

## **Emtunga Solutions AB**

*– the modular facilities specialist*

*Christofer Edström, VD*

**SMTF - 11 Oktober 2024**



# Turn-key Projects – Modular Design Deliveries since 1975

## OFFSHORE

**Living Quarters** and **Technical Buildings** for the Offshore industries (**Windpower** and **Oil & Gas**) based on Modularized Design meeting regional requirements, rules and regulations.



## CLEANROOM

**Cleanroom** facilities for the **Life Science** industry (**Food & Pharma**) and **Data Centres** through Turn-key deliveries based on the modular concept.



## MODULAR SOLUTIONS

Modular design, assembly and delivery for any type of **Technical Installations**, **Process Modules** and **Control Rooms**, both for offshore and onshore.

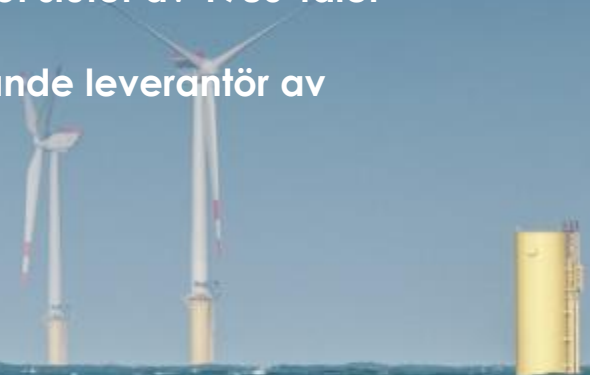


# Emtunga...

- Emtunga Mekaniska Verkstad grundades utanför Vara 1945 men började sitt Offshore-äventyr med en beställning på inredda containers från Christer Ericsson, Consafe, runt 1974-75 (Skulle ersätta hytter efter en brand)
- Expanderade snabbt med modulbyggda bostadslösningar till de plattformar Consafe lät bygga på Götaverken Arendal fram till 1980-talet
- Fortsatte leverera samma koncept till andra Nordsjö-kunder efter Arendalsvarvets avveckling mot slutet av 1980-talet
- Är nu, under den femte ägaren via åttonde bolagsnumret (!) sedan 1990-talet, fortsatt världsledande leverantör av modulbyggda bostäder till offshoreindustrin men:

## **Satsar nu på marknaden för vindkraftsplattformar till havs**

- **Moduler för styrning och kontroll av HVDC-plattformar**
- **Små permanenta övernattningsmoduler samt..**
- **Temporära "riktiga" offshore-bostäder under igångkörning av fälten (12-24 månader)**



**Vi har , just nu, flera offerter ute för leverans av relativt stora permanenta bostäder till HVDC-plattformar, att användas under perioder av underhåll.**

