## ABLE Marine Energy Park (AMEP)

ABLE Humber Port, East Coast, UK

Establishing a New Offshore Wind Cluster





Information on AMEP to Support the Attraction of Offshore Wind Activity - 2021

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### Introduction





Able Marine Energy Park (AMEP) is a port development on the south bank of the Humber Estuary on the East Coast of the United Kingdom. It is a nationally significant infrastructure project (NSIP) and is recognised as a core development within the UK Government Infrastructure Roadmap.

The AMEP project base case involves developing Phase 1 with 1,349m of installation quays, 4no. installation yards (78.63 ha), with an additional 139 ha for manufacturer storage.

It represents a singular opportunity for the UK to establish a world-scale industrial cluster and enable the UK to maximise the economic development potential provided by the combination of the emerging market and supportive policies. Subject to market demand the development has potentially 4 phases and the site could be extended to a total of 331 ha.

This document aims to provide information to assist the Offshore Wind Industry to select AMEP as either their:

- Operational hub/marshalling harbour for the construction of UK and potentially European, offshore wind projects;
- Port location for the establishment of meaningful supply chain activity and component manufacture.

AMEP provides a strong and sustainable proposition to offshore wind farm developers and manufacturing partners within the supply chain.

AMEP's core objective is to provide a more efficient UK port facility particularly to enable the offshore renewables sector to reduce its costs and maximise efficiency and profitability.

The confirmation of the major offshore wind players, as AMEP tenants will provide a significant enhancement to the regions economy and endorse the Humber as the cornerstone for the enlargement of an international scale offshore wind cluster in the UK.

AMEP ultimately provides the sector with a greater opportunity to reduce its overall costs (lowering the overall costs of the delivered component) and provides very significant benefits to the local and UK economy in terms of job creation and export potential.



## Location - Connectivity to Europe



The UK's largest ports complex.

Perfectly placed for the export and import of components and raw materials.

### **AIRPORT/HELICOPTER ACCESS**

Humberside Airport is only 9 miles (a 15 minute drive) and is the second largest heliport in the UK.

North Lincolnshire Council (NLC) is a direct stakeholder in the Humberside Airport and is willing to consider the provision of any services or future developments.

Over the last 20 years it has provided helicopter services for the North Sea oil and gas fields. It provides hangar, refuelling and maintenance facilities and has full permissions for 'under slung' loads.

Under new ownership the Airport is fully committed to expanding passenger numbers and increasing the number of 'business' destinations.

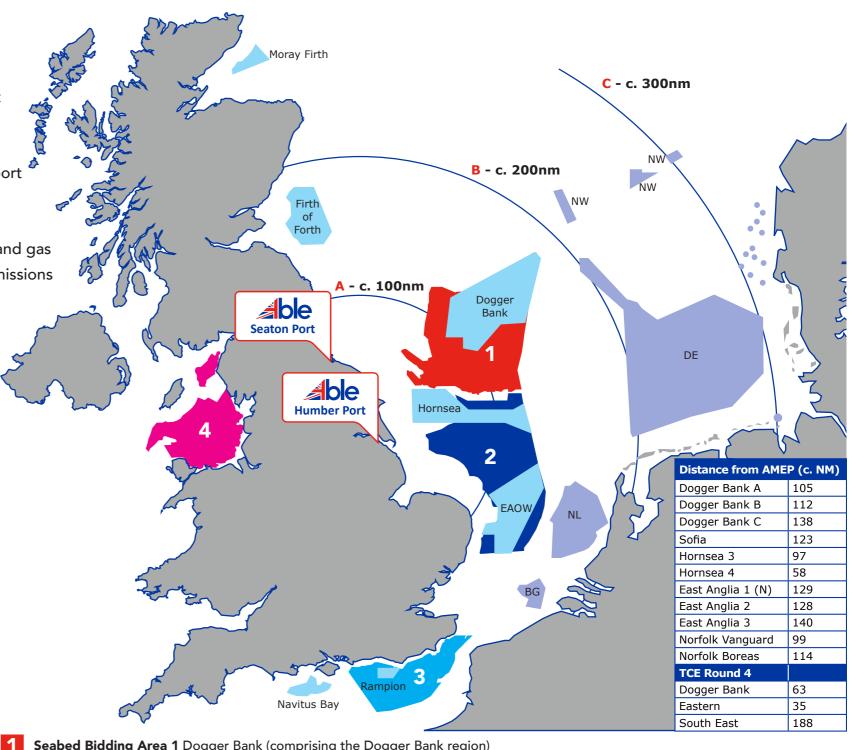


### **CONNECTIONS TO EUROPEAN PORTS**

AMEP quays will provide a vital resource for the importation of offshore wind components and raw materials from elsewhere.

Regular scheduled container and Ro-Ro services operate to the Humber from a wide variety of European ports (see table right).

From	NM	Hours @ 14 Knots
Rotterdam	186	13.3
Zebrugge	189	13.5
Dunkirk	191	13.6
Calais	195	13.9
Vlissingen	195	13.9
Emden	270	19.3
Le Havre	303	21.6
Ghent	320	22.9
Cuxhaven	321	22.9
Esbjerg	329	23.5
Bremerhaven	322	23.0
Gothenburg	488	34.8



Seabed Bidding Area 1 Dogger Bank (comprising the Dogger Bank region)

Seabed Bidding Area 2 Eastern regions (comprising the Southern North Sea region, The Wash region and the East Anglia region)

Seabed Bidding Area 3 South East (comprising the South East region)

Seabed Bidding Area 4 Northern Wales & Irish Sea (comprising the North Wales region, Irish Sea region, and the Anglesey region)

### Location - Road & Rail

Central UK at the heart of the Northern Powerhouse.



