

ENERGY-SAVINGS INITIATIVES

We are continuously investing in a broad range of voluntary energy reduction initiatives that meet or surpass the requirements of current laws and regulations. Reducing fuel and driving energy efficiency takes multi million-dollar investments and a multi-pronged strategy. Below is a list of some of the initiatives we are working on:

DESIGNING SHIPS FOR GREATER EFFICIENCY

- Optimize hull design and coating systems to minimize drag.
- Select fuel-efficient combustion equipment.
- Install equipment to use waste heat.
- Install energy-efficient on board equipment, including lighting.

SHIP OPERATION AND MAINTENANCE INITIATIVES

- Optimize diesel generator use at sea and in port.
- Manage use of evaporators.
- Use fluorescent and LED lighting.
- Utilize automatic heating ventilation and air-conditioning (HVAC) control systems.
- Change chiller additives.
- Apply silicone-based anti-fouling marine hull coatings.
- Clean propellers and hulls periodically.
- Optimize plant energy consumption.
- Increase use of waste heat from engine exhaust for fresh water production and steam generation.
- Use vessel shore power installations (“cold ironing”).

MINIMIZING FUEL USE AND ENGINE EMISSIONS

- Examine ways to increase energy efficiency through fuel homogenizers, which improve combustion and reduce fuel consumption.
- Optimize the use of diesel generators on board to improve efficiency.
- Use waste heat generated by the ships’ engines to heat water instead of relying on the ships’ boilers.
- Reduce the power required by engine room ventilation fans, through use of variable-frequency fan-drive motors and related pressure and temperature control systems.

IMPLEMENTING OTHER ENERGY-SAVING INITIATIVES

- Design more fuel-efficient itineraries.
- Use voyage optimization tools.
- Increase energy use awareness through education and training of guests and crew.
- Develop our ability to use alternative fuels.
- Research and developing emissions-reduction technologies.
- Incorporate an innovative “Air Lubrication System,” which creates bubbles between the ship’s hull and water to reduce friction.

MINIMIZING ENGINE EMISSIONS

- Use Cold Ironing or Plug-In.
- Install Exhaust Gas Cleaning Systems.
- Take advantage of alternative fuels like (LNG).