response to the consultation on directions to offer CFDs, this document sets out the process that we would intend to follow, should we enter into such a negotiation and invites views on the proposed approach.

Issued: 23 January 2015

Respond by: 20 February 2015

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How to respond:

If you wish to respond to this engagement document then we would prefer responses in an electronic format and sent to the email address above. However, hard copy responses may also be sent to the Department at the postal address above.

Additional copies:

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Confidentiality and data protection:

Information provided in response to this document, including personal information, may be subject to publication or disclosure in accordance with the access to information legislation (primarily the Freedom of Information Act 2000, the Data Protection Act 1998 and the Environmental Information Regulations 2004).

If you want information that you provide to be treated as confidential please say so clearly in writing when you send your response. It would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded by us as a confidentiality request.

1. Introduction

1.1. The Government is committed to achieving its low carbon energy goals through the deployment of a diverse range of technologies. Recent analysis[1] found that tidal lagoon technology could theoretically contribute up to 25TWh/year – the equivalent of 8% of the UK's electricity consumption in 2013[2] – of indigenous, predictable and low carbon electricity. It could also contribute to economic growth and have significant supply chain and wider benefits.

1.2. Tidal Lagoon Power Ltd (TLP) has a well-developed proposal for a tidal lagoon project in Swansea Bay and is seeking support for the project through the Contract for Difference (CFD) mechanism. In the National Infrastructure Plan[3] (NIP) published on the 2 December 2014 the Government announced that it would commence closer discussions with TLP to establish whether a potential tidal lagoon project at Swansea Bay is affordable and value for money for consumers (without prejudice to the planning decision[4] on the project). Serious consideration is now being given to the possibility of entering into a bilateral negotiation for a CFD with TLP, also without prejudice to the planning decision. This would enable us to more fully assess the value for money case for the Swansea Bay project as well as provide an opportunity to investigate further the potential of tidal lagoons in the UK and their associated benefits based on a real case.

1.3. In the Government response[5] to the consultation on directions to offer CFDs we committed to engage with stakeholders in developing any new arrangements for applying for a CFD outside of the generic application process. In line with this commitment and in response to the calls for transparency made during that consultation, this document sets out the background to the proposed project, the approach that Government proposes it would take if it enters into bilateral negotiation for a CFD with TLP and invites views on the proposed form that any bilateral negotiation could take. Any views are to be submitted by **20 February 2015**. A Government Response will be published subsequently.

1.4. It is important to note that whilst we think that the approach set out in this document to meet our commitment to seek views is suitable for this project and may be suitable for other similar situations it is not intended to act as a precedent for any other projects seeking support through the CfD where the strike price has not been administratively set. It may be appropriate to discharge this commitment to engage stakeholders in different ways depending on the individual technology. Views expressed in response to this document could be used to inform any decision in relation to similar situations in the future, where this is appropriate.

1.5. **Any potential future negotiation would be without prejudice to the planning decision on the project. Any decision to offer a CFD would also be subject to strict value for money considerations, the funds available within the Levy Control Framework (LCF) at the time of a decision and be subject to State aid approval.**

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[1] http://www.thecrownestate.co.uk/media/5476/uk-wave-and-tidal-key-resource-areas-project.pdf
[2] Final Electricity Consumption taken from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/337649/chapter_5.pdf
[3] https://www.gov.uk/government/publications/national-infrastructure-plan-2014
[4] http://infrastructure.planningportal.gov.uk/projects/wales/tidal-lagoon-swansea-bay/
[5] https://www.gov.uk/government/consultations/electricity-market-reform-emr-contracts-for-difference-regulations

1.6. Any CFDs signed following a Secretary of State direction to offer will be published once completed, including the strike price and the reference price, having redacted any other commercially sensitive information.

2. Policy Context

2.1. In October 2010, the Government concluded it did not see a strategic case for public investment in a tidal energy scheme in the Severn Estuary, but the outcome of the feasibility study does not preclude a privately financed scheme[6].

