

WISON NEW ENERGIES AND SHELL CATALYST & TECHNOLOGIES ARE IN A COLLABORATION TO DEVELOP AND DEPLOY SHELL'S DUAL MIXED REFRIGERANT (DMR) LIQUEFACTION TECHNOLOGY WITHIN WISON'S FLOATING LNG (FLNG) PRODUCT PORTFOLIO.

Successful FLNG delivery requires both proven liquefaction technology and effective EPCIC execution.

By combining Shell's decades of LNG technology development and operational experience with Wison's proven FLNG engineering, procurement, construction, installation and commissioning (EPCIC) capabilities, the collaboration delivers a growing range of competitive LNG solutions for offshore developments.

Together, Wison and Shell offer a practical combination of



Proven LNG technology and operational experience



Standardised, adaptable FLNG solutions



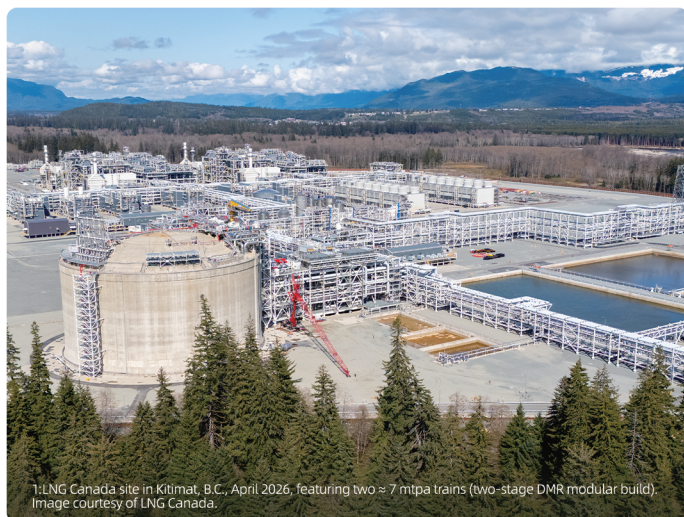
Competitive EPCIC execution

This integrated approach helps customers progress LNG opportunities with a mature design basis, supporting more efficient project development and execution.

Pre-engineered modular blocks provide a mature starting point, reducing early-stage engineering effort and supporting more efficient project execution.

Introduction of Shell DMR technology

Shell DMR is a mature technology deployed in Prelude FLNG, Sakhalin LNG and LNG Canada (Figure 1), with train sizes between 3 and 7 million tonnes per annum (mtpa). The DMR process uses a mixed refrigerant in both the pre-cooling refrigeration loop and the main liquefaction loop, utilising coil-wound heat exchangers (CWHE). This allows optimal cooling curves and use of power. The number of pre-cooling stages can be varied as part of a trade-off between process efficiency and costs and space.



1: LNG Canada site in Kitimat, B.C., April 2026, featuring two ~ 7 mtpa trains (two-stage DMR modular build). Image courtesy of LNG Canada.

WHY WISON NEW ENERGIES AND SHELL CATALYST & TECHNOLOGIES

Wison and Shell combine complementary strengths to provide a portfolio of mature, competitive and scalable FLNG solutions.



Proven LNG technology

Shell DMR is a mature LNG liquefaction technology deployed in major LNG projects, including Prelude FLNG, Sakhalin LNG and LNG Canada.



Operational experience

Shell brings decades of experience in LNG technology development, design and operation.



Standardised, adaptable FLNG solutions

FEED-ready solutions and pre-engineered modular building blocks help reduce early-stage engineering effort, shorten development schedules and enable adaptation to project-specific requirements.



Competitive EPCIC execution

Wison brings extensive FLNG engineering, modularisation and fabrication capabilities, supported by world-class fabrication facilities and an established global supply chain.

Together, these complementary strengths support FLNG designs that are both buildable and operable.

The portfolio continues to evolve as both companies work together to expand the range of available FLNG solutions and respond to changing market needs.

