



**BRIEFING PAPER**

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# Tidal lagoons

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## Summary

Around half of Europe's potential wave and tidal resource is thought to be in the UK. It has been estimated that this resource could help to meet up to 20% of the UK's current electricity demand. No large scale tidal lagoons have been developed in the UK. Tidal Lagoon Power (TLP) wanted to acquire the necessary permissions for a 'pathfinder' project in Swansea Bay.

### UK tidal energy resources

The UK is estimated to have around half of the potential wave and tidal resource in Europe. Tidal power availability is very site-specific; the highest tidal ranges in the UK are on the west coasts of England and Wales, in the Bristol Channel and Severn Estuary. Scotland has a smaller tidal potential, but offers the majority of the UK's wave resource.

There have been suggestions of a tidal barrage in the Severn Estuary (the second highest tidal range in the world) for many years. Projects for tidal lagoons in the UK are a more recent development. Some view tidal lagoons as a more economical, technically feasible and environment-friendly alternative to tidal barrages, though this view is not universal.

### Swansea Bay Tidal Lagoon

Tidal Lagoon Power (TLP) hope to construct a man-made, 320MW (megawatt) tidal Lagoon in Swansea bay, averaging 14 hours of generation every day. The lagoon would have 16 hydro turbines and a six mile breakwater wall. TLP estimated it could generate electricity for 155,000 homes for 120 years.

Owing to cost concerns, the Government commissioned former Energy Minister Charles Hendry to review the project. The [Hendry Review](#) (published in January 2017) supported the idea of a Swansea tidal lagoon as a small pathfinder project before large-scale lagoons are rolled out. The Welsh First Minister has urged the UK Government support the project.

### The potential benefits and challenges of Swansea Bay Tidal Lagoon

Advocates of the project argue that the Swansea tidal lagoon would benefit the Swansea area economically and contribute to meeting the UK's need for affordable low-carbon energy. Research by TLP found that a programme<sup>1</sup> of lagoons could generate 30 TWh of electricity per year for 120 years (a lagoon's lifespan).

Opinions are divided on the value for money of the Swansea tidal lagoon project. The strike price and generation costs have both been cited as key challenges to the deployment of tidal lagoons in the UK. A number of different strike prices had been reported, most recently in it was reported in February 2018 that as a result of discussions between TLP, the UK and the Welsh Government, TLP made a new offer on strike prices on the same terms as the Hinkley nuclear power station (92.50 per MW for 35 years).<sup>2</sup>

### Government decision

On 25 June 2018, the Secretary of State Greg Clark made a statement to Parliament on the Swansea Tidal Lagoon, saying the project did not offer value for money and the Government would not be entering into a contract with TLP.

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<sup>1</sup> By 'a Programme' TLP mean the Swansea Lagoon plus 5 full scale lagoons.

<sup>2</sup> Stefan Messenger, [Tidal Lagoon 'has offered Government new deal on price'](#), BBC, 22 February 2018

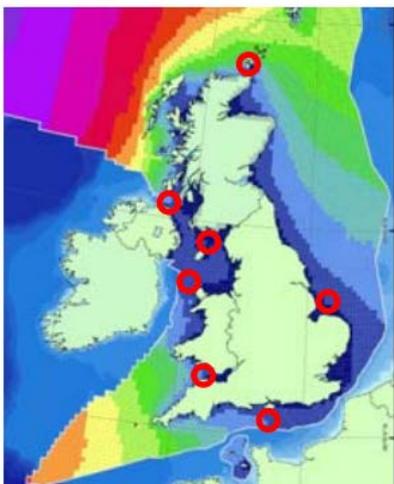
# 1. The potential for marine renewables in the UK

## 1.1 Wave and tidal resources in the UK

The UK is estimated to have around half of the potential wave and tidal resource in Europe.<sup>3</sup> In 2013, the Coalition Government estimated that this resource could help to meet up to 20% of the UK's current electricity demand (providing 30-50 Gigawatts (GWs) of installed capacity).<sup>4</sup> Moreover, a [2012 report by the Crown Estate](#) (responsible for leasing areas of the seabed for development and managing the associated seabed rights) found that there is a "theoretical" potential to harness up to 153 GW of tidal power capacity in the UK:

- Wave: 69 TWh/year (27 GW);
- Tidal stream: 95 TWh/year (32 GW);
- Tidal range (barrage schemes): 96 TWh/year (45 GW); and
- Tidal range (lagoon schemes): 25 TWh/year (14 GW).<sup>5</sup>

However, as of 2018, no large-scale marine renewables projects had been developed in the UK. The [Department for Business, Energy and Industrial Strategy \(BEIS\) reported](#) that in 2016 14 different wave and tidal sites had an installed capacity of 13.5 Megawatts (MW) (less than 0.05% of total installed capacity of sites generating electricity from renewable sources in 2016). Of the 14 sites: Two sites were located in England, one was in Wales and 11 were in Scotland.<sup>6</sup> The graphic below is taken from [POSTnote 324 in 2009](#), and identifies potential wave and tidal resources in the UK.<sup>7</sup>



**Figure 1: Wave and Tidal Resources in the UK:**<sup>2</sup> Coloured bands show wave resources, with purple denoting the greatest resource. Red circles show some of the most significant tidal power sites. Tidal resources are closer to shore than wave.

<sup>3</sup> DBEIS, [Wave and tidal energy: part of the UK's energy mix](#), January 2013

<sup>4</sup> DBEIS, [Wave and tidal energy: part of the UK's energy mix](#), January 2013

<sup>5</sup> Crown Estate, [UK Wave and Tidal Key Resource Areas Project: Summary Report](#), October 2012

<sup>6</sup> DBEIS, [Energy Trends: September 2017, special feature article - Renewable electricity in Scotland, Wales, Northern Ireland and the regions of England in 2016](#), September

<sup>7</sup> Including Figure 1, Parliamentary Office of Science and Technology (POST), [Marine Renewables](#), POSTNote 324, January 2009

Tidal power is distinct from wave power. There are two [“types” of tidal energy](#):

- **Tidal stream energy** is the flow of water as the tide ebbs and floods, and manifests itself as tidal current. Tidal Stream devices seek to extract energy from this kinetic movement of water, much as wind turbines extract energy from the movement of air.
- **Tidal range technologies** “capture” the tide in an artificial barrage or lagoon. Turbines in the barrier or lagoon generate electricity as the tide floods into the reservoir.<sup>8</sup>

The precise workings of tidal lagoon technology are explained in section 2.