2.2. The Energy and Climate Change (ECC) Select Committee report on "*A Severn Barrage?*"[7] recommended in June 2013 that a more incremental approach using alternative technologies (such as tidal lagoons) should be considered first. The Government's response to the ECC report, published in September 2013[8] made clear that the Government remains keen to hear about well-developed, privately-funded proposals for harnessing the power of the Severn Estuary – be it through a barrage or other means. Any privately funded tidal range scheme would need to credibly demonstrate strong evidence of (i) value for money; (ii) economic benefits; (iii) energy savings; and (iv) environmental impact mitigation before the Government could take a view on its potential.

2.3. The EMR Programme was established to deliver the investment in low carbon energy and reliable electricity supplies that the UK needs, while minimising costs to consumers. It is designed to facilitate this vital investment through two mechanisms: the CFD and the Capacity Market. CFDs are the main policy vehicle for supporting the delivery of low carbon electricity. They provide long-term price stabilisation for low carbon plant, allowing investments to come forward at a lower cost of capital and therefore at a lower cost to consumers.

2.4. The Government has a long standing commitment to use competition where possible to reduce the costs of decarbonisation and to move to technology neutral competitive allocation approaches across all low carbon technologies as soon as this is practical and effective. 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 are not included in the EMR Delivery Plan[9]. A strike price for tidal range was not set because of lack of available cost data. In addition, Government felt that it was not appropriate to set a strike price for tidal range as a technology in the EMR Delivery Plan (covering the period 2014/15 to 2018/19) given the significant cost variation likely from project to project, dependent on location.

2.5. The lack of a strike price for large hydro, tidal range (including tidal lagoon and tidal barrage), Nuclear and CCS means that there is currently no generic competitive CFD allocation mechanism applicable to projects using these technologies. The aim is to build competition into the allocation arrangements for these technologies where this is feasible, although it is recognised that in the period of this EMR Delivery Plan (2014/15 to

[6] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/50064/1._Feasibility_Study_Conclusions_and_Summary_Report_-_15_Oct.pdf
[7] http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenergy/194/194.pdf
[8] http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenergy/622/622.pdf
[9] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/268221/181213_2013_EMR_Delivery_Plan_FINAL.pdf

2018/19) appropriate prices for these technologies are likely to be determined on an individual basis as projects are identified for support.

2.6. Further to the publication of the EMR Delivery Plan, DECC consulted on the regulations under which the Secretary of State for Energy and Climate Change can direct the Low Carbon Contracts Company (LCCC) to enter into CFDs with eligible generators. The Government's response to that consultation notes that '*if the Government creates any new processes for applying for a CFD it would be the Government's intention to clearly describe how the process would operate and to engage with stakeholders during the design*'. The objective of this is to improve the transparency of the process for negotiating CFDs while retaining the Secretary of State's flexibility and discretion to determine how best to allocate contracts, having taken into account any views expressed.

3. The Potential of Tidal Lagoons in the UK

3.1. The Government believes that there may be significant tidal lagoon potential in the UK. Tidal range power, alongside the other low carbon technologies currently considered within the CFD allocation framework, has the potential to contribute to the low carbon energy mix. More specifically, tidal lagoon technology could theoretically contribute up to 25TWh/year – the equivalent of 8% of the UK's electricity consumption in 2013 – of indigenous, predictable and low carbon electricity.

3.2. Although tidal range barrages have been in operation since the 1960s (for example at La Rance, France), the few existing tidal barrages are significantly smaller than the type of tidal lagoon projects which could eventually be deployed in the UK. Tidal lagoons present a novel application of the tidal range technology, and could have the potential to be deployed at scale around the UK. There are currently no tidal lagoons generating electricity anywhere in the world.

3.3. The development of a world-leading tidal lagoon industry could have the following significant potential benefits to the UK economy, which deserve further exploration at this stage:

- Direct economic growth and employment benefits; with many of these benefits likely to be realised in economically deprived areas;
- Increased diversity of supply and strengthened competition across low carbon technologies in the 2020s - helping to drive down future costs in the low carbon power sector;
- Enhanced energy security; tidal power is indigenous and does not rely on imported fuel;
- Cheap electricity over decades once initial high capital cost has been repaid; the civil infrastructure (which forms a significant part of the capital cost) has a life expectancy of over a hundred years, significantly more than most other forms of low carbon generation;
- Provide greater certainty that the UK can meet its decarbonisation objectives by introducing another low carbon technology with the capability to be deployed at scale into the mix. This technology could provide a significant contribution towards meeting national carbon emission reduction targets;

- Improved system balancing with highly predictable generation; while back up generation would be needed there is certainty as to when that back up capacity would be needed;
- An incremental approach to harnessing the Severn Estuary's tidal range resource which may have the potential to provide a lower-risk, lower-impact option than developing a large barrage scheme upfront; and
- Potential for flood protection and coastal erosion protection depending on the location of any projects.

