

Floating Gas Solutions

The Preferred
Choice for Class



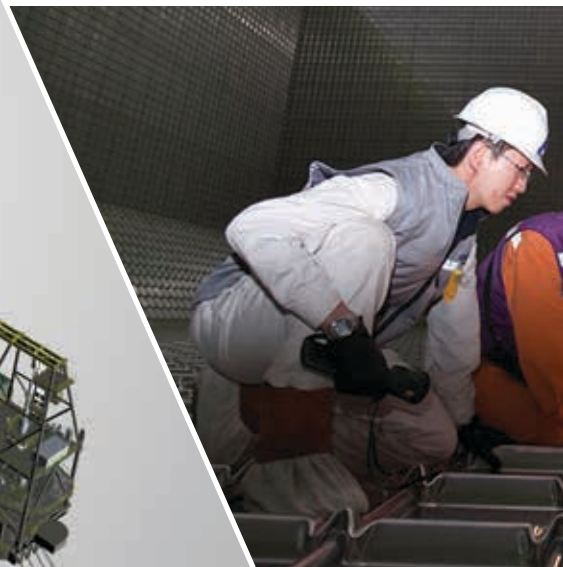
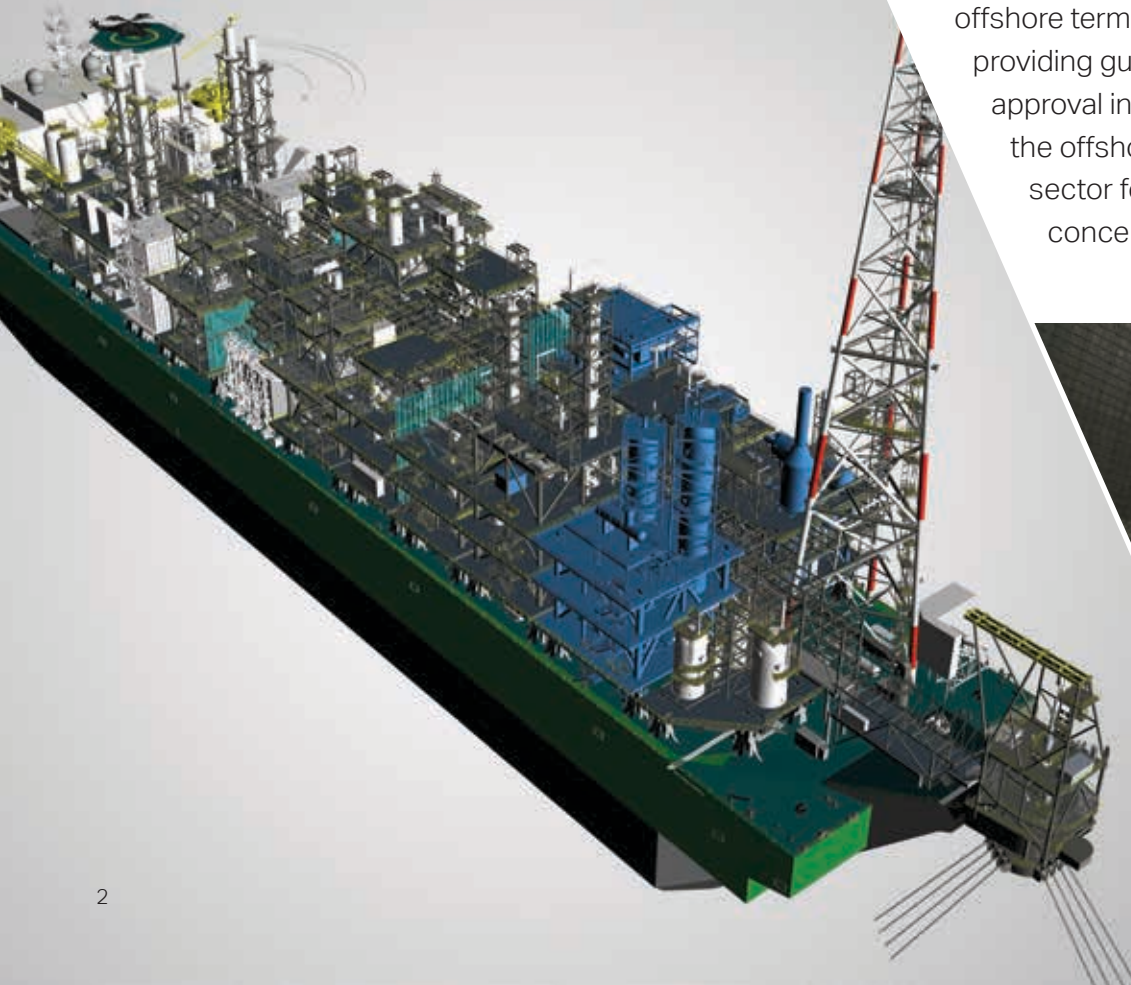
Adapting to an Evolving Environment



