

# Deciphering energy efficiency

Energy efficiency terminology is a collection of acronyms that may present a deciphering challenge even to those that work in the industry. *Generations* decoded some of the most common ones that you will come across on the pages of this issue.

## ADO

### Azipod Dynamic Optimizer

A software-based system for optimizing the toe angle of two Azipod units.

## AHTS

### Anchor handling tug supply vessel

Vessels that are mainly built with the purpose of handling anchors for oil rigs, towing and anchoring them up.

## BIMCO

### The Baltic and International Maritime Council

The oldest of the international shipping associations, comprising a membership of a broad range of stakeholders with vested interests in the shipping industry, including shipowners, managers, brokers and agents.

## BMS

### Battery management system

A battery management system manages a rechargeable battery by monitoring its state, calculating and reporting secondary data, protecting the battery, as well as controlling and balancing its environment.

## CFD

### Computational fluid dynamics

Computational fluid dynamics uses numerical methods and algorithms to solve and analyze problems involving fluid flows.

## CLIA

### Cruise Lines International Association

The world's largest cruise association that is dedicated to the promotion and growth of the cruise industry.

## DCU

### Drive control unit

ABB's application control system for a thruster drive.

## DNV

### Det Norske Veritas

Norwegian classification society and an independent foundation with the purpose of safeguarding life, property, and the environment.

## DP

### Dynamic positioning

A system that helps the vessel to automatically maintain its position and heading through the use of propellers and thrusters.

## ECA

### Emission Control Areas

MARPOL Annex VI Regulations for the Prevention of Air Pollution from Ships establishes certain sulfur oxide (SO<sub>x</sub>) Emission Control Areas with more stringent controls on sulfur emissions. In these areas, the sulfur content of fuel oil used on board ships must not exceed 1.5 percent m/m. Alternatively, ships must fit an exhaust gas cleaning system or use any other technological method to limit SO<sub>x</sub> emissions. These areas include the Baltic Sea, the North Sea and the Caribbean Sea.

## ECR

### Engine control room

A command center of the engine room.

## EEDI

### Energy Efficiency Design Index

A non-prescriptive, performance-based mechanism that leaves the choice of technologies to use in a specific ship design to the industry. As long as the required energy-efficiency level is attained, ship designers and builders would be agree to use the most cost-efficient solutions for the ship to comply with the regulations.

## EEOI

### Energy Efficiency Operational Index

Means for enabling ship operators to measure the energy efficiency of existing ships. This index is expressed in CO<sub>2</sub> per ton mile, for the efficiency of specific ship thus enabling comparisons between similar ships.

## EMMA™

### Energy monitoring and management system

Integrated solutions for decision support in the search for optimal energy management.

## EPI

### Energy performance indicator

Energy performance indicator is intended to show the energy performance and use.

## ESI

### Environmental Ship Index

A measure for air emissions relative to IMO rules and provides a tool that will assist ports and other parties to promote clean shipping.

## EVDI

### Existing Vessel Design Index

Measure of a ship's inherent efficiency in the IMO climate regulations.

## FSRU

### Floating storage and regasification unit

A floating vessel used by the offshore oil and gas industry for the processing of hydrocarbons and for storage of oil.

## GHG

### Greenhouse gas

A gas in the atmosphere that absorbs and emits radiation within the thermal infrared range.

## HFO

Heavy fuel oil

Pure or nearly pure residual oil.

## HVAC

Heating, ventilation and air conditioning

A technology for controlling the quality of indoor and automotive environment.

## ICS

International Chamber of Shipping

The principal international trade association for the shipping industry, representing all sectors and trades.

## IEA

International Energy Agency

An autonomous organization, which works to ensure reliable, affordable and clean energy for its 28 member countries and beyond.

## IEEC

International Energy Efficiency Certificate

A certificate mandatory for all vessels of 400 gross tonnage and above.

## IMO

International Maritime Organization

The United Nations' specialized agency responsible for improving maritime safety and preventing pollution from ships.]

## ISPS

International Ship and Port Facility Security Code

A comprehensive set of measures to enhance the security of ships and port facilities, developed in response to the perceived threats to ships and port facilities in the wake of the 9/11 attacks in the United States.

## LNG

Liquefied natural gas

Natural gas converted into a liquid form for the convenience of storage or transport.

## MARPOL

International Convention for the Prevention of Pollution from Ships

The key international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.

## MCR

Maximum continuous rating

The maximum output that a generating station is capable of producing continuously under normal conditions over a year.

## MEPC

Marine Environment Protection Committee

A committee of the IMO that meets every nine months to develop international conventions relating to marine environmental concerns including ship recycling, controlling emissions, and invasive species.

## NO<sub>x</sub>

Nitrogen oxide

NO<sub>x</sub> is a generic term for various nitrogen oxides produced during combustion.

## OPA

Oil Pollution Act

Oil Pollution Act was passed by the 101st United States Congress to mitigate and prevent civil liability from the future oil spills off the coast of the United States.

## PM

Particulate matter

Tiny subdivisions of solid matter suspended in gas or liquid.

## PMS

Power management system

ABB's family of unique solutions that ensure reliable and stable energy supply for energy-intensive industries.

## PSV

Platform supply vessel

A ship designed to supply offshore oil platforms.

## SC

Super-capacitor

An electrochemical capacitor with high energy density.

## SEEMP

Ship Energy Efficiency Management Plan

SEEMP is meant to incorporate the guidance of best practices of each individual ship, including voyage planning, speed and power optimization, optimized ship handling, improved fleet management, cargo handling and energy management.

## SFOC

Specific fuel oil consumption

Engine fuel characteristics at variable speed.

## SoC

State of charge

The equivalent of a fuel gauge for the battery pack in a battery electric vehicle, hybrid vehicle, or plug-in hybrid electric vehicle.

## SOLAS

International Convention for the Safety of Life at Sea

The key international treaty concerning the safety of merchant ships.

## SO<sub>x</sub>

Sulfur oxide

Sulfur oxide refers to many types of sulfur and oxygen containing compounds such as SO, SO<sub>2</sub>, SO<sub>3</sub>, S<sub>2</sub>O<sub>2</sub>, S<sub>2</sub>O<sub>3</sub>, S<sub>2</sub>O<sub>4</sub>, etc.

## VFD

Variable frequency drive

A type of adjustable-speed drive used in electro-mechanical drive systems to control AC motor speed and torque by varying motor input frequency and voltage.

## WHRS

Waste heat recovery system

A combination of equipment installed on board to assist the ship's main propulsion machinery recover a part of the energy contained in the fuel that cannot be efficiently utilized by the main engine.