



JETTY LESS SPM FLUID TRANSFER SOLUTIONS

CALM TERMINALS
TOWER LOADING UNIT
SMART SERVICES

 **Imodco**
Part of the SBM Offshore® Group

IMODCO AT A GLANCE

THE WORLD NEEDS SUSTAINABLE ENERGY , OUR MISSION IS TO PROVIDE JETTY-LESS FLUID TRANSFER SOLUTIONS TO THE WHOLE ENERGY VALUE CHAIN

The Energy Transition must become a reality, and we have a role to play in the future energy landscape.

With over 64 years expertise in Off-the -Shore fluid transfer solutions adapted to the new energy era, we will contribute to make it happen. We are committed to enable responsible energy transition, reducing emissions on oil & gas while developing cleaner solutions from renewable power sources.

As a pioneer in offshore mooring systems, Imodco has continuously kept adapting its terminals to meet new challenges.

Imodco jetty-less terminals enable bulk liquid carriers to perform cargo loading, un-loading, bunkering and de-ballasting operations simultaneously – while weather-vaning around a Single Point Mooring (SPM), thereby optimizing Operational Safety, CAPEX, OPEX and Uptime. We provide reliable and safe systems to the highest HSSE and quality standards while also ensuring aftersales support during the asset's lifetime.

With the largest track record of mooring systems developed and delivered, Imodco proposes unrivaled know-how and ensures support for any type of asset.



KEY POINTS



1958 1st CALM Buoy

2019 LAUNCHING OF
THE LNG TERMINAL

- ~60 years of experience
- 460 Mooring systems delivered
- 270 Mooring Systems in Operation
- 30 years without drydock
- ~60 countries serviced by our After-sales
- 24/7 Hotline Assistance



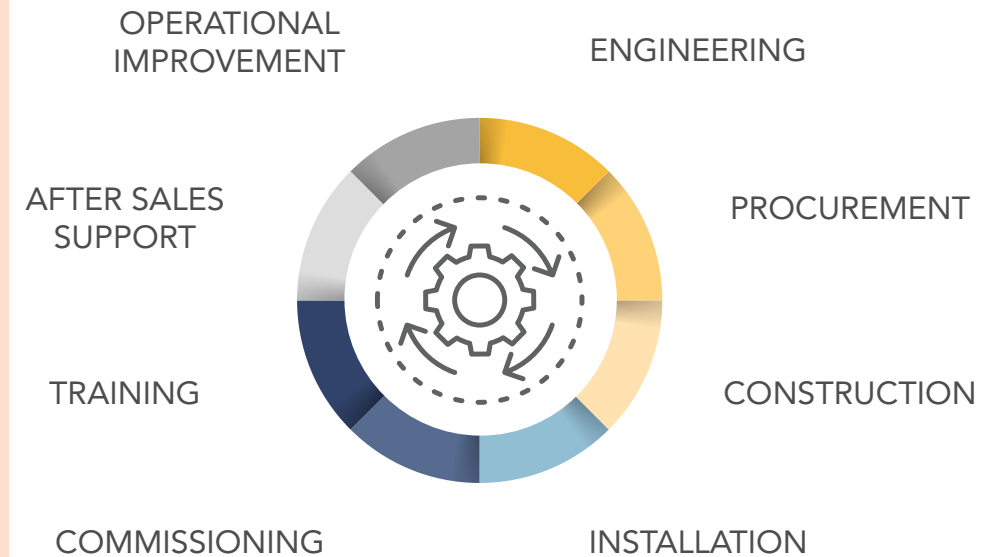
Imodco is part of the SBM Offshore Group.

Therefore together with our clients, we benefit from all the advantages of having a strong and reputable parent company: solid backlog of work (the largest fleet of leased & operated FPSOs), bespoke safety culture, over 350 years of cumulated operational experience, technological innovation track record, and corresponding technical expertise, in addition to financial strength, international presence, ...

Imodco and SBM Offshore share the same DNA, the same vision and the same values. Building upon SBM Offshore terminals technology, Imodco has optimized and qualified the CALM buoy design to remain in the water for up to 30 years.

Imodco also works with the wider SBM Offshore business to integrate swivels and mechanical parts within turrets or other types of mooring systems for FPSOs.

