

ENERGY  
ENVIRONMENT  
ECONOMY

## WÄRTSILÄ ENGINE EFFICIENCY MONITORING SERVICE



With the Wärtsilä Engine efficiency monitoring service you can minimise fuel consumption and optimise your operational practices. The service monitors the efficiency of your engines in an ISO standardised way, and supports your overhaul and operational decision making based on actual real-time data. Through advanced follow-up and trend analysis you can improve the management of your power production and total fuel consumption. The service is available as part of a service agreement for both marine and power plant installations.

The marine and power industries have been strongly impacted by the fluctuating fuel prices and stricter environmental regulations. Investing in optimising engine efficiency is still one effective way to reduce operating costs and increase long term competitiveness and sustainability.

### OPTIMISING ENGINE AND OPERATIONAL EFFICIENCY

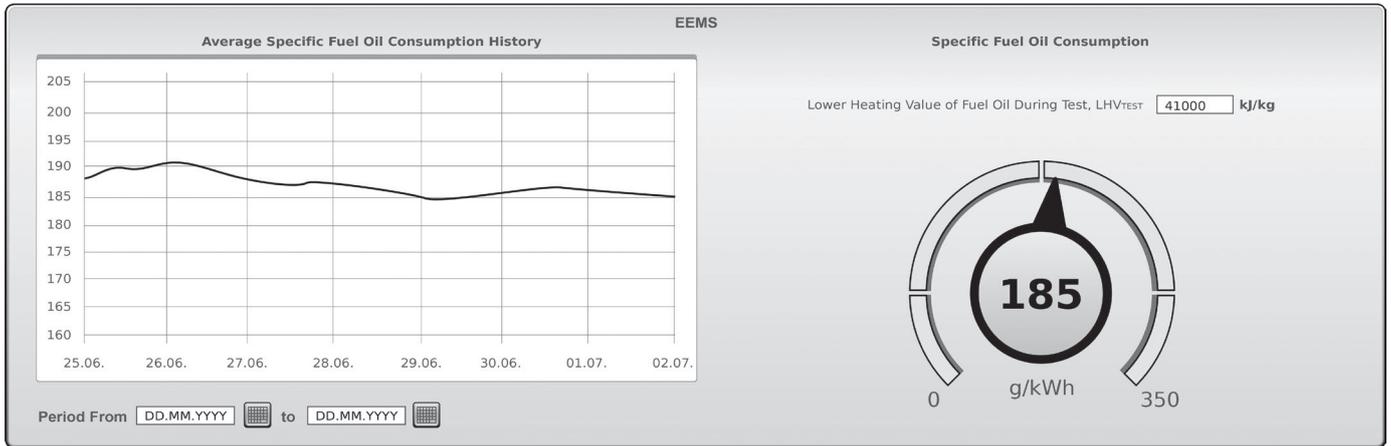
Defining the condition of your assets in real-time is a key element of the Wärtsilä Engine efficiency monitoring service. Engine efficiency is measured in a precise and standardised way, revealing the exact condition of your assets. This helps you determine whether overhauls are needed, or if there are upgrades available that could benefit your operations.

The actions and operating practices of operating personnel have a significant effect on fuel consumption, especially on marine installations. The Wärtsilä Engine efficiency monitoring service makes this visible. Engine

### KEY BENEFITS

- Optimised engine and operational efficiency
- Optimised operational expenses
- Increased uptime
- Expert analysis and advice
- Online visibility to engine and operational efficiency

efficiency, condition and other monitoring data from the onboard instrumentation, together with expert advice provided by Wärtsilä, will help you drill into root causes of increased fuel consumption and take corrective actions. KPI's and trends are also viewable onboard, making it possible to spot changes at an early stage, and save costs by reacting right away.



Example of Engine efficiency monitoring service user interface.

### MEASURING PRINCIPLES

The Wärtsilä Engine efficiency monitoring service monitors the efficiency of each engine by measuring its capability to turn fuel into mechanical energy according to the ISO standard SFOC formula. This also makes it possible to make comparisons between individual engines. The service takes into account the following parameters required by the ISO standard for SFOC measurement:

- mass flow of the fuel consumed by the engine
- power produced by the engine, measured from the propeller shaft or generator
- lower heating value of the fuel
- ambient air temperature
- barometric pressure
- charge air coolant temperature
- fuel oil clean leak
- time

### WÄRTSILÄ ONLINE SERVICES

As a subscribing client you will receive monthly reports on efficiency, including trends and follow-up on all key parameters to ensure transparency. The service includes a user-friendly onboard interface for decision making support, as well as tamper-free data storage on site. An installation's information can also be accessed by on-shore personnel through Wärtsilä Online services.



### SCOPE OF SUPPLY

The service includes the initial conceptual planning, commissioning, delivery and training, as well as support and expert analysis and advice throughout the duration of the contract. The following equipment are required to operate the service:

- Fuel mass flow meters
- Shaft power or thrust meter(s) if needed
- Wärtsilä data acquisition system
- Connectivity from instrumentation to Wärtsilä
- Interface to ship's integrated automation system.

Scope and details of the solution are configured case by case. Combining this service with other Wärtsilä Genius services allows you to have an impact on a larger portion of your aggregate efficiency management operations. This will optimise your overhaul and maintenance procedures increasing uptime and decreasing the cost of maintenance.