

Balance-of-Plant offshore construction and maintenance setup

# IWS at a glance



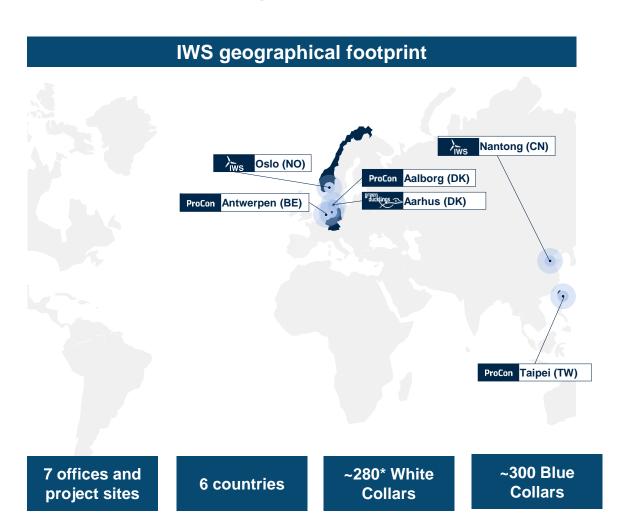
Including market leading position within Balance-of-Plant turnkey electrical solutions through subsidiary ProCon

#### **Emerging leader in integrated service for offshore wind**

- IWS offer Operation & Maintenance ("O&M") and consultancy services combined with 6x high-specification vessels to be delivered towards 2025.
- Asset Management solutions offered to the global offshore wind industry
- Established 2020 by the Awilhelmsen AS subsidiary Awilco AS (40% ownership)

# IWS Services IWS Fleet Portfolio of services and solutions for the offshore wind industry CSOV owner/ operator with 4 vessels in operation and 2 vessels under construction.

\*including PEAK Wind

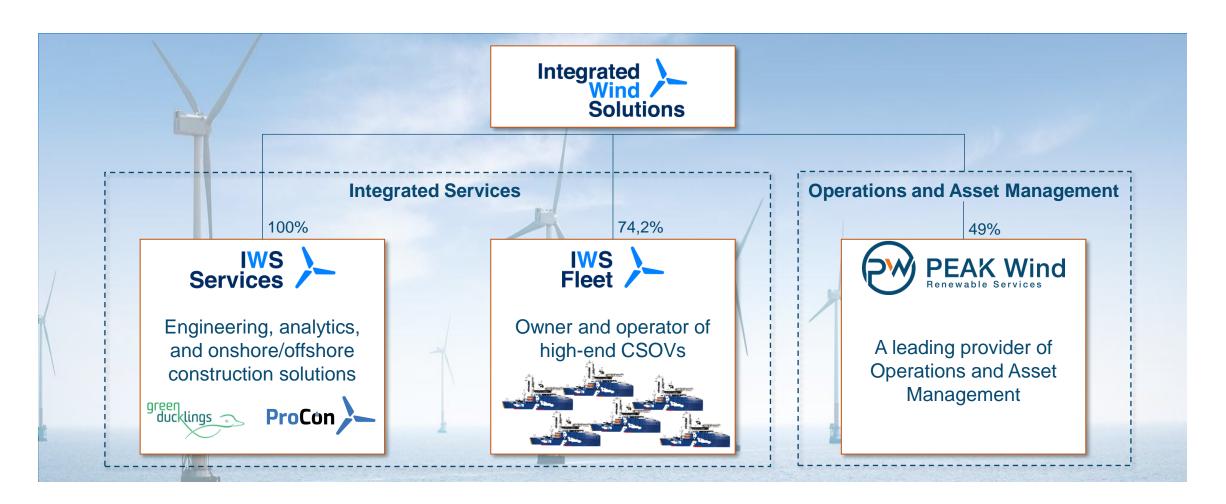


# **Organisational Structure of IWS Services**

Integrated Wind Solutions

Experienced organisation.

Integrated Wind Solutions leverages deep industry experience within offshore wind vessels and foundations. Our organisations count **more than 250 White-collars** and **more than 300 Blue-collars**, working onshore and offshore across Europe and Asia.