## 1.2 Marine renewables projects in the UK

Tidal power availability is very site-specific. The highest tidal ranges in the UK are on the west coasts of England and Wales, in the Bristol Channel and Severn Estuary. Scotland has a smaller tidal potential, but offers the majority of the UK’s wave resource.<sup>9</sup>

### Tidal barrages

Potential projects for tidal range technologies such as tidal barrages and tidal lagoons have been around for some time in the UK. There have been suggestions of a tidal barrage in the Severn Estuary (the second highest tidal range in the world) for many years. Other UK projects for barrages have included ideas for projects in The Wash, Solway Firth, Morecambe Bay, River Humber, Dee and Mersey, Menai Strait, Carmarthen Bay and Strangford Lough.<sup>10</sup> Feasibility studies have also identified smaller potential in the Loughor and Conway Estuaries, the Duddon and the Wyre.<sup>11</sup>

In October 2007, the Sustainable Development Commission (a disbanded non-departmental public body responsible for advising the Government and devolved administrations) [published a report on UK tidal power](#) which found there was a “strong case to be made for a sustainable Severn barrage.” The report also warned of potential environmental and cost risks associated with the project.<sup>12</sup>

Following a call for proposals in 2008, a number of potential Severn power schemes were developed.<sup>13</sup> One such project considered would have ranged from Cardiff to Weston-super-Mare. This project – and all the others proposed – was later dropped after a Department of Energy

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<sup>8</sup> [What is Tidal Energy?](#), Tidal Energy [accessed: 18 December 2017]

<sup>9</sup> Crown Estate, [UK Wave and Tidal Key Resource Areas Project: Summary Report](#), October 2012, p. 7

<sup>10</sup> Godfrey Boyle, *Renewable energy – power for a sustainable future*, Second edition, Oxford University Press, p.225

<sup>11</sup> Godfrey Boyle, *Renewable energy – power for a sustainable future*, Second edition, Oxford University Press, p.225

<sup>12</sup> Sustainable Development Commission, [Turning the Tide. Tidal Power in the UK](#), October 2007, p. 13

<sup>13</sup> HM Government, [Severn Tidal Power: Feasibility Study Conclusions and Summary Report](#), October 2010

and Climate Change (DECC) feasibility study found that it was too “high cost and high risk in comparison with other ways of generating low-carbon electricity.”<sup>14</sup> In 2013, the Coalition Government stated:

The 2-year cross-government Severn tidal power feasibility study could not see a strategic case for public investment in a Severn tidal scheme in the immediate term, though private sector groups are continuing to investigate the potential.<sup>15</sup>

Some of the biggest concerns with tidal barrages are their impact on the environment.<sup>16</sup> Wildlife charities, such as the [RSPB](#), opposed and criticised the Severn Barrage project. Furthermore, in 2013, the House of Commons Energy and Climate Change Committee concluded that the case for the “economic, environmental and technological viability of the project’ was unproven.<sup>17</sup>

### Wave and tidal power in Scotland

Scotland is estimated to have approximately 40% of the UK’s resources in marine renewables.<sup>18</sup> In order to meet its 2020 renewable electricity target, the Scottish Government is supporting wave and tidal initiatives like the [European Marine Energy Centre](#) in Orkney or the [Shetland Tidal Array](#) through [Wave Energy Scotland](#) and Scottish Enterprise. For more information on the Scottish Government’s plan for renewable energy sources including marine renewables, see the briefing papers on [Energy](#) and [Offshore Renewable Energy](#) from the Scottish Parliament Information Centre.

### Tidal lagoons

Projects for tidal lagoons in the UK are a more recent development. Some experts view tidal lagoons as a more economical, technically feasible and environment-friendly alternative to tidal barrages<sup>19</sup>, though this view is not universal<sup>20</sup>.

Tidal range technology is still at an early stage of development and no tidal lagoons exist anywhere in the world yet. There are a number of technological, financial, political and environmental obstacles to their deployment. In the case of the Swansea tidal lagoon project, these obstacles are outlined in section 3.

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<sup>14</sup> DECC, South West RDA & Welsh Assembly Government, [Severn Tidal Power – Feasibility study conclusions and summary report](#), October 2010, p.4

<sup>15</sup> DBEIS, [Wave and tidal energy: part of the UK’s energy mix](#), January 2013

<sup>16</sup> These concerns have been summarised in the POSTNote [Environmental impact of tidal energy barrages](#), POST, 435, June 2013

<sup>17</sup> Energy and Climate Change Committee, [A Severn Barrage?](#), 21 May 2013, Vol. I, para.117

<sup>18</sup> Scottish Parliament Information Centre (SPICe), [Offshore renewable energy](#), 12/37, 8 June 2012

<sup>19</sup> Carbon Brief, [‘A rough guide to tidal lagoons’](#), 7 February 2014

<sup>20</sup> RSPB, [‘What are we doing about tidal lagoons? – guest blog by Dr Sean Christian, RSPB Cymru’](#), 19 May 2015

## 2. How tidal lagoons work

### 2.1 Tidal energy

Tidal energy is created by the constantly changing gravitational pull of the moon and sun. It is a reliable source of energy because tides are predictable, and never stop. Tidal resources are at their best when there is a good tidal range and the speed of the current is amplified by the funnelling effect of the local coastline and seabed. Tidal devices work well in narrow straits and inlets, around headlands, and in channels between islands.

A tidal lagoon generates electricity twice in one tide – once when the tide is coming and once when it is going out. A video showing the tidal flows involved in tidal lagoon technologies is available on [BBC News](#). Alternatively, a diagram from the Sustainable Development Commission is also available on [BBC News](#).

Tidal lagoons work in a similar way to barrages by “capturing a large volume of water behind a man-made structure, which is then released to drive turbines and generate electricity.”<sup>21</sup>

In the words of [Carbon Brief](#):

The movement of the tide in or out means that a difference in water levels builds up in the lagoon, compared to the water around it, in much the same way as a man-made lock on a river does. Once the difference is big enough, sluice gates are opened – allowing water to rush through the gaps, turning big turbines installed underwater. The rotating turbines generate electricity.<sup>22</sup>

The turbine technology necessary to generate tidal energy is central to the challenge of deploying commercially-viable tidal lagoons in the UK. Although hydro turbines are a relatively established technology, their use in the context of tidal lagoons is still relatively new and being developed.

Unlike tidal barrages, tidal lagoons do not require infrastructure that blocks off an entire estuary.

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<sup>21</sup> Tidal Lagoon Power, [Tidal Technology](#), [accessed: 1 December 2017]

<sup>22</sup> Carbon Brief, [‘A rough guide to tidal lagoons’](#), 7 February 2014

## 3. The Swansea Tidal Lagoon project

### 3.1 TLP's Swansea Bay project

Tidal Lagoon Power (TLP) have proposed to construct a tidal lagoon £1.3 billion power plant in Swansea Bay off the south coast of Wales. TLP had hoped to start building the lagoon in 2018 and expected it to be ready to generate power in three years. TLP have described the Swansea Bay tidal lagoon as a “pathfinder project” which will provide a “scalable blueprint” for a fleet of larger UK tidal lagoons able to generate renewable electricity at scale and low cost.<sup>23</sup> In the long term, TLP want to create a network of [six lagoons](#) in Swansea Bay, Cardiff, Newport, Colwyn Bay, West Cumbria and Bridgewater Bay. They were planning on submitting a planning application for Cardiff in 2018-19.<sup>24</sup> Before construction could start on the Swansea Bay tidal lagoon, the company require a number of permissions and financial guarantees to make the development viable. The status of the necessary permissions and agreements are summarised in the table below.