**ABLE Facilities** 

Other Ports

### ROAD

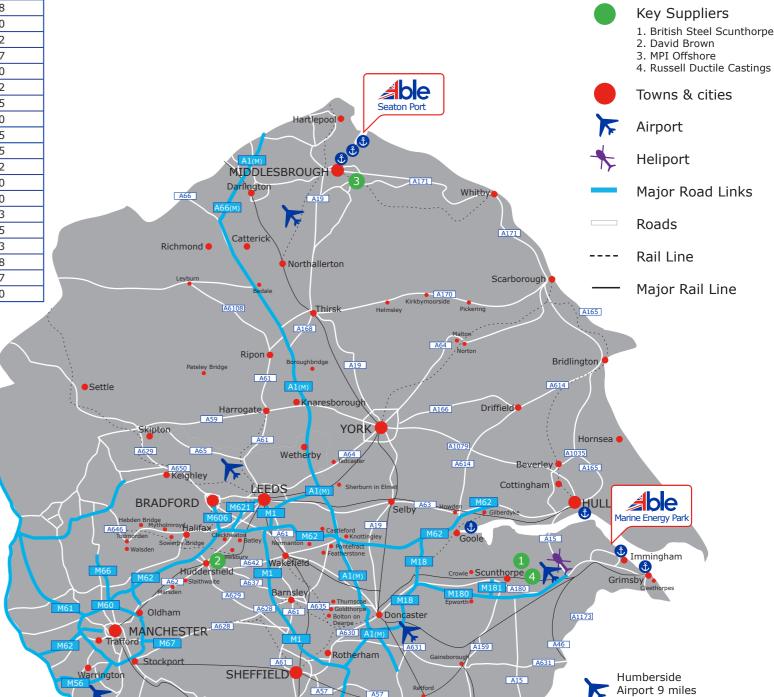
The facility has good access to the trunk road network via the A/M180 dual carriageway.

The link to the M180 has been significantly enhanced to full dual carriageway standard and associated junction improvements, along the length of the route between the junction with the A180 at the Brocklesby Interchange.

The road access surrounding AMEP has no restrictions other than those applied nationally. Large components can be delivered from Sheffield (South Yorkshire) and the Midlands without height or width restrictions.

The M62 connects Liverpool (Mersey) and Manchester with the Humber and the M1 and A1 via M18, M180 provide easy access directly to Edinburgh, the Midlands and London.

From	Miles	Hours @ 60mph
M180	10	0.17
M18	35	0.58
M62	42	0.70
M1	55	0.92
Leeds	70	1.17
Derby	90	1.50
Peterborough	103	1.72
Manchester	105	1.75
Birmingham	120	2.00
Teesside	122	2.05
Liverpool	135	2.25
Chester	145	2.42
Newcastle	150	2.50
Carlisle	180	3.00
London	200	3.33
Swindon	213	3.55
Portsmouth	230	3.83
Cardiff	245	4.08
Glasgow	250	4.17
Edinburah	270	4.50



### **RAIL**

A rail connection to the main network terminates at Able Humber Port.

Access to the railway sidings on the AMEP site will be made available for all tenants and this service will only be charged on an 'as used' basis.

This can provide the opportunity to have containers or other in-bound products delivered directly to site, potentially mitigating reliance on local ports and shipping routes.

The North Lincolnshire rail network carries the highest proportion of freight in the UK and has already been upgraded for additional capacity. Access to mainline UK freight rail network is fast and effective.

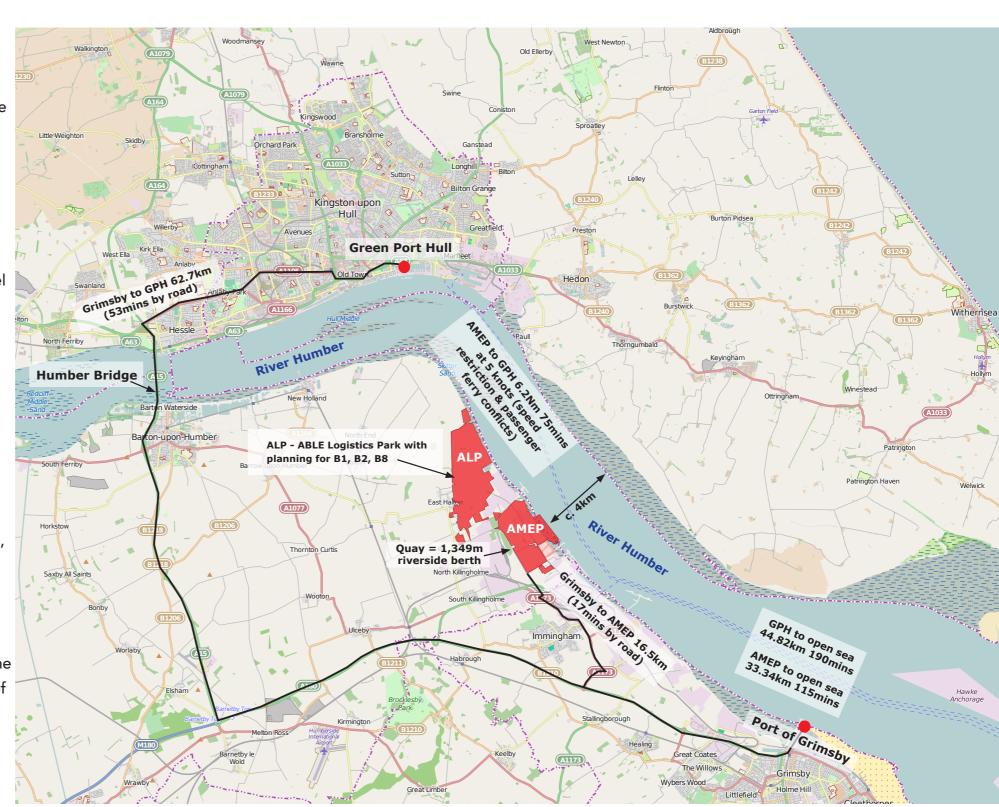
## Location - Proximity to Market



Direct proximity to major East Coast, UK offshore wind projects and the European market.

AMEP offers close proximity to market and affords significant logistics savings in respect of time, resource utilisation and, ultimately, overall costs.

- Able Marine Energy Park (AMEP) is located centrally on the East Coast of the UK on the South Bank of the Humber Estuary. It forms the UK's largest developable land bank with deep-water frontage.
- It is 11 miles (a 17 minute drive) from the Port of Grimsby.
- For staff travelling by car from the Port of Grimsby, AMEP provides a 1 hour 12 minute saving on return journey travel times compared to Green Port Hull.
- It is adjacent to the Humber Sea Terminal (C.Ro) and close to Immingham Port (2.0km) – Grid reference: 53"39'20 N 0"14'15 W.
- The DFDS Ro-Ro Terminal located within the Port of Immingham is located adjacent to AMEP and frequently handles wind-related project cargo.
- AMEP offers immediate access to Hornsea, Westermost Rough, Race Bank, Lincs Inner Dowsing, Sheringham Shoal, Dudgeon, Humber Gateway and Triton Knoll.
- The large Round 3/4 wind farms of Dogger Bank and East Anglia/Eastern area are also in close proximity.
- More than 80% of all North Sea Wind Farms and 60% of the entire European market is within 12 hours steaming time of AMEP.
- AMEP is in the heart of an industrial area and with no residential neighbours is suitable for operations (and construction) to work 24/7 required.



