Decom Offshore Wind

Vessel and harbour capacities

Björn Wittek, 02.04.2025

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01 – Glance on Rhenus – Who are we?

Rhenus in Numbers

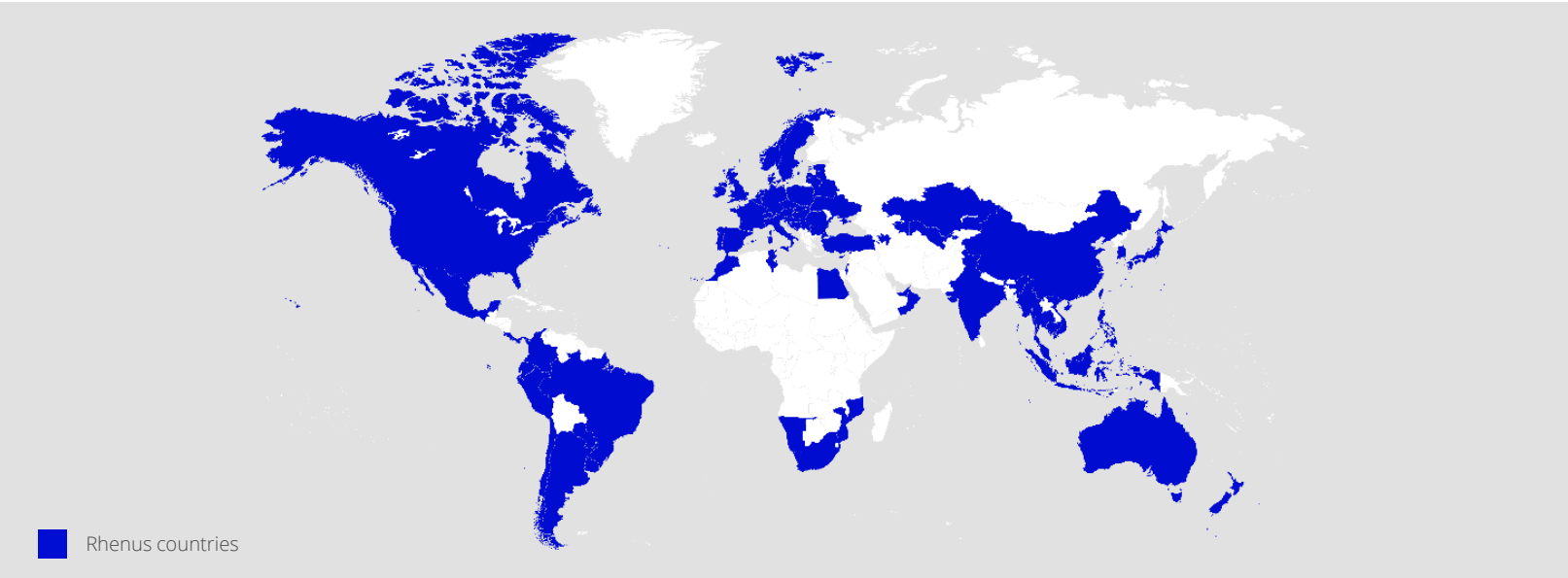
*2023

Founding year
1912

Take-over by Rethmann-Group
1998

Employees worldwide*
40.000

Annual turnover in Euro*
7,5 Mrd.



Countries*
70+

Locations*
1.320

01 Glance on Rhenus – Who are we?

Rhenus Port Logistics in figures

70+
Terminals at 40 locations

5,500,000+
Square meter storage yard

Up to 1,000
Inland barges in operation daily

Over 20km
Quay length

160+
Own locomotives and 1,400 rail cars

42,000,000+
Tons handled (in 2023)

130+
cranes and over 250 lift-trucks

90km+
Rail tracks at our terminals

- Agriculture and Chemicals
- Automotive
- Onshore- and Offshore-Wind Energy
- Project Cargo
- Coal and Ores
- Container
- Recycling goods and Dangerous goods
- Steel and metals

02 – What qualifies us to talk?

Rhenus as Partner to the Offshore Industry

- Over 15 years expereince in the Offshore (Wind) Industry

- Broad experience across the board:
  - Own ports (Cuxhaven, Emden, Nordenham, Rotterdam, Wilhelmshaven) – Cable, Foundations, Turbines, O&M
  - Specialized Offshore Logistics-Unit (North- and Baltic Sea, Atlantic, Mediterranen, Far East)
  - Specialized Project Logistics Entity (amongst foundations, major components, blades)
  - Own Transport Engineering department for Offshore- and Project cargoes

- Sister with Offshore Experience
  - Remondis (Recycling)
  - TSR (Scrapping)
  - Xervon (O&M, Corrosion Protection)


RHENUS
LOGISTICS
Cargostore

03 – Decom Offshore: Requirements

Unclear situation to start from

- Not fully defined legal framework
  - How deep to extract foundations?
  - Cable to stay? Or to be recovered?
  - What happens with the scour protection?
  - Cross-border decom
- Decom concepts
  - Erecting the windfarm reloaded – just the other way around? All in one project?
  - Opportunistic approach? Whenever it fits?
- Money talks
  - How much will Decom cost? What´s in the budget?
  - How much will scrapping & recycling cost?

03 – Decom Offshore: Requirements

Elephants in the room

- Port capacity
  - How much space is required?
  - Where is it available?

- Recycling capacity
  - Which recycling capacities exist?
  - Which recycling ways are actually available?

