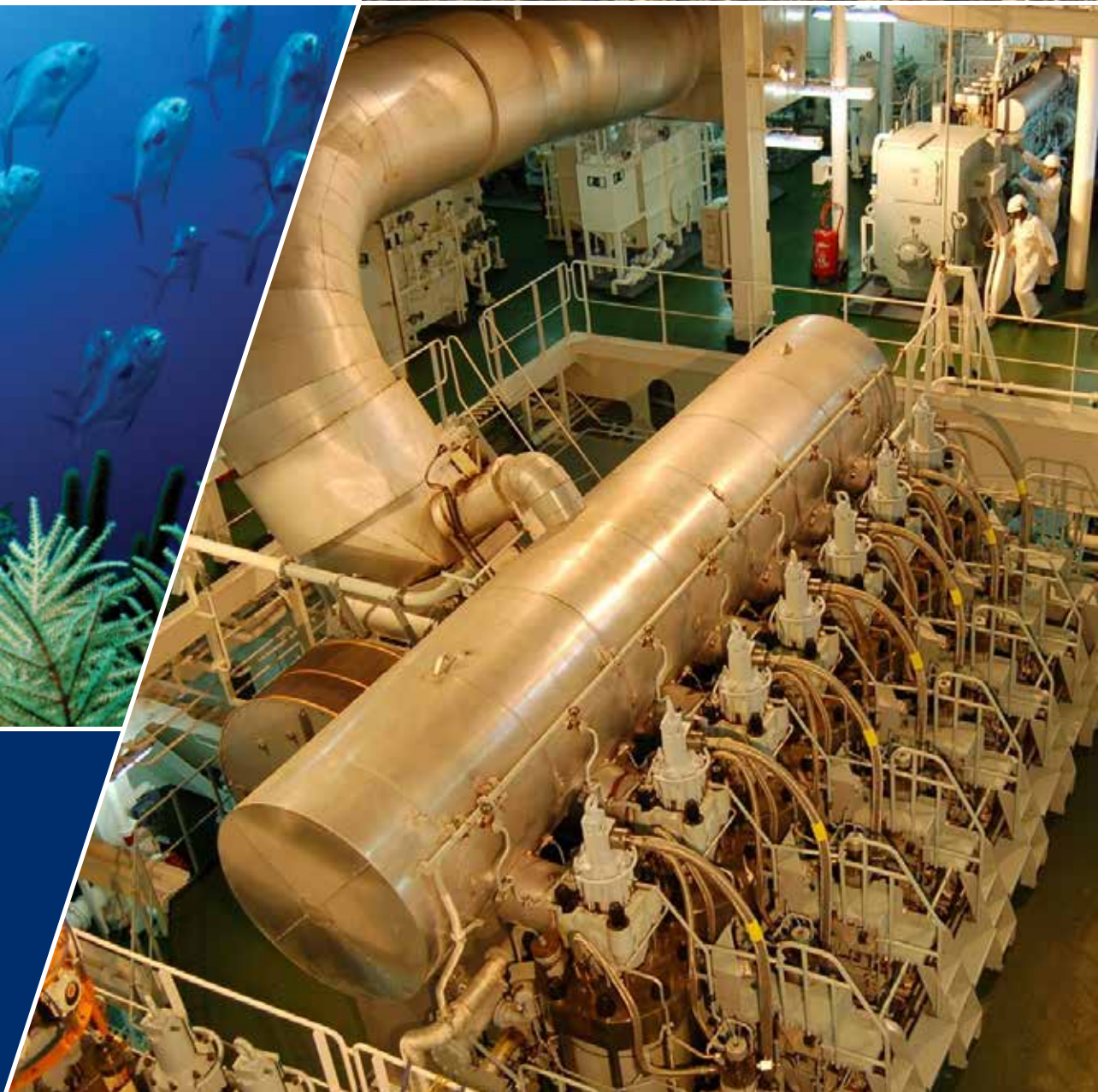




# Environmental Performance

Technical Solutions for  
Operational Challenges





# Environmental Regulatory Guidance



Regulations impacting the marine and offshore communities are complex and often difficult to understand. ABS is dedicated to advancing the development of regulations, disseminating information to owners and operators and promoting the use of best case solutions to protect the environment.

The ABS Environmental Performance team supports classification by actively engaging with regulatory bodies and by supporting the development of solutions for environmental compliance. The team's goal is to provide accurate and judicious reporting to clients to facilitate continued regulatory diligence.

Clients benefit from ABS' application of cutting-edge technology and commitment to smart asset management, both of which play essential roles in safe, efficient and environmentally conscious maritime operations.



# Ballast Water Management



The control of aquatic nonindigenous species continues to be an important topic in the marine industry, and regulations have continued to develop at both the international and national levels. When in force, the IMO Ballast Water Management Convention will apply to all vessel types operating, designed to carry ballast water and entitled to fly the flag of a Party to the Convention. Additionally, vessels entering the waters of the United States must adhere to the ballast water requirements of the US Environmental Protection Agency (US EPA) and the US Coast Guard (USCG).