3.4. TLP's proposal for a tidal lagoon at Swansea Bay could provide evidence that this technology has the capability to be deployed at scale at an acceptable cost for consumers and could unlock the potential of this new industry in a similar manner to the approach taken with the CCS demonstration programme. We are therefore giving serious consideration to the possibility of entering into a bilateral negotiation with TLP regarding potential CFD support for its tidal lagoon project at Swansea Bay.

3.5. Given the lack of deployment anywhere in the world, Government recognises that more work needs to be done to understand the scale of the potential benefits relating to the deployment of tidal lagoons in the UK, as listed above. Entering into a bilateral negotiation would enable us to assess, through intense scrutiny of a live project, whether these potential benefits can be realised and to confirm whether (i) this project could be realised at an acceptable cost to consumers and (ii) that it could unlock a wider tidal lagoon industry, which could play a role in the UK's diverse energy mix alongside the existing low carbon technologies.

4. The Swansea Bay Project

4.1. In early 2013 TLP approached the Government about its proposal for a 320MW tidal lagoon project in Swansea Bay (anticipated to generate approximately 0.5 TWh/ year), indicating that it would like a CFD to support the project. A number of initial discussions subsequently took place to better understand the project as TLP continued to develop its proposal. In parallel, TLP submitted its application to the Planning Inspectorate (PINS) on 7 February 2014. These initial discussions were undertaken without prejudice to any future decision on whether or not to enter into negotiations for a CFD and to the planning decision for the project. DECC confirmed in July 2014 through independent third party validation that the TLP proposal for a tidal lagoon at Swansea Bay is technically feasible; and that extensive work on its design and associated costs has already been undertaken by the developer.

4.2. As announced in the NIP published in December 2014, the Government has now entered into closer discussions with TLP to establish whether a potential tidal lagoon project at Swansea Bay is affordable and value for money for consumers (without prejudice to the planning decision on the project).

4.3. Development of a successful first of a kind (FOAK) tidal lagoon like the one proposed by TLP in Swansea Bay could enable an incremental approach to developing this sector. It is unlikely for example that investors would be prepared to invest the high upfront capital (from £4bn upwards) required for a larger FOAK lagoon. A smaller lagoon, such as that

proposed for Swansea Bay, although likely to be less cost-effective, would establish a scalable blueprint that could be applied to future projects.

4.4. The Government remains open to considering any well-developed proposals for harnessing tidal range in the Severn Estuary but also around the rest of our coastlines, including through barrages, lagoons and other alternatives. Any tidal range scheme needs to demonstrate evidence of (i) value for money; (ii) economic benefits; (iii) energy savings; and (iv) environmental impact mitigation before the Government could take a view on its potential. Similar evidence for any tidal range scheme would also need to be demonstrated before Government could take a view as to whether to consider offering it CFD support.

4.5. We are not currently aware of any other tidal lagoon project(s) that are sufficiently developed at this stage to enable a competitive approach to take place. The possible development of the Swansea Bay tidal lagoon proposal and the developer's aspirations for a wider tidal lagoon programme is however increasing the interest shown by other project developers in potential tidal range projects as evidenced through interest in The Crown Estate's leasing processes and recent notifications to PINS of intended future applications from interested developers.

5. Establishing a Value for Money Case

5.1. An essential part of the evaluation of the desirability for a Swansea Bay tidal lagoon will be to establish whether it could offer value for money compared with other low carbon technologies, taking into account uncertainties around low carbon technology costs and the potential costs and benefits of a wider tidal lagoon industry.