- Vessel capacity
  - Are installation vessel available for decom?
  - How much will these cost?

04 – Key Element: Port Capacity

More space is coming – but still limited

- Offshore-suited port space remains scarce in the North Range (Eemshaven – Esbjerg)
- Larger scale projects >50,000 m² are currently securing space for projects between 2028 – 2032. These bookings will determine where small projects can fit in. Further, prices are increasing.
- We expect Berths 5 to 7 in Cuxhaven (~30 ha) will be rented out long-term when the space will come to market
- The EnergyHub Bremerhaven, Rysumer Nacken in Emden or a Phase II of Jade-Weser-Port– if they come at all – will only be available post 2030.
- Options such as Jade-Weser-Port, CT1 Süd (Bremerhaven) or ABC-Halbinsel (Bremerhaven) will depend on container trade volume depelopment

04 – Excursion: Numbers don´t lie

Two example calculations show the uncertainty

Fundament		
Länge	80	Meter
Durchmesser	8	Meter
Gewicht	750	Tonnen
Verkehrswege	75%	
Fussabdruck pro Fundament	1.120 m²	
Größe Windpark	80	Anlagen
Anliefergeschwindigkeit	3	pro Woche
Abarbeitung	2	pro Woche
	Flächenbedarf	Abarbeitung
Flächenbedarf Anfang Woche 1	3.360 m²	2
Flächenbedarf Anfang Woche 2	4.480 m²	4
Flächenbedarf Anfang Woche 3	5.600 m²	6
Flächenbedarf Anfang Woche 4	6.720 m²	8
Flächenbedarf Anfang Woche 5	7.840 m²	10
Flächenbedarf Anfang Woche 20	24.640 m²	40
Flächenbedarf Anfang Woche 21	25.760 m²	42
Flächenbedarf Anfang Woche 22	26.880 m²	44
Flächenbedarf Anfang Woche 23	28.000 m²	46
Flächenbedarf Anfang Woche 24	29.120 m²	48
Flächenbedarf Anfang Woche 39	45.920 m²	78
Flächenbedarf Anfang Woche 40	47.040 m²	80

Jahreskapazität 75 tto

Fundament		
Länge	80	Meter
Durchmesser	8	Meter
Gewicht	750	Tonnen
Verkehrswege	75%	
Fussabdruck pro Fundament	1.120 m²	
Größe Windpark	80	Anlagen
Anliefergeschwindigkeit	3	pro Woche
Abarbeitung	**1,5**	**pro Woche**
	Flächenbedarf	Abarbeitung
Flächenbedarf Anfang Woche 1	3.360 m²	1,5
Flächenbedarf Anfang Woche 2	5.040 m²	3
Flächenbedarf Anfang Woche 3	6.720 m²	4,5
Flächenbedarf Anfang Woche 4	8.400 m²	6
Flächenbedarf Anfang Woche 5	10.080 m²	7,5
Flächenbedarf Anfang Woche 20	**35.280 m²**	**30**
Flächenbedarf Anfang Woche 21	36.960 m²	31,5
Flächenbedarf Anfang Woche 22	38.640 m²	33
Flächenbedarf Anfang Woche 23	40.320 m²	34,5
Flächenbedarf Anfang Woche 24	42.000 m²	36
Flächenbedarf Anfang Woche 39	67.200 m²	58,5
Flächenbedarf Anfang Woche 40	**68.880 m²**	**60**

Jahreskapazität 56 tto

04 – Excursion: Numbers don´t lie

Two example calculations – Points of Interest

- Processing and Delivery speed from offshore determine space requirement in port
- Small changes in these variables have a significant impact on space requirements
- Ports themselves don´t play a major role in delivery- or processing speed
- If both don´t match: significant cost risks

05 – Key Element: Vessel Capacity

Shortage everywhere

- Highly specialized vessel in the prime segments, especially Jack-Ups and Cably Lay Vessel, are booked into the early 2030ties already, often via Frame Work contracts
- Lower-Spec vessel such as Jack-Ups are booked well, too, though not for installation but for O&M. Again, many of these are secured long-term for Major Component Replacements.
- In recent years, rates have significantly increased across the board. High-Spec Jack-Ups for 350-400,000 EUR+ / day have been mentioned – and even smaller Jack-Ups such as the HEA Hydra class (ex-Seajacks, worked at Meerwind during installation) are known to command 60,000 – 100,000 EUR / day
- Costs are not the driver of rates – it´s solely (mostly) the owner´s expectation about market level!
- Little to no newbuild activity visible. Costs and lead-times don´t match currently. But what isn´t ordered today, won´t be in in 2030.

06 – Or is it recycling capacity?

Is recycling capacity actually already available?

- Scrapping capacity for major offshore components is close to non-existent, neither for nacelles, blades nor foundations
- Cables and towers are “market commodities”, though scaling-up to offshore sized still required
- Disposal chains still need to be defined. On paper existing – but in reality? Not really – we´ve no idea about actual capacity.
- Many unknowns re processing capacity, costs or value reimbursements
- Consequence: Unknowns will have to be priced in as risk buffers for port and vessel activities

07 Resumee & Your questions

- Current market and market sentiments points towards a complex and expensive project “Decom Alpha Ventus”
- The degree of flexibility required will be a challenge to all participants
- Parts of the Decom supply chain haven´t been defined yet

Decom Alpha Ventus will be a similarly pioneering challenge as building was!

Call us for assistance!

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Thank you for your interest!