#### Summary of permissions and agreements for Swansea Bay Tidal Lagoon

Permission	Detail	Status
Development consent	There is a separate planning regime for renewable and/or low-carbon energy developments under and over 50 MW capacity. Under the <a href="#">Planning Act 2008</a> , developments over 50 MW capacity are considered as a nationally significant infrastructure project by the Secretary of State for Energy, and the local planning authority is a statutory consultee.	Granted development consent, <a href="#">June 2015</a> , subject to a number of conditions <sup>25</sup>
Marine licence for (i) marine energy works; and (ii) to dredge and dispose of material at sea	The <i>Marine and Coastal Access Act 2009</i> prohibits certain activities unless they are subject to a marine licence. <a href="#">Natural Resource Wales (NRW)</a> is the awarding body for Welsh marine licence applications. When determining applications NRW must have regard for the need to: Protect the environment; protect human health; prevent interference with legitimate uses of the sea; and other relevant matters. <sup>26</sup> The applicant or the NRW Marine Licensing Team may also be required to: Carry out an Environmental Impact assessment; Carry out a Habitat Regulations assessment; Ensure any activities licensed are compliant with the Water Framework Directive (WFD), and the Marine Strategy Framework Directive.	TLP provided NRW with the requested supplementary information. As of March 2018, licence is pending a decision. <sup>27</sup>

<sup>23</sup> Tidal Lagoon Power, [Swansea Bay](#) [accessed 18 December 2017]

<sup>24</sup> [Planning](#), TLP, [accessed: 18 December 2017]

<sup>25</sup> Department of Energy and Climate Change, [Swansea Bay Tidal Lagoon project gets green light on planning](#) 9 June 2015

<sup>26</sup> NRW, [Marine Licences](#), [accessed: 18 December 2017]

<sup>27</sup> NRW, [Swansea Bay Tidal Lagoon](#), [accessed: 18 December 2017]

Crown Estate lease agreement	The Crown Estate owns the territorial seabed out to 12 nautical miles and is responsible for leasing areas of the seabed for development and managing the associated seabed rights.	Discussions ongoing as of December 2017. <sup>28</sup>
Subsidy agreement: Contract for Difference (CfD)	CfDs are intended to give investors the confidence and certainty they need to invest in low carbon electricity generation. CfDs are agreed either through a reverse auction or as a bilateral agreement with the Government (as has been the case with Hinkley Point C and is thought to be under negotiation for the Tidal Lagoon project). CfDs work by fixing the prices ('strike prices') received for low carbon generation. When wholesale electricity prices are lower than the strike price, generators receive top-up payments, and vice versa.	Government rejection (see section 4). <sup>29</sup>

### Development consent

In December 2014, Tidal Lagoon Power (TLP) applied for development consent to construct a man-made, 320MW (megawatt) tidal Lagoon, averaging 14 hours of generation every day.<sup>30</sup> The project is planned to consist of a 9.5km long sea wall in Swansea Bay between the Rivers Tawe and Neath, connecting Swansea Docks and the Swansea University Science and Innovation campus.<sup>31</sup> It will have 16 hydro turbines and a six mile breakwater wall. TLP estimates it could generate electricity for 155,000 homes for 120 years.<sup>32</sup>

TLP was granted planning consent for what the Government described as "the world's first Tidal Lagoon" for generating energy in Swansea Bay on 9 June 2015, subject to a number of conditions.<sup>33</sup>

### Marine licence

The project is yet to be awarded a marine licence. Natural Resource Wales (NRW) is the awarding body for Welsh marine licence applications. The application was made in February 2014 and NRW has been deliberating and consulting on the issue ever since. NRW is still assessing evidence it received on the impact of the project on fish.<sup>34</sup>

### Low carbon subsidy

The project requires subsidy from the Government, which is likely to be in the shape of a strike price under the Contracts for Difference (CfD) scheme.

In the Autumn 2017 Budget the Chancellor announced a moratorium on new low carbon subsidies through a Control for Low Carbon Levies

<sup>28</sup> Author's correspondence with Crown Estate, December 2017

<sup>29</sup> HC Deb, [Energy Policy](#), 25 June 2018, vol 643, c634

<sup>30</sup> Department of Energy and Climate Change, [Swansea Bay Tidal Lagoon project gets green light on planning](#) 9 June 2015

<sup>31</sup> Natural Resource Wales, [Swansea Bay Tidal Lagoon](#) [accessed 18 December 2017]

<sup>32</sup> Tidal Lagoon Power, [Swansea Bay](#) [accessed 18 December 2017]

<sup>33</sup> Department of Energy and Climate Change, [Swansea Bay Tidal Lagoon project gets green light on planning](#) 9 June 2015

<sup>34</sup> Natural Resource Wales, [Swansea Bay Tidal Lagoon](#)

(the 'Control').<sup>35</sup> The control excludes £557 million of funding for further CfD auctions, confirmed in the Government's Clean Growth Strategy.<sup>36</sup> The Control will apply until the total of costs from low carbon levies is falling, which the Treasury has calculated will not happen until 2025. Some people have raised concerns that this means this project and other new low carbon energy developments would all be on hold unless they can find a way to proceed without government support.<sup>37</sup> However, on 28 November 2017, Tim Lord, Director for Clean Growth at BEIS, told the Business Energy and Industrial Strategy (BEIS) Committee that the new Control did not mean tidal, wave and geothermal technology would not go ahead and that no decisions on how to spend the already committed £557 million for future CfD auctions had been made.<sup>38</sup>

However, on 25 June 2018, the Government made a statement saying they would not enter into a contract with TLP (see Section 4).<sup>39</sup>

### **Hendry Review**

Due to the controversial nature of the project, in February 2016 the Government [commissioned](#) the former Energy Minister Charles Hendry with the task of reviewing the "feasibility and practicality of tidal lagoon energy in the UK." The review looked beyond the Swansea Bay Tidal Lagoon at the broader possibilities of tidal lagoons. The Government was particularly concerned about the value for money of tidal technology.

The final report – the 'Hendry review' – was published in January 2017 and supported the idea of a Swansea tidal lagoon as a small pathfinder project before large-scale lagoons are rolled out. Hendry stressed the need to pause for a reasonable period after the pathfinder so that in-depth monitoring and research can be carried out to address issues as they arise.

The recommendations and views from the Hendry Review are discussed in the relevant sections below.

## **3.2 Potential benefits for Swansea**

Advocates of the project argue that the Swansea tidal lagoon would benefit the Swansea area economically (creating jobs and wealth from tourism although the scale of this is contested) and contribute to meeting the UK's need for affordable low-carbon energy.