# **Bundled service offerings**



Targeting owners and operators of offshore wind farms



Significant inefficiency in the traditional way of servicing an offshore wind farm



At the core of our strategy is the development of an integrated service & solution offering



Working in combination with our stateof-the-art CSOVs



Focusing on Balance of Plant segment and logistics for the OEMs and asset managers, with an option to interface WTG OEM



Acquisitions of Green Ducklings and ProCon provide initial starting points but expect further organic and inorganic growth Building a one-stop services shop – across several delivery models

The portfolio companies as stand-alone services



IWS fleet & IWS services as a full service (including CSOV)







# Capabilities to address the entire offshore wind value chain



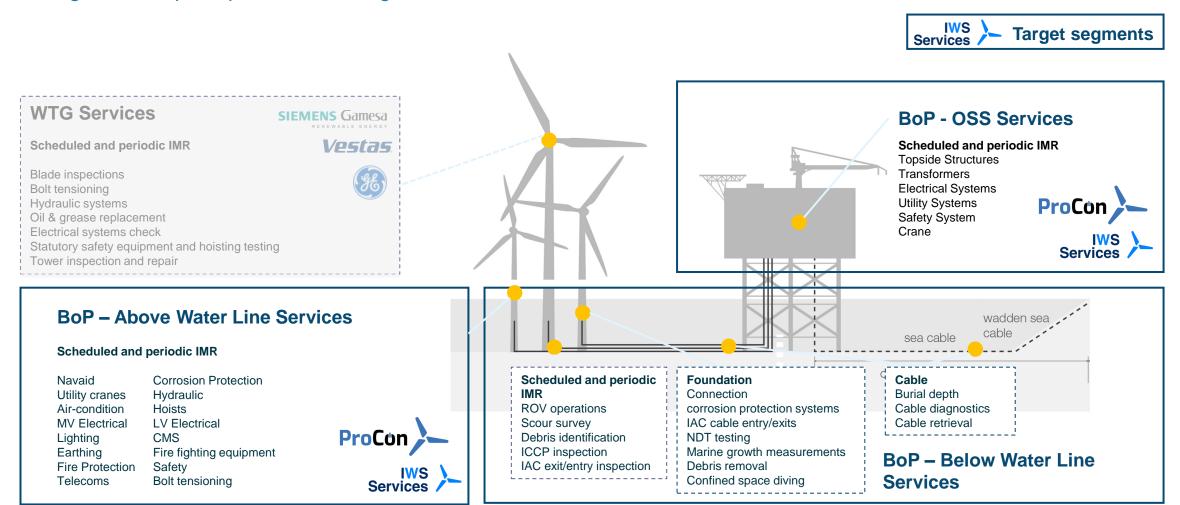
Possible extension of requested scope to obtain synergies across construction and operational activities

	•	Onshore -		Offshore		
	Bidding	Development	Construction	Installation / Commissioning	O&M	Decommissioni ng
	Support developer's bidding activities for seabed leases or PPA's. Supply Chain structure and operational strategies for BoP to meet bidding objectives	Engineering & Planning of O&M activities and logistics, qualify technologies and cost-out opportunities, structuring of supply chain to meet project objectives (i.e. local content)	Focus on a one-stop-shop approach to Transition Piece outfitting (HV/LV equipment, secondary steel, utility systems, cable trays, lighting, earthing etc.	Onshore and offshore Installation at Transition Pieces & WTG's, Mechanical /Electrical Completion and Commissioning	O&M of balance of plant and transmission assets, planning and logistics. Retrofitting and repair campaigns for WTG's	Safe removal of the assets at the end of lifetime.
Services >	8	<b>⊘</b>	•	•	•	<b>×</b>
ProCon	×	•	•	•	•	<b>×</b>
IWS >	8	<b>⊗</b>	<b>×</b>	•	•	8
green ducklings	•	•	•	•	8	<b>×</b>

# **IWS Services target offerings**



Building a one-stop-shop service offering for maintenance of offshore wind farms



## **Portfolio of Services**



#### Strong backbone – supported by established partnerships and planned acquisitions

# Existing activities and inhouse skills

IWS Services has strong inhouse competence through subsidiary ProCon for all relevant electrical and utility systems. ProCon has installed more than 30% of all electrical and utility systems in offshore wind foundations worldwide. ProCon several ongoing installation turnkey projects ongoing in Taiwan and Europe, where the scope includes engineering, specification, procurement and onshore installation of all electrical LV/MV and utility systems in the foundations, including selected mechanical scope.

The scope includes all foundations for the offshore wind projects, including local site management and supplementary sites in Asia.