With more than 150 floating oil and gas facilities in the ABS-classed fleet, ABS is the market leader in classification of offshore drilling and production units, which includes vessels used for FLNG.

ABS has been integral to the evolution of gas development and has a long history working with floating gas concepts. ABS classed the first offshore LPG storage facility in the mid-1970s, the first purpose-built LPG floating storage and offloading unit delivered in 1997 and the first LPG FPSO in 2005. ABS' most recent award came from Malaysia national oil company PETRONAS, which selected ABS to class the newbuild *PFLNG2*. The vessel is scheduled to begin producing gas from the deepwater Rotan Field offshore Sabah, Malaysia, in early 2018.

In addition to leading classification work, ABS has been at the forefront of developing standards for both LPG and LNG floating offshore terminals and providing guidance and approval in principle (AIP) to the offshore liquefied gas sector for new design concepts.



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New Floating Gas Concepts

The offshore and energy industries look to ABS to validate new designs through the application of prescriptive requirements and advanced risk analysis. ABS takes a collaborative approach toward offshore technology advancement, working in close cooperation with government, academia and industry and applying the results of these research efforts to developing, updating and improving the ABS Rules and Guides.

With the fast pace of technology development, ABS recognizes that offshore facility designers and owners have the need to propose novel designs or designs that include alternative means of compliance to existing ABS Class Rules. Typically, ABS employs the use of advanced risk analysis and special studies for the novel elements within a new floating offshore gas project. A number of guidelines are applied to novel floating liquefied gas terminal concepts and containment system designs, including the *ABS Guidance Notes on Review and Approval of Novel Concepts* and international standards such as the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code).

ABS welcomes the opportunity to participate in preliminary planning and offers AIP for new technology concepts. ABS has awarded AIP for 10 FLNG concepts and has participated in preliminary work on others.



Practical and Technical Experience

ABS has a strong presence worldwide classing offshore units and delivering efficient, practical and responsive assistance. ABS maintains major engineering offices in Houston, Rio de Janeiro, London, Singapore, Yokohama, Busan and Shanghai to facilitate the design review of floating liquefied gas terminals. Experienced ABS professionals provide technical support and assistance to clients from the initial design concept, through the design approval process, during construction and throughout the entire service life of the unit. From locations in more than 70 countries, engineers and surveyors support ABS classed offshore units around the world.

In addition to support services, ABS offers a comprehensive training program that is used both within ABS and externally as a service to its clients. Through the ABS Academy, the organization offers training courses that can be conducted at ABS Academy facilities or presented at client-specified locations around the world, including:

- Specialized training courses that address specific areas of interest
- Established courses on the design and approval process of floating offshore gas terminal classification.