From proven LNG technology to competitive FLNG execution, Wison and Shell combine complementary strengths to deliver robust, practical solutions for offshore LNG projects.

FOR MORE INFORMATION

For additional information, please visit our websites:

www.wison-energies.com

<https://www.shell.com/LNGTech>



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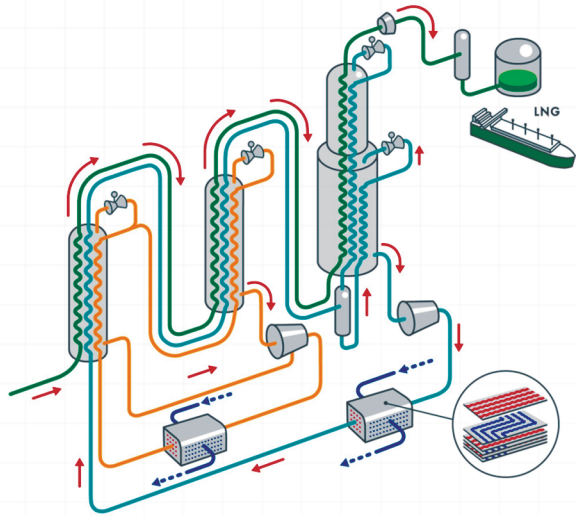


WISON NEW ENERGIES FLNG SOLUTIONS

WITH DMR TECHNOLOGY
LICENSED BY SHELL

Standardised FLNG solutions built on Shell DMR technology

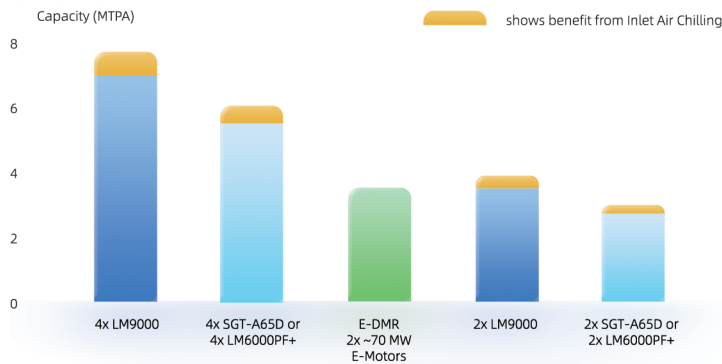
To support faster project development, Wison has created a catalogue of FLNG solutions, based on Shell DMR technology, covering capacities from approximately 3 to 7 mtpa. An illustration of a two-stage DMR liquefaction train is shown in Figure 2.



2: Generic Shell DMR liquefaction process (two-stage pre-cooling).

These solutions build on pre-engineered modular design blocks with associated engineering deliverables, including process flow diagrams, equipment lists, plot plans and piping and instrumentation diagrams. This enables projects to start from a mature design basis, reducing early-stage engineering effort and supporting more efficient project execution.

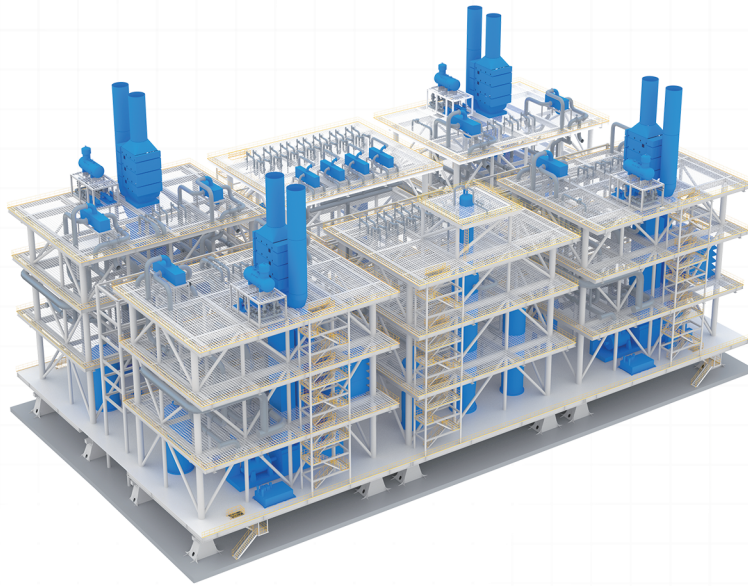
This approach offers significant flexibility in both capacity and optionality, e.g. whether electrical or direct mechanical drivers are preferred, or if the unit should be air- or water-cooled. Gas turbine power augmentation by inlet air chilling (IAC) is also offered as a potential capacity-boosting alternative. Figure 3 shows the expected LNG capacity ranges (depending on project conditions) for five water-cooled options that have been developed up to front-end engineering design (FEED) ready level; three of these are further discussed as examples in the next sections.