### AMEP - The Offer



The best platform for a meaningful UK Offshore Wind Port Cluster.

ABLE is committed to providing tenants with their preferred solution(s).

### ABLE offer:

- Access to project quays
- Quay land directly behind the quays
- Dedicated manufacturing and storage land with direct access to the quays
- On site heavy lift and transport services for handling and pre-assembly of components, as required

ABLE offers manufacturing partners within the supply chain:

- Land and;
- Buildings (if/as required)
- Site Management & Maintenance
- Dedicated external storage land with direct access to quays
- Quay access for import/export raw materials and components
- A neutral/central location to provide access to a range of customers
- Adjacent Office and Logistics Park
- Fixed pricing for 10 years for all on-site operations including heavy lift and transport services for handling and pre-assembly of components as required

Manufacturers could commence construction in 2020. A decision to construct quays in Q1 2020 would enable quays to be available from Q4 2022.

## AMEP - Potential Freeport Status



**Projected Benefits** 

Working closely with local and national stakeholders there is a shared ambition to ensure that AMEP has full Freeport status..

Subject to the Humber bid being successful AMEP will offer the benefits of being both a Freeport Customs Site and a Freeport Tax Site.

In addition to the deferred customs and duty charges on products the Tax Site benefits will include:

### **STAMP DUTY LAND TAX (SDLT)**

100% relief on leases executed before 31 March 2026 SDLT is s a function of the net present value of rent (to the end of the term [excluding breaks]). It would normally be paid at the rate of 1% (up to £5m) and thereafter at 2%.

#### **ENHANCED STRUCTURES AND BUILDINGS ALLOWANCE (SBA)**

This accelerated relief is intended to allow firms to reduce their taxable profits by 10% of the cost of investment every year for ten years (compared with the standard 3% p.a. over 33 and a third years. This relief would be claimable where qualifying expenditure is incurred, all associated construction contracts are entered into and the asset in question is brought into qualifying use between 1 April 2021 and 30 September 2026.

### **ENHANCED CAPITAL ALLOWANCES (ECA)**

Will provide enhanced tax relief for companies investing in qualifying new plant and machinery assets. This accelerated relief is intended to allow firms to reduce their taxable profits by the full cost of the qualifying investment in the same tax period the cost was incurred. This relief would be claimable where the qualifying investments are incurred on or after 1 October 2021 until 30 September 2026. Assets eligible for relief must be for use primarily within defined Freeport tax areas.

### **EMPLOYER NATIONAL INSURANCE CONTRIBUTIONS (NICS) RATE RELIEF**

Employers operating in a Freeport tax site would pay 0% employer NICs on the salaries of any new employee working in the Freeport tax site. This 0% rate would be applicable for up to three years per employee on earnings up to a £25,000 per annum threshold. Normally, employers pay National Insurance (NI) on all earnings over £732 per month (£8,784 pa). Under the proposed regime employers only pay NI on all earnings over £2,083 per month (£25,000 pa) and save 13.8% on the difference, ie £2,238 (13.8% of £16,216).

### **BUSINESS RATES RELIEF**

100% relief on the first five years, subject to relief starting by 30 September 2026.

## AMEP - Optimum Site Solutions



Available plots can be adapted to provide optimum site solutions for AMEP tenants.



# AMEP - Indicative Working Plan



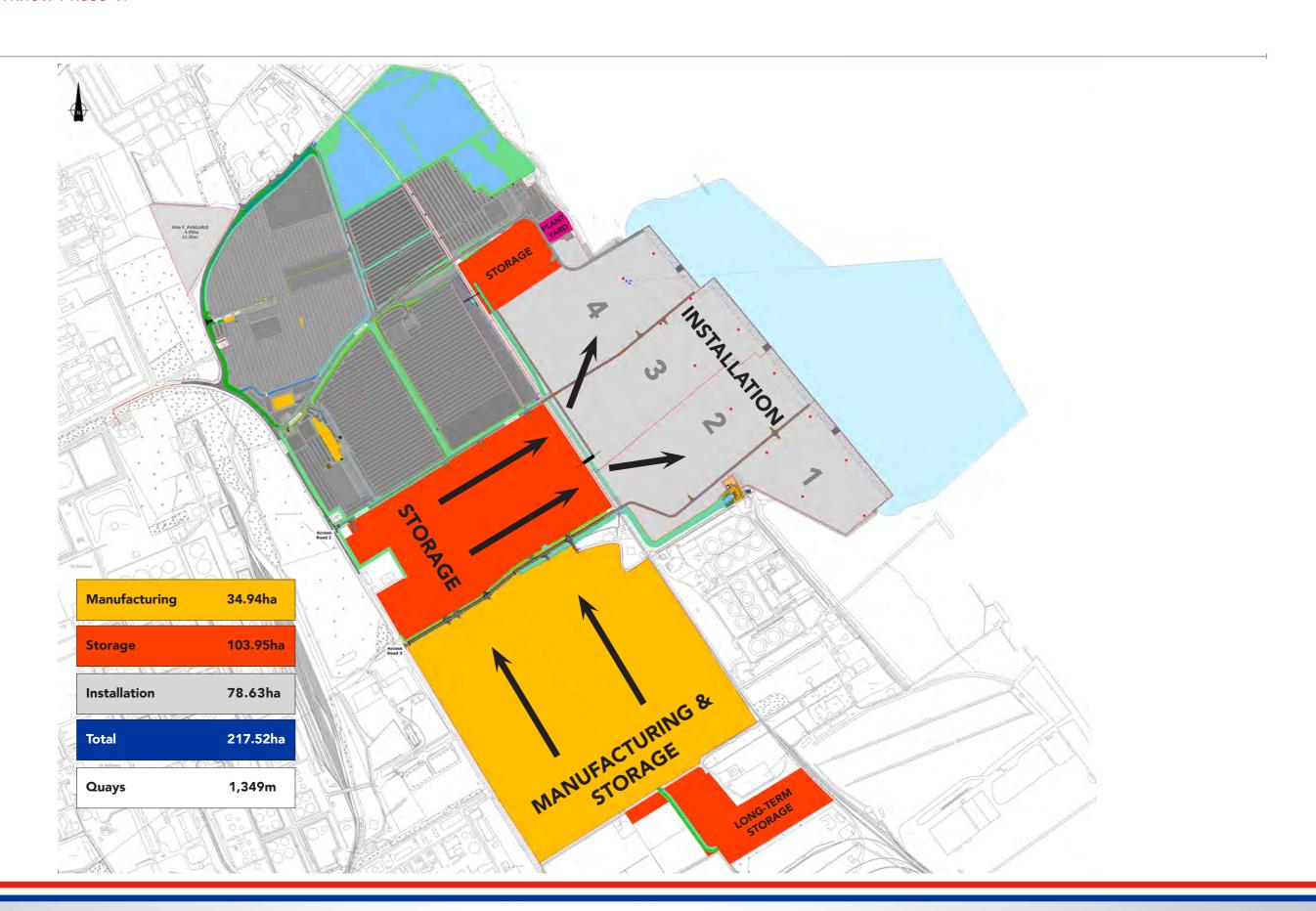
Potential cluster arrangement.