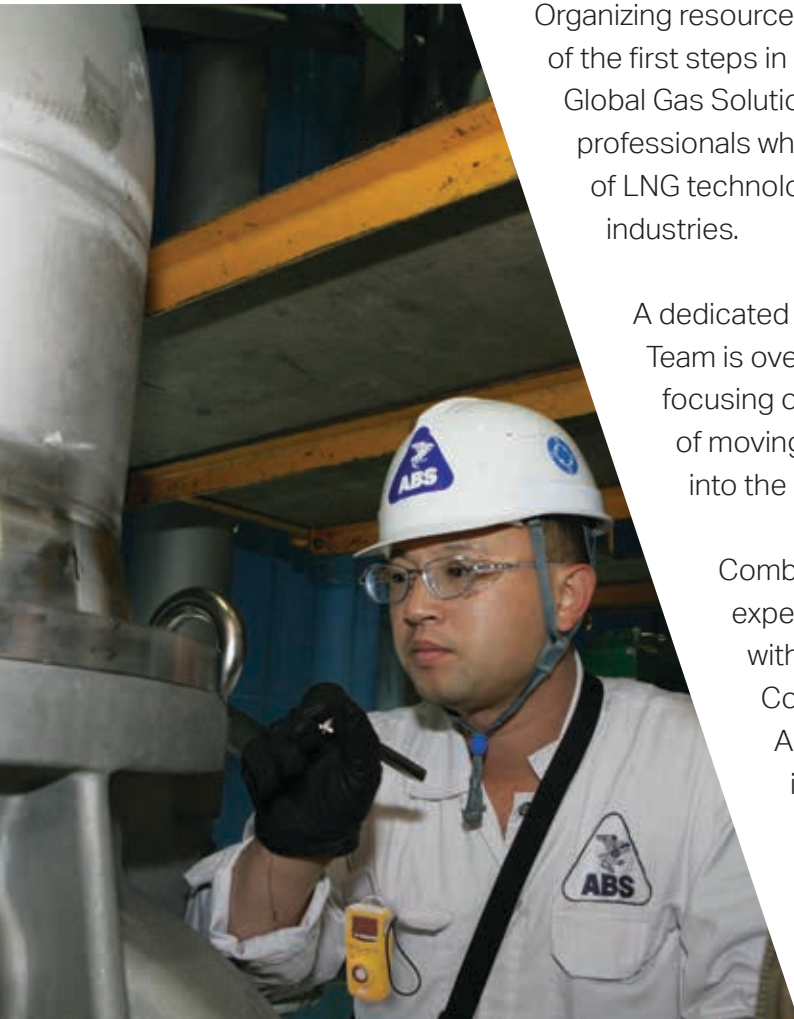


Research and Innovation

The ABS Technology Department has a dedicated staff of professionals who are engaged in research projects that address technical issues relevant to the offshore gas industry, from guidance on sloshing issues for partially filled LNG and LPG floating offshore terminals to the critical interfaces between the hull and position mooring systems.

ABS Technology also takes a leading role in examining emerging gas technologies and provides practical guidelines and solutions to the offshore industry. This technical leadership and dedication to a best-in-class service have allowed ABS to be among the first class societies to develop guidance for building and classing floating LPG and FLNG terminals.

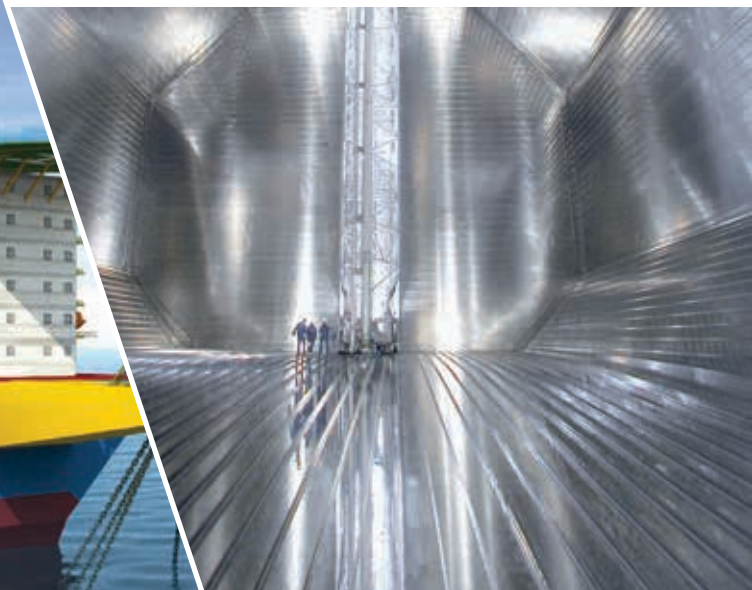
Global Gas Solutions



Organizing resources to focus on specific disciplines is one of the first steps in meeting technology challenges. The ABS Global Gas Solutions Team brings together industry-focused professionals whose objective is to promote the safe use of LNG technology applications in the marine and offshore industries.