# Strategic Initiatives for organic expansion

Strategic initiatives are ongoing for strengthening the portfolio offering within Port Logistics, Engineering & Project Management.

IWS Services is currently recruiting engineering and project personnel in order to strengthen the technical skills within multidisciplinary projects and sourcing of services to cover the full scope of offshore maintenance and operation.

# Partnerships to be established

IWS Services will establish the necessary partnerships within port operations and logistics and below-waterline-services. Such partnerships aim for a seamless execution of bundled and integrated services for international projects. Such partnerships will aim at a fully integrated setup for scheduled and unscheduled inspections and maintenance. The integrated setup will include ease-of-shopping, efficient use of vessel spread for cost reductions, reduction of interface risks and application of best practices established through experience and track records.

#### **M&A Strategy**

As illustrated by the acquisition of Green Ducklings and ProCon, acquisitions have from the very beginning been an integral part of IWS Services' strategy.

IWS Services is currently involved in several inorganic processes to build the portfolio of inhouse services and is constantly looking for further opportunities. To support the strategic initiatives outlined above, target areas are Engineering & Projects, Specialist Services & Products as well as Offshore Wind Logistics. The company has been capitalized to support this strategy and closings are expected in 2023.

IWS Services is committed to build the necessary portfolio to help release synergies.



# Offshore Wind Foundation Scope - Selected References



Turnkey and service scopes across European and Asian projects performed by IWS Services subsidiary ProCon

# Turnkey foundation outfitting

#### 900MW Offshore

[Taiwan] (See reference list for more similar projects¹)

#### **Project Details**

#### **Projects**

- Approx. 900 MW offshore projects in APAC
- MHI 9.5 MW turbines (174m rotor)
- Project construction in several phases.
- Project CoDs between in 2022-2025

#### **IWS Services/ProCon Team**

- IWS Services subsidiary ProCon established business hub in APAC
- Dedicated office and project team locally in Taiwan
- Back-office support from PEAK Wind's global organisation

#### **IWS Services/ProCon scope**

# Turnkey delivery of foundation field equipment

- Field engineering of cable routings, , interconnection, terminations and specification of all foundation field equipment (electrical and utility systems)
- Procurement of all field equipment
- Installation of all field equipment, including supervision at 3 installation sites
- Offshore Completion and Commissioning of all field equipment

#### **Project Location**





#### **Project Details**

#### Service Scopes for foundation

#### +5GW Offshore

and OSS

[UK, Denmark, Belgium, France, Netherlands, Taiwan]

#### Projects

- Ad hoc service activities to support offshore wind foundations and substations
- Offshore Completion and Commissioning
- Providing of offshore above-waterline services
- Specialist offshore tasks for HV/MV and utility equipment

#### IWS Services/ProCon Team

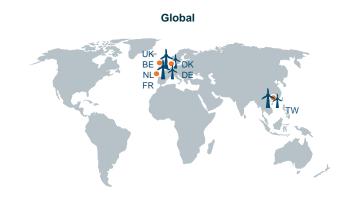
- Site Management & logistics
- Skilled technicians across multiple disciplines
- Engineering support
- Global Service team, including Taiwan back-office support

#### **ProCon's Scope**

#### Responsibilities

- HV/MV Equipment onshore installation and offshore commissioning & service
- Retrofitting of utility- and electrical equipment
- Statutory inspections to provide regulatory compliance
- Repair works at unplanned breakdown

#### **Project Location**



# **Offshore Wind Vessel Scope - Reference**



Delivery of CSOV and services for the world's largest offshore wind project by IWS Fleet

#### **Project Details**

# CSOV for Commissioning

3600MW Offshore

#### **Project**

- Dogger Bank, the worlds largest offshore windfarm under development
- Contracts for all three projects (A, B & C)
- 13MW GE Haliade-X turbines to be installed
- Owned and operated by Equinor, SSE and ENI all highly experienced and market leading offshore wind developers

#### **IWS Fleet/Services scope**

#### **Delivery of CSOV and related services**

- IWS to assist General Electric in Commissioning works
- Contract commencement mid-2023 with expected completion late 2026 (A/B/C)
- Expected support for retrofitting upon first power
- Possible delivery of HV/MV technicians for completion and Commissioning

#### **Project Location**



IWS suggests to also consider realisation of synergies across construction and operation in terms of foundation outfitting and SOV for offshore completion and commissioning in the Construction Phase.