### **Economic benefits**

TLP argue that the project will deliver substantial value to the Welsh economy and job market:

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<sup>35</sup> HM Treasury, [Control for Low Carbon Levies](#), 22 November 2017, para 1.8

<sup>36</sup> HM Government, [The Clean Growth Strategy](#), October 2017

<sup>37</sup> [Autumn Budget 2017: Key climate and energy announcements](#), *Carbon Brief*, 22 November 2017

<sup>38</sup> Q56: [BEIS committee session on Clean Growth Strategy](#), 28 November 2017, HC 596/597

<sup>39</sup> HC Deb, [Energy Policy](#), 25 June 2018, vol 643, c634

Independent reports find that 2,232 construction and manufacturing jobs will be directly sustained by the build, supporting thousands of further jobs in the wider Welsh/UK economy. The project is expected to contribute £316 million in Gross Value Added to the Welsh economy during construction, followed by £76 million in each of its 120 years of operation.<sup>40</sup>

The Hendry Review concluded that “marine technologies offer an energy opportunity where the UK can reasonably aspire to be the global leader.”<sup>41</sup> The report also received evidence about the potential of the Swansea project to become an “important driver of local economic regeneration and of new recreational opportunities.”<sup>42</sup>

According to the Hendry Review, potential economic benefits of tidal lagoons are:

- **Flood protection** (especially for future lagoons in North Wales)<sup>43</sup>
- **Regeneration to the Swansea Bay area**, though Hendry concluded that this would be an incidental benefit and the lagoon should be considered as an electricity project rather than a hybrid project with multiple sources of funding support.<sup>44</sup>
- **Supply chain benefits** in terms of jobs and commercial opportunities for local communities and businesses. TLP told the Hendry Review that it would seek to source its materials and components in the UK wherever possible; it has a target to source 50% of its materials and components from Wales and 65% from the UK. The Hendry Review was told that the project could create up to 2,260 full-time equivalent jobs – especially in the manufacture of fabricated metal industry, steel casting and forging/stamping.<sup>45</sup> However, the Hendry Review did note that there were risks TLP could prefer “cheaper products from abroad” over a UK supply chain.<sup>46</sup>
- **Local tourism and further education industries.** The Hendry Review recommended that more work is done on estimating the potential benefits for these two sectors.
- **Export opportunities** if the UK became a world leader in supplying the technology for tidal lagoons. These opportunities are currently uncertain and cannot yet be relied upon.<sup>47</sup>

The Hendry Review concluded that support for the project should be contingent on ensuring the wider, long-term economic benefits accrue to UK businesses not to businesses overseas.

If the UK is to commit to a new source of power generation, such as tidal lagoons, then I consider it absolutely essential that it

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<sup>40</sup> Tidal Lagoon Power, [Swansea Bay](#), [accessed: 19 December 2017]

<sup>41</sup> Hendry review, [The Hendry Review – Overview](#), 12 January 2017

<sup>42</sup> Hendry Review, [The Role of tidal lagoons - Final report](#), 12 January 2017, p.33

<sup>43</sup> Hendry Review, [The Role of tidal lagoons - Final report](#), 12 January 2017, para. 3.5.1-3.5.2

<sup>44</sup> Hendry Review, [The Role of tidal lagoons - Final report](#), 12 January 2017, para. 3.5.2

<sup>45</sup> Hendry Review, [The Role of tidal lagoons - Final report](#), 12 January 2017, IV Supply chain, p.38-onwards

<sup>46</sup> Hendry Review, [The Role of tidal lagoons - Final report](#), 12 January 2017, para. 4.8

<sup>47</sup> Hendry Review, [The Role of tidal lagoons - Final report](#), 12 January 2017, para. 5.6

should also bring wider and long-term economic benefits to the country, rather than imposing charges on consumers' bills where the economic benefits go to businesses overseas.

To help achieve maximum UK advantage, the Government should make it clear that its support for tidal lagoons is, in part, based on the supply chain opportunities and the wider industrial and economic benefits such a programme would bring.<sup>48</sup>

Hendry also urged the Government to draft a strategy similar to that for offshore wind "with a clear sense of purpose and mission."

On 9 January 2017, ahead of the publication of the Hendry Review, more than 20 industrial companies wrote a letter in the *Financial Times* urging the Government to support tidal lagoons.<sup>49</sup> In their letter, the industry leaders said that Government support for tidal lagoons could "create a multibillion pound industry," provide thousands of UK jobs and offered "massive potential" as a British export technology.<sup>50</sup>

### Security of supply and low-carbon power

Promoters of the Swansea project have argued that the project would deliver long term benefits in terms of energy generation. There are cost concerns regarding the project, which are considered in following sections.

In research commissioned by TLP, the Centre for Economics and Business Research (CEBR) estimated that:

A fully operational tidal lagoon infrastructure industry (as represented by the six proposed lagoons) could produce as much as 8% of the UK's electricity needs – enough to power 7.9 million homes.<sup>51</sup>

The same research suggested that a programme of tidal lagoons<sup>52</sup> could generate 30 TWh of electricity per year for 120 years (the lagoon's lifespan), which according to the researchers could help reduce fossil fuel imports by £0.5 billion by 2030 and reduce the UK's annual emission target by 0.9%.<sup>53</sup>

In July 2016, TLP produced new analysis that modelled the consumer cost for each delivered unit of electricity, a megawatt hour, for different technologies over the technology's lifetime.<sup>54</sup> According to this analysis, TLP claim that the lifetime cost of Swansea Bay tidal lagoon would be the same as Hinkley Point C's (£25.78/MWh).<sup>55</sup> Additionally, TLP assert that the first large scale lagoon at Cardiff would generate the cheapest

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<sup>48</sup> Hendry Review, *The Role of tidal lagoons - Final report*, 12 January 2017

<sup>49</sup> [Tidal lagoons can quickly become a pillar of the UK's energy mix](#), *Financial Times*, 9 January 2017

<sup>50</sup> [Tidal lagoons can quickly become a pillar of the UK's energy mix](#), *Financial Times*, 9 January 2017

<sup>51</sup> Centre for Economics and Business Research, *The Economic Case for a Tidal Lagoon Industry in the UK*, July 2014, p.10

<sup>52</sup> By 'a Programme' TLP mean the Swansea Lagoon plus 5 full scale lagoons.

<sup>53</sup> Centre for Economics and Business Research, [The Economic Case for a Tidal Lagoon Industry in the UK](#), July 2014, p.10

<sup>54</sup> TLP, [The New Power Cost League Table A clear view of the consumer cost of new build power stations](#), July 2016

<sup>55</sup> TLP, [The New Power Cost League Table A clear view of the consumer cost of new build power stations](#), July 2016, p. 10

electricity of all new build power stations (£7.80/MWh). However, it is important to note that this is an average figure for the lifetime of the project; the proposed Swansea strike price would involve higher costs to consumers in earlier periods than in later ones.

Research from the Crown Estate reached more conservative conclusions and found that tidal lagoons could generate up to 25 TWh per year.<sup>56</sup> This is enough to supply around 12% of UK electricity demand (at 2013 levels) according to the Government.<sup>57</sup>

Due to the predictable pattern of tides, tidal lagoon technology is often hailed as a way to increase UK energy security with a reliable supply of energy unaffected by variable meteorological conditions like wind or solar power.<sup>58</sup> The Hendry Review concluded that a network of tidal lagoons in the UK would contribute towards solving the energy trilemma<sup>59</sup>:

Tidal lagoons would help deliver security of supply; they would assist in delivering our decarbonisation commitments [...].

