



# Asso.subsea

## Introduction

Bridging the Distance - Connecting the World

2025

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# Agenda

## 1. Introduction

## 2. Assets

Company Owned Vessels

Trenchers



# 01 Introduction

## We are Asso.subsea

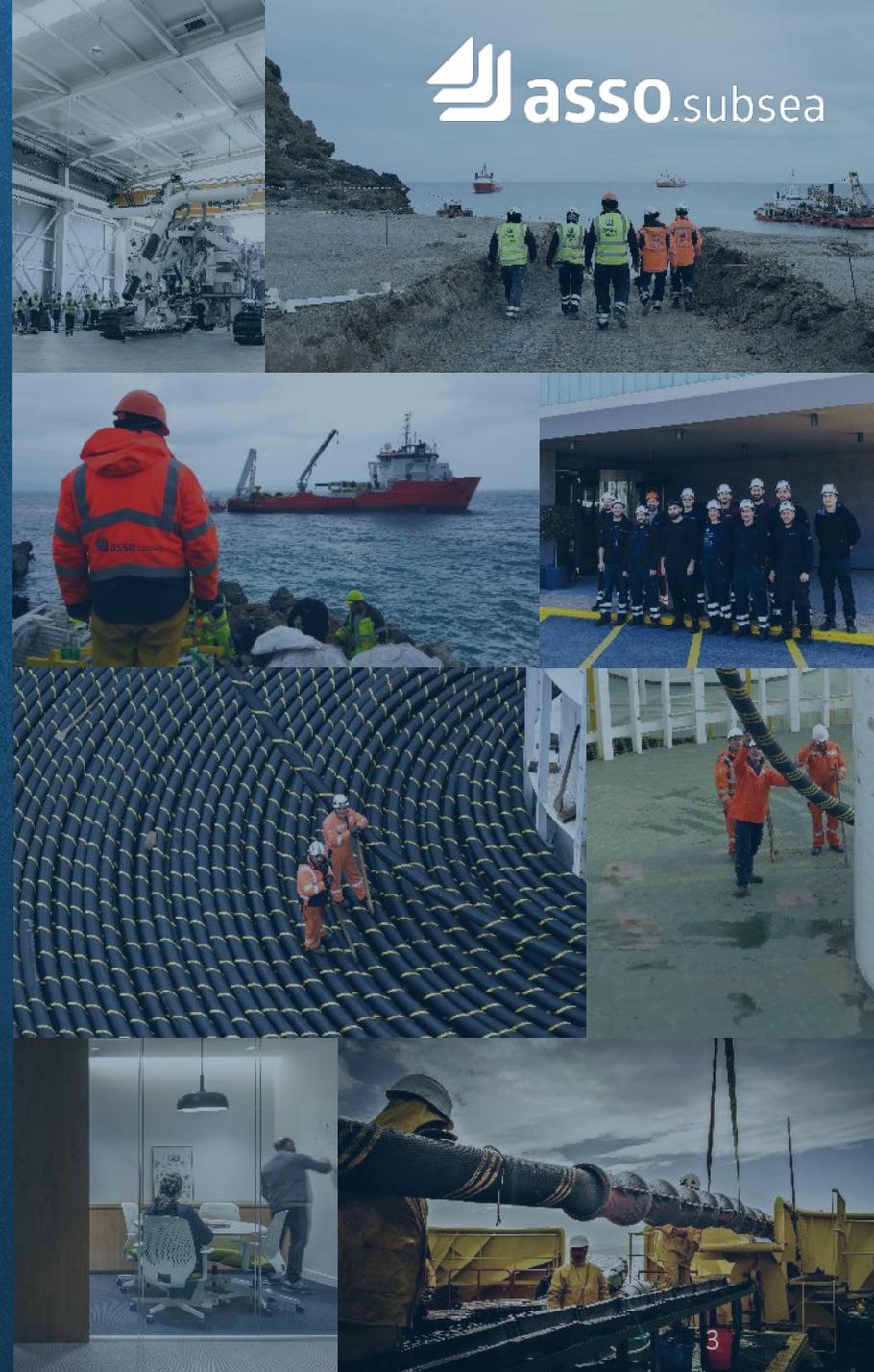
- Formerly known as Assodivers
- Greek-owned and based company
- Founded in 1976
- Providing services to clients for almost 50 years
- Specialized in worldwide submarine utilities installation and repair activities
- In-house design of vessels and tools
- Creative, innovative, reliable and cost-effective solutions fitted to customer needs