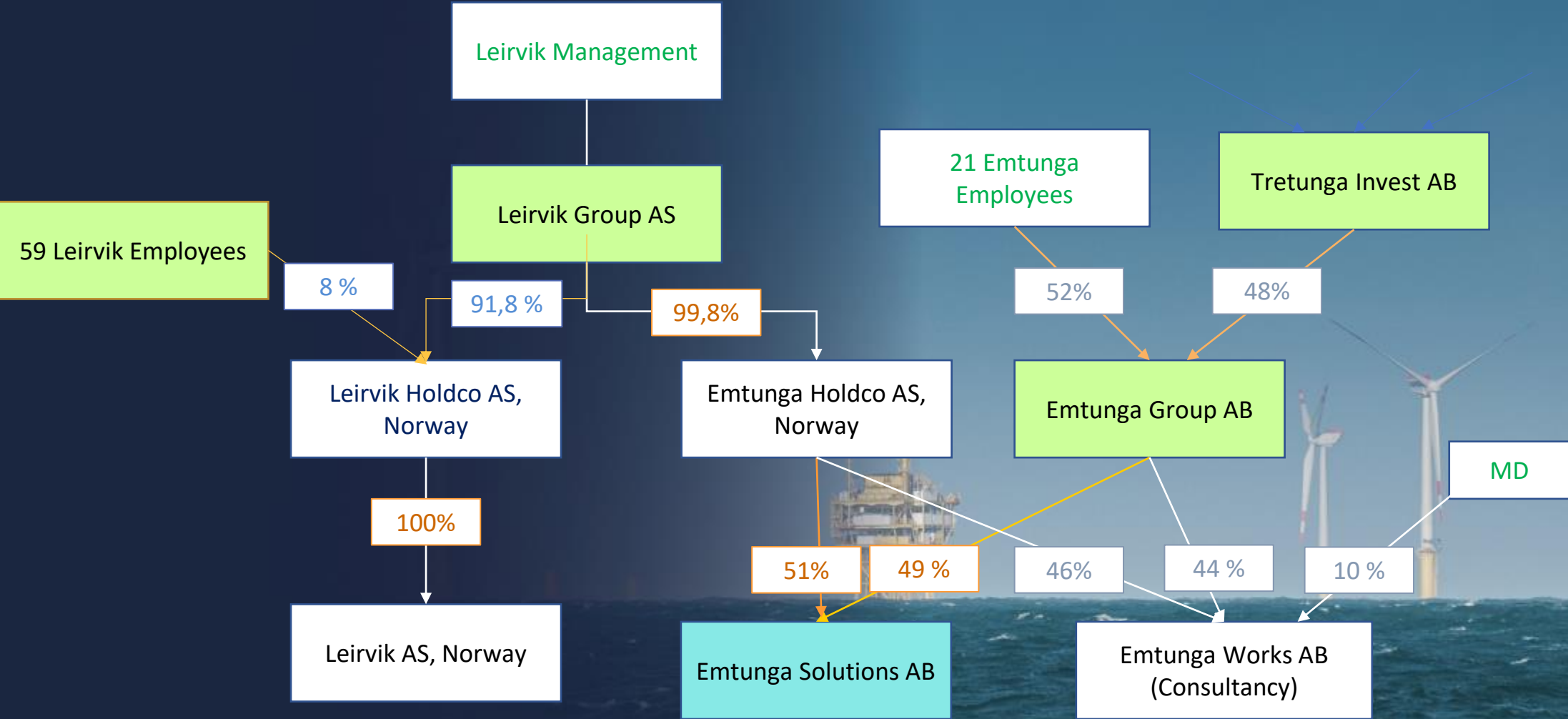
**EMTUNGA**

# Background and ownership History..



- *Emtunga is a village name – 100 km inland from Gothenburg*
- *Went into the offshore accommodation business in 1975*
  - *Modular fabrication concept was a solution forced by the inland location of the company*
  - *Several advantages with the concept laid the foundation for global deliveries*
- *Sold by founding family to a Swedish Venture Capitalist Group (IDI) in 1998*
- *Merged with pharmaceutical plant engineering firm “Pharmadule” in 1999 (Pharmadule-Emtunga)*
- *Sold by IDI to U.K.-based venture capitalist “3i” in 2004*
  - *Emtunga and Pharmadule split up into two companies again in 2006*
  - *Both entities mismanaged by 3i into bankruptcy Dec 2008 (Emtunga) and 2011 (Pharmadule)*
- *Emtunga bought by Leirvik (Competitor) in Jan 2009, three weeks after bankruptcy was declared*
- *Ultimate owner to both Leirvik and Emtunga was Hitecvision Fund IV (Stavanger) from 2009-2021*
- *Leirvik & Emtunga Sold by Hitecvision in a Leirvik Management Buy-Out in September 2021*
- *Emtunga personnel was offered and accepted a 49% buy-in in 2022 (Leirvik retains 51% of Emtunga)*
- *Moved to Lidköping (Sweden) 2023 –establishing a modern modular fabrication site with outsourced, local welding of structural steel modular units – and leaving Emtunga “the village” after 78 years!*
- *Established quayside assembly and load-out site in Halmstad port in 2023 (leaving the old GVA Shipyard in Gothenburg after 25 years)*

# Emtunga Ownership Structure since 2022



# While based in Sweden..





# Emtunga has an international presence...

ADRIATIC SEA  
- ITALY

AUSTRALIA

BRUNEI

CANADA

CASPIAN  
- AZERBAIJAN  
- KAZAKHSTAN

KOREA

INDONESIA

MALAYSIA

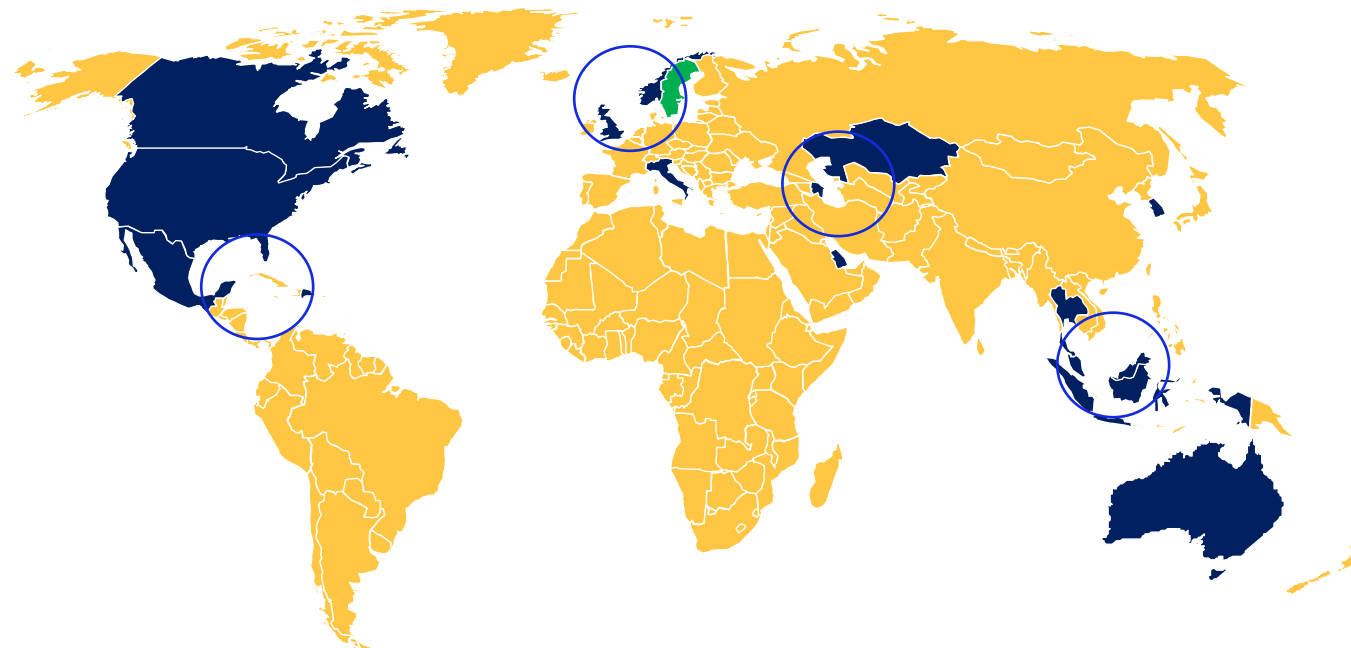
GULF OF MEXICO  
- MEXICO  
- UNITED STATES

