

OFFSHORE WIND ENERGY HUMAN RESOURCES - CHALLENGES AND OPPORTUNITIES

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INTRODUCTION

- Offshore wind is a **cornerstone of the EU's Green Deal** and Fit for 55.

- EU targets: **at least 111 GW by 2030 and up to 317 GW by 2050** (from ~30 GW today).

- Such expansion creates **massive demand for skilled personnel** across the supply chain.

- **Baltic: Rising Offshore Wind Ambitions** - The Baltic Sea countries have collectively committed to increasing offshore wind capacity from 3.1 GW to 19.6 GW by 2030, underscoring the region's dedication to renewable energy expansion.

- Such expansion creates **massive demand for skilled personnel** across the supply chain.



CHALLENGES

Overall world tendency -
lack of marine professionals.

At present, demand for
maritime crew is estimated
at about 1.45 million,
including some 790,500
officers

CURRENT SHORTAGE (2023 - 2024)



Shortage of officers: ~9% gap globally



This is equivalent to **a shortfall of over 55,000 officers worldwide.**



It's the **highest recorded shortage**
in the past 17 years.



Demand is especially high for **engineers, electro-technical officers (ETOs), and officers for tankers and LNG vessels.**

CHALLENGES

FORECAST (2026–2027)



The industry **will need 89,510 additional officers by 2026** to operate the global merchant fleet effectively.



If current trends continue, **the officer shortage could exceed 100,000 by 2027.**



Decarbonization requirements (e.g. training for alternative fuels like ammonia, LNG) will add **pressure for skilled personnel**, not just in quantity but also in qualification levels.

WIND ENERGY SKILL SHORTAGE

- **Severe lack** of specialized workforce: turbine technicians, offshore engineers, marine coordinators, HSE specialists, cable installers, maritime personnel for CTV, Jack up, Construction, MRSV, WTIV etc vessels.
- **Transferable skills from Oil & Gas** and maritime sectors exist, but re-training is needed.



TRAINING & CERTIFICATION GAPS

- No fully standardized EU-wide certification system (e.g. GWO vs national schemes).
- **Need for upskilling existing maritime professionals and training new entrants fast.**



AGING WORKFORCE

- Many experienced offshore workers are nearing retirement.
- Younger generations are not yet fully attracted to the sector.



PROJECT PIPELINE UNCERTAINTY

- Fluctuating investment confidence and permitting delays in some EU states affect job stability and long-term workforce planning.





“MARITIME” crew - STCW

OFFICERS



CAPTAIN



CHIEF OFFICER



CHIEF
ENGINEER



2nd OFF, 3rd OFF



2nd ENG, 3rd ENG



ELECTRICAL OFF

RATINGS



BOSUN, AB, OS, CADET



FITTER, WELDER



MOTORMAN, OILER,
WIPER



COOK



PUMPMAN









STEWARD

"OFFSHORE" CREW

STCW+ GWO+OPITO+IRATA+IMCA+Sparrows





OFFICERS

-  CAPTAIN
-  CHIEF OFFICER
-  CHIEF ENGINEER
-  2nd OFF, 3rd OFF
-  2nd ENG, 3rd ENG
-  ELECTRICAL OFF



-  BARGE/JACKING MASTER/ENGINEER
-  SDPO, DPO, JDPO
-  ROV SUPERVISION, TECHNICIAN
-  DIVE SUPERVISOR, TECHNICIAN
-  GEOLOGIST
-  FIELD SURVEYOR

RATINGS

-  BOSUN, AB, OS, CADET
-  FITTER, WELDER
-  MOTORMAN, OILER, WIPER
-  COOK
-  PUMPMAN
-  STEWARD



-  DECK FOREMAN
-  ROPE ACCESS RAT1/2/3
-  SPARROWS STAGE 3
-  NDT INSPECTOR
-  CRANE OPERATOR
-  LGS/LMI INSPECTOR
-  RIGGER, SLINGER, BANKSMAN
-  CAMP BOSS
-  WINCH OPERATOR
-  ASSISTANT COOK, BAKER
-  AMPELMAN OPERATOR
-  STEWARD, LAUNDRY MAN
-  JACKING OPERATOR

REQUIREMENTS



**SPECIFIC TRAINING AND
CERTIFICATION AS PER
FOLLOWING STANDARDS**

- **STCW**
- **OPITO**
- **GWO**
- **IMCA**
- **SPARROWS**
- **IRATA**

REQUIREMENTS



RIGGER

- OPITO Rigger
- OPITO BOSSIET WITH CA-EBS
- GWO Slinger Signaller/Rigger Signal Person
- GWO SEA Survival
- GWO Working at heights
- GWO Manual Handling
- GWO Fire awareness
- GWO ISC R-ALF Pulley + SKED Training
- GWO First Aid
- Confined Space entry
- Offshore Induction
- Chester step
- Work Party Person Training
- BOAT LANDING & CREW TRANSFER
- BASIC ELEMENTS OF SAFETY SCC (VCA)
- Safe Use of Industrial Telescopic Handler
- Safe Use of Mobile Elevating Work Platforms
- Safe Use of Industrial Counterbalance Forklift
- Selecting suitable equipment to suit application