**49**  
Years  
of Excellence

**9**  
vessels

**900+**  
professionals

**25+**  
units



## ASSO Added Values

**01**

BOD with field experience  
Continuous Investments  
Swift Decision Making

**02**

Permanent Employees  
Continuous Growth

**03**

More than 130 M€ of CAPEX in the last three years

**04**

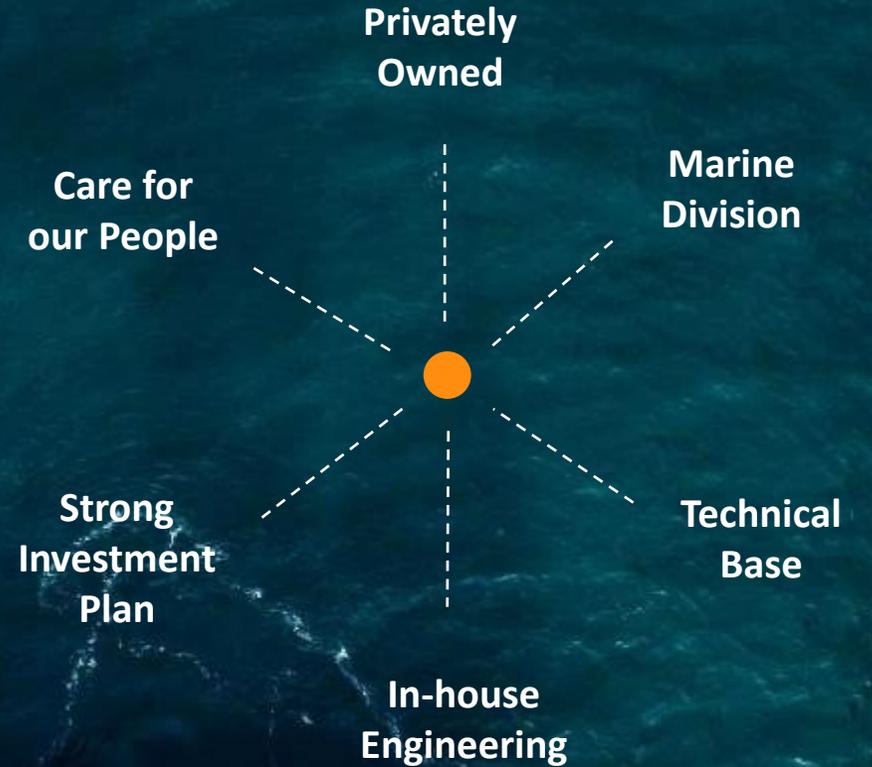
Detailed pre-engineering in Tender Stage  
Engineering expertise for Project Execution  
Continuous support of Project operations

**05**

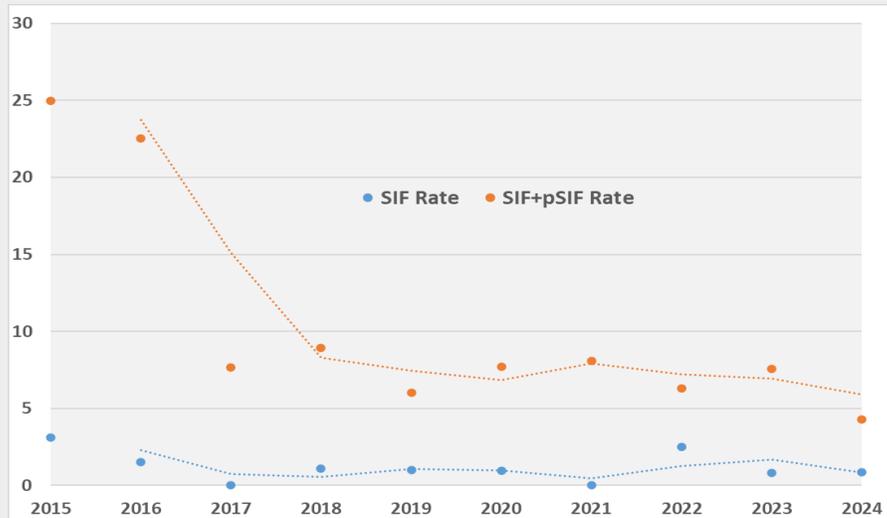
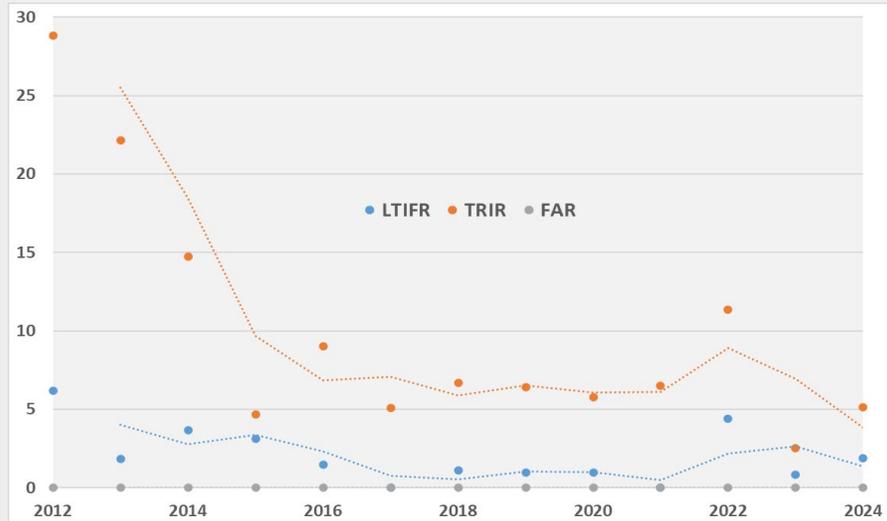
In-house R&D for company Equipment  
In-house constructions and modifications  
Continuous support of Project operations  
Innovations and evolution of subsea tools