## AMEP - Offshore Wind Workflow



Potential Workflow Phase 1.



### Hornsea One Offshore Wind Farm

www.ableuk.com

ABLE's Successful Work Record in Offshore Wind at Able Seaton Port.

One of Able's port facilities on the River Tees - Able Seaton Port (ASP) provided the installation base for the foundation package for Ørsted's 168 OWT, 1,200MW Hornsea One offshore wind farm.

The contract extended over an intensive 13-month period and was completed at the end of January 19. Able provided both the facility and the onshore logistics and the project was completed without incident and, critically without any Lost Time Incidents – reflecting the strong and collective partnership working of all parties.

It included the safe transportation, using ABLE's own fleet of SPMTs handling 550 components and supporting accessories which included:

- Monopiles the heaviest at 993 tonnes and the longest at 71 meters.
- Transition Pieces 28m tall weighing c. 360 tonnes;
- Anode Cages etc.

There were 107 Transition Pieces - manufactured on the Tees, by Offshore Structures Britain (OSB) and Wilton Engineering - that were delivered and transferred direct from a barge on to the collecting installation vessel at ASP.

All the Monopiles were sourced from EEW's Rostock facility in Germany and the balance of the Transition Pieces from Bladt Industries based in Aaborg, Denmark. The deliveries were made by SAL's 15,000 tonne ship the MV Svenja.

The installation programme was led by the vessel the GeoSea Innovation which was able to jack-up adjacent to the quay at ASP and utilise its c. 1,500 tonne crane capacity. It was assisted by two of her sister ships – the Sea Installer and the Sea Challenger – which installed most of the Transition Pieces.

The project set potentially new standards in productivity, most notably the safe load-out of four monopiles within a three-hour period.











### Triton Knoll Offshore Wind Farm

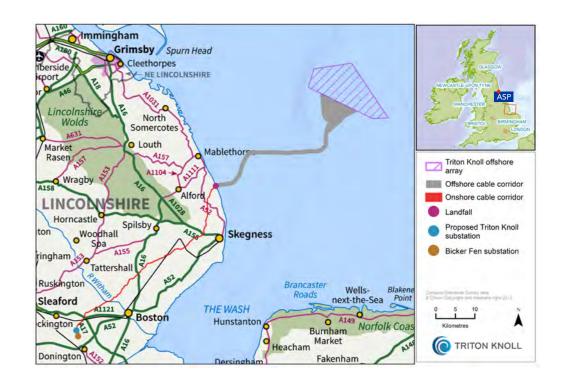
ABLE's Successful Work Record in Offshore Wind at Able Seaton Port.

From September 2020 ABLE is providing the installation base for the turbine package for RWE's 860MW Triton Knoll offshore wind farm with Mitsubishi Vestas Offshore Wind as the actual occupier. It involves the deployment of 90 turbines, the assembly of 3 tower sections per turbine and the marshalling of 270 turbine blades.

GeoSea will provide the offshore installation vessels.

ABLE has pioneered, as evidenced by both the Hornsea One and Triton Knoll projects, an innovative business model that meets the needs of the offshore wind sector. To this end ABLE provides fixed lump sum prices for the use of the facility AND the provision of the onshore logistics required by the project.

This includes, as necessary, the unloading of vessels, the movement of components to storage, the provision of load grillage for the storage of equipment, the 'picking' of components and the assembly and movement of products back to the quayside for loading/collection.



















## Dogger Bank Offshore Wind Farm

ABLE's Successful Work Record in Offshore Wind at Able Seaton Port.



Able Seaton Port has been confirmed as the marshalling base for Dogger Bank Wind Farm, the largest wind farm in the world utilising GE's 13MW Haliade-X (shown in the photo bottom right) as the turbine powering the first two phases of the project. This will enable the creation of 120 new skilled jobs during the construction phase.

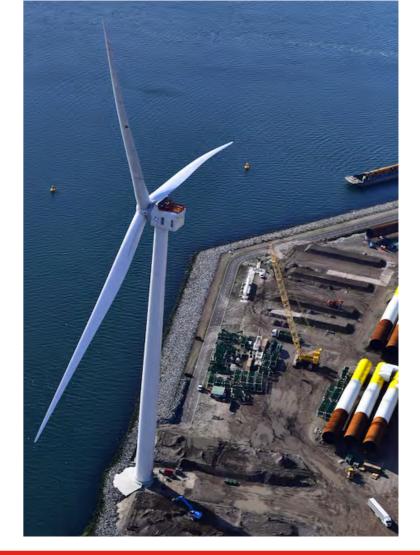
GE Renewable Energy will establish its marshaling harbour activities at ASP which will serve as the base for turbine service equipment, installation and commissioning activities for Dogger Bank A and B. This will see the delivery of component parts for each of GE's Haliade-X 13MW wind turbines to our specialist port, including the nacelle, three tower sections and three 107m long blades, for pre-assembly on-site at ASP prior to transport out to the North Sea for installation.

Recruitment is to start in early 2021 with turbine installation due to begin in 2023 at Dogger Bank A. The announcement represents the largest single order ever for offshore wind turbines, confirming 190 turbines for Dogger Bank A and Dogger Bank B installed off the north-east coast of England, split evenly at 95 turbines for each of the first two phases of Dogger Bank Wind Farm.

The installation of these turbines will be the first time ever a 13MW Haliade-X is installed in the world. One spin of the Haliade-X 13MW can generate enough electricity to power a UK household for more than two days.

As the first order for the 13MW Haliade-X, installation at Dogger Bank A will be the first time the turbine is installed in the world and ASP will play a key role in the project.













**GE Renewable Energy** 

## Planning - Fully Consented



Full planning consent for a deep sea port with Harbour Authority status.

