

## Background

ClimaCheck is used on a superyacht where the chillers consumed a total of 863 526 kWh/year, before optimisation. The redundancy was also questionable due to bad performance of several of the chillers.

Power consumption and reliable system is always important. On cruise ships and superyachts, it is even more important. The energy is expensive, and the CO2 emission is high. And customer satisfaction is the number one priority, to keep the business going. Air-conditioning and refrigerant systems are therefore crucial. A failure might result in the need of returning to port earlier than expected which, will result in huge economical and commercial losses.

## EQUIPMENT

4 Chillers  
Fridge System  
Freezer System

## VALUE DELIVERED

- 225,000 kWh annual energy savings
- 26% Lower energy consumption
- Decreased CO2 emission with 200+ ton

*Savings based on baseline performance.*

## ClimaCheck

Approximately 20% of total world electricity consumption is used for refrigeration and air-conditioning. In many operations, cooling can represent more than 50% of the entire electricity cost.

### ClimaCheck enables:

- Performance analysis
- Reduced energy consumption
- Early warning and fault detection
- Measurement and verification
- Predictive maintenance
- Longer plant lifetime
- Benchmarking

## Case Study

### Superyacht, Seven seas

#### Customer profile:

Superyachts with four Chillers, fridge and freezer system for food and drinks. Yearly energy consumption 863 526 kWh.

#### Implementation:

ClimaCheck *online* have been installed to collect and analyse baseline data, to get system performance and identify what can be done to optimise the system.



Data from ClimaCheck *online*

The energy consumption per day is shown with red bars. The energy signature from pre-optimisation is illustrated in blue. The new energy signature after the initial adjustments (left arrow) is shown with a red line. The energy savings is "between" the blue line and the red bars.

#### Result:

Based on the information from ClimaCheck *online*, initial measures were made to increase system performance and reliability. It resulted in decreased energy consumption with 125 000 kWh, and a more reliable system (left arrow).

Working with optimisation is a process and another set of corrective measures was done (right arrow), to deal with additional problems. It was possible to decrease the energy consumption another 100 000 kWh. The improvements can be seen to the right in the graph.

So far, the total energy saving is 225 000 kWh/year and the HVACR-system is working much better with a decreased risk of failure.

Contact ClimaCheck for more information.