

PRESS RELEASE

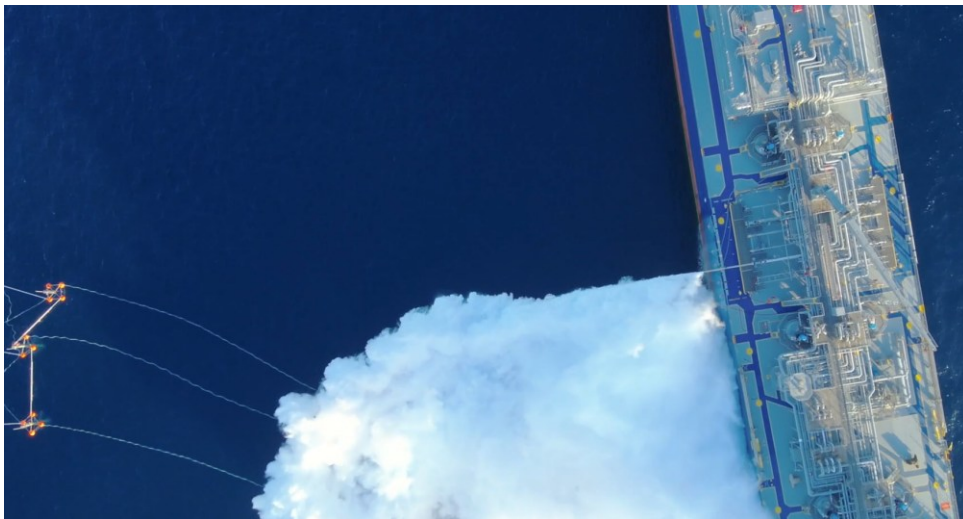
ARISE successfully completes full-scale ammonia release trials at sea

15.10.2026

The **ARISE – Ammonia Response In Sea Emergencies** partnership has successfully completed its final full-scale experimental campaign involving controlled releases of refrigerated ammonia at sea.

The campaign marks a major milestone for the international research partnership, which brings together research organisations, maritime safety experts and industrial sponsors to improve understanding of the behaviour of ammonia following an accidental release in a marine environment.

As ammonia is increasingly considered as a low-carbon energy carrier and marine fuel, reliable knowledge of its behaviour when released at sea is essential for risk assessment, emergency preparedness and the development of appropriate safety measures.



Full-scale ARISE experimental campaign, June 2026. The controlled trials brought together atmospheric and marine monitoring systems to generate experimental data on refrigerated ammonia releases at sea. © ARISE 2026 / SDIS29. Licensed under CC BY-ND 4.0.

A unique experimental programme

The ARISE project was established to address important knowledge gaps concerning the interaction between refrigerated ammonia and seawater.

Existing experimental information on large-scale ammonia releases over or into water remains limited. ARISE has therefore developed a multi-scale experimental programme combining laboratory studies, sensor testing, modelling activities, pilot-scale trials and, ultimately, full-scale experiments under realistic marine conditions.

The final experimental campaign in June 2026 brought together several complementary measurement systems designed to characterise the behaviour of ammonia both in the atmosphere and in seawater.

These included:

- fixed and remote atmospheric detection technologies;
- infrared imaging systems;
- instrumented floating measurement platforms;
- underwater sensors monitoring parameters such as pH, conductivity, temperature and dissolved oxygen;
- mobile and remote monitoring systems;
- meteorological and oceanographic measurements.

The experimental programme was also designed to generate data that can subsequently be used to assess and improve consequence models for accidental ammonia releases at sea.

Successful completion of the final experimental campaign

The full-scale campaign was completed in June 2026, following extensive preparation by the ARISE consortium and close coordination with the competent French maritime authorities and the French Navy. The successful execution of the trials marks the completion of the principal experimental phase of the project.

The campaign involved significant technical and operational challenges, including the deployment and coordination of multiple measurement systems in a marine environment, the controlled handling and release of refrigerated ammonia, and the implementation of extensive safety and environmental monitoring arrangements.

The consortium would like to acknowledge the contribution of all organisations and personnel involved in the preparation and execution of the trials.

Further information on the experimental campaign, including the following two videos, is available at: <https://www.arise-partnership.org/results>

- **3-minute overview** — Presents the objectives of the campaign and the main measurement systems deployed.
- **18-minute detailed video** — Provides a closer look at the preparation, experimental setup, controlled releases, atmospheric and marine measurements, remote sensing, drone operations, and the contributions of the different scientific and operational teams.

Analysis of the results now underway

Completion of the experimental campaign does not mark the end of the scientific work.

The substantial amount of data collected during the trials is now being consolidated, quality-checked and analysed by the ARISE technical partners.

The analysis will focus in particular on:

- the behaviour of refrigerated ammonia immediately after release;
- the interaction and transfer of ammonia between seawater and the atmosphere;
- atmospheric and marine dispersion;
- the performance of ammonia detection and monitoring technologies;
- comparison between experimental observations and consequence models;
- potential environmental effects;
- implications for risk assessment and emergency response.

No definitive conclusions on the outcome of the full-scale experiments will be communicated until the corresponding data have been analysed and technically validated.

From experimental data to practical guidance

The next phase of ARISE will focus on transforming the experimental data into scientific and operational knowledge.

The project is expected to contribute to:

- improved consequence modelling of ammonia releases in marine environments;
- better-informed risk assessments for ammonia transport and bunkering operations;
- improved detection and monitoring strategies;
- guidance for emergency preparedness and response;
- assessment of potential environmental impacts;
- identification of remaining research and knowledge gaps.

Validated findings will progressively be disseminated through scientific publications, international conferences, technical reports and dedicated stakeholder activities.

The project also intends to make selected experimental data publicly available in order to support further research and model development, subject to completion of the validation and dissemination process.

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Disclaimer

ARISE is funded by several Sponsors. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the Sponsors. The Sponsors cannot be held responsible for them.

Further information: www.arise-partnership.org

About ARISE

ARISE – Ammonia Response In Sea Emergencies is an international research partnership investigating the consequences of accidental refrigerated ammonia releases in marine environments. The project combines experimental research, detection technologies, atmospheric and marine consequence modelling, environmental assessment and emergency response expertise. Its objective is to improve the scientific evidence available for the safe development of ammonia transport and bunkering activities and to support industry, authorities and emergency response organisations in preparing for potential ammonia incidents at sea.

Further information: www.arise-partnership.org

Consortium

ARISE brings together research and technical organisations with complementary expertise in industrial safety, marine pollution response, atmospheric and marine modelling, experimental research, detection technologies and environmental assessment.

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