NORWAY

THAILAND

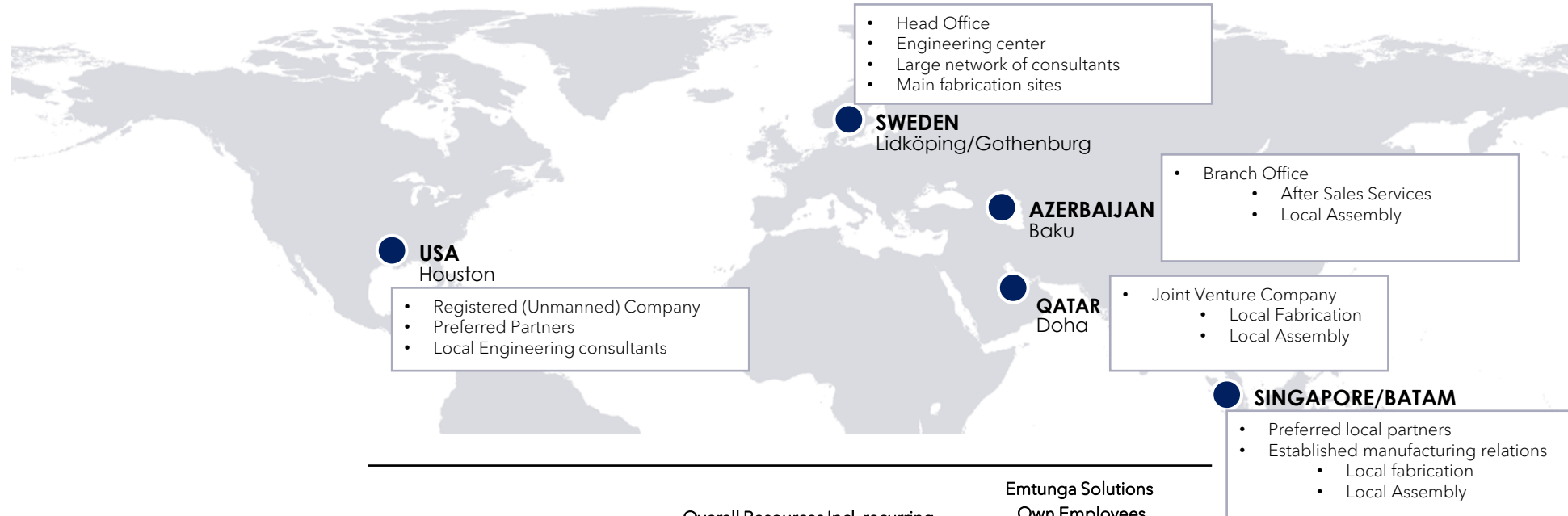
TRINIDAD &  
TOBAGO

UNITED KINGDOM



**EMTUNGA**

# and our organisation is scalable and provides a solid geographical reach...



Category	Overall Resources Incl. recurring consultants and contractors	Emtunga Solutions Own Employees (2024)
Management, Admin and Sales	5	5
Engineering & Procurement	65+	36
Fabrication & HSE	150+	5 (Mgmt)
Project Mgmt, DC, QA/MC	15	7
LQ Services and Upgrades	10	1
<b>Total</b>	<b>245+</b>	<b>54</b>





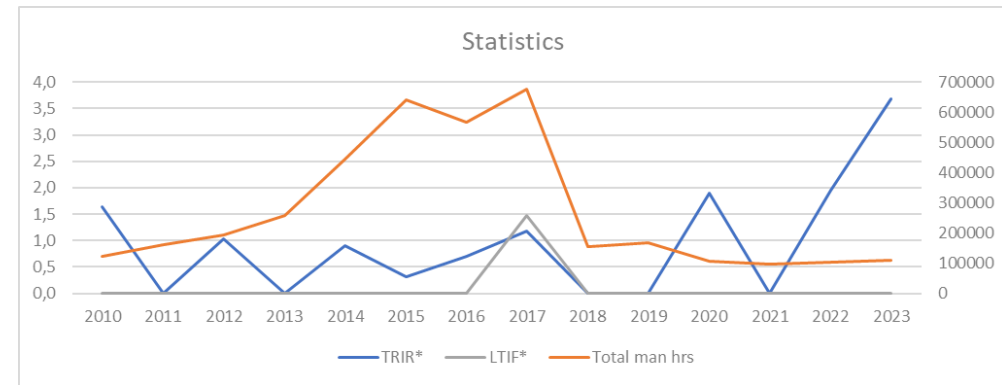
# Health, Safety & Environment performance – key elements