DELIVERING ACROSS THE FULL SYSTEM LIFE CYCLE. IMODCO ENGAGES WITH ITS CLIENTS FROM PROJECT CONCEPTION AND OVER THE ENTIRE OPERATIONAL LIFE



YOUR NEEDS, YOUR CHALLENGES

GREEN AMMONIA PROJECTS

Export system CAPEX relatively small vs Overall Project CAPEX but KEY in project value delivery

Must have features:

- Reliability
- Safe operations
- Acceptability by Off-taker carriers
- High Uptime
- Ease of maintenance & repair

Nice to have features:

- Easy Permitting (e.g. limited environmental impact,...)
- Short delivery
- Cost Efficient CAPEX, low OPEX



Need Jetty-less SPM Terminals

CARBON CAPTURE STORAGE (CCS)

- Inject CO₂ into offshore reservoirs
- Address pipeline solutions issues:
 - High initial CAPEX – 100% sunk cost
 - Long delivery time
 - Pipeline diameter is project capacity's Bottle neck

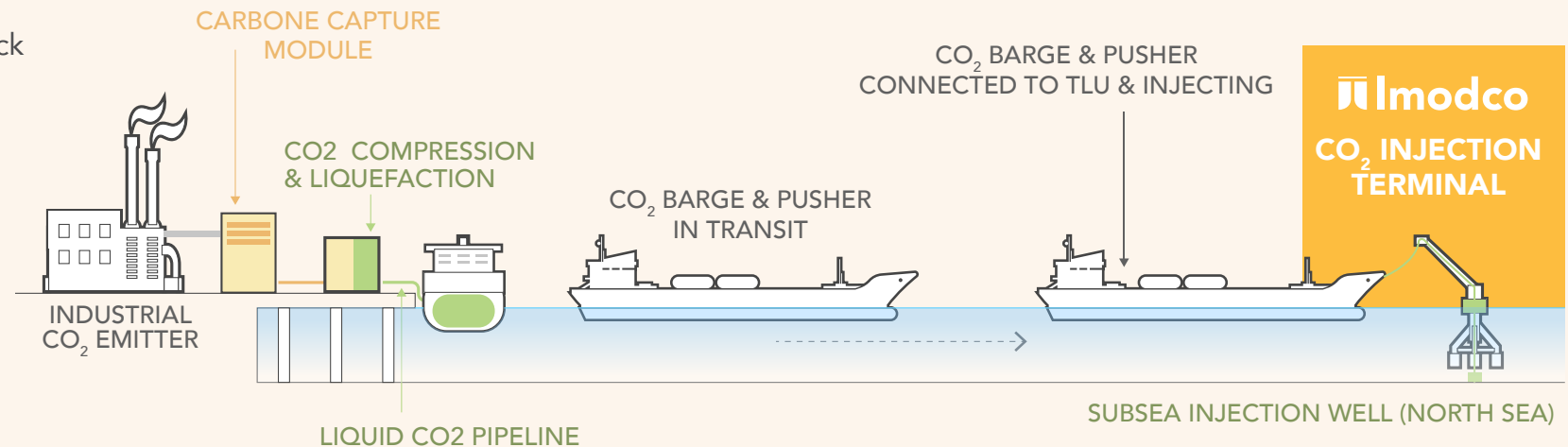
Virtual Pipeline solutions

- Using CO₂ carries in rotation
- Reduce CAPEX risk – assets can be re-assigned to different project/reservoir
- Project capacity can be scaled up (add more CO₂ carriers in rotation)



Need Offshore CO₂ Injection Terminals to

- Offload CO₂ from carriers (standard interface per fleet)
- Hoist Injection Pumps (project / reservoir specific)



2 PRODUCTS TO FIT ALL YOUR NEEDS

JETTY LESS TERMINALS

- Minimal civil work
- Reduced CAPEX
- Reduced time-to-market (permitting, project execution)
- Reduces maritime traffic constraints
- Reduces environmental impact

In Open sea, Jettyless Terminals are Single Point Mooring type (SPM)

WEATHERVANING

Our terminals offshore perform the dual function of keeping a ship moored and transferring fluids while allowing the ship to weathervane.

SPM systems are permitting cargo operations to continue in almost all weather and sea conditions.

