



# Baltic InteGrid

Integrated Baltic Offshore  
Wind Electricity Grid Development



## Baltic offshore grid SME business cases

A summary report for the Baltic InteGrid project  
October 2018

## **Baltic offshore grid SME business cases** **A summary report for the Baltic InteGrid project**

By BVG Associates

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## 1. Introduction

Offshore wind energy (OWE) is playing an increasingly important role in a diversified and sustainable future energy mix. Offshore wind capacity in Europe totals 15.8GW (2017), the vast majority of which is located in the North Sea (WindEurope, 2018). The Baltic Sea Region (BSR) offers good conditions for offshore wind development: compared with the North Sea, waters are relatively shallow, wave height is lower, tides are less pronounced and potential sites are close to shore, resulting in lower manufacturing, installation and grid infrastructure costs. By 2030, the BSR could have 9.5GW in offshore wind capacity (Baltic InteGrid, 2018), of which only about 1.8GW has been installed by the end of 2017 (WindEurope, 2018).

The Baltic InteGrid project is exploring the potential of a meshed offshore electricity transmission grid for the BSR. It aims to contribute to sustainable electricity generation, to integrate the regional electricity markets further, and to enhance the security of supply around the BSR. The Baltic InteGrid project supports research efforts to equip its stakeholders with insights on the development of a regional meshed grid across a range of fields, including market and supply chain analysis.

The purpose of this study is to identify the various business cases for regional small and medium-sized enterprises (SMEs) to become involved in the supply chain for OWE electricity transmission. The study identifies the packages of work awarded by contractors that could be delivered by an SME across the lifecycle of OWE transmission assets. The study then describes challenges for SMEs entering these markets and provides recommendations for SMEs on how to prepare for entry to the OWE transmission supply chain. This report is a summary of the full report, which contains the full details of the work, the results and the assumptions.

## 2. Approach

The OWE transmission market was considered across three supply chain areas: export cables, substation structure and substation electrical system. Each supply chain area was considered across a four stage lifecycle: development, manufacture, installation and maintenance.

From the primary OWE transmission contracts awarded by the main contractor, 37 potential subcontracted work packages were identified that could be delivered by SMEs. The largest contract that an SME could bid for (having 250 or fewer employees) is likely to be about €10 million.<sup>1</sup>

Each of the 37 work packages was assessed on its future growth in demand, required investment size, synergies with other sectors, level of competition, complexity of

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<sup>1</sup> BVG Associates professional estimation. The turnover of a company with 250 employees could be up to €25 million and a single contract of more than €10 million would probably be considered a significant risk by the buyer.

interfacing, and relevance of proximity of customers. These assessments, along with five case studies of BSR SMEs that have won subcontracted work packages, were used to draw conclusions about the challenges and opportunities for SMEs entering the OWE transmission market.

### 3. SME work packages

The 37 work packages identified by the study that could be delivered by SMEs are summarised in Table 1. Some packages (such as diving services, crewing services and crew transfer vessel services) are contracted across several supply chain elements or lifecycle stages.

	<b>Export cables</b>	<b>Substation structure</b>	<b>Substation electrical</b>
Development	Cable design	Structural design analysis	System design
	Cable ancillaries design	Logistics analysis	
	Cable route engineering	Sea fastening design	
Manufacture	Factory jointing	Architectural steel	Busbars
	Cable ancillaries manufacture	Secondary steel	Heating, ventilation and air conditioning
	Equipment servicing	Signage	Fire detection and suppression
	Transport and storage	Sea fastening manufacture	Lighting
		Cable routes and trays	
		Cranes	
Installation	Cable protection	Port services	
	Route clearance and pre-lay grapnel run	Crewing services	
	Unexploded ordnance survey and removal	Crew transfer vessel services	
	Remotely operated vehicle services		
	Diving services		
	Cable termination and testing		
	Cable surveying		
	Trenching tools		
Maintenance	Repair jointing	Asset inspection services	Safety checks
	Fault monitoring		

Table 1 The 37 SME work packages considered in the study.

