

# FUEL EFFICIENCY MONITORING SYSTEMS



“TO MEASURE IS  
TO KNOW, IF YOU  
DO NOT MEASURE IT,  
YOU CAN NOT  
IMPROVE IT”



At HMC Energy we believe we can help reduce your fleet's Green House Gas Emissions. Through our passion for ship technology we want to contribute to the preservation of our planet for the generations to come.

If you wish to significantly increase your profitability;  
When global warming is your concern;  
If you want your company to comply with IMO and other environmental regulations;

**Then we have got the product for you!**

HMC Energy is a Dutch based company that designs and delivers fuel and energy efficiency monitoring systems and analysis software for the shipping industry.

Our solutions work three fold.

- 1 Provide the captain and his officer's with insight in the Key Process Indicators (KPI's) that make up efficiency and with the tools to take immediate action to improve efficiency.
- 2 Providing comprehensive (voyage) reports to the operations department to plan efficient voyages in regards of optimal cost and optimal fuel operations.
- 3 Provide data information to the technical department for long term trend analyses in order to efficiently plan major maintenance and keep the fleet in perfect condition.

# MEASURING



HMC Energy works closely with well-respected suppliers in the Marine Industry. It is of absolute importance to have reliable sensors as it is the base of the system.

Where necessary we supply a complete package including all required sensors, meters and signal conditioners such as:

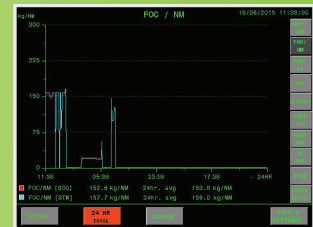
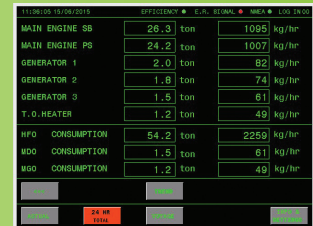
- Fuel oil flow transmitters
- Temperature transmitters
- Power & torque meters
- Generator load transmitters
- E-motor load transmitters
- Valve Position switches
- NMEA converters for
  - GPS
  - Speed log
  - Anemo meter
  - Echo sounder

The systems are of a modular design. From single engine monitoring up to twin propeller installations with full auxiliary generators & boilers monitoring included, some features are:

- Single & twin propeller
- up to 8 auxiliary consumers
- "Uni fuel" executions
- Registration of up to 3 different fuel oil types
- LNG & dual fuel executions
- Mass & volume flow meter connections
- Diesel Electric

All signals are measured by means of PLC technology. The data is sent over the ship's Ethernet to the touch screen panel located in the navigation desk.

# MONITORING & VISUALISATION



The measured data is presented on a touch screen panel located in the wheelhouse in an intuitive manner in three sections.

- actual measurement
- daily totals and averages
- voyage totals & averages.

Various other tools and dashboards can be opened for quick overviews of the performance and efficiency of the complete vessel as well as individual consumers and components.

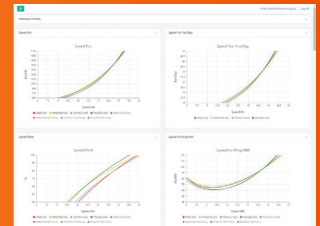
This allows for the officer of the watch to take immediate action to improve and adjust the efficiency. As a result, significant fuel savings are made and emissions are reduced.

Some of the available screens are:

- Overall fuel efficiency and ship performance
- Propulsion systems
- Operational cost
- Propeller / propeller slip
- Individual engines / consumers
- Power / electricity generation
- Electric motors (diesel electric)
- Voyages

All this leads to an increase of crew awareness in regards of fuel oil consumption and efficiencies.

Fuel and cost savings of 10% and more have been reported by our customers after implementing our systems.

A man in a dark suit and striped tie is pointing his right index finger towards a central circular icon of a cargo ship. This central icon is part of a network of six circular icons connected by thin white lines. The other icons include a container ship, a bulk carrier, a tanker, and two smaller cargo ships. The background is a gradient of blue and orange. The text 'REPORTING & ANALYSING' is overlaid in large white capital letters, with a small cargo ship icon integrated into the letter 'A'.

## REPORTING.

Several reports are generated automatically in CSV format and stored onboard. They can be opened in Excel or used as input in analysis software. Available reports are:

- Log files
- Daily reports
- Voyage reports
- Voyage update / progress
- Fuel oil change over reports

The reports can be accessed by any ships computer connected to the ships Ethernet. Ships officers can use these for making reports or can be send to the shore office(s)

All available data can also be retrieved from the systems by MODBUS over Ethernet for use by other management software.

## ANALYSING.

The product line is complemented with a powerful online analysis tool. Data is automatically send ashore via e-mail.

The information, reports and analysis tools can be accessed with any electronic device with internet connection. Some of the features are:

- fleet performance overview
- performance comparison
- analysis of ship performance and efficiencies
- Trend analysis with predictions
  - hull / propeller fouling
  - engine performance
  - auxiliary engine performance
- Voyage planning, advise most economical speed settings and expected fuel oil consumptions and costs, based on historical performance
- Sailing profiles individual ships, classes and fleet. (input for newbuilding projects)
- SEEMP / CO2 reporting



# FACTS & BENEFITS

HMC Energy, your partner and resource for cost effective solutions that will help you to achieve:

- reduction of emissions
- improved fuel efficiencies
- increased profits
- compliance with IMO regulations

Additional savings due to:

- Improved communications between the departments: operations – ship – technical
- Improved prediction for major ship maintenance
- Bench marking between same ships
- Comparison of various crews and corrective actions to improve operational behavior
- Strategic marketing image for being "Green"
- Sustainable shipping operations
- IMPROVING COMPANY WIDE EFFICIENCY AWARENESS

## PROVEN FACTS:

- Pay back times on average short sea ship, 2-4 months.
- Complying with the latest IMO regulations on Emission Reductions.
- Optimal use of the Latest Technology.
- More than 150 systems in operation.



**HMC BV (Head office)**

Operetteweg 4  
1323 VA Almere-Stad  
The Netherlands

E-mail: [info@hmc.nl](mailto:info@hmc.nl)

Sales, Ton Bos:

T: +31 (0) 36 5464775

M: +31 (0) 6 53890189