The Secretary of State at the Department for Transport has granted the full AMEP Planning Permission through a Development Consent Order (DCO).

## Construction of all of the manufacturing sites could commence 2021 – so manufacturers could be producing components ready for installation in 2023/4.

In his AMEP decision letter the Secretary of State noted that,

"the scale of the opportunity offered by the AMEP development to transform the Humberside economy...... set it apart from other schemes" and that, "the benefits of the project, if fully realised, in terms of its contribution to the local, regional and national economy...... are of major significance."

The AMEP DCO contains all the necessary permissions required to execute the full AMEP port development including:

- Permission to construct the AMEP Quays
- Relevant (Statutory) Harbour Authority status for Able Humber Ports Ltd
- Permission to construct the associated buildings relating to the storage, assembly and manufacture of all offshore wind components and associated activities
  - Critically, the AMEP DCO provides planning permission for the construction of offshore wind related facilities to support the manufacture and assembly of components such as
    nacelles, blades, towers, foundations, cables, off-shore sub-stations etc.
  - AMEP will provides tenants with a considerable time, risk and cost saving compared to other UK ports, that must undertake conventional and complex planning processes to obtain necessary planning approvals.
  - ABLE will provide turnkey solutions (including buildings) for production/assembly tenants, as required.
  - ABLE will provide a full facilities service/maintenance package, as required.

## Cost Reduction Opportunities



AMEP will play a vital role in assisting the sector to reduce costs and maximise profitability.

### How we can help to reduce the costs of offshore wind?:

Over the past decade ABLE has engaged deeply with a number of wind industry experts and major players, to ascertain the requirements from a port and to gain a better understanding of the sectors approach and the challenges it faces. As the pressure builds on the sector to reduce its costs and provide local content, the development of meaningful offshore wind port clusters is clearly a pre-requisite for the industry's growth and prosperity.

Whilst port costs represents a relatively modest proportion of the sectors overall investment we believe they are a critical path to enabling wider more significant cost reductions and operational efficiencies. A coastal facility with the capacity of AMEP provides the UK with the biggest opportunity to attract inward investment from top-tier manufacturers and assemblers from within the supply chain.

If space to manufacture or mass-assemble is available at the port location where the major projects are deployed from, the competitive cost advantages of being located at that port will justify investment.

Port development projects like AMEP are required in order to allow easy access and egress at ports, not only for the installation vessels, but also for the supply-ships that will bring a large number of the required components to the hub/marshalling harbour.

### AMEP will contribute to the reduction of cost within the sector by:-

- Minimising movements of materials and products.
- Minimising the number of times materials and products are handled.
- Reducing the number of individual material and product storage locations.
- Reducing the logistics costs of material and product (and people)

AMEP will also enable opportunities for developers to take a more direct role in the installation and construction of their future wind farm developments rather than outsourcing this traditionally high-value work to third party contractors.

### From an operational perspective, aside from its efficient/ideal geographical location, AMEP will assist the sector to mitigate expenditure and risks in a number of ways:

- AMEP can dramatically reduce the expenditure and risk exposure on delivery and installation vessels.
- AMEP's introduction of a new, fixed, transparent charging model for operating the quays provides a more stable financial model and cost-certainty.
- Logistics costs represent a significant percentage of the total turbine or foundations sales value. For the large volume of offshore components that are to be installed close to AMEP, a significant cost saving will be obtained providing a strong incentive for turbine component manufacturers and developers to group their manufacturing facilities, supply chain and construction facilities.

### Wind Installation Vessels - Benefits



AMEP will dramatically reduce the sectors expenditure on Wind Installation Vessels and mitigate project risk.

AMEP can play a major role in developing new solutions that will enable the sector to overcome challenges. We have engaged with Wind Installation Vessel operators and wish to share the following feedback on the benefits provided by AMEP:

- The sector requires the provision of dedicated heavy duty deep water quays to meet the specific needs of a wide range of installation vessels and cargo ships.
- The need for both delivery and collection vessels to have access to the same port facility at the same time is paramount.
- The ability for installation vessels to "jack up alongside" is critical. AMEP will provide a bespoke engineered surface that would enable vessels to jack up and maximise the effectiveness of their onboard cranage.
- There are no other UK ports that can provide a total project solution that allows both the manufacture/assembly of project-components and facilitates the loading of the installation vessels from one port ie: manufacturing and multiple sets of both foundations and turbine components.
- AMEP quays and the significant hinterland directly behind them will offer the rare, unique, opportunity to store the requisite number of components ready for critical offshore installation.

  This in turn means that the risks of delaying not having product to load onto the installation vessel can be minimised/eradicated.
- The ability for multiple installation vessels to work in tandem on the same project to accelerate the provision of early-first power generation.
- AMEP provides a total port solution where turbines, foundations and balance of plant can be stored and deployed. This will ensure construction projects are more efficient and provide Developers with more flexibility, minimising project delays.
- AMEP's proximity to the major offshore wind zones (and proposed future wind zones) will help reduce the considerable impacts associated to exposure to weather interventions.
- AMEP's purpose built facility will enable smoother contracting interfaces with Installation Vessel Operators.
- A modern, bespoke facility, like AMEP, dramatically reduces risk in comparison to conventional ports.
- The vast majority of UK ports either lack significant land adjacent to the quays.
- If developers wish to dual-source turbines it will create an even greater demands on storage land adjacent to the quays. This further emphasises the need for neutral port locations that can handle a variety of different components.

## AMEP - Technical Specification



AMEP quays will be future-proofed.

#### **LAND**

Construction of the AMEP land is underway and well progressed and can provide a full site area of 331 ha.

- The whole site has the capability of storing equipment with a 10t/m² UDL and distributed patch loads up to 100t/m² (with minor settlement).
- All of AMEP is suitable for fully loaded SPMTs carrying maximum loads and for the storage of the various offshore wind components.
- All of AMEP is developed so that the largest mobile harbour cranes in the world can be deployed anywhere on the site.

### **QUAYS**

The quays have initially been designed following extensive liaison with relevant companies operating within the offshore wind sector (including developers, manufacturers, installation contractors and vessel operators). Ro-Ro capabilities will be incorporated into the AMEP quays. We believe that the facility will be fully 'fit for purpose' and are confident that the design is future-proofed for the deployment of the next generation(s) of installation vessels and components.