I conclude that the potential impact on consumer bills of large scale tidal lagoons appears attractive particularly when compared to nuclear projects over a long time period. I also conclude that, using a measure of [Contract for Difference] cost per MWh over project lifetimes, a tidal lagoon programme could play a competitive role as part of the UK's energy mix alongside low carbon energy from nuclear and offshore wind.

This is not therefore just about how we decarbonise the power sector in the most cost effective way now; it is also about very long-term, cheap indigenous power, the creation of an industry and the economic regeneration that it can bring in its wake.<sup>60</sup>

### 3.3 Environmental concerns

The construction of the tidal lagoon in Swansea Bay has raised a number of environmental concerns. As a nationally significant infrastructure project (NSIP), TLP undertook to produce an Environmental Impact Assessment (EIA) as part of its application for Development Consent. The EIA is reported as an [Environmental Statement \(ES\)](#), which forms part of the Development Consent Order (DCO) application. Moreover, as part of its marine licence application to [Natural Resource Wales \(NRW\)](#) TLP has submitted evidence on the environmental impact of the project. Throughout this process the potential impact of the Swansea lagoon on the environment has been disputed. A particular issue of concern has been the potential impact on

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<sup>56</sup> The Crown Estate, [UK Wave and tidal key resource areas project – Summary report](#), October 2012

<sup>57</sup> Department for Energy and Climate Change, [Guidance – Wave and tidal energy: part of the UK's energy mix](#), 22 January 2013

<sup>58</sup> Centre for Business and Enterprise Research, [The Economic Case for a Tidal Lagoon Industry in the UK](#) July 2014

<sup>59</sup> The so-called 'energy trilemma' is a term commonly used to describe the challenge faced by the UK Government to reduce emissions, improve energy security and reduce costs for energy users.

<sup>60</sup> Hendry review, [The Hendry Review – Overview](#), 12 January 2017

fish populations. Consequently, NRW has requested additional information from TLP as part of its marine licence application.<sup>61</sup>

While the Tidal Lagoon has some support for its potential to provide low-carbon energy – Renewable UK Cymru say the lagoon is “too big an opportunity to pass up”<sup>62</sup> – environmental groups have raised a number of concerns. The South and West Wales Wildlife Trust believe that the sheer scale of tidal lagoons could have a major impact on biodiversity. The Angling Trust and Fish Legal have consistently called for more scrutiny of the potential impact of the lagoon on the marine environment and the migratory fish present in Swansea Bay.<sup>63</sup> Similarly, RSPB Cymru have voiced concerns about the impact of the lagoon on migratory birds, fish, and other species<sup>64</sup> and criticised the lack of an “adequate [post-construction] modelling and monitoring package” of the lagoon on wildlife in TLP’s application.<sup>65</sup>

The South and West Wales Wildlife Trust summarised some of the major concerns it (and other environmental groups) have about the project as follows:

- **The development could lead to a loss of intertidal habitat,** and the creation of new habitat will not mitigate for the habitat due to be lost, because it is a different type of habitat.
- **The development could lead to a loss of subtidal ecology and related species,** including the Great Crested Grebe. The Trust is particularly concerned that TLP’s proposed mitigation relies on an unproven practice of introducing new spawning material via the rocky reef walls.
- **The potential for invasive non-native species** to be introduced as a result of the construction of a seawall, which the Trust says further supports its stated need for long-term monitoring.
- **The potential for detrimental impacts on designated sites,** specifically the sand habitat of the Blackpill Site of Special Scientific Interest (SSSI).
- **The potential impact on marine mammals.** The Trust noted that there disappointment at the lack of site specific marine mammal surveys, but welcomed the fact that TLP had changed their plans to use installation methods which will produce the least amount of underwater noise.
- **Impact on migratory fish populations** due to injury as they pass through the turbines.<sup>66</sup> The impact on fish populations has been disputed (see below).

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<sup>61</sup> NRW, [Swansea Bay Tidal Lagoon](#), [accessed: 18 December 2017]

<sup>62</sup> BBC News, [‘Swansea tidal lagoon: the environmental arguments’](#), 7 November 2016

<sup>63</sup> Angling Trust, [Swansea Tidal Lagoon approved despite huge uncertainties about impact on fish](#), [accessed: 23 January 2018]

<sup>64</sup> RSPB, [The Severn Estuary](#) [accessed 23 January 2018]

<sup>65</sup> RSPB Cymru Blog, [‘What are we doing about tidal lagoons? – guest blog by Dr Sean Christian, RSPB Cymru’](#), 19 May 2015

<sup>66</sup> South and West Wales Wildlife Trust, [Time for action: Tidal lagoons](#), [accessed: 23 January 2018]

The Hendry Review stressed the difficulty of assessing the environmental impact of tidal lagoons given that the technology has not yet been deployed anywhere in the world. Charles Hendry received evidence that corroborates the “challenging environmental issues to be overcome if tidal power of any kind is to be deployed.”<sup>67</sup> He concluded that

It will be necessary in many cases for developers of potential tidal lagoon sites to make good the loss of existing habitat for wildlife in order to comply with the Habitats and Birds Directive.<sup>68</sup>

Hendry did not expect the Swansea lagoon to require too much compensatory habitat, but recognised that a Cardiff tidal lagoon would.<sup>69</sup> Hendry also stressed that although impact was hard to predict, TLP had produced “expert and credible” advice on the matter as part of their application process and had “committed” “to considering locations where sufficient compensatory habitat may be found”.<sup>70</sup>

The Review did not dwell on environmental considerations as its author said it would have gone beyond the review’s terms of reference. However, it did recommend that

should tidal lagoons be built, the Government should require a high level of on-going monitoring of environmental impacts to ensure that mitigation can be put in place where impacts are judged to require it.<sup>71</sup>

RSPB [responded](#) to the Hendry Review, welcoming the fact that it had taken on board the charity’s recommendations to treat the Swansea lagoon as a pathfinder from which more could be learnt. The charity reiterated its plea for diligent monitoring of the environmental impact but said they “support the Swansea lagoon proposal subject to the outstanding environmental questions”.<sup>72</sup>

## Impact on fish populations

As part of TLP’s marine licence application, assessments of the potential impact on fish populations has been disputed. Consequently, NRW has requested additional information from TLP as part of its marine licence application.<sup>73</sup>

The impact on the fish population of the lagoon has been [assessed](#) most recently by NRW. The organisation estimated that the lagoon was likely to have a detrimental impact on fish populations, especially the Atlantic salmon and sea trout species which NRW think will decrease by 21% and 25% respectively. The study also states that TLP’s modelling of fish distribution do not corroborate evidence received by NRW.<sup>74</sup>

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<sup>67</sup> Hendry Review, [Final report](#), p.29

<sup>68</sup> Hendry Review, [Final report](#),

<sup>69</sup> Hendry Review, [Final report](#), pp.29-30

<sup>70</sup> Hendry Review, [Final report](#), p.30

<sup>71</sup> Hendry Review, [Final report](#),

<sup>72</sup> RSPB, Martin Harper’s Blog, [‘How to harness the tidal power of the Severn Estuary’](#), 12 January 2017

<sup>73</sup> NRW, [Swansea Bay Tidal Lagoon](#), [accessed: 18 December 2017]

<sup>74</sup> NRW, [fish impact levels](#), 2016

NRW's impact study was [contested](#) by TLP who claimed that the figures used were unsourced and therefore unverifiable and "misleading".<sup>75</sup> TLP also asked the Permitting Service to pause the licence determination to enable them to submit additional evidence in relation to fish mortality to NRW for consideration. TLP submitted this additional evidence on 30th June 2017.