Leveraging on the heavy track experience within design, procurement and installation scope for foundation electrical and utility systems ("Foundation Outfitting"), IWS Services and ProCon can ensure a design for operational cost efficiency during the lifetime of the wind farm, including possibility for extended warranty on the delivered equipment.

# **ProCon's Track Record for foundation works**



Having outfitted more close to 40% of all existing offshore wind foundations, ProCon is the market leader within electrical and utility installations. Substantial installation works have been performed on substations as well.

#### **Germany:**

**Albatross** ✓

Amrumbank West ✓

Arkona ✓ ✓

Borkum Riffgrund I ✓ ✓

Borkum Riffgrund II ✓ ✓ ✓

**Borkum West** ✓

Butendiek ✓ ✓ ✓

Dan Tysk ✓ ✓

**Deutsche Bucht** ✓ ✓

EnBW Baltic 2 ✓ ✓

Gode Wind 1&2 ✓ ✓ ✓

Haltern-Belm ✓

Hohe See ✓

Kaskasi ✓ ✓

Merkur ✓

Nordergründe ✓

Sandbank ✓ ✓ ✓

Veja Mate ✓ ✓ ✓

Wikinger Offshore ✓

#### **United Kingdom:**

Burbo Bank ✓ ✓

Doggerbank A&B ✓

**Dudgeon** ✓ ✓

Galloper ✓

Gunfleet Sands ✓ ✓

Gwynt y Môr ✓ ✓

Hornsea 1 ✓ ✓

Hornsea 2 ✓ ✓ ✓

Race Bank ✓

Walney ✓ ✓ ✓

Walney Extension ✓ ✓

Westermost Rough ✓ ✓

#### The Netherlands:

Borssele 1&2 ✓ ✓

Gemini ✓ ✓

Prinses AmaliaWindpark 🗸

#### **Taiwan:**

Changfang & Xidao 1&2 ✓ ✓

Changhua 🗸

Yunlin ✓ ✓

Zong Neng ✓

#### **Belgium:**

**Norther** ✓

Northwester 2 ✓

SeaMade ✓

#### **United States of America:**

Coastal Virginia ✓

#### Sweden:

Nysater ✓

Åndberg ✓

Malajord 🗸

Ljungbyholm 🗸

#### **Denmark:**

Danish Kriegers Flak ✓

Horns Rev 3 ✓ ✓

Røgild ✓

Stenes Enge ✓

Vrå Enge ✓

#### France:

Saint-Nazaire ✓ ✓

St. Brieuc ✓

#### Ireland:

Oweninny II ✓

#### LEGEND:

- ✓ Engineering
- ✓ Construction
- ✓ Service & Installation
- Offshore works



# **OWF** References

#### **Germany:**

Albatross ✓

Amrumbank West ✓

Arkona ✓ ✓

Baltic Eagle ✓

Borkum Riffgrund I&II ✓ ✓ ✓

Borkum West ✓

Butendiek ✓ ✓ ✓

Dan Tysk ✓ ✓

Deutsche Bucht ✓ ✓

EnBW Baltic 2 ✓ ✓

Gode Wind 1&2 ✓ ✓ ✓

Hohe See ✓

Kaskasi ✓ ✓

Merkur ✓

Nordergründe ✓

Sandbank ✓ ✓ ✓

Veja Mate ✓ ✓ ✓

Wikinger Offshore ✓

#### **United Kingdom:**

Beatrice ✓ ✓

Burbo Bank ✓ ✓

Doggerbank A&B ✓

Dudgeon ✓ ✓

Galloper ✓

Gunfleet Sands ✓ ✓

Gwynt y Môr ✓ ✓

Hornsea 1 ✓

Hornsea 2 ✓ ✓ ✓

Race Bank ✓

Walney ✓ ✓ ✓

Walney Extension ✓ ✓

Westermost Rough ✓ ✓

#### **The Netherlands:**

Borssele 1&2 ✓ ✓

Gemini ✓ ✓

Prinses AmaliaWindpark 🗸

#### **United States of America:**

Coastal Virginia ✓ Ocean Wind ✓

#### **Belgium:**

Norther ✓

Northwester 2 ✓

SeaMade ✓

#### **Denmark:**

Danish Kriegers Flak ✓ Horns Rev 3 ✓ ✓ Thor ✓ ✓

#### France:

Saint-Nazaire ✓ ✓

St. Brieuc ✓

Treport ✓

Noirmoutier ✓

#### Taiwan:

Changfang & Xidao ✓ ✓
Changhua ✓
Yunlin ✓ ✓

Zong Neng ✓ ✓ Taipower 2 ✓ ✓

Feng Miao ✓ Hai Long ✓

✓ Engineering

**✓** Construction

✓ Ins, Com, Ser



# **OSS** References

Project	Year	Country	Customer	Scope
Coastal Virginia	2023	USA	Semco maritime	Onshore pre-assembly, installation, testing and commissioning/termination of Electrical, Mechanical, Component, system scope
Ocean Wind	2023	USA	Semco maritime	<ul> <li>Onshore pre-assembly, installation, testing and commissioning/termination of Electrical, Mechanical, Component, system scope</li> </ul>
Baltic Eagle	2023	Germany	Equans	Offshore snacking Offshore M&E completion