AMEP Quay Information	
Total Quay Frontage	1,349m
Quay capacity	20/m² UDL with patch loads up to 100T/m²
Heavy duty sections	25m wide 40t/m² UDL with patch loads up to 100t/m²
Depth	1,000m of quays designed to be dredged to -17.5mCD. 349m of quays designed to be dredged to -14.5mCD.
Berthing pocket	61m wide
Quayside	Quayside designed to allow vessels to jack-up adjacent to the quays (berth bed suitable for jacking up)
Staging Area	79 hectares of flat, strong storage land directly behind the quays for the marshaling of components
Bollards	250t, 24m apart, the design allows for larger capacity bollards if required
Fenders	Suitable for the mooring of OWT installation vessels up to 200,000GT



## AMEP - Operating Model



AMEP can offer dedicated project quays.

Our aim is to make the offer of quay use as simple and transparent as possible. AMEP can offer dedicated quays that can be available for priority/exclusive use.

#### **LAND**

- AMEP internal roads will provide tenants with direct access to the AMEP quays.
- Suitable demarcation between sites will be provided according to Client's requirements.
- In periods where AMEP tenant's activity is high, additional land and quays can be made available for shorter term occupation to accommodate peaks in demand.
- ABLE can provide tenants with the first option to expand on available adjacent land.

### **QUAYS**

- ABLE can provide clients with priority terms on a section(s) of AMEP quays.
- ABLE can provide fixed costs for up to ten years for facility and on-site handling operations.
- AMEP provides tenants with the ability to undertake financial forecasting with more stability and mitigates exposure to the various interdependencies within the supply chain.
- In the case of production/assembly facilities ABLE can provide plant, labour and equipment to receive, discharge and transport deliveries of imported steel plate, materials, equipment and potentially larger items such as pre-manufactured tower flanges all on a fixed price basis.

## AMEP - Competitive Advantage



22

AMEP provides a blank canvas for clients to do it their way.

### **THE CLUSTER**

- AMEP's strategy is to provide facilities including all plant and equipment, for organisations whose activities complement one another. The majority of tenants can benefit from each others business, be more productive, more environmentally friendly and, ultimately, more competitive, safer and more profitable the so-called 'integrated cluster'.
- ABLE is an experienced developer of multi-user port facilities. This means tenants are not limited to using a single supplier and are free to select as appropriate. This is a factor that contrasts sharply with many other UK and continental conventionally operated ports. ABLE operates multi-user facilities to ensure that our tenants can execute their projects in the most cost effective manner.

#### **KEY BENEFITS**

- AMEP will provide a purpose-built, environmentally friendly port to meet the needs of the offshore marine renewables sector.
- It is a new port development that will be future-proofed to enable impending innovations and facilitate new work-flow concepts, ultimately providing tenants with the opportunity to maximise flexibility/efficiency, not just today but in the future.
- AMEP's size allows the optimum overall configuration required by each tenant. It will provide the freedom to continually adapt and change the layout to derive further beneficial efficiencies for manufacturers and their supply chain.
- The AMEP site is effectively greenfield with no required remediation works and no contingent liabilities linked to contamination. This 'blank canvas' allows for a more cost effective development layout enabling ideal, rather than merely convenient solutions.
- AMEP is a new port development so no balance of priorities with competing users/sectors have to be assessed. No displacement or complex negotiations over access to quays, storage or capital equipment will occur.
- The emerging concept of floating wind farms has specific port requirements characterised by large onshore construction areas combined with wet storage capacity and the ability to launch large offshore wind structures. AMEP can provide these core needs.
- Access to extensive electrical supplies (including from renewable sources), potentially via a private wire providing a c. 15% cost saving.

# Heavy Lift & Transport Services

Heavy lift transport services can be provided on site for AMEP tenants.



ABLE has undertaken a multi-million pound investment plan to purchase new heavy lift and transportation equipment. AMEP's hard standing area, deep water, large quays with heavy lift crane pads make it an ideal location for challenging projects to be completed. ABLE own and operate a range of plant and equipment which includes:

### Liebherr LHM 800 SHL Mobile Harbour Crane

SWL of 308t at 18 metres radius and capable of lifting 58 ton at 64 metres radius. Maximum hoisting height above quay of 95.5 metres. Also available with a 28t; 16m³ dredging grab and a 26m³ cactus grab.

### Liebherr LHM 600 SHL Mobile Harbour Crane

SWL of 208t at 24 metres radius and capable of lifting 53.7 ton at 58 metres radius. Can be used for handling containers with Bromma container handler attachment. Maximum hoisting height above quay of 59 metres. Also available with a 28t; 16m³ dredging grab.

### Liebherr LR1300 Crawler Crane with Luffer

300.5 ton lift capacity and can be configured to a maximum radius of 80 metres. Also available with a 50m leader rig attachment and Bruce 16 ton piling hammer.

### Sennebogen 6130 Crawler Crane

Can be configured to lift 136 ton and has a maximum radius of 42 metres.

### **RT55 Rough Terrain Crane**

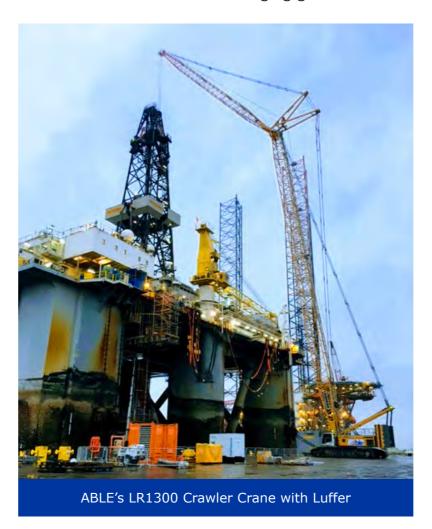
SWL of 54.88 ton and a maximum working radius radius of 41 metres. A main jib head height of 34 metres but also comes complete with a telescopic fly jib that can increase the head height up to a height of 54 metres and can be offset from 0 to 40 degrees.

### Scheuerle 4 and 6 axle SPMTs with 5 x Z350 power pack units

The individual trailers can be linked together mechanically in any combination using coupling elements or in loose-coupling mode using a data line.

### **Forklifts**

ABLE has various sizes of forklifts available from 3Te up to 50Te and a 45Te Reach Truck.