Flexible hoses connect the ship's cargo manifolds to the SPM. Other hoses and piping connect the underside of the SPM to the submarine pipelines at the sea bed.

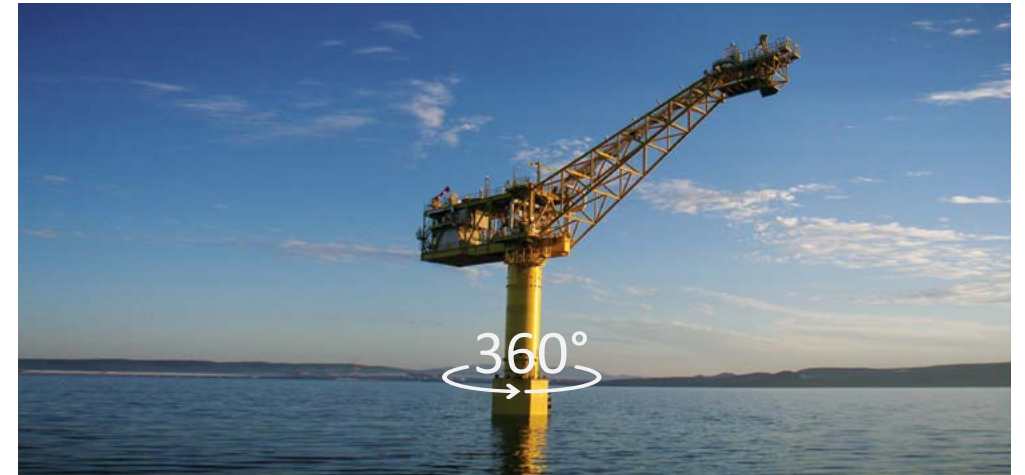
EPCI EXPERTISE

Our designs and technology continuously evolve to meet the complex demands of the offshore terminals industry, allowing installation of our CALM buoys and Tower Loading Unit in increasingly wide range of water depths, facing harsher conditions and berthing larger tankers.

Imodco's terminal systems are bi-directional and capable of handling multiple fluid cargoes.



SPM TERMINALS FOR HIGHER SAFETY AND UPTIME



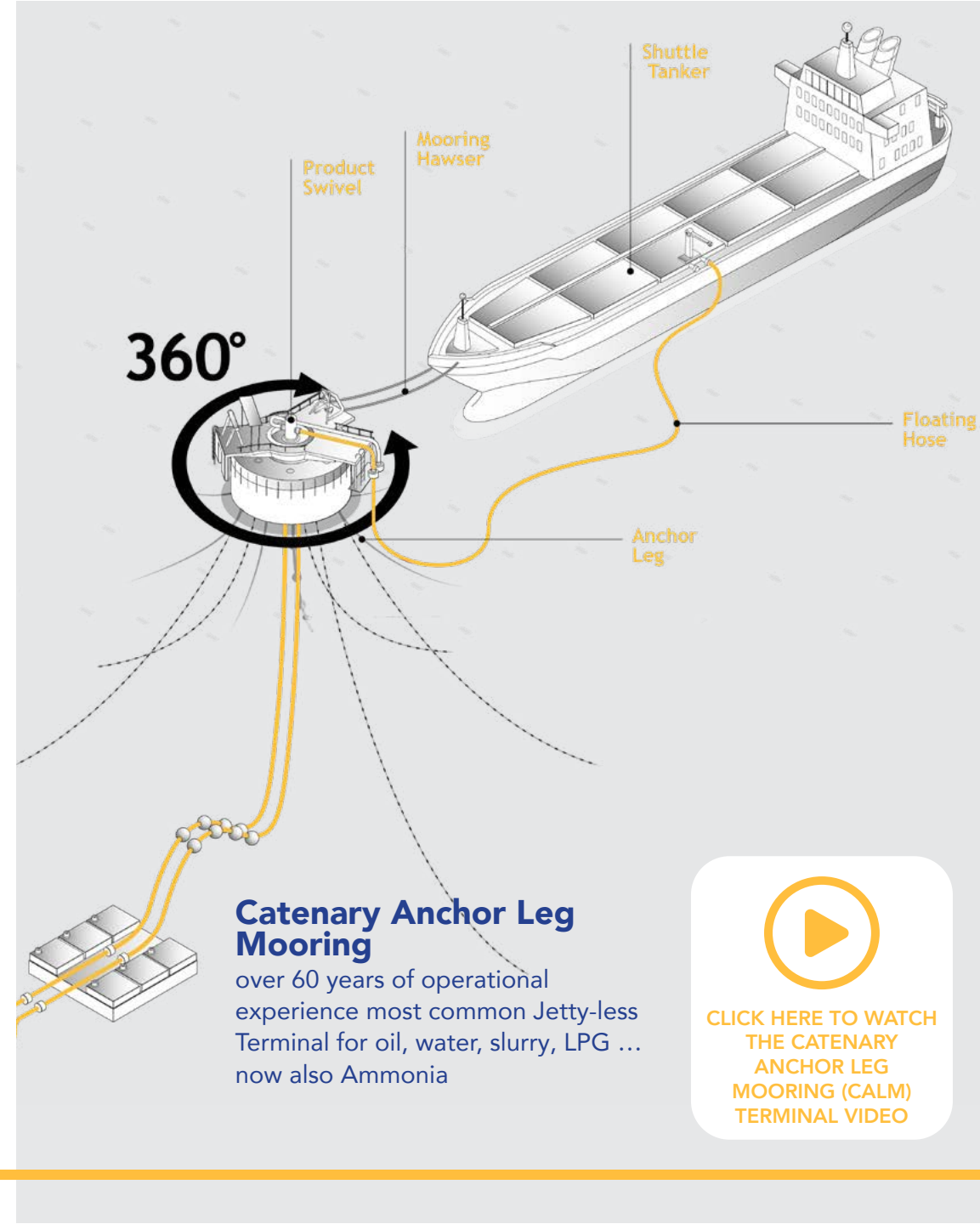
CATENARY ANCHOR LEG MOORING (CALM) SYSTEM