Saint Brieuc	2022-2023	France	Equans	<ul> <li>Onshore preparation and planning of offshore works</li> <li>Offshore snacking</li> <li>Offshore M&amp;E completion</li> </ul>
Kaskasi	2021 – 2022	Germany	Semco Maritime	Onshore electrical installation and commission (E&I
Hornsea 1	2017 – 2019	United Kingdom	Semco Maritime Siemens	<ul> <li>Installation and commissioning of HV switchgear on onshore substation</li> <li>Offshore M&amp;E completion</li> </ul>
Merkur	2017 – 2018	Germany	Semco maritime	Offhore installation and termination of LV panels and monitoring systems
Nordergründe	2017	Germany	Sabik Offshore	Offshore installation and commissioning of nav-aid



### **IWS Fleet**



Premium vessels designed for superior performance and efficiency

#### **Premium tonnage with several benefits**



No conversion risk with 'fit-for-purpose' design



Lower fuel consumption and GHG emissions<sup>1</sup>

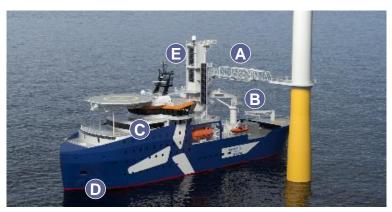


Optimal technical solutions for efficient onboard work-flow



#### **Design highlights**

- A Adjustable motion compensated gangway
- B Dedicated motion compensated "colibri" crane
- © Premium cabin accommodation and catering
- Optimized hull & DP capabilities
- Solar cells for low-carbon footprint



#### **Low-carbon footprint of vessels**

Energysaving technology



✓ Equipped with photovoltaic cells (solar) and largest battery pack in the industry to achieve lower emissions

Plug-in hybrid



✓ Plug-in hybrid solution reducing emissions optimizing fuel consumption

Optionality for zeroemission



- Conversion to a fully zeroemission vessel at competitive cost
- ✓ Ready for all-electric operation using supercharging, solar cells and battery

## **SKYWALKER - Class**



#### Designed for best-in-class performance and minimized carbon footprint

Energy efficiency by design

Solar panels for renewable energy

Hull design optimized for DP operation and comfort

Hybrid power system with largest battery in the industry

Cruise standard accommodation

Daughter craft

Helideck



3D compensated gangway

30 meter above the water line at 3m Hs

3D compensated crane 5t 3D and 25t in harbour

Open deck area 400m2

Warehouse Area 420m2

Separate crane for DC

Boat landing Stepless via walkway

No tunnel thruster equals less sound and vibrations

Permanent magnet motors for superior fuel efficiency

# **Vessels and Management**



State-of-the-Art Fleet and strong technical team for vessel management

Inhouse competences for ship management and operation of vessels will ensure a successful operation of the wind farm, and the best possible platform for our technicians. Whether our inhouse vessels will be used, or we decide to charter 3<sup>rd</sup> party vessels, we can bring value to both offshore construction and operation.

Experience rests in our DNA

The IWS Fleet organization has roots from the Awilco ship owning group, established in 1939 in Norway. This gives IWS Fleet a 80+ year strong and diverse experience in building, owning and operation ships in various segments (VLCC, Rigs, Offshore, LNG).

Operation of vessels

Strong experience in managing vessels in various arrangements with regards to ownership, financing and joint ventures. The organization has the capabilities to hold ownership and to handle the operations required by a vessel.