## The Humber Estuary Characteristics



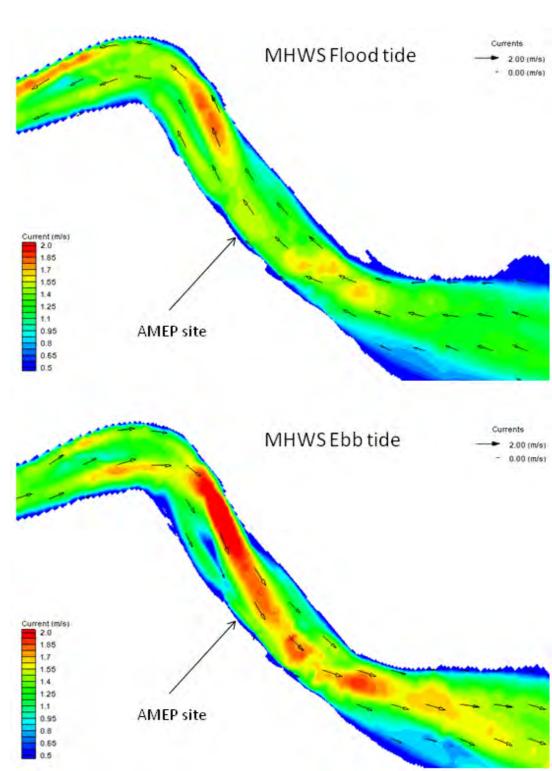
Wider, Deeper, Closer, Better...
...with the capacity to do even more.

We understand how important it is to utilise the wind installation vessels efficiently and safely. From an operational perspective we believe the Humber and specifically the location of AMEP on the Estuary, provides the optimum marine conditions.

- The estuary is 4km wide at AMEP.
- There are 2 shipping channels;
- River Humber 'Sunk Channel' is -9.5m CD (180m wide).
- River Humber 'Grimsby Roads Channel' is -6m CD (660m wide).
- Mean High Water Neap (MHWN) is 5.8m CD.
- Mean Low Water Neap (MLWN) is 2.6m CD.
- The tidal range between neaps is 3.2m.
- Mean High Water Spring (MHWS) is 7.3m CD.
- Mean Low Water Spring (MLWS) is 0.9m CD.
- The tidal range between springs is 6.4m.
- The river can be accessed 24/7.
- There are no air draft restrictions from AMEP to the North Sea
- There are no restrictions regarding horizontal clearance
- There are no locks or similar restrictions

AMEP provide a base for fast, safe and effective port calls for all types of vessels associated with the offshore wind sector. Obviously the sector, with its established operations on the south bank of the Humber is accustomed to the Humber Estuary and its characteristics however, there are other specific points that should also be noted:

- The various cruise liners that operate from Hull have priority over all other river traffic on the estuary. However, because AMEP can use a separate access channel to the cruise liners the users of AMEP quays will be unaffected.
- The current flow of the river is not an issue at AMEP. Upstream, near Hull, the estuary's current-force creates unfavourable sediment flow and river-bed conditions, making it difficult for jack-up vessels to operate in some locations. The charts on the right show peak bed shear stresses during a rising and falling Mean High Water Spring (MHWS) tide. They clearly show that vessels utilising the AMEP quays will not have to contend with the higher current velocities that occur in other parts of the estuary providing 24 hour access to AMEP.



An extract from AMEP Estuary Modelling Studies Report

# Humber - Tees & Tyne Comparisons



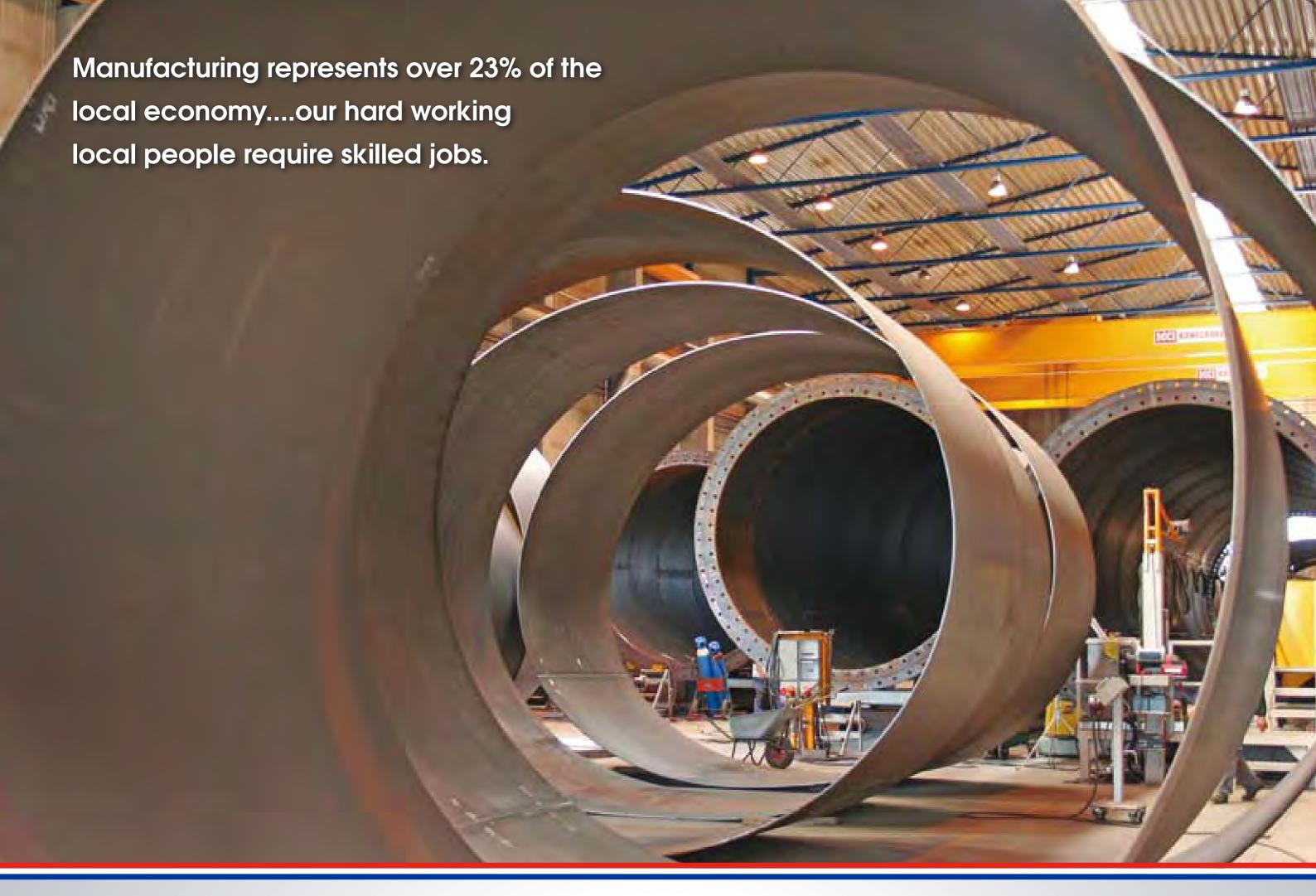
The Humber Estuary has the capacity to enable dramatically increased shipping movements and coupled with its natural characteristics, offers the opportunity to mitigate project risks.