**06**

Group-owned Vessels  
Internal Management of Means  
Internal Design of Conversions  
Internal Management of Crewing



## ASSO QHSE Management System



### General

**Integrated** QHSE management system covering **all ASSO activities**, i.e. shore-based (offices, technical base), maritime, project-related. Overseen by **single Group-wide Division (R&QHSE)** of QHSE and Marine Compliance Managers / Engineers / Offshore Advisors.

ASSO certified to **ISO 9001:2015, ISO14001:2015, ISO45001:2018** by Bureau Veritas Certification and to NEN's **Safety Culture Ladder** at Level 3 by Lloyd's Register. Also, awarded Bronze Medal for ESG / Sustainability in latest EcoVadis assessment. Currently, under certification to ISO 27001: 2022.

Ship management companies certified to **ISM Code**, marine means certified to **ISM Code, ISPS Code** and **MLC, 2006** by Bureau Veritas.



### Highlights

**No fatality and no significant environmental incident** in Group's history.

**Marked improvement** in safety performance in the past decade – challenges (plateau & occasional spike) due to rapid growth and expansion.

Strong HSE focus during selection and management of **project subcontractors** – always integrated in ASSO performance metrics after 2021.

Increasing focus on **actual and potential 'Serious Injuries & Fatalities'** (SIFs and pSIFs).



## ASSO worldwide references

### Our worldwide projects

Asso.subsea has participated in a string of operations worldwide, working for some of the leading players in the field.

25 FOC-flexibles-others, 77 repairs

207

Main Projects

80

Inter-connectors



25 OWF

Offshore windfarms



#### Middle East

GCCIA  
Kahramaa  
KSA

#### Indonesia

Java-Bali

#### USA & Australia

 Hudson River  
BassLink

#### Belgium & Holland

 Seamade OWF Project  
HKZ Interlink Repair

#### France

 Fecamp  
St Briec  
Provance Grande-Large

#### Croatia

Adriatic I  
Adriatic II

#### UK & Ireland

 Viking Link Interconnector  
 IFA2 HVDC & HVAC Interconnector  
Rampion OWF  
 Western HVDC Link  
Shannon River  
Rathlin  
Isle of Man

#### Greece

Lavrio – Karystia  
Kafireas Interconnection  
St. George OWF  
Evia – Andros – Tinos  
Cyclades Phase A, B, C, D  
Attica – Evia  
 Attica – Crete  
Mantoudi- Skiathos

#### Turkey

Çanakkale II  
Çanakkale I

#### Germany & Denmark

 Viking Link Interconnector  
 COBRA Interconnector  
Kaskasi OWF Exports  
Deutsche Bucht – GT1 - Albatros  
Kriegers Flak CGS  
CWA I  
DoIWin 3  
BorWin 3  
Veja Mate  
HelWin 2  
SylWin 1  
BorWin 2 – HelWin 1



#### Italy & Spain

Malta-Sicily Repair  
Messina  
 SAPEI  
Mallorca – Ibiza  
COMETA  
Italy-Montenegro (MONITA)  
Capri-Torre Annunziata  
Italy-Greece (GRITA)  
ESMA (Remo)