ABS actively supports clients' needs to comply with these complicated regulations and is able to develop customized ballast water management solution sets for each vessel or vessel type by combining a review of technology preferences, conducting life cycle analysis, identifying possible negatives of each option, and by analyzing factors like fleet composition, routing and vessel operations.

Paramount to owners are systems installed safely, chosen with consideration given to the overall operability and crew training requirements. Where necessary, ABS conducts safety assessment studies to address risk to the vessel, crew and environment, including the identification of hazards that can be associated with the equipment and its location.



# US Vessel General Permit

The 2013 Vessel General Permit (VGP) applies to non-recreational vessels transiting the inland waterways of the United States or within three miles of its shores. The permit restricts 26 vessel discharges, includes monitoring, sampling and analysis requirements for 4 effluents and requires submission of an annual report to the US EPA. ABS provides assistance to vessel owners and operators to navigate this extensive permitting program.

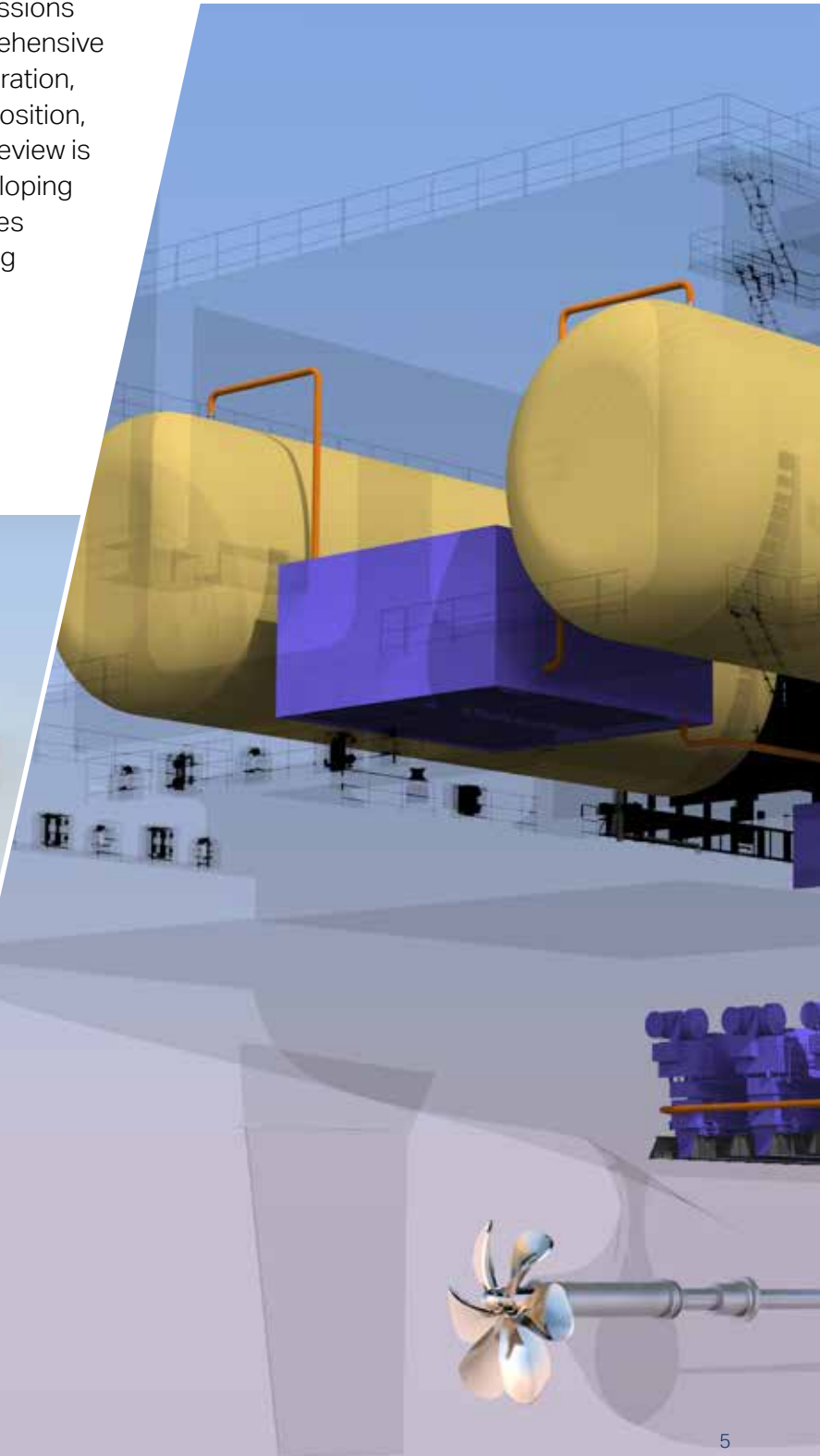
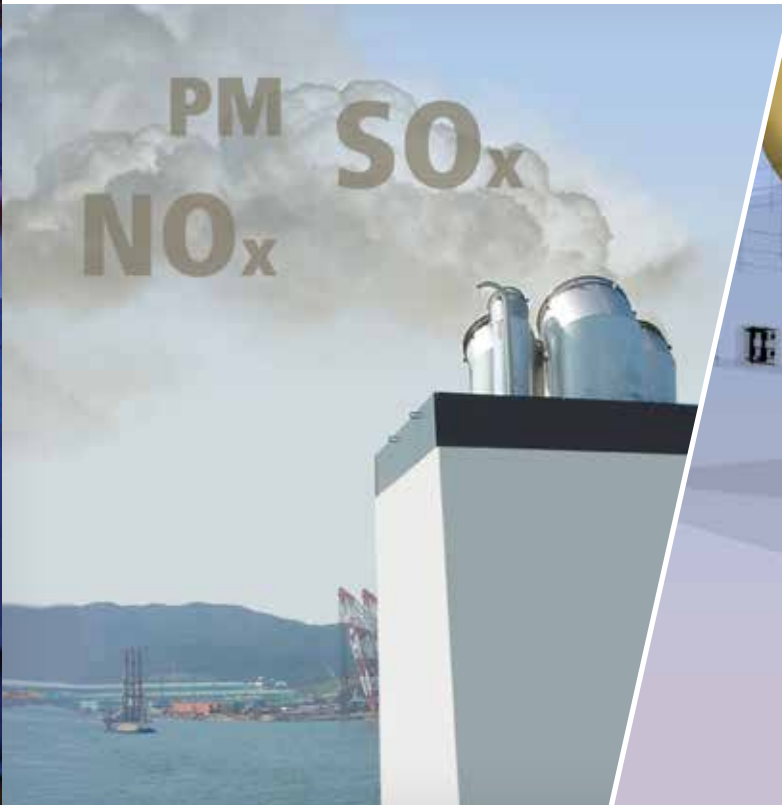
ABS offers several tools and publications to assist owners and operators with the various requirements of the VGP, including articles, Advisories and solution services. ABS has also identified various laboratories in the US that can support the necessary personnel training, effluent sampling and monitoring. Additionally, ABS is working with regulatory bodies and vessel owners to ensure compliance.



