

# INGESHIP

# BESS

## INGESHIP IAS Technical Functions Battery Energy Storage System



Ingeteam's Containerized Battery Energy Storage System provides a high efficiency compact hybrid power solution for electric propulsion vessels.

### Battery Energy Storage System

INGESHIP Battery Energy Storage Systems (BESS) is a compact battery storage solution controlled by an optimized energy management system that enhances vessel's power plant capabilities.

Ingeteam's BESS turns any standard electric propulsion vessel into a latest generation hybrid-electric propulsion vessel.

#### Functional Benefits

- ✓ Increased power plant stability and availability
- ✓ Greatly enhanced responsiveness and safety, specially operating on safety-critical situations
- ✓ Increased redundancy
- ✓ Less GHG emissions
- ✓ Improved working environment by reducing the noise and vibration levels on board

#### Economical Benefits

- ✓ Reduced fuel consumption
- ✓ Increased diesel engine efficiency
- ✓ Reduced engine running time and maintenance costs

Energy Capacity Battery Type Cooling Battery Life	<b>Batteries</b>  Up to 700 kWh Lithium ion Air or liquid 10 years
Type Rated AC Voltage Rated Frequency Rated Output DC Bus Voltage Cooling	<b>Frequency Converter</b>  Ingecon Storage 380-690 Vac 50/60 Hz Up to 2200 A 530-11000 Vdc Air or fresh water
Dimensions Mass With Equipment Cooling Ambient Temperature Range Internal Climate Control Safety Equipment Firefighting	<b>Container</b>  6050 x 2862 x 3100 mm 22000 kg Fresh water -20 °C / +45 °C Air and water heat pump Fire detection system Yes

## Components and installation

INGESHIP BESS is delivered in a standard 20 feet container designed for quick and easy integration on board any vessel.

Self-Contained solution includes all controls, interface and auxiliary equipment:

- BatterY packs
- AC/DC converters for connection to Shore / Ship's power system
- Control system including Energy Management System and interface with ship's automation system
- Cooling and ventilation systems
- Fire protection system