5.2. Our approach would be to consider the Swansea Bay project as a FOAK project, which could prove the concept and help unlock a cost effective programme of tidal lagoons in the 2020s and beyond. The value for money case will examine the implications of the current assumption of approximately 0.5 TWh/year of generation from a tidal lagoon at Swansea Bay contributing to the UK's 2020 Renewable Energy Directive target to deliver 15% of energy from renewable sources. It will also examine the implication of generation from Swansea Bay and a wider programme of tidal lagoons contributing to our existing longer term decarbonisation goals.

5.3. Any future decision whether or not to offer a CFD for the project would be informed by a full value for money assessment. This is likely to be based on whether the CFD would provide the developer appropriate returns in relation to the project, without over-compensating; and whether the negotiation has shown that the project could be cost-competitive on a broadly comparable basis relative to other options for delivering low carbon power or otherwise contribute to the delivery of a more socially cost effective electricity generation mix. In addition the project would also need to be affordable for electricity consumers.

5.4. We would also need to be satisfied that any support for this project via the CFD mechanism would comply with EU State aid rules, in particular the 2014 Guidelines on State aid for environmental protection and energy 2014-2020. Under these Guidelines the preferred approach for providing support is via technology neutral competition. Individual State aid approval would be required for bilaterally negotiated contracts.

6. The Environmental Case

6.1. DECC is mindful of the potential environmental and social impacts of a development of this scale. The statutory planning process, conducted by PINS[10], is assessing a number of these impacts and a decision will be published in due course, entirely separately from the policy consideration regarding a potential CFD for the project. On or before 10 March 2015, PINS will provide the Secretary of State with its report and recommendations on the application for development consent under the Planning Act 2008. The Secretary of State will then have three months to reach a final decision on the application. Any engagement process with TLP or potential negotiations for a CFD will be without prejudice to the planning decision.

6.2. Separately from the matters being examined as part of the planning process, we have asked the developer to calculate the embedded energy use and greenhouse gas emissions in relation to the proposed development. Guidance on the methodology is included within *Valuation of energy use and greenhouse gas (GHG) emissions, 2014*[11] which was published to provide guidance for analysts attempting to quantify and value energy use and emissions in response to the HM Treasury's Green Book. We will include this assessment within the value for money case being developed.

7. The Approach

7.1. The Government is keen to explore further the potential of a tidal lagoon industry in the UK, which could have the potential to play a significant role in decarbonising our electricity sector, alongside existing low carbon technologies. The Government believes that the potential benefits highlighted in section 3 warrant further exploration to confirm whether these could be realised. In-depth analysis of TLP's Swansea Bay lagoon proposal, including the appropriate strike price, presents a unique opportunity to further examine the potential for this industry through a live project. This analysis would allow the Department to explore the possibility of developing the Swansea Bay proposal to unlock a wider industry. This is why we are giving serious consideration to the possibility of entering into a bilateral negotiation with TLP.

7.2. At this point in time, we do not consider a competitive process in relation to the Swansea Bay project to be feasible. As explained before, we are not aware of any other tidal lagoon project(s) that are sufficiently developed at this stage to enable a competitive approach to take place. Furthermore we consider that a bilateral approach is better suited to a FOAK lagoon, faced with significant development costs, risks and an immature supply chain.

7.3. Entering into a bilateral negotiation for a CFD with TLP would enable the Government to carry out full due diligence on the project and provide the level of detail necessary for a full value for money assessment to be undertaken. Any decision to enter into such

[10] http://infrastructure.planningportal.gov.uk/projects/wales/tidal-lagoon-swansea-bay/?ipcsection=docs&stage=app&filter=Environmental+Statement

[11] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/360316/20141001_2014_DECC_HMT_Supplementary_Appraisal_Guidance.pdf

negotiations will be dependent on further consideration of firm costs and the complete financial model, which are being made available to DECC for review via a data room, as part of the closer discussions currently being conducted. This cost information will give DECC a further indication on whether or not Swansea Bay, as a stand-alone project, has the potential to be value for money or whether or not it has the potential, as a demonstration project, to unlock a cost effective tidal lagoon industry in the UK.

7.4. Entering into a bilateral negotiation to establish the required strike price for this project, would not necessarily mean that a CFD would be awarded to the developer. We would conduct any negotiation in such a way as to deliver a fair return to the developer while remaining affordable and value for money to the consumer. If it is not possible to negotiate a contract (including a strike price for this technology) that meets our value for money considerations *and* that is acceptable to both parties, discussions would be terminated.