The Catenary Anchor Leg Mooring (CALM) is a Single Point Mooring (SPM) system made of a floating buoy that performs the dual function of keeping a tanker moored and transferring fluids while allowing the ship to weathervane.

Providing a simple, economical solution to the challenge of loading and offloading, they are used for a variety of applications, water depths and vessel sizes ranging from small product carriers to Very Large Crude Carriers (VLCC).

CALM systems are securely anchored offshore, permitting cargo operations to continue in almost all weather and sea conditions. Floating hoses, which rotate around the SPM terminal with the tanker, connect the ship's cargo manifolds to the SPM. Other hoses connect the underside of the SPM to the submarine pipelines at the sea bed via a Pipeline End Manifold (PEM).

CALM TERMINALS FOR CONVENTIONAL PRODUCTS



Catenary Anchor Leg Mooring

over 60 years of operational experience most common Jetty-less Terminal for oil, water, slurry, LPG ... now also Ammonia



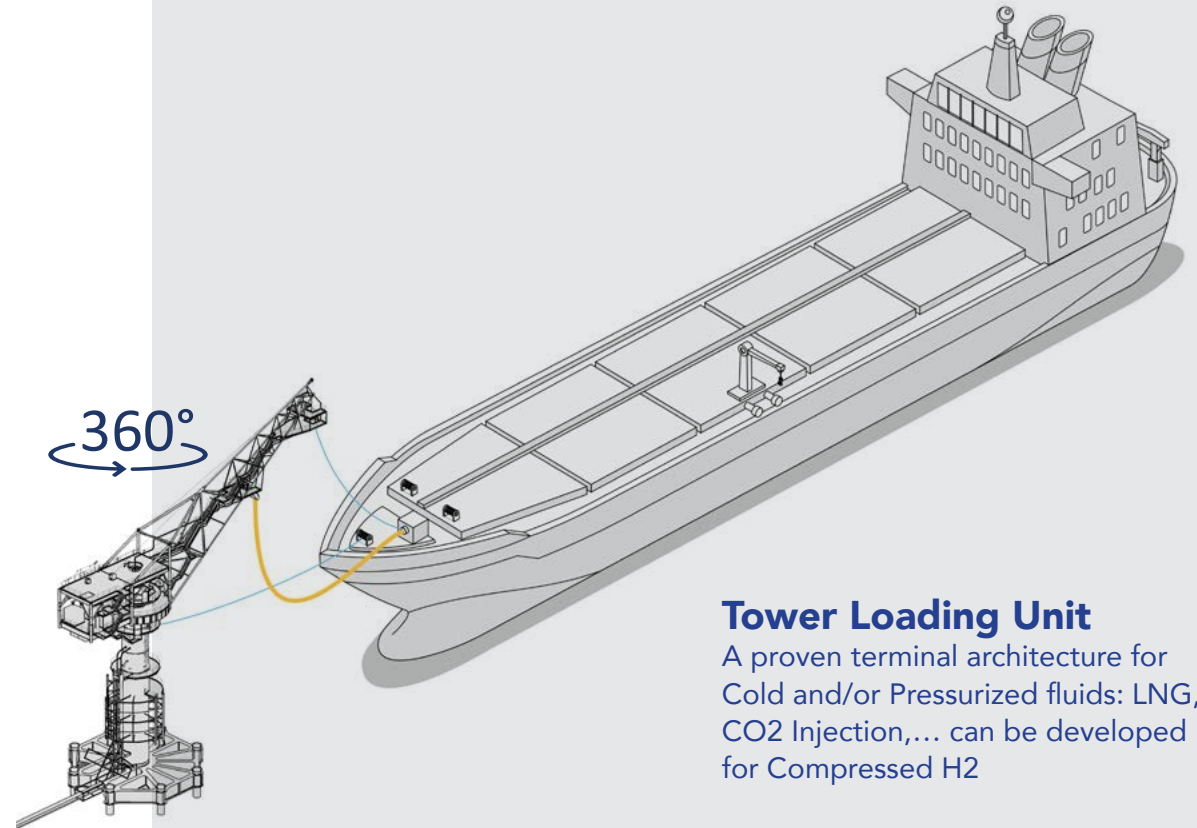
CLICK HERE TO WATCH THE CATENARY ANCHOR LEG MOORING (CALM) TERMINAL VIDEO

TOWER LOADING UNIT (TLU)

The Tower Loading Unit (TLU), a Single Point Mooring (SPM) system for **CHALLENGING PROJECTS**:

- already in use for offloading in **ice conditions**
- further developed for **LNG transfer** application
- suitable for low temperature (e.g. LNG @ ~160 deg C)
- suitable for **very shallow water depths** (e.g. 10 m for ssLNG carrier)
- now also adapted to **CO2 Injection** application as
 - suitable for operations in **harsh environment** (e.g. North Sea conditions)
 - **operations remotely controlled** from CO2 carriers – no need for external support
 - **hoisting CO2 injection pumping system**