DPO

Chief Officer Unlimited and Master up to 3000 GRT

Dynamic Positioning Operator Unlimited

BOSIET + CA-EBS (OPITO approved)

GWO - Working at heights

GWO- Boat transfer

Crisis Management and Human Behavior

Managing the crowd

Certificate of Training - Gas tester

DNV Practical Marine Risk assessment course

DNV Marine Incident Investigation and Analysis course

Course completion certificate -Ship Handling Course for ASD

Certificate – P&I Seminar on Salvage and Evidence Gathering

Dangerous & hazardous cargo (B-V/b, B-V/c)

Fire Prevention and Fire Fighting

Advanced Fire Fighting

Survival Crafts & Rescue Boats

Fast Rescue Boats

Elementary First Aid

Medical First Aid

Medical Care

GMDSS General Operator Certificate

Radar and ARPA Management Level

ECDIS Generic

Bridge Resource Management

Bridge Team Management

AMOS M&P Basic user induction

REQUIREMENTS



OPPORTUNITIES



JOB CREATION

- Offshore wind could create **over 200,000 jobs in the EU by 2030.**
- Growth in coastal regions (Baltic Sea, North Sea, Atlantic) = revitalization of local economies.

OPPORTUNITIES



RESKILLING FROM OIL & GAS

- Energy transition allows thousands of offshore O&G professionals to **pivot** into wind roles.
- Cross-sector migration programs are growing (e.g. Denmark, Netherlands, UK).

OPPORTUNITIES



STEM EDUCATION & MARITIME SCHOOLS

- Strong opportunity to modernize EU maritime academies and technical schools to serve wind industry needs.
- More apprenticeships, dual-study programs, and public-private training alliances.

OPPORTUNITIES



INCLUSION & DIVERSITY

- Wind sector offers chance to reset norms – more inclusive hiring, gender diversity, and broader outreach to underrepresented groups.

OPPORTUNITIES



INTERNATIONAL COLLABORATION

- Engaging in international partnerships can enhance knowledge transfer, standardize training programs, and align regulatory frameworks. Poland, for instance, has actively participated in such collaborations to bolster its energy security and workforce capabilities.

OPPORTUNITIES



TECHNOLOGICAL INNOVATION

- Investing in research and development can lead to technological advancements, such as floating offshore wind platforms, which can unlock new areas for development and require specialized skills, thereby creating additional employment opportunities

SOLUTIONS TO OVERCOME GLOBAL SHORTAGE OF SEAFARERS & OFFSHORE WIND WORKFORCE

ACCELERATED TRAINING AND UPSKILLING PROGRAMS

- **Expand maritime and technical training capacity** (more places in academies, fast-track programs).
- **GWO-certified** (Global Wind Organisation) safety and technical training centers expansion for wind technicians.
- **Simulation and VR-based learning** to reduce training time and increase competence.

Example: Denmark, Germany, and Poland investing in regional training hubs for offshore workers.



SOLUTIONS TO OVERCOME GLOBAL SHORTAGE OF SEAFARERS & OFFSHORE WIND WORKFORCE

CROSS-SECTOR TALENT TRANSFER

- **Transition oil & gas and merchant shipping workers into offshore wind roles through conversion training.**
- **Recognize transferable skills: HSE, mechanical/electrical engineering, dynamic positioning, vessel operations.**

Example: Shell, Ørsted, and Vattenfall support re-skilling initiatives for oil & gas professionals.



SOLUTIONS TO OVERCOME GLOBAL SHORTAGE OF SEAFARERS & OFFSHORE WIND WORKFORCE

REGIONAL MARITIME EDUCATION REFORM

- Integrate **offshore renewables** into maritime academy curricula.
- Foster **dual-degree or hybrid programs** (e.g., marine engineering + renewable systems).
- Promote **Baltic Sea regional cooperation** on mutual recognition of certifications.



Example: Klaipėda Academy offering tailored modules for offshore wind logistics and operations.

SOLUTIONS TO OVERCOME GLOBAL SHORTAGE OF SEAFARERS & OFFSHORE WIND WORKFORCE

IMPROVE SEAFARER & TECHNICIAN RETENTION

- Enhance **working and living conditions** onboard vessels and offshore platforms.
- Competitive and **predictable salaries**, clear promotion pathways.
- Better **mental health support**, rotation systems, and family contact access.

Example: Some offshore companies offer 2:1 or 3:1 rotation schedules + mental wellness programs.



SOLUTIONS TO OVERCOME GLOBAL SHORTAGE OF SEAFARERS & OFFSHORE WIND WORKFORCE

ATTRACT YOUTH AND UNDERREPRESENTED GROUPS

- Launch **STEM career campaigns** targeting youth, especially in coastal regions.
- Provide **scholarships, internships, and apprenticeships** focused on offshore sectors.
- Promote **women in maritime and wind energy** through visibility and inclusion programs.

Example: WindEurope's "Work in Wind" initiative promotes careers among students and women.