3: Examples of tested liquefaction driver options vs. capacity

5-6 MTPA gas turbine-driven Single Train

To extend the portfolio to larger single-train capacities, Wison and Shell developed a train of about 5.5-6 mtpa, depending on the level of IAC applied (Figure 4). The engineering was based on 4 x Siemens A65 aeroderivative turbine drivers in 2 x 50% strings for each of the refrigeration loops; however, a similar capacity would be possible with a Baker Hughes LM6000PF+. The scale-up in size enables economies of scale on the CWHE as well as other equipment. 3D layout studies based on a sized equipment and piping list demonstrated the feasibility of building this configuration as a six-module concept.



4: Single-train high-capacity DMR liquefaction block.

What this could mean for your project

This option is suited to developers seeking higher LNG capacity from a single train, with the added benefit of flexibility in turbine driver options.

7+ MTPA gas turbine-driven Two Train

Further capacity enhancement is possible using Baker Hughes LM9000 aeroderivative turbine drivers. Wison and Shell considered a two-train configuration with these drivers (1 x LM9000 aeroderivative turbine drives a 100% string for each of the refrigeration loops - Figure 6), allowing up to 7 mtpa without any IAC. 3D layout studies based on a sized equipment and piping list demonstrated the feasibility of building this configuration with three modules per train.

What this could mean for your project

This configuration extends the portfolio to higher-capacity developments, offering a route to 7+ mtpa for projects where maximising FLNG production capacity is a priority.

3.6 MTPA e-DMR Single Train



Wison expanded its Generation 2 FLNG offering, first presented at Gas-tech 2025, with a Shell DMR train based on a 2 x 70-MW electrical driver, with power generated in a combined-cycle gas turbine (CCGT) power plant (Figure 5). This results in a ~25% reduction of CO₂-equivalent emissions, compared to Wison's Generation 1 FLNG designs. Supported by joint studies, with input from Baker Hughes for the rotating equipment and Linde for the CWHE, the design was matured to a FEED-ready level.

What this could mean for your project

This configuration provides an electrified option for projects seeking to reduce FLNG emissions while retaining a single-train design.

The role of CWHEs in the design

Shell selected CWHEs (Figure 6) for its DMR technology because they:

- 1 have been reliable and durable workhorses in the LNG industry for the past 50 years in a wide range of sizes and applications, including FLNGs
- 2 have no moving parts, are robust against thermal shocks and are easy to maintain through, for example, individual tube plugging options
- 3 provide relatively large heat exchange surface areas for their footprint, given their vertical design

Shell DMR technology can be provided in partnership with a range of CWHE vendors.



6: CWHE is the core equipment in large baseload LNG plants. Image courtesy of linde GmbH.

Why this matters

Building on more than 50 years of LNG experience, Shell's application of CWHE technology contributes to:



compact
liquefaction
layouts



reduced
equipment
count



simplified
maintenance



operational
robustness



efficient
FLNG
integration

Together, these characteristics are intended to support efficient project development and reliable long-term operation.