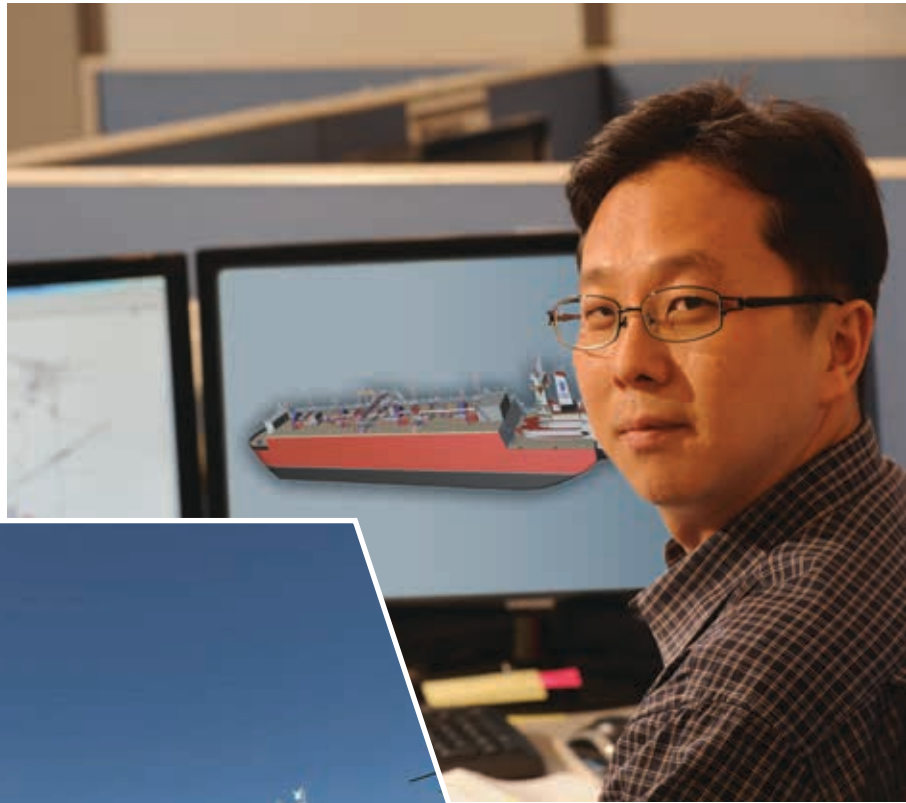
A dedicated group within the Global Gas Solutions Team is overseeing programs in North America, focusing on LNG as a marine fuel and the challenges of moving the growing North American gas supplies into the global marketplace.

Combining this extensive LNG and LPG experience with a track record of working with the USCG, Federal Energy Regulatory Commission and Maritime Administration, ABS is well positioned to help stakeholders in the global gas industry navigate the sector's unique challenges.



The Classification Leader for Offshore

Its long history of service excellence in the offshore industry is the foundation for ABS' service delivery system, which has the flexibility to meet the demands of owners and operators of FLNG assets. From its Energy Corridor location in Houston and specialized offshore offices around the globe, ABS continues to monitor LNG development worldwide, working with industry to anticipate needs as operating environments become more demanding. As the leading provider of classification services to the global offshore industry, ABS is in a unique position to support the evolving FLNG market sector.



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For more information:

Contact an ABS technical advisor today to discuss the unique aspects of your next project, and access ABS Rules and Guides online at www.eagle.org under the Resources tab.

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