NRW consulted on this evidence and are reviewing the submitted information and the consultation responses.<sup>76</sup>

### 3.4 Financial challenges

Opinions are divided on the value for money of the Swansea tidal lagoon project and tidal lagoon technology more generally. The strike price and generation costs have both been cited as key challenges to the deployment of tidal lagoons in the UK.

#### Generation costs

Electricity generation costs are an indicator used for energy market analysis which estimate expenditure per MW or MWh for the lifetime of a plant all the way from planning costs through construction and operation costs to decommissioning costs.<sup>77</sup>

Construction of the Swansea Tidal Lagoon would be a major infrastructure project with overall estimated costs for the project of over £1 billion. Funding has been and is being sought from private investment.

Some like Richard Howard at Policy Exchange argue that the cost of the technology makes the project a "folly".<sup>78</sup> However, the Hendry review supported the project as pathfinder that could achieve economies of scale with large-scale tidal lagoons built later. The Hendry Review found there was potential for reductions in generation, project and capital costs if large-scale tidal lagoons projects followed a pathfinder project.<sup>79</sup>

The Review received evidence of a direct relationship between cost of capital and generation costs and was told that a pathfinder would contribute towards decreasing capital costs for future lagoon projects.<sup>80</sup>

The Review also argues that cost of capital is influenced by the level of government subsidy available to TLP for this project.

#### Government subsidy

The project requires subsidy from the Government in the shape of a strike price under the Contracts for Difference scheme which would ultimately be paid by consumers (see Box 1). The Government have said they want to limit costs to consumers (see Box 2).

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<sup>75</sup> BBC, [Swansea Bay tidal lagoon fish death figures 'misleading'](#), 14 December 2016

<sup>76</sup> NRW, [Swansea Bay Tidal Lagoon](#), [accessed: 5 April 2018]

<sup>77</sup> DECC, [Electricity generation costs](#), October 2012, Introduction

<sup>78</sup> Policy Exchange, Richard Howard, ['The folly of Swansea Bay tidal lagoon'](#), 11 January 2017

<sup>79</sup> Hendry Review, [Final report](#), p. 73

<sup>80</sup> Hendry Review, [Final report](#), p. 73

Various figures have been put forward on the cost of the lagoon, from the developer, the Government, and the press. It is not always clear what these costs are based on including factors such as what timescale the contract is for and how many lagoons are included in the calculation. It is therefore difficult to compare the different discussions of the lagoon's cost.

### **Box 1: Contracts for Difference (CfD) 'strike prices'**

Contracts for Difference (CfD) are a system of reverse auctions intended to give investors the confidence and certainty they need to invest in low carbon electricity generation. CfDs have also been agreed on a bilateral basis, such as the agreement struck for the Hinkley Point C nuclear plant.

CfDs work by fixing the prices received by low carbon generation, reducing the risks they face, and ensuring that eligible technology receives a price for generated power that supports investment. CfDs also reduce costs by fixing the price consumers pay for low carbon electricity. This requires generators to pay money back when wholesale electricity prices are higher than the strike price, and provides financial support when the wholesale electricity prices are lower.

The costs of the CfD scheme are funded by a statutory levy on all UK-based licensed electricity suppliers (known as the 'Supplier Obligation'), which is passed on to consumers.<sup>81</sup>

In 2014, a report for TLP by the consulting firm Pöyry suggested the first lagoon would require a strike price of £168 per MWh for 35 years.<sup>82</sup>

In 2016, it was reported that TLP were requesting an average strike price of £89.50 over 90 years with a bespoke descending structure that started with a higher price that decreased over the contract period.<sup>83</sup>

In January 2018, the Welsh Government reiterated their support for the Swansea lagoon and said they were "willing to provide further substantial investment to get the project off the ground".<sup>84</sup>

It was reported in February 2018 that as a result of discussions between TLP, the UK and the Welsh Government, TLP have made a new offer on strike prices on the same terms as the Hinkley Point C nuclear power station (£92.50 for 35 years).<sup>85</sup>

In May 2018, the Business, Energy and Industrial Strategy and the Welsh Affairs Committee launched a joint inquiry into the decision-making process of the Swansea Bay Tidal Lagoon project. During an evidence session on 9 May 2018, Mark Shorrock, Chief Executive of Tidal Lagoon Power, said that without the proposed financial support of the Welsh Government, the lagoon would cost £92.50 per MW over 60 years or £150 per MW over 35 years on a descending structure format.<sup>86</sup>

<sup>81</sup> EMR Settlement limited, [Contracts for Difference](#), [accessed: 20 December 2017]

<sup>82</sup> Pöyry, [Levelised costs of power from Tidal Lagoons](#), March 2014

<sup>83</sup> Utility Week, Swansea Bay tidal lagoon can offer same terms as Hinkley, 28 February 2018

<sup>84</sup> Welsh Government, [First Minister offers further support to kick start Swansea Bay Tidal Lagoon](#), 10 January 2018

<sup>85</sup> [Tidal Lagoon 'has offered Government new deal on price'](#), BBC news, 22 February 2018

<sup>86</sup> Business, Energy and Industrial Strategy and Welsh Affairs Committees, [Oral evidence: The Swansea Bay Tidal Lagoon](#), HC 1014, 9 May 2018, Q60 - 63

### Box 2: Control for low carbon levies

At Budget 2016, the Government set a cap for future CfD support at £85/MWh for projects commissioning by 2026 (and £105/MWh for 2021).<sup>87</sup> Moreover, the Chancellor announced a moratorium on new low carbon subsidies through a Control for Low Carbon Levies (the 'Control') in the Autumn Budget.<sup>88</sup> The Control will apply until the total of costs from low carbon levies is falling, which the Treasury has calculated will not happen until 2025. This could potentially be problematic for TLP as it has stated that its aim is to start construction in 2018, with the first power generated in year three (2021).<sup>89</sup> When questioned about the prospects of future marine and tidal projects by the BEIS committee on 28 November 2017, Tim Lord, Director for Clean Growth at BEIS said:

- no decisions on how to spend the already committed £557 million for future CfD auctions had been made;
- the new Control did not mean tidal, wave and geothermal technology would not get ahead; and
- that in some cases "technologies will come forward after 2025."<sup>90</sup>

The Climate Change Minister Claire Perry said reducing cost pathways for less mature technologies was one area where CfD money could potentially be spent.<sup>91</sup>

Ultimately, any Government subsidy would be paid for by consumers. The Hendry Review estimated that the cost to British households of a government subsidy for the Swansea lagoon are:

- 31p on average for the first 30 years
- 18p on average for the first 60 years<sup>92</sup>

The Review concluded that "On this basis, tidal lagoons are more expensive than offshore wind and nuclear during earlier periods."<sup>93</sup> The Review also found that the benefits of Swansea Bay are that in the long term it will be a cheaper source of energy:

During a 60-year period, a large scale tidal lagoon is less expensive than offshore wind and significantly less expensive than nuclear (with an average annual cost of c.£0.50 as compared to c.£1.40).<sup>94</sup>

It is important to note that this analysis in the Hendry review is based on data from Tidal Lagoon Power that is not publicly available and therefore difficult to know what strike price they are based on. Tidal lagoon proposed strike prices are more expensive in earlier years than in later ones. The calculations are based on a 60 year subsidy contract for tidal lagoons rather than a 35 year contract for Hinkley or 15 year contracts for wind. There are a number of years beyond the end of the contract when there would be no subsidy; the Swansea lagoon is projected to last 120 years and Hinkley is projected to last 60.