# 01 Introduction

## Asso Worldwide

### Asso Experience

Cable Installation ● **1.633 km**

Cable Protection ● **3.981 km**

Jetting 2.292 km

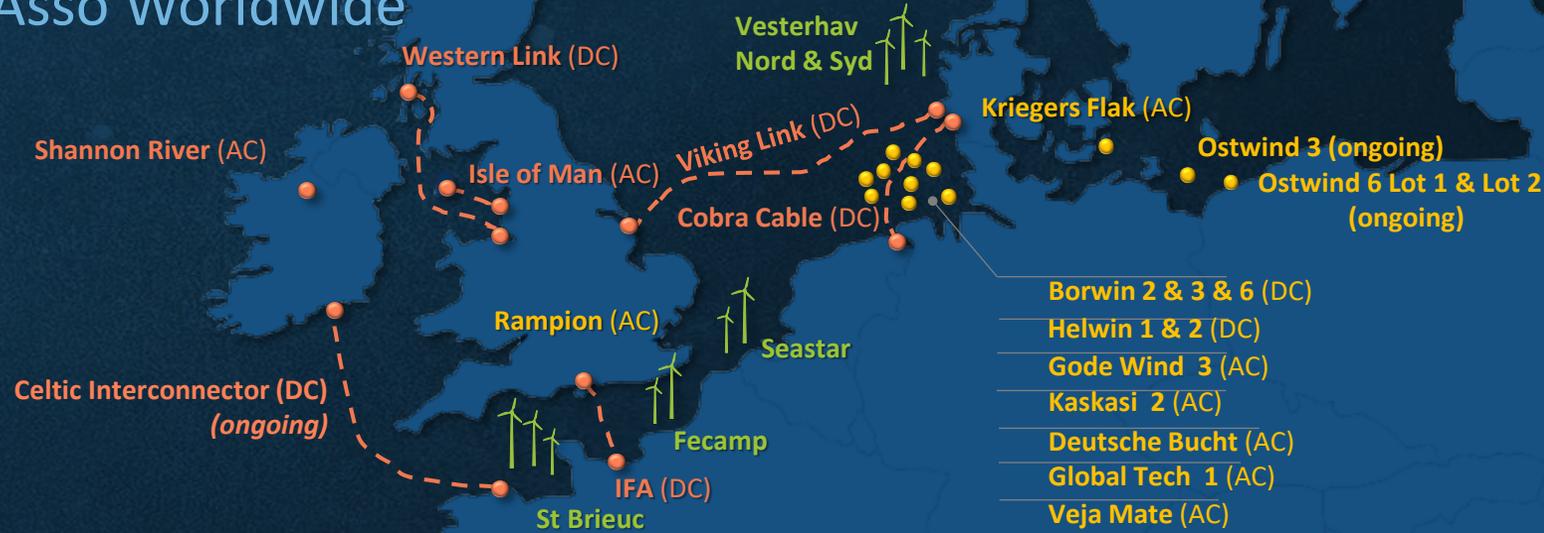
Mechanical Trenching 1.178 km

Simultaneous Lay & Burial 511 km



# 01 Introduction

## Asso Worldwide



### Asso Experience

- Interconnectors
- Exports
- IAC
- FOWF



# Agenda

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## 2. Assets

Company Owned Vessels

Trenchers



## Cable Laying Vessels Our Fleet

Company owned CLV's diversified characteristics and ASSO flexibility provide complete 'laying' solutions for:

- Deep water operations
- Shallow water operations
- Challenging shore landings
- Platform pull-ins
- Simultaneous lay and burial



### CLV Ariadne

**Key Features:**

DP-3 Specialized Cable Laying Vessel  
Extensive track record on diverse subsea construction projects under harsh environmental conditions (also as Viking Poseidon).  
High Sea State capability.  
Accommodation: 106 Persons  
Built 2009, Norway - under Greek Flag and ABS Class

Currently Equipped with:

- **2x Turntables of 7,000T combined total**
- **1x Work-Class ROV**
- **1x 250T Offshore Crane**
- **Pick-up Arm and Cable Pathway**
- **PLGR Equipment**
- **OASYS cable monitoring system**



### CLV Atalanti

**Key Features:**

DP-2 Specialized Cable Laying Vessel  
Extensive track record on diverse subsea cable installation projects.  
Shallow water operation with beaching capability.  
Bundle and SLB cable laying capabilities  
Accommodation: 77 Persons  
Hull built 2008, China / Outfitted 2010, Greece - under Greek Flag and ABS Class

Equipped with:

- **1x Turntable of 4500T**
- **1x Turntable of 2500T**
- **1x Work-Class ROV**
- **1x 35T Offshore Crane**
- **3x Pick-up Arms and Cable Pathways for maximum flexibility**
- **2x Spud cans for position keeping**
- **4 point mooring system**

## Cable Laying Vessels Althea

Introducing Althea, the cutting-edge DP-2 Cable Laying Vessel engineered to redefine cable installation in offshore and shallow-water environments.