# Air Emissions Strategies

Developing an effective compliance strategy for vessels operating in emission control areas (ECAs) involves an understanding of a vessel's trading patterns, machinery configuration and available compliance options. Potential strategies can include any one or a combination of the following: the use of low sulfur fuel; fuel switching; exhaust gas cleaning systems (scrubbers); liquefied or compressed natural gas (LNG or CNG); and other alternative fuels. ABS uses the most current information to systematically identify the best emission control alternatives available for vessel owners.

ABS can produce a customized emissions control analysis by reviewing comprehensive details of the vessels under consideration, studying factors such as fleet composition, routing and vessel operations. The review is intended to assist owners with developing their own ECA strategies and includes techno-economic modeling covering equipment life cycle analyses.





# Hazardous Materials Guidelines

Toxic materials, like asbestos and polychlorinated biphenyls (PCBs), are often part of the basic construction of oceangoing vessels. At the end of their useful lives, vessels are deconstructed, which can release toxins contained within the ship or the ship's inventories into the environment. Additionally, the act of dismantling ships is extremely dangerous even if good work practices are followed.

The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (Hong Kong Convention) and the European Ship Recycling Regulation were written with the objectives of promoting safe working conditions for workers in ship recycling yards and reducing negative environmental impacts from the dismantling of ships.

To help shipowners prepare for these regulations, ABS offers the Green Passport (GP) notation. For the GP notation, vessels must have a compliant Inventory of Hazardous Materials (IHM). ABS offers a web-based product featuring an interactive platform to help shipowners more easily prepare and maintain their IHMs.





# Focus on Protecting Marine Life

Underwater noise generated by commercial vessels has been shown to have adverse effects on marine life. Propeller cavitation and noise from internal machinery have been identified as primary sources of underwater noise from ships.

Although compliance with the IMO's recently adopted *Guidelines for the Reduction of Underwater Noise from Commercial Shipping* is voluntary, responsible shipowners and operators may seek to follow these guidelines, to include design, operation and maintenance considerations. ABS is available to provide guidance on a variety of mitigation options.

Going forward, more research is needed, particularly for measurement and reporting. In early June 2014, the International Organization for Standardization (ISO) published its first standard (ISO/DIS 16554.3) to support the quantification of underwater sound emanating from ships. ABS is continuing to follow developments in this area and will issue updates as warranted.





ABS Asset Performance Management services build on the benefits of classification, assisting owners and operators with evaluating and optimizing their assets for maximum performance from initial design to decommissioning.



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