## HSE INITIATIVES

The modular fabrication offers a couple of unique HSE advantages over conventional “Stick Built” construction methods:

- **WORKING AT HEIGHTS IS MINIMISED:** 70% of the outfitting work is done in the workshop at floor level with ceiling voids being the maximum installation height.
- **MATERIALS HANDLING SIMPLIFIED:** Nearly all construction material is handled mechanically by fork lifts right up to each individual module (at floor level) – carrying of material through stairs or handling by crane to laydown areas at higher levels is minimized.
- **REPEAT SOLUTIONS INCLUDED AS FAR AS POSSIBLE:** Experienced workers, supervisors and contractors continually improve quality, economy, schedule and safety in the repeated and refined execution process.
- **CLEAN BUILDING PROCEDURES** are simpler to achieve in an indoor outfitting environment.

## HSE PERFORMANCE



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
LTI	0	0	0	0	0	0	0	1	0	0	0	0	0	0
LTIF*	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1,5	0,0	0,0	0,0	0,0	0,0	0,0
TRI	1	0	1	0	2	1	2	4	0	0	1	0	1	2
TRIR*	1,6	0,0	1,0	0,0	0,9	0,3	0,7	1,2	0,0	0,0	1,9	0,0	2,0	3,7
Incidents	1 MTC		1 MTC		1 RWC 1 MTC	1 MTC	2 MTC	3 MTC	1 FO		1 MTC	1 FO	1 MTC	2 MTC
Total man hrs	122318	161605	194817	256712	443761	642620	566759	676335	154422	168454	104911	95887	101981	108464

\*LTIF = Number of incidents x 1 000,000 / total number of employee hours worked in a year

\*\*TRIR = Number of incidents x 200,000 / total number of employee hours worked in a year

# Emtunga has delivered a wide variety of Living Quarter projects

GREENFIELD LIVING QUARTER & REPLACEMENT MODULES



LQ EXTENSION MODULES



LQ STAND ALONE MODULES



**- with a past track record in Pharmaceutical plant solutions,**

ENTIRE MODULAR FACILITIES



PURPOSE BUILT SOLUTIONS



ENGINEERING & PROJECT MANAGEMENT



**and other applications of the modular EPC-delivery model**

ONSHORE CONTROL ROOMS



GENERATOR & ELECTRICAL BUILDINGS



MODULAR DATA CENTER ENGINEERING



# ...a long and successful track record offshore

MAD DOG, 2004



ARTHIT, 2007



SARAWAK B-11, 2008



CHAMPION 7, 2012



DELIVERIES SINCE 1975

MAJOR LQ PROJECTS:	85
ADDITIONS TO EXISTING LQS:	37
SMALL PROJECTS (SINGLE MODULES):	108
NUMBER OF BEDS DELIVERED:	~ 12.500
NUMBER OF M <sup>2</sup> DELIVERED:	~ 135.000

