

LNG REGASIFICATION

A remarkable CASE STUDY

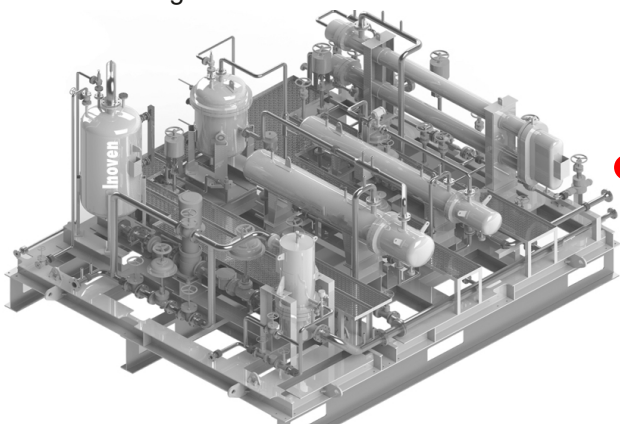
How Prozemek Srl transformed its vision for LNG regasification into a fully integrated engineering solution, delivering the complete process design for the FSRU conversion of the Golar Arctic carrier. A scalable, high performance technology platform engineered for both offshore and onshore LNG terminals.

Executive Summary

Prozemek Srl as a leading engineering firm was selected to execute the first phase of a major LNG project study, reinforcing its role as a trusted partner in the sector. The scope includes developing the full process design and conducting an advanced optimization study, establishing the technical basis for a high-efficiency, next-generation regasification solution.

How it works, Conceptualized to Succeed

At Prozemek Srl, we have engineered a distinctive and transformative LNG system designed to outperform conventional technologies through exceptional efficiency and competitive capital expenditure. Our approach enhances BOG (Boil-Off Gas) treatment at LNG terminals with a flexible single or double-stage cooling process, enabling superior stability, reduced energy use, and optimized plant economics. This next-generation design positions Prozemek Srl at the forefront of innovative, value-driven LNG regasification and BOG management solutions.



Problem Solved, What Others Did Not

In today's market, LNG terminal operators face increasing pressure to reduce costs while ensuring long-term stability. While many engineering firms offer high-margin, short-term solutions, Prozemek Srl takes a different path.

We place "safe-design" at the core of every project, ensuring operational sustainability as a guaranteed outcome. Our FSRU system achieves up to 60% energy savings versus conventional technologies and features a more compact skid footprint. This advantage comes from Prozemek's proprietary internals and continuous equipment-optimization efforts.

Minimal utility consumption and very low internal losses deliver outstanding efficiency, reducing OPEX and improving lifecycle value.

For onshore terminals, our Integrated Chilling Unit (ICU) recovers thermal energy released during regasification and converts it into instantly available cooling utilities, providing further efficiency and environmental benefits.

Prozemek Srl continues redefining LNG regasification by combining safety, efficiency, and sustainable engineering in every solution.

TECH FACTS

- 60% of energy savings
- 25% more compact

A System Derived From Conventional, Designed To Be Revolutionary

Prozemek Srl has re-engineered traditional regasification concepts, merging key elements of conventional LNG design with advanced proprietary technologies to create more efficient, cost-effective systems. Refined design principles combined with our innovations deliver an LNG platform offering high performance with reduced operating costs. Engineered for offshore and onshore use, the system maintains strong efficiency where traditional plants struggle—limited space, vessel motion, or complex layouts—ensuring stable performance in demanding conditions. This flexible, high-efficiency architecture enables Prozemek Srl to support LNG operators in achieving superior results across diverse environments and constraints.

The discriminating factor of the energy consumption

One of Prozemek Srl's key innovations is its dual-stage pre-cooling concept, delivering major energy savings far beyond traditional direct-compression systems. Our proprietary design cuts power consumption to 800 kW, compared to 2,000 kW for a conventional process of the same capacity significantly lowering OPEX and positioning our solution among the industry's most efficient.

The system also features a 25% smaller skid footprint, a crucial advantage in offshore applications where space and weight are limited.

This breakthrough stems from extensive engineering work energy-balance studies, thermodynamic modelling, and CFD-based optimization, establishing a new benchmark in LNG regasification efficiency.

Benefits include:

- Lower operational costs
- Reduced installation costs
- Reduced maintenance requirements
- Greater operational safety and stability

Why Prozemek?

Prozemek Srl is synonymous with high-value process solutions and specialized consultancy services focused on economic efficiency and operational performance. Our technologies are integrated into in-house-engineered process packages, delivered fully assembled and ready for operation without compromising total quality.

Clients seeking greater operational efficiency benefit from our broad portfolio of advanced systems, each developed to reduce complexity while enhancing technological excellence. Every solution is part of a coherent, high-performance product range designed to exceed expectations.

Driven by our vision of cost-efficient, next-generation units, Prozemek Srl delivers breakthrough solutions for the Oil & Gas, Chemical, and Petrochemical sectors, engineered for unmatched performance from day one. Our ready-to-operate systems combine innovation, sustainability, and robust design—reflecting our commitment to advancing process engineering.

Prozemek Srl

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SYSTEM KEY FACTORS

Application of heat recovery principles on the LNG process heating energy, to achieve energy-efficiency 60% higher,

Specifically design condensation BOG process with dual-stage pre-cooled and compressed gas system,

Substitution of air coolers with exchangers for the critical cooling,

Reduction of the total compressor power consumption to 250 KW,

Reduction of the total pump power consumption to 350 KW.