



**DAPHNE**<sup>®</sup>  
TECHNOLOGY

## **Daphne Technology's SlipPure™ achieves Lloyd's Register Approval in Principle for innovative Plasma-Catalysis System with Proven Performance Results.**

*Lausanne, 1<sup>st</sup> July 2024* - Daphne Technology's innovative SlipPure™ system has been awarded Approval in Principle (AiP) from Lloyd's Register ("LR") for its Plasma-Catalytic technology, with LR witnessed results confirming its performance. This recognition marks a significant milestone in the fight against methane slip in the maritime and land-based oil and gas industries.

The advanced SlipPure™ system, which previously received AiP for its plasma-only configuration, now runs its full Plasma-Catalytic process. This advanced technology improves efficiency by lowering plasma power consumption, enabling very high methane slip reductions at exhaust temperatures well below those required for catalyst-only solutions, in Daphne Technology's view, making it both the most effective and efficient methane slip reduction system available. The SlipPure™ Plasma-Catalysis system is also Approved in Principle by DNV.

Methane slip is a major contributor to greenhouse gas emissions, with a global warming potential 28 times greater than that of CO<sub>2</sub> over a 100-year period. Reducing methane emissions is crucial as it is responsible for at least a quarter of the current global warming.<sup>1</sup> As it has a much shorter atmospheric lifetime compared to CO<sub>2</sub>, cutting methane emissions now can lead to faster climate benefits.<sup>2</sup>

Daphne Technology believes it is the only company actively developing a Plasma-Catalysis system for methane slip reduction. This advanced system integrates our patented wavelet pulse power (WPP) supply technology to generate plasma and utilises our proprietary catalyst, ensuring unmatched performance and efficiency.

SlipPure™ has undergone several rigorous test campaigns utilising exhaust gas produced from a land-based test engine (746kW lean burn spark ignited engine type RR MTU 8V4000M55RN) installed at the Maritime Center of the University of Applied Science in Flensburg, Germany.

In January 2023, safe operation of the WPP power supply in the plasma-only system was demonstrated over nearly 75 hours of operation. Earlier this year, the Plasma-Catalytic process was evaluated over nearly 100 hours of operation, and LR witnessed 4.0 g/kWh removal of methane slip (62% methane slip reduction at 75% load) from exhaust gas with temperatures as low as 380 °C.



*"We are again very honoured to be working closely with Lloyd's Register and delighted to receive this AiP," said Dr Mario Michan, CEO and Founder of Daphne Technology. "This approval in principle validates our innovative approach, and the witnessed results are a testament to the efficacy and reliability of our SlipPure™ system. The performance results demonstrate our technology's readiness for market deployment and its impact on reducing methane emissions."*

**Panos Mitrou, Lloyd's Register Global Gas Segment Director, said:** *"LR has been working with Daphne Technology for several years and following recent testing, it's clear that its Plasma-Catalytic technology is moving the bar in helping companies to meaningfully mitigate methane slip in the maritime and land-based oil and gas industries."*

#### **Key Benefits of the SlipPure™ Plasma-Catalysis System:**

- **Reduced Power Consumption:** More energy-efficient compared to plasma-only systems.
- **Feasibility:** Operates effectively at the lower exhaust temperatures typical of marine engines.
- **Innovative Technology:** Combines the strengths of plasma and catalysis for superior methane abatement.

The Plasma-Catalysis system represents a breakthrough in methane abatement technology, significantly enhancing the efficacy of SlipPure™ while reducing power consumption and maintaining operational feasibility.

Additionally, combining SlipPure™ with Daphne Technology's [PureMetrics™](#) enhances the effectiveness of methane slip reduction by providing accurate quantification and reporting of GHG emissions. PureMetrics™ is essential for monitoring the real-time impact of SlipPure™, offering auditable reports and operational insights. This integration ensures compliance with environmental regulations and helps companies achieve their sustainability goals by providing a clear picture of their emissions.

The next version of SlipPure™ is currently being manufactured for deployment in November 2024 with a US Oil super-major, highlighting our commitment to continuous improvement and market readiness.

Footnote 1: [IEA](#)

Footnote 2: [IPCC](#)

**Ends**

*Notes to editors*

### **About Daphne Technology**

Daphne Technology is a Swiss climate deep-tech company, focused on solving the greenhouse gas challenge in tough-to-decarbonise industries. The company develops technologies and scales innovative products to measure and reduce GHG emissions from industrial sources, with a portfolio approach to decarbonisation targeting GHG emission inefficiencies in power generation and energy conversion across the globe.

Daphne's high-tech, innovative approach has attracted investment from global industrial leaders, including Shell Ventures, Saudi Aramco Energy Ventures, Trafigura, AET, Swisscom and JP Morgan, who are committed to enabling an economically sustainable energy transition.

The company has received multiple awards and recognitions, including the Horizon 2020 EU grant, Vaud Innovation Fund SPEI, Swiss Ministry of Environment Award, VentureKick 2020, Climate-KIC 2020, and Venture Business Idea. Daphne has also been featured as a top Swiss Clean Tech and Top 100 Swiss Start-up by VentureLab five times. The company has won several awards, including the Envirotech Maritime Innovation Award in 2021, the inaugural Nor-Shipping Ocean Solutions Award in 2022, and voted the top deep-tech company in Switzerland honoured with the prestigious Deep-Tech/Life Science Award at the 25th edition of the Swiss Economic Forum 2023. For more information, go to [daphnetech.com](https://daphnetech.com)

### **About SlipPure™**

SlipPure™ is an innovative exhaust gas cleaning system specifically designed to remove methane from exhaust gases. It is a solution for natural gas-fired internal combustion engines in maritime, oil & gas and land-based industries. SlipPure™ is an environmentally responsible and technologically advanced solution for industries looking to reduce their carbon footprint and meet sustainability targets.

[daphnetechology.com/solutions/slippure](https://daphnetechology.com/solutions/slippure)

### **About Lloyd's Register**

*Trusted maritime advisers, partnering with clients to drive performance across the ocean economy.*

Lloyd's Register (LR) is a global professional services group specialising in marine engineering and technology. With a heritage going back more than 260 years to the establishment of the world's first marine classification society, LR is dedicated to setting and improving standards for the safety of ships.

Today we are a leading provider of classification and compliance services to the marine and offshore industries, helping our clients design, construct and operate their assets to accepted levels of safety and environmental compliance.

We also provide advice, support and solutions on fleet performance, fleet optimisation and voyage optimisation, enhancing our clients' digital capabilities. Our digital solutions are relied upon by more than 20,000 vessels.

In the race to zero emissions, our research, technical expertise and industry-firsts are supporting a safe, sustainable maritime energy transition.

Lloyd's Register Group is wholly owned by the Lloyd's Register Foundation, a politically and financially independent global charity that promotes safety and education.

Find out more [lr.org](https://lr.org).

### **For media enquiries contact**

Nicola Good

External Communications Director

Lloyd's Register

T +44 20 7076 6452

M +44 7855 113 273  
E [nicola.good@lr.org](mailto:nicola.good@lr.org)

Lloyd's Register  
71 Fenchurch Street, London EC3M 4BS, UK  
T +44 (0)20 7709 9166  
E [news@lr.org](mailto:news@lr.org)

**Daphne Technology**

Janne Berglund, Head of Marketing, Communications & Branding

M +47 478 02 981

E [janne.berglund@daphnetech.com](mailto:janne.berglund@daphnetech.com)

[daphnetech.com/contact](https://daphnetech.com/contact)

***Daphne Technology - innovating a sustainable future with deep-tech.***