ROWAN STAVANGER, 2019



SIEMENS OSX, 2013



FROM CHIRAQ 1997 TO AZERI CENTRAL EAST 2022



MAHOGANY, 2017  
AMHERSTIA 2018



MARTIN LINGE, 2018



**EMTUNGA**

# Emtunga project: Exxon-Ringhorne 2001



Norwegian Continental Shelf - 1230 tonnes under one hook

**EMTUNGA**



# Emtunga project: Bp- Mad Dog 2004

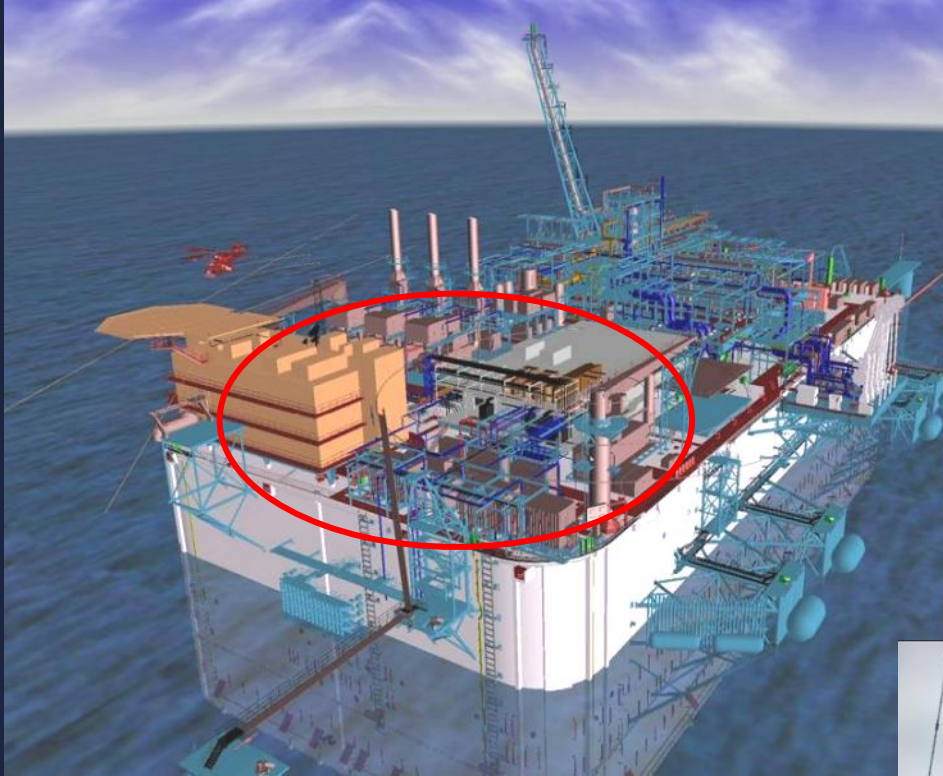


Gulf of Mexico (US) - on a floating "Spar"  
anchored in 1300m deep waters

**EMTUNGA**



# Emtunga Project: (Exxon/Qatargas) Adriatic LNG Terminal Buildings 2007



**EMTUNGA**



**Emtunga project:**  
**Martin Linge 2018**



For Total Norway (Equinor at delivery) - 3000 tonnes

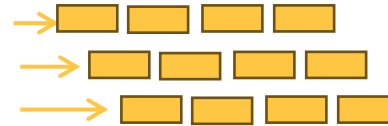
**EMTUNGA**

# Turn-key Projects – Modular EPC Sequence

- Basic Design: splitting the facility into modular sections and aligning customer expectations



- Detailed design: in module batches



- Welding & surface treatment of steel structure modules in batches

- Outfitting of modular units to 70% completion in "factory environment"

- Transport to assembly site (E.g. Thailand, Indonesia, Baku, Mexico...)

- Assembly of facility/ building

- Hook-up of systems between modules & Tie-in to external media facilities

- Testing/ Commissioning/ Handover

N.B! not "Container"-sized !  
Example: 4,2 x 4,2 x 26m modules



# ...we have three well-proven delivery models to enable cost efficient delivery

- **Engineering, fabrication and assembly** is carried out at Emtunga's premises and later shipped to the customer
- Turn-key deliveries
- Commissioning "As far as possible" before load-out

## DELIVERY MODEL 1



- **Engineering and fabrication** is carried out at Emtunga's premises, modules are fabricated and outfitted to 70% readiness and shipped to client for final assembly
- Engineering in close proximity to fabrication
- Fabrication in tried and tested environment
- Transport savings
- Schedule advantages
- Local content satisfaction to a certain degree
- Weight efficient if assembly on integrated topsides frame

## DELIVERY MODEL 2



- **Engineering** is carried out at Emtunga's offices, but fabrication and assembly is carried out at international site in the general area of final destination
- Local Content requirements satisfied
- Transport cost minimised
- Local labour cost savings

## DELIVERY MODEL 3





# Fabrication of Modular sections - Welding





# Outfitting of Modular Sections after surface treatment



**EMTUNGA**

Road Transport: up to 26m  
long modules (4,2m wide)



**EMTUNGA**



Assembly quayside or on site



**EMTUNGA**

# Offshore Wind – a politically driven market

19 May 2022

## The Esbjerg Offshore Wind Declaration

European Commission President Ursula von der Leyen participated in an Offshore Wind Summit in the Port of Esbjerg (Denmark) with German Chancellor Olaf Scholz, Belgian Prime Minister Alexander De Croo, Danish Prime Minister Mette Frederiksen and Dutch Prime Minister Mark Rutte. In a joint declaration they highlighted the role of home-grown North Sea offshore wind in strengthening the EU's energy security. They pledged to expand the combined North Sea offshore wind capacity of the four countries to 65 GW by 2030 and 150 GW by 2050.

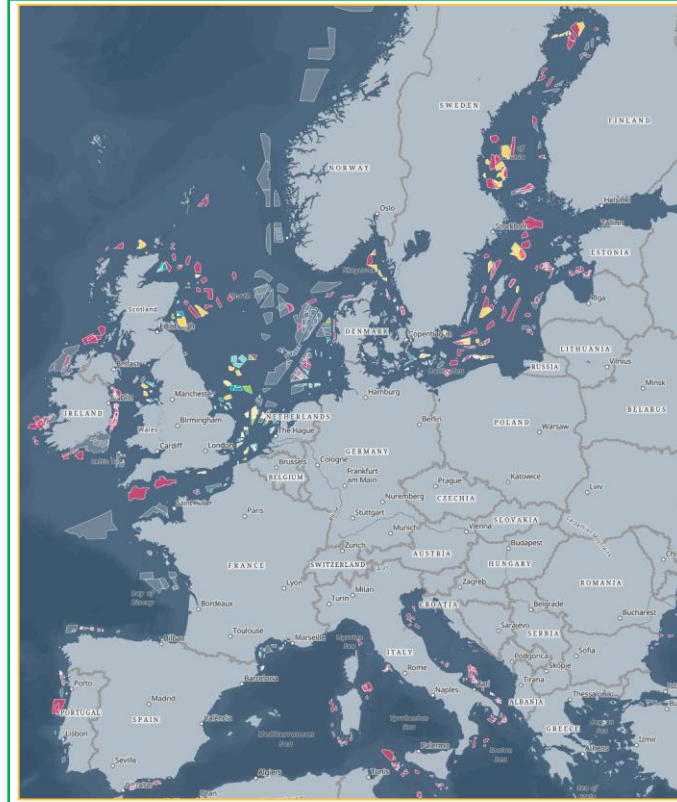
Comparison:

One Nuclear powerstation (Ringhals) currently (yesterday at 16:30) had an output of 2 204 MW or 2 GW

➤ Windpower plans to output the equivalent of 30 "Ringhals" in Europe by 2030

# Offshore Wind – Market going forward

Market observers expect more than **380 GW** of new offshore wind capacity to be added over the next decade



## Europe

Europe's offshore wind energy targets in comparison

European Union



Esbjerg Declaration



Germany



The Netherlands



## United States

### Offshore Wind Energy Strategic Initiatives

U.S. DEPARTMENT OF ENERGY

**NOW**  
Lower costs, develop supply chain, and inform deployment of fixed-bottom offshore wind.

**FORWARD**  
Establish U.S. leadership in floating offshore wind design, manufacturing, and informed deployment.

**CONNECT**  
Enable reliable and resilient transmission solutions for large-scale offshore wind deployment.

**TRANSFORM**  
Expand offshore wind co-generation technologies for widespread electrification and decarbonization.

2030

**30 GW**  
of generation capacity

2050

**>110 GW**  
of generation capacity

## Australia

- 2 GW by 2032
- 4 GW by 2035
- 9 GW by 2040

## The evolution of transmission capacity

2 GW back then and now





## Project delivered 2024 – East Anglia 3: Offshore Wind



East Anglia Three is the second East Anglia offshore windfarm project to be developed and part of the East Anglia Hub.

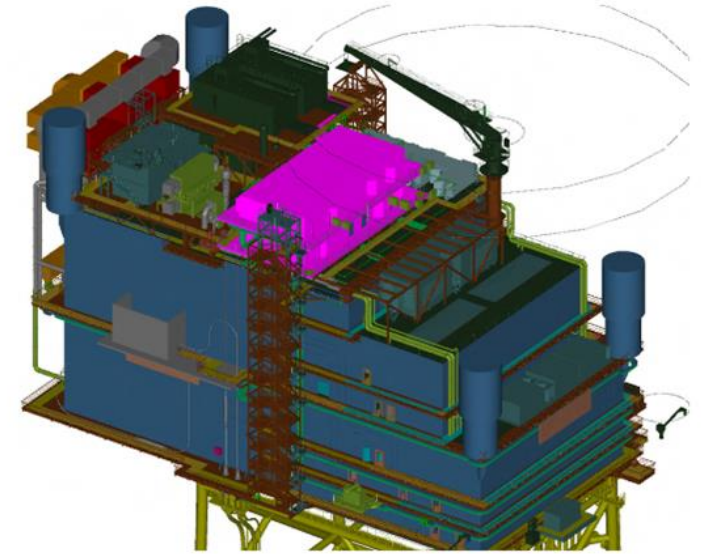
We are delivering an EIT building, an overnight shelter and two muster stations



# Project – 5322 East Anglia 3 - Wind farm Project

Contract with Akers Solutions, Norway

- End Customer Scottish Power
- 4 Units with modular assembly in Halmstad, Sweden.
  - Overnight Shelter for 24 persons
    - Designed by using 10 modules
  - Electrical Building (Data and Control Cabinet Center)
    - Designed using 16 modules
  - Muster Shelters in 2 stand-alone modules
- 771 kvm of total floor area
- Normally unmanned platform
- Delivery planned for 6th of May 2024
  - Actual load-out 29th of July 2024