Purpose-built for versatility, efficiency and sustainability, Althea is designed to access areas the larger cable laying vessels cannot, making her a game changer for offshore wind farms, intertidal zones and other challenging offshore projects.



### CLV Althea

#### Key Features:

- DP-2 Next-Generation Cable Laying Vessel
- Shallow draught operation with beaching capability
- Hybrid-Powered and Future-Ready
- Advanced Cable Handling Systems
- Accommodation: 120 Persons
- Currently under construction

#### Equipped with:

- 12,000T of cable in 1,2 or 3 carousel divisions
- 9x Thrusters
- 4x Spud Cans
- Double laying line, for both shallow and deep water
- Advanced Hybrid Propulsion – Battery Powered, Methanol-Ready
- Cold Ironing / Alternative Marine Power Capability
- Bio-Fuel Ready Engines



## Our Fleet Trenching Support Vessels

Company owned TSVs optimized for supporting the Group's specialized subsea spreads:

- Hard-soil trenching vehicles
- Jetting vehicles
- Multi-functional pre-trenching ploughs
- Boulder removal grabs
- Mattress installation frames etc.
- State-of-the-art Work-Class ROV systems



### TSV Argo

**Key Features:**

DP-2 Specialized Trenching Support Vessel. Extensive track record on diverse subsea cable installation projects. Multi-role capability  
80T Bollard pull capability  
SPS Certified  
Accommodation: 112 Persons

Built 2011, Spain – under Greek Flag and ABS Class

Equipped with:

- 2x Trenching support spreads
- 1x 150T Offshore Crane
- 2x Work Class ROVs
- 1x Moonpool



### TSV Aethra

**Key Features:**

DP-2 Specialized Trenching Support Vessel. Extensive track record on diverse subsea cable installation projects. Multi-role capability  
150T Bollard pull capability  
SPS Certified  
Accommodation: 87 Persons

Built 1999, Norway – under Greek Flag and ABS Class

Equipped with:

- 2x Trenching support spreads
- 1x 100T A-frame
- 1x 150T Offshore Crane
- 1x Work Class ROV
- 1x Moonpool with Boulder Grab System



### TSV Athena

**Key Features:**

DP-3 Specialized Trenching Support Vessel. Extensive track record on diverse subsea offshore projects. Multi-role capability  
110T Bollard pull capability  
SPS Certified  
Double-deck for simultaneous operations  
Accommodation: 100 Persons  
Built 2013, Singapore– under Greek Flag  
Equipped with:

- 2x Trenching support spreads (from 2022)
- 275T Offshore Crane
- 1x 170T A-Frame
- SAT & Surface Diving Systems
- Anchor and chain handling systems
- 1,500T Cable Carousel (optional)

## Trenching Support Vessels Avra

The Avra is a DP-2 Trenching Support Vessel, engineered for cable protection works, but also for cable repair and cable laying operations. She can handle simultaneously two (2) burial spreads (trenching vehicles), a Work-Class ROV and a boulder clearance tool.

The vessel is fitted with a **21 MW hybrid (battery)** diesel-electric power plant, methanol and bio-fuel ready engines and an alternative marine power system (cold ironing).

**The Avra is the most powerful Trenching Support Vessel in the market, specifically designed for supporting trenching vehicles with up to 3MW power in adverse weather conditions.**



### TSV Avra

#### Key Features:

- DP 2 (3-Bus Split)
- 21 MW installed power
- Hybrid (Battery) powered
- Methanol-Ready
- Bio-Fuel capability
- Cold-ironing capability
- Adverse weather capable

#### Equipped with:

- 2x Trenching support spreads
- 1x 150T A-frame
- 1x 150T Offshore Crane
- 1x Work Class ROV
- 250T Holding Power Towing Winch
- 2 x Moonpools with dual cursor LARS systems
- 4000T Below deck Cable Carousel



## Our Fleet General Support Vessels

The primary role of the Alcyone is to support all shore-end trenching operations related to cable laying (either pre-excavation or post lay burial), and any near-shore or coastal subsea scope which may be necessary.