<sup>87</sup> Hendry Review, [Final report](#), para. 7.2

<sup>88</sup> HM Treasury, [Control for Low Carbon Levies](#), 22 November 2017, para 1.8

<sup>89</sup> TLP, [Swansea Bay](#), [accessed: 23 January 2018]

<sup>90</sup> Q56: [BEIS committee session on Clean Growth Strategy](#), 28 November 2017, HC 596/597

<sup>91</sup> Q57: [BEIS committee session on Clean Growth Strategy](#), 28 November 2017, HC 596/597

<sup>92</sup> Hendry Review, [Final report](#), Table 11

<sup>93</sup> Hendry Review, [Final report](#), p.82

<sup>94</sup> Hendry Review, [Final report](#), p.82

## Welsh Government Support

The Welsh Government has been vocal supporter of the project. On 5 October 2016, the Welsh Government set out its support for the Swansea Bay Tidal Lagoon because of the economic benefits and low-carbon energy it would bring to the area.<sup>95</sup> In January 2018, Wales First Minister Carwyn Jones wrote to the Prime Minister “offering to cover some of the tidal lagoon’s capital costs and urging the UK government to give the project the go-ahead.”<sup>96</sup>

It has been reported that the Welsh Government offered £200 million to the project.<sup>97</sup>

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<sup>95</sup> Welsh Government Written Statement [Swansea Bay Tidal Lagoon](#), 5 October 2016

<sup>96</sup> Welsh Government, [First Minister offers further support to kick-start Swansea Bay Tidal Lagoon](#), 10 January 2018

<sup>97</sup> [Swansea tidal lagoon: £200 offer from Welsh Government to get it built](#), BBC, 5 June 2018

## 4. Government decision on support for the Swansea tidal lagoon

### 4.1 Government statement

On 25 June 2018, the Secretary of State Greg Clark made a statement on the Swansea Tidal Lagoon, saying the project did not offer value for money and the Government would not enter into a contract with TLP:

Mr Speaker, I wish to make a statement about the proposed Swansea Bay tidal lagoon.

Britain's energy policy on electricity generation is based on meeting three needs: ensuring that we can count on secure and dependable supplies of electricity at all times; minimising the cost of supplies to consumers and taxpayers; and meeting our greenhouse gas emission reduction obligations. To those three requirements we have added, through our industrial strategy, a further ambition, which is to secure long-term economic benefits, in terms of jobs and prosperity, from the decisions that we take.

Our policy has been successful. Britain has one of the most secure and reliable electricity supply sectors in the world. Last winter, one of the coldest in recent years, the margin of capacity in our electricity generating system was more than 10%—around twice what it was in 2016-17. We have the strongest record in the G7 for reducing our greenhouse gas emissions. Between 1990 and 2016, the UK reduced its emissions by more than 40%. We have massively increased our deployment of renewable generation: renewable electricity now makes up almost 30% of our generation; our renewable capacity has quadrupled since 2010; and in two years the auction price of offshore wind has fallen from £114 per MWh to £57.50 per MWh. Coal, the most polluting fuel, contributed less to generation in Britain last year than in any year since the industrial revolution. All that has been achieved while the UK has maintained a position in respect of electricity's overall cost to households that is well below the average for major European countries.

Nevertheless, the cost of electricity is significant for households and for businesses, and the policy-related costs have been growing. We have made a clear commitment to bear down on those costs. It is in that context that the Government have assessed whether they should commit consumer or taxpayer funds to the programme of six tidal lagoons proposed by Tidal Lagoon Power Ltd, with the first being the proposed project at Swansea. We believe in renewable energy and we believe in the benefits of innovation. The conclusion of our analysis, which has been shared with the Welsh Government, is that the project and the proposed programme of lagoons do not meet the requirements for value for money, so it would not be appropriate to lead the company to believe that public funds could be justified.

The proposal for the Swansea tidal lagoon would cost £1.3 billion to build. If successful to its maximum ambition, it would provide around 0.15% of the electricity we use each year. The same power generated by the lagoon over 60 years for £1.3 billion would cost around £400 million for offshore wind, even at today's

prices, which have fallen rapidly and which we expect to be cheaper still in future. At £1.3 billion, the capital cost per unit of electricity generated each year would be three times that of the Hinkley Point C nuclear power station. The Hendry review found that if a full programme of six lagoons were constructed, the cost would be more than £50 billion, and it would be two and a half times what it would cost Hinkley to generate a similar electricity output. It is estimated that enough offshore wind to provide the same generation as a programme of lagoons would cost at least £31.5 billion less to build.

Taking all the costs together, I have been advised by analysts that by 2050 the proposal that was made, which would generate around 30 TWh of electricity per year, could cost up to £20 billion more to produce, compared with generating that same electricity through a mix of offshore wind and nuclear, once financing, operating and system costs have been taken into account. That could cost the average British household consumer up to an additional £700 between 2031 and 2050, or the equivalent of £15,000 for every household in Wales. However, in recognition of the potential local economic benefits that might result from a lagoon in Swansea, I asked officials to go back to consider what additional benefit could be ascribed to a number of other factors, including a beneficial impact on the local economy. For £1.3 billion, a Swansea lagoon would support, according to the Hendry review, only 28 jobs directly associated with operating and maintaining the lagoon in the long term.

Officials were also asked to make an assessment of the potential for valuable innovation and cost reductions for later lagoons that might come from embarking on a programme of construction. Independent advice concluded that the civil engineering used in Swansea bay offers limited scope for innovation and capital cost reduction—estimated at 5%—in the construction of subsequent facilities.

I asked for an assessment of the export potential of embarking on a programme of implementing the technology, but the Hendry review concluded that it would take

“a leap of faith to believe that the UK would be the main industrial beneficiary”

of any such programme. On energy reliability, the generation of electricity would be variable rather than constant, with a load factor of 19% compared with around 50% for offshore wind and 90% for nuclear.