 **Aker**Solutions

 **ScottishPower**

**EMTUNGA**

## 5322 EA3 – Loadout in Halmstad



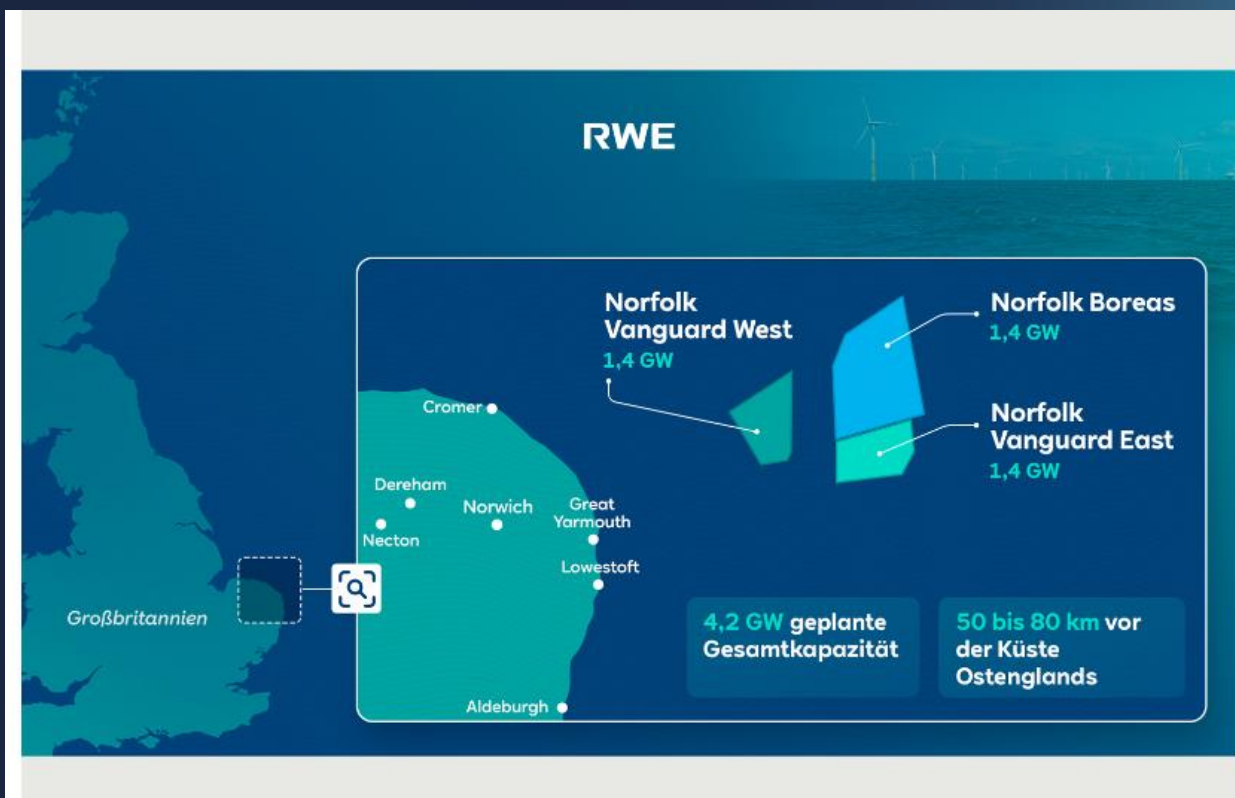


# Lifting in Norway



**EMTUNGA**

## Project in Workshop – Norfolk Vanguard West Offshore Wind

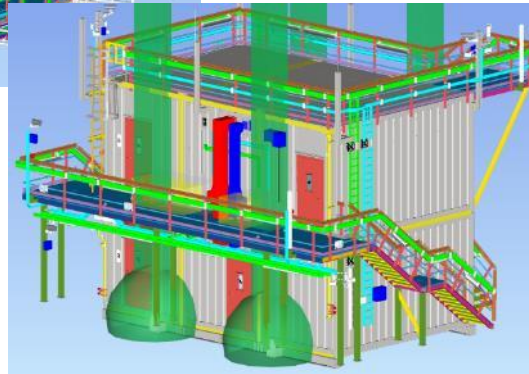
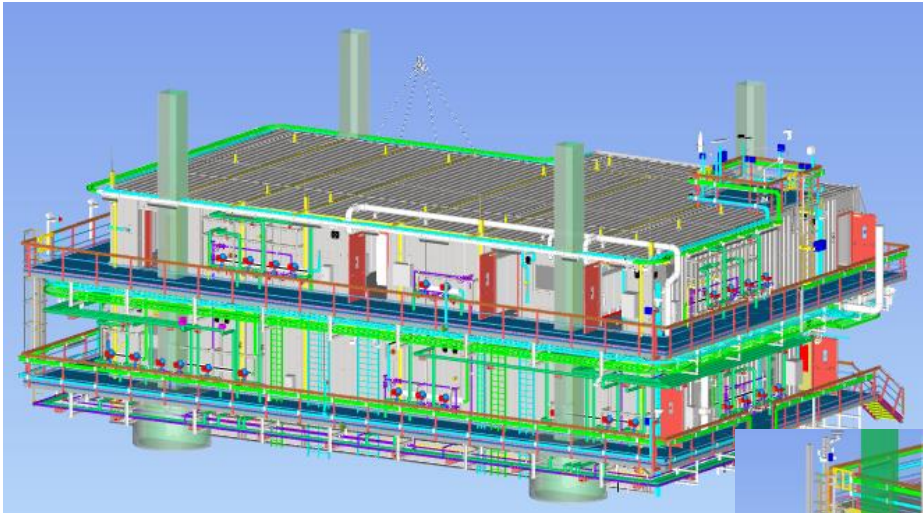


Norfolk Vanguard West is the first of three offshore windfarm projects to be developed and part of the Norfolk Hub for RWE (Germany) who acquired the field from Vattenfall in December 2023

We are delivering an EIT building, an overnight shelter and two muster stations here too



# Ongoing Projects – 5331 Norfolk Vanguard West



## Project Overview

- 793 m<sup>2</sup>
- POB 22 (camping mats and sleeping bags (!))
- 5 Units with Fabrication in Sweden.
  - Overnight Shelter built with 6 Modules and a winch platform on top
  - EIT Building constructed with 15 Modules
  - Workshop built using 2 Modules
  - Muster Shelters in 2 stand-alone Modules
  - Normally unmanned platform