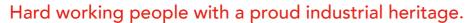








## Workforce - Productivity





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The Humber is a low cost region with both labour and housing costs significantly below the UK national average. In North Lincolnshire manufacturing represents over 23% of the local economy compared to a UK national average of c.10%. It has a proud industrial heritage and a large workforce who are accustomed to the true values of hard work, making real products and adding value.

Consultation events in relation to the planning processes of various offshore wind projects have taken place on the South Humber bank. A resounding positivity from local stakeholders emphasises how the planned activities at AMEP would be welcomed by the local working population.

The region has a strong skills base from the following sectors:

- Marine / offshore base
- Process Engineering
- Steel works

- Major chemical plants
- Logistics Operations
- Major Fabrication Metals and casting / forging

The current age profile of the region is good when compared to the rest of Europe with approximately 25% of the regions working age population falling within the age range of 35 – 49.

The region also compares well to other European countries on a number of key productivity indicators:

- Average hours worked per week
- Willingness to work over 48 hours per week
- Annual leave taken is relatively low
- Working full shift patterns is common
- 4 days on and 4 days off is a popular pattern of working
- Skilled manual workers are willing to work overtime

## Workforce - Availability





- AMEP has a population of 1.8 million within a one-hour drive. Aberdeen (as an example) has only 380,000 and Dundee 630,000.
- A labour force of, say, 750 would represent only 0.08% of the potential local work force.
- The region is heavily industrialised with engineering, petro-chemical, manufacturing and marine activities as the primary industrial employers. This industry embraces the potential for the offshore wind sector to enlarge the engineering workforce of the region.
- Between 2008 and 2033 the local population is forecast to increase by nearly 19%.
- Over 14% of employees (living within 45 minutes of AMEP) travel 20km to their place of work.
- There are over 121,000 people in the 'skilled manual workers' category within the immediate AMEP catchment area. The proportion of semi-skilled and unskilled manual workers is significantly above the national average.
- The manufacturing base in North Lincolnshire represents 22.4% of the local workforce. Employment in manufacturing is more than double the national rate, (which is below 10%).
- Gross Value Added is c. £74,000 per employee in the production sector compared to c. £53,300 regionally and c. £59,300 nationally.

Recent large-scale redundancy programmes at TATA Scunthorpe has demonstrated a willingness to collaborate early with inward investors at AMEP to absorb job losses. In this regard an opportunity funding will become available to provide a timely skills intervention and deliver a wealth of employees with suitable skills for the offshore wind sector who can fulfil duties on behalf of offshore wind developers and manufacturers:

- Pre Assembly and Installation base
- Riggers, crane drivers, dockside, fitters, wiremen
- Planners, logistics, management,
- Manufacturing
- Heavy machining, fitters, wiremen, fabricators, industrial painters,
- Welders, Welding Engineers, Non destructive testers, Machinists

# Production & Assembly - Workforce



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If manufacturers are secured we can establish 'mock-production lines' to train employees prior to opening.

A number of skills initiatives to prepare for the anticipated inward investment from the offshore wind sector have been established and will assist AMEP tenants to increase their workforce productivity sooner. These initiatives will bring advantages to both production / assembly inward investors and offshore wind developers.

Workforce productivity will be a key factor in enabling component manufacturers to optimise costs. In this regard North Lincolnshire Council have been pro-active in establishing a number of new skills interventions within the local area to prepare for inward investment from the offshore wind industry.

We want offshore wind component manufacturers to locate at AMEP and establish higher levels of workforce productivity sooner:

We believe that with initial intervention, a future workforce could obtain earlier and enhanced productivity levels and this would have an enormous impact on the costs of final components. To facilitate this, the nearby North Lindsay College received a donation of £200,000 from ABLE. This has enabled them to invest in new facilities in fabrication and welding to serve the anticipated market for the Wind Turbine sector.

The College has 24 welding bays with MIG, TIG and MMA capability together with 4 virtual welders and a submerged-arc welding facility. In addition rolls, press breaks, hydraulic guillotine, universal croppers are also available.

A new multi-million pound Engineering Technology Centre is now established and ready to be used. Put simply, it offers the potential to for inward investors to establish a 'mock-production line' to help train employees prior to commissioning their facilities at AMEP.

Adequate provision within local partner colleges exists to train people on pre-employment courses before deployment in inward investors factories. This would increase productivity from day one and could then be supplemented through further apprenticeships and Higher Education programmes.

ABLE as the main Employer Sponsor helped to establish a new-build college dedicated to renewable engineering for 14-18 year olds – the Scunthorpe based, Humber University Technical College. This new College is now open and delivering a bespoke curriculum revolved around aspects of engineering and renewables, to prepare a new generation of employees for the offshore wind sector.

An investment in knowledge pays dividends. ABLE is pioneering the skills transition on the Humber as the main Employer Sponsor of the new Humber University Technical College.



## Financial Support for Investment



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Maximum financial incentives are available. Including 100% capital allowances.

ABLE and North Lincolnshire Council would be willing to partner in an application for existing and emerging funding opportunities.

AMEP is within an Assisted Area so investors can maximise local and central Government grant support. Previous organisations (including a tower manufacturer) have been successful at securing multi-million pound grant support via the Regional Growth Fund [RGF].

- 248 hectares of the AMEP site falls within the UK's largest Enterprise Zone with 100% Enhanced Capital Allowances.
- This would allow inward investors to claim back 100% of their expenditure on new capital equipment against tax on their profits (as early as year one).
- This could be a significant benefit in terms of mitigating the costs of capital equipment and machinery.



## Other ABLE Facilities

### **ABLE Seaton Port**

Location: River Tees
Grid Reference: 54°389′04″N

01°11′26″ W

Quays: 557m quays inc.

48,000t heavy load quay

Max Water: 20.5m MHWS



### **ABLE Middlesbrough Port**

Location: River Tees

Grid Reference: 54° 34′ 50.75″ N

1° 13′ 03.76″ W

Quays: Up to 1,220m inc. 3

heavy load out quays

Max Water: 12.5m MHWS



### Contacts

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