Port Oostende

OFFSHORE HARBOUR LOGISTICS : obstacles and solutions

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North Sea Region
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Offshore harbour logistics : obstacles and solutions

1. Harbour logistics
2. Obstacles for SME and SME Ports
3. Future challenges
4. Business case - cooperation between SME : OWPP

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Offshore harbour logistics : obstacles and solutions

Offshore harbour logistics:

1. Offshore Harbour logistics : what ?

- Planning & survey
- Project logistics
- Installation and commissioning
- Operations & Maintenance
- Decommissioning

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Marine operations spread - Fixed installations

Planning/Survey

- Installation and maintenance of structures/buoys for monitoring equipment

- Wind resource mapping

- (Environmental/Fauna) Monitoring

- Farm seabed survey and mapping (UXO, bathymetry, soil)

Projects logistics

- Logistics (from manufacturer to base) Only WTG

- Foundation Installation

- Blade transport vessel

- Tower transport

Installation BoP/WTG & Commisioning

- Substation foundation installation

- Substation topside installation

- Trenching

- Export cable laying

- Burial/Rock dumping

- Accommodation

- Securing site

- Foundation/TPInstallation

- Foundation/TPInstallation

- Trenching

- Array cable laying

- Burial/Rock dumping

- Accommodation/ Access/Pull-in

- Securing site

- WTG Installation

- WTG Commisioning, accommodation and access service

OMS

- Operation & general maintenance, accommodation and access service

- BoP incl substation I&R

- Main component repair/replacement

- Scour/hydrographic monitoring and management

- Survey/Inspecion support vessel with ROV

Decommisioning

- WTG removal

- Foundation removal

- Substation removal

- Pile cutting

- Scour protection removal

- Cable removal

- Accommodation/ Access

- Removal pre/post survey

- Securing site

Accommodation vessel/SOV	Heavy lift/Crane vessel
Cable layer	Jack-up/Crane vessel/WTIV
Cable layer/OCV	Foundation installation vessel
Heavy transport vessel	Survey/Inspecion support vessel with ROV
Rock dumping vessel	Survey vessel
Small vessel, CTV etc	

2 . Obstacles for SME and SME ports

- Maritime context - cost factor of operations at sea
- Technological development - innovation level is high , e.g predictive O&M
- Legal framework : definition of liabilities and need for a stable legal framework
- Economic setting of the energy market: unreliable politicians – nationalist set-up in an international market - competition with other energy sources - need for a long-term vision
- Human resources: lack of skilled workers
- Financing of operations : corona-sclerosis of financial sector, especially towards SME – when a real vaccine to cure the financial sector
- Management of stakeholders

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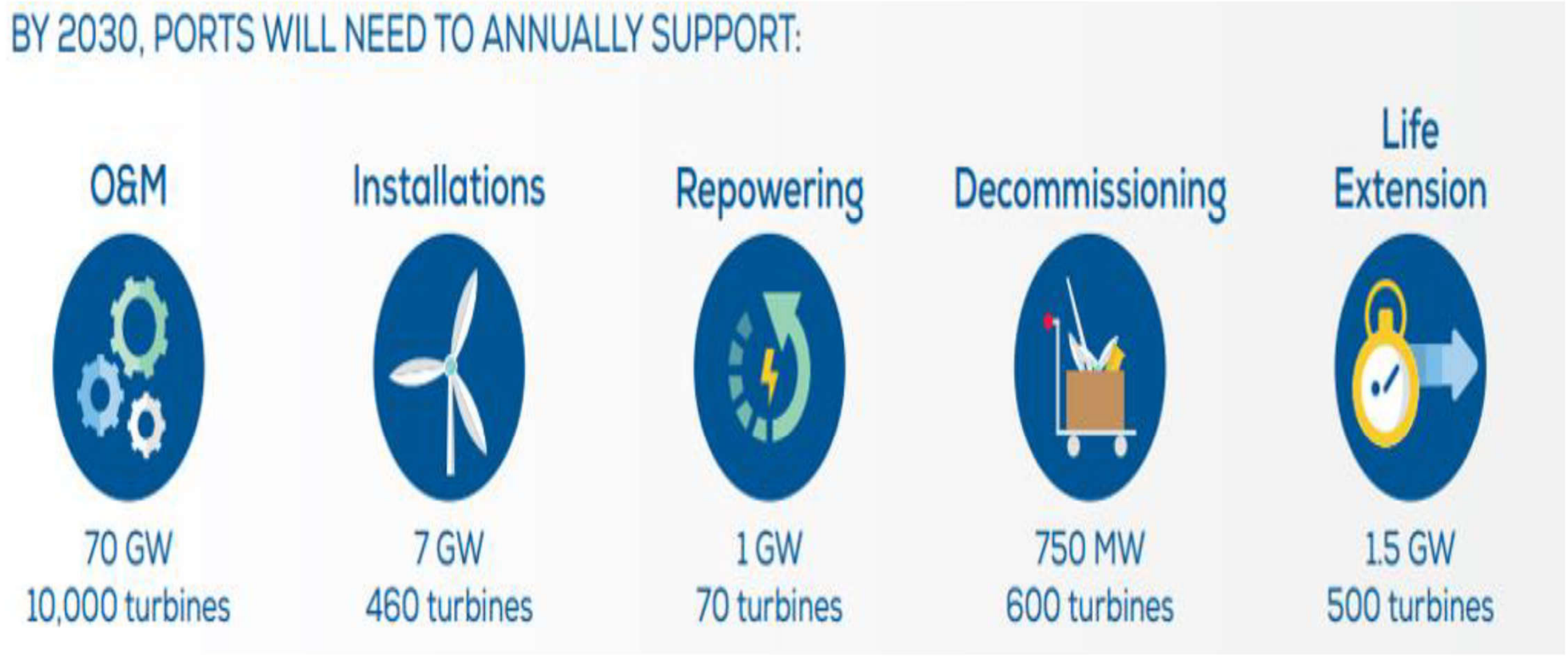
3. Future challenges