- *Client/End Client: AKSO/RWE (Vattenfall sold the project early in 2024)*
- *Contract Value over 250 MSEK*
  - *Extended warranty up to 8 years option*
- *Free Along Shipside Delivery 1st of July 2025 from Halmstad.*
- *Work in Dubai from September 2025 under separate agreement*



# Ongoing Project – 5331 Norfolk Vanguard West

## *Schedule overview, high level- July 2024 Updated Contract*

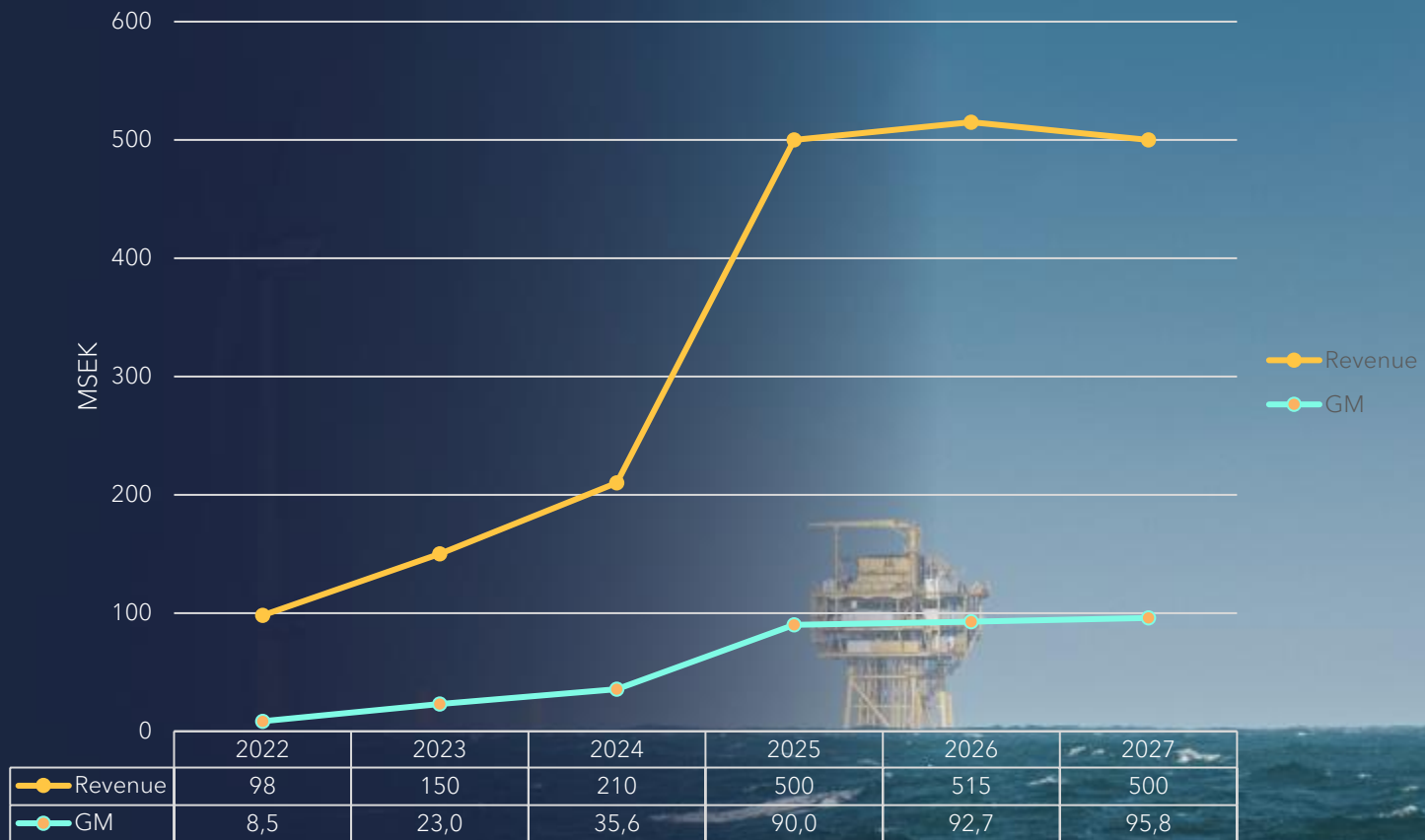
- Project Start 7 Aug 2023
- Engineering driven by Aker Solutions, UK: 7 Aug, 2023 – 23 Oct, 2024
  - First planed with “Design Freeze” in November 2023 (!)
- Construction Welding Started 2<sup>nd</sup> of July, 2024
- Revised contract signed 2<sup>nd</sup> of July, 2024
- Outfitting started 10<sup>th</sup> of September, 2024
- Assembly started in Halmstad (welding of the baseframe) on the 28<sup>th</sup> of Aug 2024
- Mechanical Completion in stages from 20<sup>th</sup> of October, 2024 to 30<sup>th</sup> of June, 2025
  - Noise test and Leakage Hold tests are included
  
- Free Along Shipline delivery 1<sup>st</sup> of July, 2025
- To be shipped around Africa to Dubai – where the main HVDC platform is built by “Drydocks Dubai”



# Ongoing Project – 5331 Norfolk Vanguard West



## Emtunga going forward





Tack för att ni lyssnade!

Frågor?