 - Its aerial jumper enabling **to keep the system pressurized between two injection operations** – (important feature in the “virtual pipeline scheme” with almost daily operations)
 - cost effective for water depths down to around 50 m, could be designed for deeper waters

A tower to which a vessel can be moored to offload LNG
(similar to existing SPMs for oil products).



Tower Loading Unit

A proven terminal architecture for Cold and/or Pressurized fluids: LNG, CO2 Injection,... can be developed for Compressed H2

SMART SERVICES

EMBRACE LATEST DIGITAL TECHNOLOGIES ACROSS THE ENTIRE PRODUCT LIFE CYCLE TO IMPROVE PERFORMANCE OF IMODCO CURRENT SYSTEMS, LOWER THE COST OF OUR PRODUCTS THROUGH MORE EFFICIENT EXECUTION, AND CREATE A STRATEGIC DIRECTION TOWARDS A FULLY DIGITAL FUTURE

IDEA, our digital platform

Through a web-based portal for operation & integrity management

- providing Imodco full lifecycle expertise
- Unlocking the power of your terminal data;
- enabling operational teams to work remotely and efficiently,
- having all true information of the asset stored and easily accessible, from both computer & mobile.

Imodco Telemetry

Offering 2 option of In-House solutions of telemetry systems to allow loading/offloading operations in the most constraining configurations.

Imodco In-House Telemetry products are imagined, developed and built to PROTECT people, environment & client assets.

Submarine drone technology

The Submarine Drone has been developed to carry out UWILD operations (Underwater Inspection In Lieu of Dry-docking), able to:

- undertake works such as underwater visual inspections and full 3D bathymetry surveys
- provide with best engineering recommendations for SPM's Integrity and Life Extension management.



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