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3. Future challenges

- Implementation of new technologies - impact of data management
- Greening of the offshore operations within O&M and other logistics operations : opposition of traditional fuel mogols
- Reorganisation of the supply chain in function of big, bigger, biggest – high targets for installation : 90 GW offshore wind in 2030 - issue of space – port cooperation
- Challenge of decommissioning : reuse vs recycling of waste - where is the business case?
- Upcoming markets : floating wind turbines – mature ? Challenges as to logistics and mooring
- Interconnection between offshore wind turbines and the production of green H2 at sea and on land
- Energy islands

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4. Business case - cooperation between SME : OWPP

- **What** : a platform where port authorities, active in the offshore wind sector, can share their best practices and engage with the policy-makers and the industry

- **What do they represent**:
  * 460 hectares port area, dedicated to offshore wind industry
  * 8000 MW installed capacity of offshore wind turbines at sea , that needs to be maintained

- **Typology** : general ports and specialised ports

- Logistic efficiency within the ports contributes to the reduction of the LCOE, produced by the offshore wind sector : e.g. use of Ro-Ro facilities on heavy-weight pontoon

- **Challenge**: space in ports and adaptation of port infrastructure in order to reach the ambitious goal of 90 Gigawatt installed offshore wind capacity

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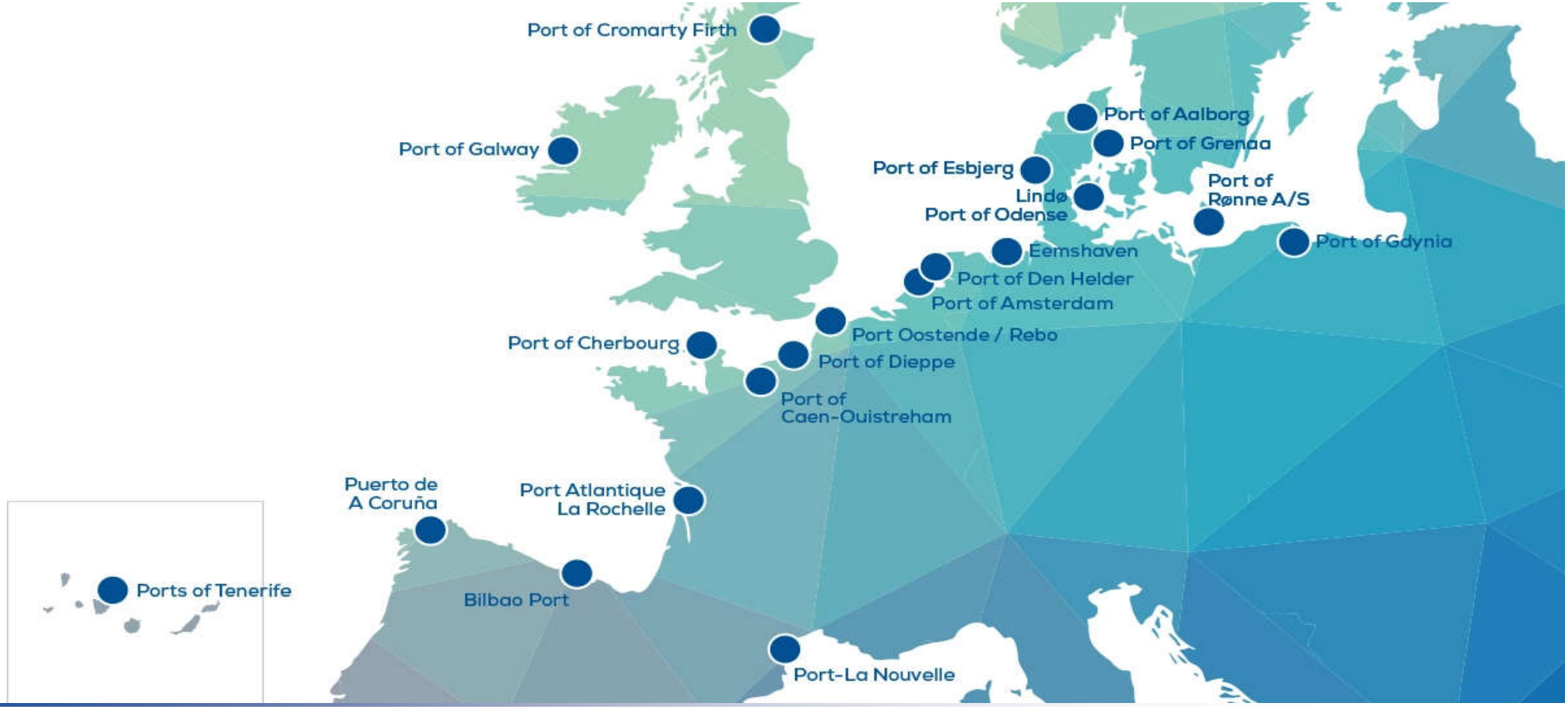
4. Business case - cooperation between SME : OWPP



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Thank you for your attention

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