7.5. DECC would conduct the bulk of any negotiation and associated works by utilising internal commercial resource. DECC may also choose to engage external consultants to provide advice regarding specific aspects of the project. Any commercial negotiation would enable both parties to move to a common understanding of what strike price and length of contract would be needed to realise the project, in a cost effective, value-for-money manner. DECC would reserve the right to interrupt or terminate these negotiations at any time. Reasons for interruption or termination of negotiations could include (but are not limited to) situations where it has become clear that the above criteria could not be met or have a low probability of being conducted within a realistic timeframe.

7.6. DECC has not placed a timeframe on any negotiation, which will depend on a number of factors, many of which would be outside the control of the Department. A decision on whether to award a contract could only be made further to the successful completion of any negotiation and once Government has fully satisfied itself, based on robust and extensive value for money analysis, i) of the desirability of a tidal lagoon industry in the UK; and ii) that the Swansea Bay lagoon project represents a good opportunity for unlocking the potential of this industry.

7.7. Furthermore and as indicated previously in this document, any potential future negotiation would be without prejudice to the planning decision. Any future decision to offer a CFD would also be subject to strict value for money considerations, the funds available within the LCF at the time of a decision and any necessary State aid approval from the EU Commission.

7.8. While the Government aims to be as transparent as possible, details of any negotiations with developers over contract terms must be kept confidential in order to allow the Government to secure the best possible deal for consumers. During any negotiation, a developer would share commercially sensitive information that is necessary in order to be able to agree a price that represents good value for money. As noted above, any CFDs signed following a Secretary of State direction to offer will be published once completed, including the strike price and the reference price, having redacted any other commercially sensitive information.

7.9. It is important to note that whilst we think that this approach is suitable for this project and may be suitable for other similar situations, it is not intended to act as a precedent for any other projects seeking support where the strike price has not been administratively set. It may be appropriate to discharge this commitment to engage stakeholders in different ways depending on the individual technology. Views expressed in response to this

document could be used to inform any decisions in relation to similar situations in the future, where this is appropriate.

7.10. Note furthermore that whilst this approach would rely on a non-competitive, bilateral negotiation for Swansea Bay lagoon, our preference, where feasible, would be to seek to introduce a competitive process for allocation of CFDs to any subsequent tidal range projects. This is a key feature of the EMR programme, and of EU State aid rules. We anticipate that further in-depth consideration of this project alongside details on other emerging proposals for future lagoons should allow us to set in future an acceptable and appropriate strike price for tidal lagoons. The Government remains committed to moving to technology neutral competitive allocation approaches across all low carbon technologies as soon as this is practical and effective, including for future tidal lagoon projects.

8. Stakeholder views

8.1. As part of this process the Government is seeking views from interested parties on the following:

1. Do you agree that this document provides transparency on the process for applying for and negotiating a CFD outside the generic CFD allocation process for a tidal lagoon at Swansea Bay? Any CFDs signed following a Secretary of State direction to offer will be published once completed, including the strike price and the reference price, having redacted any other commercially sensitive information.
2. Are there any similarly developed tidal range projects, of sufficient scale that could be in a position to compete with the Swansea Bay Tidal Lagoon as a FOAK project for this new industry, in the near future?
3. The Government considers that there may be circumstances where competition is not possible or does not represent the most cost effective option for some low carbon technologies. Do you agree with our view that, in the case of a FOAK project, consideration of the Swansea Bay lagoon project through a bilateral negotiation process is appropriate? We would however seek to introduce, where feasible, a competitive process for allocation of CFD for subsequent lagoons, with the aim of moving to technology neutral competitive allocation approaches across all low carbon technologies as soon as is practical and effective.
4. Any potential future negotiation would be without prejudice to a future planning decision on the project. Any decision to direct the LCCC to offer a CFD would be subject to strict value for money considerations, the funds available within the LCF at the time of a decision and obtaining State aid approval from the EU Commission. In respect of value for money, do you have any views on how we might assess the considerations set out? Are there any other considerations you think we should be taking into account in deciding whether to offer a CFD?

8.2. Responses should be sent to ORED.Stakeholderengagement@decc.gsi.gov.uk by **20 February 2015**.

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