The inescapable conclusion of an extensive analysis is that, however novel and appealing the proposal that has been made is, even with these factors taken into account, the costs that would be incurred by consumers and taxpayers would be so much higher than alternative sources of low carbon power that it would be irresponsible to enter into a contract with the provider. Securing our energy needs into the future has to be done seriously and when much cheaper alternatives exist no individual project and no particular technology can proceed at any price. That is true for all technologies. The fact that this proposal has not demonstrated that it could be value for money does not mean that its potential is not recognised. My Department is also in receipt of proposals from other promoters of tidal energy schemes that are said to have lower costs than the Swansea proposal, although these are at an earlier stage of development. Any proposals must be able

credibly to demonstrate value for money for consumers and public funds.

I am sure that many people in the House and beyond would wish that we were in a position today to say yes to the Swansea proposals. I have appreciated the contribution of Charles Hendry, whose constructive report led to this further analysis being made, and the engagement of the Secretary of State for Wales and Members of the Welsh Assembly, including the First Minister and the Leader of the Welsh Conservatives, Andrew R. T. Davies. All of us have a requirement to be responsible stewards of taxpayers' and consumers' money and to act at all times in their interests. It is in discharging that responsibility rigorously that I make this statement today, and I commend it to the House.<sup>98</sup>

## 4.2 Response to Government statement

### Tidal Lagoon Power statement

Following the announcement, Tidal Lagoon Power circulated a statement criticising the decision and analysis<sup>99</sup>. In particular, TLP said that the Government had not engaged with them and said they did not recognise the Government's figures [their capitals]:

The Secretary of State is clearly misinformed as his briefing today was very misleading. He says Swansea Bay Tidal Lagoon will cost three times nuclear. This is incorrect. Swansea Bay Tidal Lagoon will add just 30 pence to consumers' bills whereas Hinkley Point C will add £12 or more to bills.

The offer to the UK Government for Swansea is AT THE SAME PRICE as nuclear for a small pathfinder which as he acknowledges is 0.15% of the UK's energy requirements. The UK's second proposed tidal lagoon at Cardiff would be 88 times less expensive for consumers than Hinkley. Furthermore, the £1.3 billion build cost of Swansea is privately funded. It is NOT a cost to consumers as suggested by Mr Clark.<sup>100</sup>

The company also outlined their next steps:

In light of today's statement and having heard next to nothing from government for 2 years, the Board will be meeting in 2 days' time to consider its next steps. There has been no negotiation and it is not unreasonable to expect that government will now be willing to meet and discuss its position on Swansea Bay Tidal Lagoon in some detail. We have already requested that meeting.<sup>101</sup>

### Debate following statement

Following the Secretary of State's statement, a number of MP's commented on the decision.

Speaking for the Opposition, Bill Esterton MP criticised the decision:

The Government really should be ashamed about what we have heard from the Secretary of State today. When he announced the

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<sup>98</sup> HC Deb, [Energy Policy](#), 25 June 2018, vol 643, c634

<sup>99</sup> Received by House of Commons Library by email, statements not available online at time of publication.

<sup>100</sup> House of Commons Library, Correspondence with Tidal Lagoon Power, 25 June 2018

<sup>101</sup> House of Commons Library, Correspondence with Tidal Lagoon Power, 25 June 2018

cancellation of the project, my hon. Friends said, “Shame”. They were right to do so as this is indeed shameful. It is another broken promise by the Conservative party—we have seen lots of those recently, too. I remind the House that, in 2015, the Conservative manifesto committed to building the Swansea Bay tidal lagoon. The Government appointed Charles Hendry to produce a report to do just that. It has been one year, five months and 14 days since he published his final report. The report stated:

“The aim now is that we should move to secure the pathfinder project as swiftly as possible.”

During this time, the Minister has received letters signed by more than 100 MPs from all parts of the House in support of the project, along with interventions and questions indicating the strength of feeling in this place. There has been unanimous support from across industry, but the handling of the project by this Government has been atrocious.<sup>102</sup>

The SNP’s Drew Hendry criticised the decision<sup>103</sup> and Welsh MPs such as Carolyn Harris,<sup>104</sup> Stephen Kinnock,<sup>105</sup> and Tonia Antoniazzi also criticised the decision.<sup>106</sup>

A number of MP’s requested the Government publish their analysis. For example, Ed Davey, who was Secretary of State when the project began, questioned the Government’s analysis of the finances:

I was Secretary of State for Energy when the tidal lagoon story began, so may I tell the current Secretary of State with responsibility for energy that his statement is wrong, wrong, wrong? The evidence that the price of future tidal lagoons would fall dramatically after the first lagoon at Swansea is overwhelming. That was exactly what happened with other renewable technologies, including offshore wind, as he has admitted. Will he promise the House today that he will publish every scrap of evidence and analysis that he has used to take this decision, and hold a debate in Government time on that analysis and evidence?<sup>107</sup>

Some MPs accepted the Government’s arguments on the economic viability of the project, but asked about alternative tidal projects. The Government said they supported innovation.<sup>108</sup>

## Select Committee

In May 2018, the Business, Energy and Industrial Strategy and the Welsh Affairs Committee launched a joint inquiry into the decision-making process of the Swansea Bay Tidal Lagoon project.

Following the statement, the Business Energy and Industrial Strategy Committee, and the Welsh Affairs Committee, held an oral evidence session with the Minister Claire Perry. At the time of publication, the transcript had not been published but the session can be viewed on [Parliament TV](#).

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<sup>102</sup> HC Deb, Energy Policy, 25 June 2018, Vol 643, [c636-637](#)

<sup>103</sup> HC Deb, Energy Policy, 25 June 2018, Vol 643, [c639](#)

<sup>104</sup> HC Deb, Energy Policy, 25 June 2018, Vol 643, [c642](#)

<sup>105</sup> HC Deb, Energy Policy, 25 June 2018, Vol 643, [c644](#)

<sup>106</sup> HC Deb, Energy Policy, 25 June 2018, Vol 643, [c647](#)

<sup>107</sup> HC Deb, Energy Policy, 25 June 2018, Vol 643, [c641](#)

<sup>108</sup> HC Deb, Energy Policy, 25 June 2018, Vol 643, [c638](#)

The Committee members raised several questions about the financial analysis of the project. Other than repeating the points made by Greg Clark in the statement, Claire Perry said that they were subject to a non-disclosure agreement and could not provide any additional information on the figures for the project.

### Press comment

The BBC's article reporting the statement quoted Charles Hendry, author of the Hendry review:

Mr Hendry said he was disappointed with the UK government's decision but he added: "They're keen to look at other tidal technologies and that at least is positive.

"But they have therefore also taken 18 months which they could have almost said 'no' to it on day one."<sup>109</sup>

The Financial Times repeated the value for money claims of the Government statement but said the move was a "death knell" for the "innovative" project.<sup>110</sup>

The local newspaper Wales Online reported that although there was disappointment, the supporters "would have invested fully aware that it was a high-risk project."<sup>111</sup>

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<sup>109</sup> *BBC news*, [Swansea Bay tidal lagoon rejection decision criticised](#), 26 June 2018

<sup>110</sup> *The Financial Times*, [UK government pulls plug on Swansea tidal lagoon project](#), 26 June 2018

<sup>111</sup> Sion Barry, [Is there anyway back for the UK Government rejected £1.3bn Swansea Bay Tidal Lagoon?](#) *Wales Online*, 25 June 2018

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