Ability to charter 3<sup>rd</sup> party vessels

Based on skills for configuration and operation of state-of-the-art vessels, IWS Fleet can charter in 3<sup>rd</sup> party vessels to fill gaps or provide the most efficient setup for the specific project context. Members of the management team of IWS Fleet have extensive experience from ship broker activities.



Ship Building Extensive inhouse experience is available for newbuilding projects, delivered on time and at cost. Quality assurance and follow-up is managed by own IWS site team.



Vessel type & design

The vessel type will be selected in order to meet the client requirements, and when needed IWS Fleet has experience in developing novel ship designs in order to customize the vessels to the job at hand, and to push the envelope with regards to HSE and emission standards.

# **Vessels and Management**





Technical Management team of IWS Fleet has been adapted from founding company AWILCO. Experience, procedures and personnel has been transferred.

#### Long track-record within shipping and offshore



#### Strong in-house capabilities





Extensive experience in successfully delivering on newbuilding projects in Asia on time and cost with own site-team



Strong experience in managing vessels after delivery



Commercial & technical wind competence in management team from experience with both renewables markets advisory & capital markets and establishing Fred. Olsen Windcarrier



Access to external financing and ability to raise capital



# **Training and Certificates**



Internal training platforms for service technicians and vessel crews

Digital and physical training platforms to ensure skilled personnel in compliance with Employer's and statutory requirements

Crew for vessel operations

IWS Fleet has extensive experience with successful recruitment, training and employment of a wide range of personnel of various backgrounds and nationalities, for worldwide operations.

Whether on owned vessels or chartered vessels, qualified and competent crew and technicians will be provided. Crew will typically be trained and certified within STCW, GWO, OPITO and others as relevant for their role and tasks.

IWS Fleet/Awilco has also initiated an extensive training program for female vessel crew members in the Philippines as part of gender equality efforts.

Technicians

Efficient training and onboarding of Technicians is in the core of ProCon's DNA. Multinational recruitment requires a state-of-the-art digital training platform to ensure that the skilled workers are dressed for the specific project tasks and compliant to ProCon's procedures and values. Hence ProCon has made significant investments in a fully digitalized training platform, that include use of virtual- and augmented reality systems. These systems enable remote training and instruction in virtual Transition Pieces and efficient onsite support.

Our service coordinators ensure that the formal project requirements for training and certificates are analysed and adhered to. Training and personnel logistics are managed efficiently as well as board and lodging. We invest in GWO-certification for relevant personnel to constantly have available skilled workforce, that can be mobilized on short notice.

All of our technicians have access to the ProCon App at their personal cell phones, making procedures, work instructions and further relevant support available at hand, without reuirement for a PC. Furthermore, the ProCon App is used for distribution of general information and internal news on ProCon initiatives.





# IWS/ProCon can comply with required standard requirements



#### **Best-in-Class within safety, quality & Environment**

#### IWS operational units comply with most requirements:



IWS and subsidiaries are applying best-in-class HSE and Q/A standards to meet Regulatory-and Employer's Requirements

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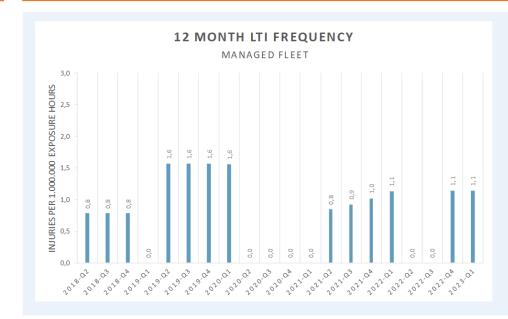


Procedures for ensuring a safe working environment, compliance to requirements, quality of services and products andrisk management form part of certified management system (examples attached)

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We are **fully committed as an organisation** to never compromise health & safety and live up to **industry leading standards** across all our projects and activities.



- LTI frequency statistics not split into categories by number of days off work.
- LTIF includes all LTIs 1 day or longer, based on 1.000.000 exposure hours
- No fatalities on managed vessels or offices in the last 5 years.

IWS Services are in the process of becoming ISO certified, and expect to have this in place within time of CoD if required in addition to IWS Fleet and ProCon.



# **HSE** and Quality Management certification



Operational units of Integrated Wind Solutions are certified according to required ISO standards

IWS Fleet (Vessels) and ProCon (Services) are certified according to ISO 9001, ISO 14001 and ISO 45001. IWS Services build on these management systems.