The primary role of the Astrea is to support in the context of route preparation such as PLGR surveys. She is also engaged as a TSV with trencher tools.



### MSV Alcyone

#### Shore-end Trenching Support Vessel

##### Key Features:

- 7-point anchor spread
- 2x Anchoring Spud-poles
- 2~2.5m draft capable to reach shallow shore-ends
- Multirole capability
- Accommodation: 12 Persons
- Built 2006, Italy – under Greek Flag and ABS Class
- Equipped with:

- 1x Clam shell excavation Gear**
- 1x Hammer**
- 1x inspection class ROV**
- 1x 120T Crane**



### MSV Astrea

#### Multi-purpose Support Vessel

##### Key Features:

- DP-2 Specialized Trenching Support Vessel.
- Extensive track record on diverse subsea cable installation projects. Multirole capability
- Shallow water operation capability
- SPS Certified
- Accommodation: 55 Persons
- Built 1987, Norway / Conv. 2008, Greece – under Greek Flag and ABS Class

##### Equipped with:

- **1x Trenching support spread**
- **1x 55T A-frame**
- **1x 20T Offshore Crane**
- **1x Work Class ROV**

## Deep Water Trenchers Soft Soil Trencher

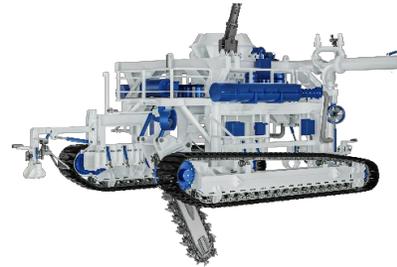


**AssoJet III Mk1**  
Jetting Vehicle (1.3 MW)



**AssoJet III Mk2**  
Jetting Vehicle (1.56 MW)

## Deep Water Trenchers Hard Soil Trencher



**AssoTrencher IV Mk9**  
Mechanical Trencher – Chain or Wheel modules



**AssoTrencher IV Mk12**  
Mechanical Trencher – Chain or Wheel modules



**AssoTrencher IV Mk13**  
Mechanical Trencher – Chain or Wheel modules and backfilling mode

## Shallow Water Trenchers

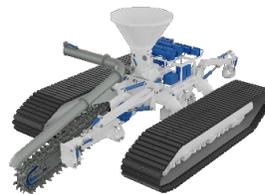
**Assotrencher V Mk3**  
Shallow water trencher – configurable with jetting swords or cutting chain



**Assotrencher V Mk4**  
Shallow water trencher

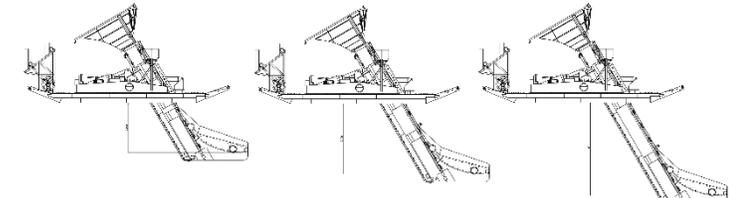
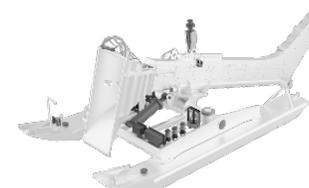


**Assotrencher V Mk5**  
Shallow water trencher



## Simultaneous Lay & Burial Plough Hydroplow(s)

Jet Sleds – configurable for surface fed or onboard pumps – variable depth stingers

