Increased welding automation

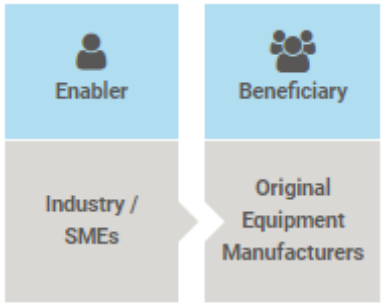
Type of Entry: Innovation Area

Substructures > Foundations > Other types of fixed foundations

https://offshorewindinnovationhub.com/category/substructures/

Description

Within the manufacturing supply chain, especially for the manufacture of jacket structures where there are complex joints, welding can be a key driver to cost/quality/time for manufacture. Through the increase of automated welding, cost can be reduced by increased speed of welding / reduction in quality concession and rework required due to inconsistencies. Such facilities have large associated CAPEX and therefore require sound business cases in order to influence the decision to invest.



Strategic Outcome

- Enabling disruptive innovation
- **Commercialising >15MW turbine platforms**
- Maximising operational performance of existing wind farms

UK Benefit

Low — Medium — **High**

Notes: UK fabricators are not currently able to fully utilise modern automated techniques due to lack of certainty around future pipeline. This is a significant driver in costs and productivity. The primary challenge is not with innovation but rather with creating the business case for capital investment in facilities and automation

Potential To Reduce LCoE

Low — **Medium** — High

Case for Intervention

Low — **Medium** — High

Notes: Manufacturing cost reductions are required if jackets are to become cost effective, increased automation is unlikely to make sense until nodes are standardised.

HSE impact

Low — **Medium** — High

Notes: Manual welding of nodes requires large human intervention, including welding large structures potentially at height. Increased automation could improve H&S in the fabrication process. Additionally, the improvement of weld quality could result in reduced offshore inspections and associated H&S risk.

Technology Readiness Level

1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9

Read more about TRLs

Forecast start and finish

Now — 2020 — 2022 — 2025 — 2030 — 2035 — 2040