## 4. Conclusions

### **Demand will increase in work packages that can be undertaken by an SME, however this may not result in increased demand for SME services.**

Offshore wind developments in the BSR will provide an increase in demand across most of the work packages identified in the study. The size of demand varies across supply chain element and lifecycle stage however, with the greatest growth likely to be in crew services and crew transfer vessel services that are required across both installation and maintenance. While almost all work packages will experience growth to at least a small degree it is unlikely a Baltic SME can form a business case for entering the offshore wind transmission market based on serving this industry alone. Work packages with the lowest barriers to entry for SMEs tend to be ones with lower growth opportunities.

### **Competition from rival businesses is the biggest challenge to SMEs entering the market**

From the criteria used to assess the challenges for SME market entry into each work package, the existing competition in the market presents the highest challenge. Many work packages require highly specialised skills or an established track record which are difficult for SMEs to obtain. These packages are most likely to be kept in-house by the primary fabrication or installation contractors and may only become available to SMEs when the contractor has insufficient in-house capacity to fulfil multiple contracts at once. When subcontracting opportunities do arise they are likely to be won by competitors that may be large companies. An SME looking to enter these highly specialised areas should look to recruit experienced individuals from competitors.

### **There are significant opportunities to transition from, or diversify into, similar markets**

Companies that have experience supplying similar industries such as oil and gas, telecommunications or interconnectors are more likely to be able to transition into the OWE transmission market. In order to demonstrate a credible track record within offshore wind and compete with experienced suppliers, SMEs must focus on their technical, commercial and logistical experience in applications that are relevant to offshore wind. Gaining a detailed understanding of the technology, supply chain and contracting approaches is essential to identify key potential customers. For more specialised packages, partnerships with existing offshore wind suppliers can help establish credibility and are often an effective way to enter the sector.

Similarly, an SME considering entering the offshore wind market should consider that its potential customers may also be in parallel sectors due to synergies with other markets being found in all the work packages identified in this study.

### **There are advantages to SMEs being capable of providing multiple work packages**

Many work packages can be contracted as single packages to reduce interfacing complexity and risk to the end client. Some work packages, such as offering both design and manufacturing work, is advantageous to be integrated. SMEs in the BSR who have been successful in entering the offshore transmission sector tend to demonstrate capability in multiple areas.

### **There are opportunities for SMEs to serve markets outside of the BSR**

Although demand will increase significantly in the BSR by the end of 2030, offshore wind will also be installed in significant volumes across the North Sea and moderate levels in the Atlantic and Mediterranean. Contracting across the existing market has shown that offshore wind operates a truly European supply chain. Many work packages have been delivered by suppliers who are not located in close proximity to their sub-suppliers or end client. SMEs should consider their capability to export goods and services to the wider European market. Once some capability and experience has been gained, there may also be opportunities to expand into emerging markets, such as in North America and Asia who will look to European suppliers until their domestic supply chains are established.

### **Strong relationships with large supply chain contractors may be necessary for SMEs**

The scale and importance of offshore transmission assets means that a high level of trust is required in any SME subcontracted to undertake most of the described work packages. An SME that has developed a relationship with a large contractor should look to secure a framework agreement to enhance the likelihood of further opportunities. Some of the advantages of framework agreements include:

- Strengthening the working relationship between client and supplier
- Cost efficiencies of delivering multiple contracts
- Increase in company confidence, allowing re-investment into the company, or expansion into other work packages and markets, and
- Standardisation of supply.

Framework agreements often 'split' larger packages into smaller scopes of work, which are more accessible for SMEs with low experience or ability to take on risk to secure. SMEs in the BSR have found success in securing framework agreements with major offshore wind contractors.

### **SMEs can exploit advantages of proximity to the customer**

Some successful Baltic SMEs have utilised their proximity to customers or projects to win work in OWE transmission. In many cases this initial package of work has been used as a platform to demonstrate SME capability that has allowed the company to win further work.

### **Investment may be required for both capital assets and skills**

Many SMEs will have the equipment or infrastructure in place to supply to the OWE transmission market without significant further investment. Expanding capabilities to be able to win additional work packages may require further investment in capital assets but in some cases also in skills development such as training or certification, due to the highly skilled nature of many work packages.

### **There are opportunities for SMEs to demonstrate their innovative capabilities**

Offshore wind faces challenges in deploying larger volumes of more reliable technology whilst maintaining an emphasis on cost reduction. A strong and competent European supply chain has grown to support the offshore wind industry and many companies are exploring innovative ways to reduce costs. An SME that can demonstrate capability and offer an innovative solution that reduces costs in a work package will be attractive to a large client.



## References

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