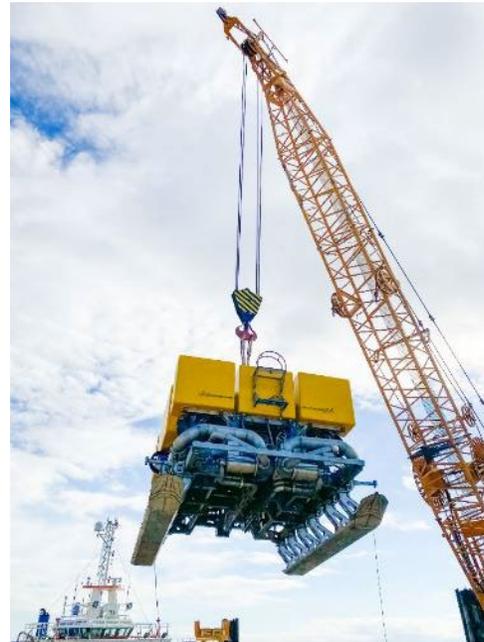




## Subsea Mechanical Trenchers AssoTrencher IV series

- ✓ 1.56 MW of installed power
- ✓ In house trenching tool for max efficiency
- ✓ In house design hydraulic system
- ✓ In house design of water pumps & distribution system
- ✓ In house design of cameras , lights & telemetry architecture
- ✓ Low compression on seabed surface
- ✓ Assured cable depth in various soil conditions with the use of eductor(s)
- ✓ Dead-sub automatic release of product
- ✓ Post-Lay burial with minimum slack requirement of laid product
- ✓ Option for cutting chain and cutting wheel

**IN-HOUSE  
DESIGN**



**IN-HOUSE  
DESIGN**

## Subsea Mechanical Trenchers AssoJet III Series

- ✓ 1.3MW (Mk1) and 1.56MW (Mk2) of installed jetting power
- ✓ 3.0m jetting swords cable lowering depth capability
- ✓ 1.0m (approx.) jet backfilling swords for slope collapsing & trench backfilling / Swords length can increase with extensions, if needed
- ✓ Single eductor option for cleaning/intervention operations
- ✓ In house design of cameras , lights & telemetry architecture
- ✓ In house design hydraulic system
- ✓ In house design of electrical power distribution
- ✓ In house design of control system
- ✓ Strategically removable buoyancy blocks for fast easy access
- ✓ Enhanced maintenance/repair capability – on-board workshops
- ✓ Option for tracked mode

