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# Studies into labour requirements of the proposed Swansea Bay Tidal Lagoon

## Summary

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# **Studies into labour requirements of the proposed Swansea Bay Tidal Lagoon**

## **Summary**

In early 2015, Welsh Government commissioned SEMTA and the Construction Industry Training Board (CITB) to produce labour requirement forecasts specifically relating to the manufacturing of turbines for, and construction of, the proposed Swansea Bay Tidal Lagoon project. This is a project that aims to harness the seven to nine metre tidal range in Swansea Bay through 16 specially designed and built turbines, to generate electricity.

The UK Government is currently conducting an independent review into the feasibility and practicality of tidal lagoon energy in the UK. The outcome of this review is expected in the autumn along with, potentially, a decision regarding Swansea Bay Tidal Lagoon.<sup>i</sup>

This summary presents key findings from the CITB and SEMTA commissioned studies. Readers should be aware of the caveats attached to each study.<sup>ii</sup>

## **Manufacturing requirements**

- Labour demand for the manufacturing and assembly of the main components required for the project is forecast to support around 1,197 full-time equivalents (FTEs) during a 5-year build period.
- Additionally, there is also an estimated demand for 28 FTEs continuing for the operation and maintenance of the power plant for the useful life of the tidal lagoon (estimated to be a minimum of 120 years) – total of 1,225 FTEs.
- The majority of this labour (92 per cent) will be required for the power generation components, with the largest requirement within this being for the manufacture of turbine sets and sluice gates / stop logs.
- Around two thirds of the labour demand (63 per cent) is for technical / skilled occupations (the equivalent of Level 3 skills).
- The largest proportion of jobs (49 per cent) is for people working in the manufacture of fabricated metal industry, with a fifth (20 per cent) of jobs requiring people working in steel casting, and 11 per cent in forging / stamping metals.
- A potential pinch-point is identified in forging and fabricated metals, where the project is forecast to require 64 per cent and 20 per cent of current labour.
- There are potential shortages in Wales' capability to meet the demands for steel casting. This is due to the lack of such companies operating in Wales.
- It is estimated that, at present, Wales has the capability to provide around half (54 per cent) of the manufacturing and assembly of the main components requirements. However, the study notes that with sufficient investment to fill the gaps in Wales' capability (most notably in securing the required machinery and facilities), the capacity in Wales could, in theory, be expanded to provide some 92 per cent of activities.

- The study also calls for a strategic approach to up-skilling the existing workforce, and developing the required number of new entrants into the industry.

### **Construction requirements**

- Labour demand is forecast to peak in 2019 at slightly over 1,000 people (see endnote iii for further information on this).
- Over 60 per cent of the forecast labour demand can be accounted for by five occupations.
- These five occupations are plant operatives (17 per cent of total demand), specialist building operatives (15 per cent), wood trades and interior fit-out (11 per cent), labourers (11 per cent) and maritime-related occupations (11 per cent).
- Construction employment in Wales is forecast to grow much faster than in the UK as a whole between 2016 and 2020 (an average of 2.9 per cent per year on average in Wales compared to 1.1 per cent in the UK).
- Figures from the Labour Force Survey suggest around 18,000 workers in Wales will be eligible for retirement over the next ten years.
- Despite projected construction growth, trends in further and higher education qualification numbers point to a reduction in the future supply of qualified workers.
- Whilst this may be able to be absorbed in the short-term by the existing employment base, occupational pinch-points both in terms of numbers and skills are a real risk in the medium to long term.
- The forecasts suggest that in the short term there is capacity in the labour market to enable the construction element of the proposed Swansea Bay Tidal Lagoon, but that this is dependent upon a number of factors including the construction element of other large scale projects that may take place at the same time and the growth in the Welsh construction market.

The CITB construction study also contains a series of recommendations for Welsh Government, Tidal Lagoon Power, and other stakeholders.

The studies can be found at:

[www.learningobservatory.com/sbti](http://www.learningobservatory.com/sbti)

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<sup>i</sup> For further information on this review see: <https://www.gov.uk/government/news/review-of-tidal-lagoons>

<sup>ii</sup> Readers should note that these studies, data presented and related information must be viewed and used with caution and readers should be aware of the following caveats.

Caveats for manufacturing study:

- As with all projections and forecasts, the results presented in this report should be regarded as indicative and not precise measurements.
- The forecasts are based on information known up to February 2016 and are subject to changes in project timelines and refinements to build methodology.

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- The forecasts specifically relate to the manufacture and assembly of the main component parts required as part of the Swansea Bay Tidal Lagoon project by Tidal Lagoon Swansea Bay Plc.

Caveats for construction study:

- As with all projections and forecasts, the results presented in this report should be regarded as indicative and not precise measurements.
- The forecasts are based on information known up to this point in time and are subject to changes in project timelines and refinements to build methodology.
- The forecasts are based in part on information received from a Tier One contractor who has since left the Swansea Bay Tidal Lagoon project. It is not possible to quantify the effect of this change in contractor on the forecasts.
- The commencement start year of construction was assumed to be 2016 when analysis for this report was undertaken and labour supply information was compiled. Readers should bear in mind that a start date has not yet been confirmed at the time of publication. This may again impact on the research findings presented.
- The forecasts specifically relate to the construction plan and timetable of a tidal lagoon in Swansea Bay by Tidal Lagoon Swansea Bay Plc.

<sup>iii</sup> Note that this assumes a 2016 start date, which is unlikely at present, but was the assumption when the forecasts were produced.