SOLUTIONS TO OVERCOME GLOBAL SHORTAGE OF SEAFARERS & OFFSHORE WIND WORKFORCE

STANDARDIZE AND HARMONIZE CERTIFICATIONS

- Push for **global recognition** of maritime and wind energy training (e.g., STCW for seafarers, GWO for wind).
- Harmonize national requirements to support **labour mobility** across borders.

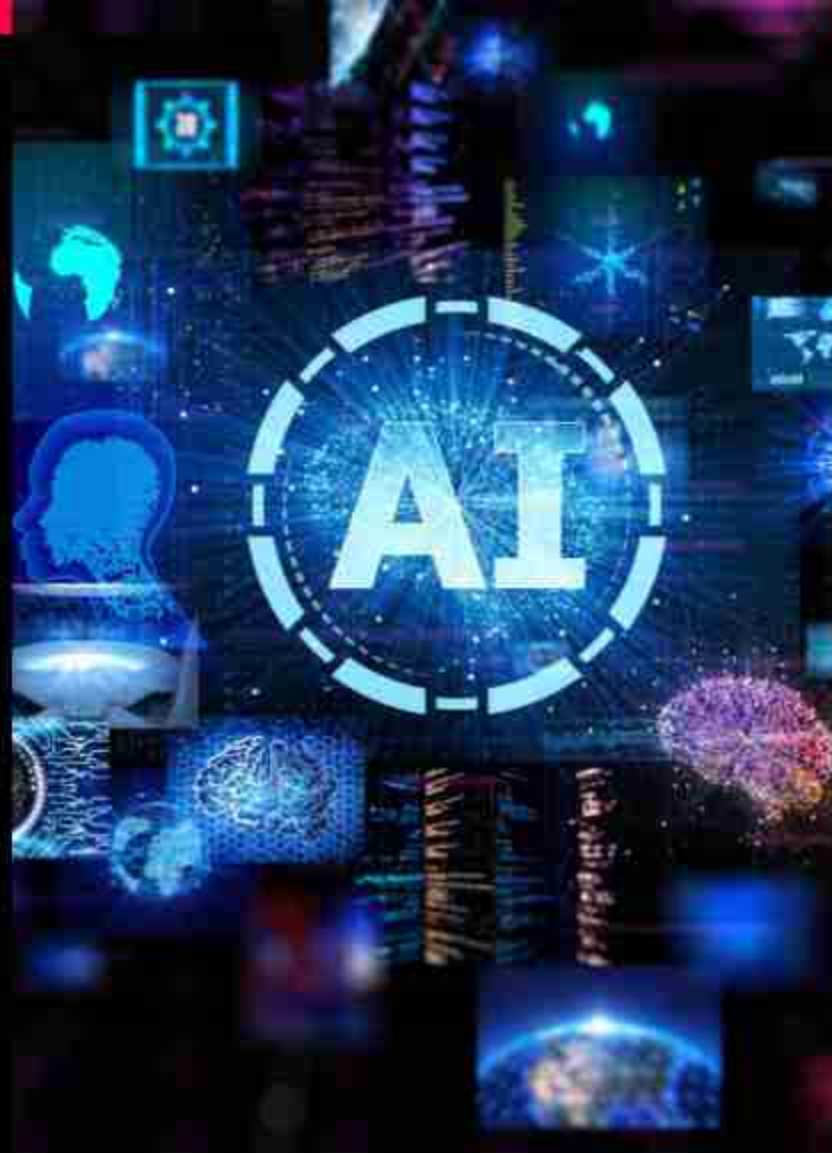
Example: Baltic Sea countries working under BEMIP Offshore Wind Initiative to align standards.



SOLUTIONS TO OVERCOME GLOBAL SHORTAGE OF SEAFARERS & OFFSHORE WIND WORKFORCE

INVEST IN AUTOMATION AND DIGITAL COMPETENCIES

- Incorporate **digital skills training** (AI systems, remote monitoring, vessel automation).
- Use **data platforms** to match skilled labor with offshore projects in real-time.



Example: EU-funded projects developing digital twin training and remote asset management tools

SOLUTIONS TO OVERCOME GLOBAL SHORTAGE OF SEAFARERS & OFFSHORE WIND WORKFORCE

BUILD LOCAL WORKFORCE CAPACITY IN EMERGING MARKETS

- Develop national offshore wind industrial strategies that include HR planning.
- Encourage **local content requirements** with support from industry and academia.

Example: Poland's offshore wind strategy includes local workforce development goals.



CONCLUSION

- Offshore wind HR is a **bottleneck and a huge opportunity**.
- With proper planning, investment in training, and EU-level coordination, the sector can lead the green transition while creating stable, high-value jobs across the continent.

The Baltic Sea region stands at the forefront of offshore wind energy development, offering substantial opportunities for economic growth and job creation.

Addressing the challenges related to human resources through strategic planning, investment in education and training, and fostering international cooperation will be pivotal in realizing the full potential of offshore wind energy in Poland, Lithuania, Latvia, and Estonia.

THANK YOU

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