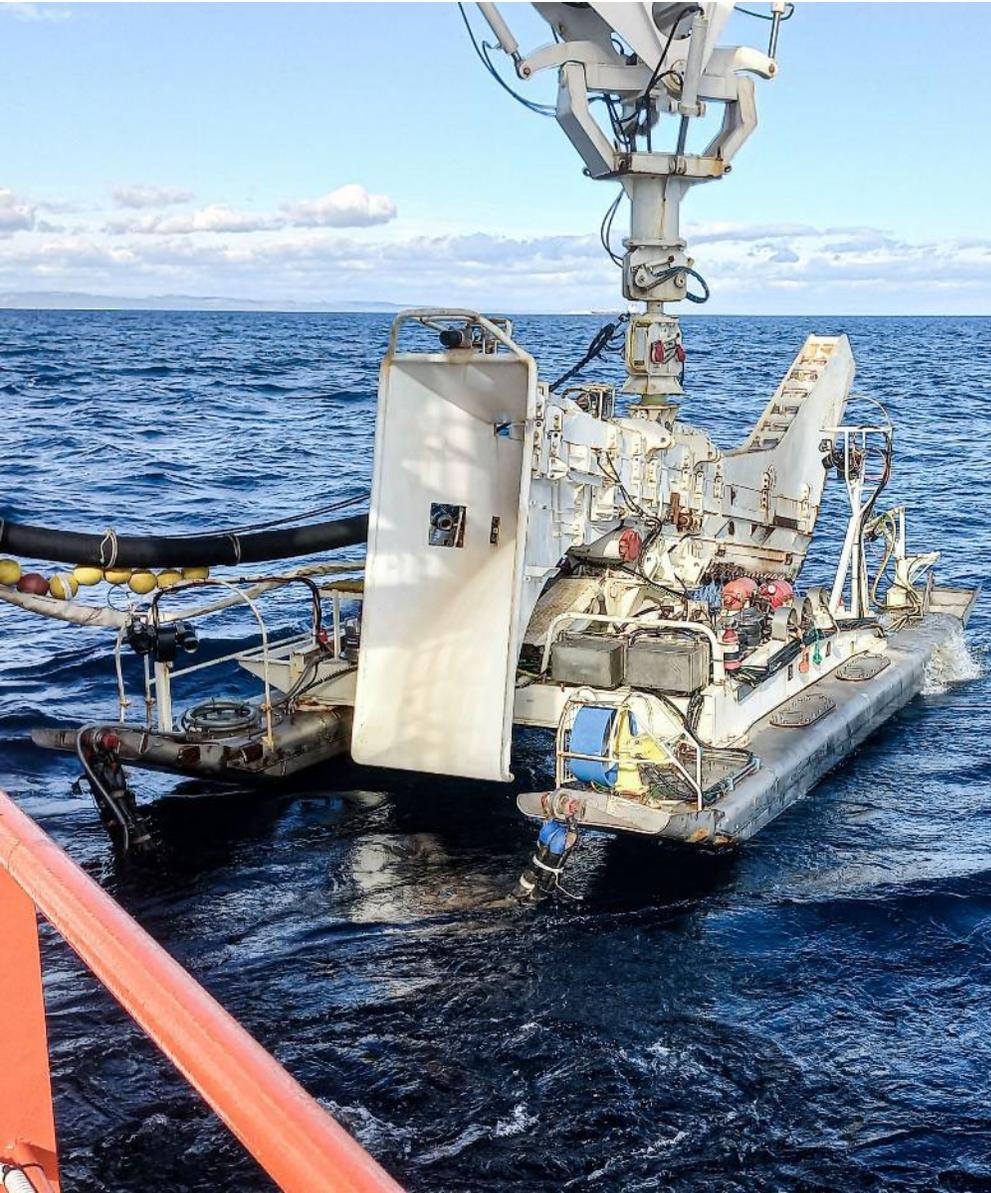


**IN-HOUSE  
DESIGN**



## Subsea Mechanical Trenchers AssoTrencher V Series

- ✓ Total power of 950kW with 450kW HPU for high performance trenching
- ✓ Designed for shallow water with crawling capability in very soft clays
- ✓ Dual burial configuration: cutting chain & jetting swords
- ✓ Backfilling jetting swords configuration available for material collapsing & backfilling up to 1m depth
- ✓ Capable of both pre-lay and post-lay burial operations
- ✓ Trenching depth up to 2.4m (cutting) and 3.4m (jetting)
- ✓ Operates in soils up to 3MPa (cutting) and 120kPa (jetting)
- ✓ In house design of cameras , lights & telemetry architecture
- ✓ In house hydraulic system design
- ✓ In house electrical power distribution design
- ✓ In house control system design
- ✓ Optional buoyancy system available



**IN-HOUSE  
DESIGN**

## Ploughs HydroPlow

- ✓ Soft Soil Jetting Sled
- ✓ Lightweight, towed sled for Simultaneous Lay & Burial (SLB) operations
- ✓ Designed for cohesive soils and harsh weather conditions
- ✓ Burial depth up to 4.0m with interchangeable 2m, 3m, or 4m stingers
- ✓ Compatible with umbilicals, cables, flowlines, and flexible pipelines
- ✓ Operates with surface-fed or onboard water pumps
- ✓ Eliminates hydro-electric umbilicals with single HV cable system
- ✓ Burial speed: 0.1–1.0 km/h; seabed: up to 120kPa shear strength
- ✓ Full real-time monitoring with cameras, sonars, and sensors
- ✓ In-house designed for reliability, precision, and ease of deployment



## Multi-function Plough MF Plough

- ✓ 3 interchangeable modes: Boulder Clearance, Pre-Trenching & Backfilling
- ✓ Max trenching depth: 1.7m | Trench base width: 0.5m
- ✓ Max boulder size approx. 2.0m
- ✓ Handles seabed soil strengths >600 kPa with multiple passes
- ✓ Common chassis with modular skids, grills & mouldboards for configuration flexibility
- ✓ Steerable frame with hydraulic arms & tow bridle for controlled trench routing
- ✓ Precision steering & depth control for stable, engineered trench creation
- ✓ Deep trenching with vertical-sided trench base for maximum cable protection
- ✓ Detachable lift point for safe and reliable launch and recovery
- ✓ Advanced control cabin with A/C, touchscreen interface & remote diagnostics



## Mattresses & Boulder picking

### AssoMat III

- ✓ Fast and accurate mattress installation frame for cable, pipeline & crossing protection
- ✓ Ideal for crossings and free-span rectification due to enhanced positioning accuracy
- ✓ Available in two configurations: basic installation frame & optional version with thrusters/sonars
- ✓ Compact design for efficient offshore deployment
- ✓ Compatible with a wide range of mattress types

### AssoGrapple II

- ✓ Multi-purpose in-house tool for boulder removal, seabed shaping & mattress placement
- ✓ Self-propelled, autonomous frame with 4 thrusters & 200HP HPU for high maneuverability
- ✓ 3.0m x 2.0m frame easily integrates with trenching spreads and existing deck setups
- ✓ Equipped with tine grab, clamshell or mattress tools for various operations
- ✓ Provides 2D control (sway, yaw, surge) & real-time operator feedback (pitch, roll, sonar, altimeter etc.)
- ✓ Optimized for high-depth, high-current environments



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**Greece**

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