



*The new, field proven **hybrid propulsion and power system** for CATAMARIS catamarans:*

## **„GREEN POWER SUPPLY“**

*Demands that owners can make on advanced propulsion technology for modern sailing catamarans:*

- Environmental friendliness: Lower emissions for NoX and Co2
- Reduced fuel consumption
- High, proven reliability
- Security thanks to redundancy
- Improved manoeuvrability
- Reduced noise and vibration levels
- Minimum service intervals
- Very easy to operate
- Energy recovery/recuperation: Silent sailing while charging at the same time

*... hence "Green Power Supply"*

### **"Green Power Supply" for "Custom made" catamarans from CATAMARIS**

CATAMARIS now uses the field-proven, electric hybrid propulsion and energy system as an alternative to conventional diesel engine propulsion systems in its new aluminium catamarans: The innovative **"Green Power Supply"** system for environmentally friendly and worldwide travel.

The **"Green Power Supply"** concept is designed to significantly reduce the use of diesel fuel, resulting in lower emissions of NoX (nitrogen oxides) and Co2 (carbon dioxide).

Further advantages are high system reliability, low noise and vibration levels, minimal maintenance intervals and worldwide access to protected areas, which are only allowed for electrically powered yachts.

**Custom made:** For each CATMARIS yacht **an individual system configuration** for the "Green Power Supply" system is defined together with the customer, which integrates the specific requirements of

the owner and the power demand of all electrical components used on board. For each system, maximum redundancy plays an essential role for safety at sea, at anchor and in ports. The "**Green Power Supply**" configuration consists of the latest technologies of V-Power electric drives, lithium battery pack and generator(s) in DC (direct current) design, which together meet the lowest emission standards.

After **two successful test years** of the manufacturer in Holland with 4 large luxury yachts and 15 commercial vessels, "**Green Power Supply**" is now also available for CATAMARIS catamarans.

### *Your advantages thanks to "Green Power Supply" systems*

Yachts equipped with the "**Green Power Supply**" system reach the same speeds as yachts with conventional diesel engines.

The "**Green Power Supply**" system is particularly environmentally friendly due to low emissions

The "Green Power Supply" system has - depending on the configuration - sufficient electrical capacity to equip the ship without a complex hydraulic system - e.g. for the sails or for the aft platform.

The electric propulsion motors also charge the "**Green Battery Pack**" when the yacht is running under sails or with electric motors and the propellers are turning.

### *Independent "Green Battery Pack" for consumers on board*

The energy generated by the various components - **generators, shore power, electric propulsion engines** during the cruise **and solar panels** - is stored in a **separate "Green Battery Pack"** for the consumers on board.

The "**Green Battery Pack**" consists of lithium batteries. The capacity of the pack depends on the energy balance to be determined for all consumers.

Behind the "**Green Battery Pack**" there is an inverter which supplies the correct voltage for the various consumers.

When the yacht is in the harbor and numerous consumers are operated at the same time - e.g. air conditioning, induction cooker, oven, washing machine, laptop, audio and TV etc. - the additional energy required can be supplied by one or two 16amp shore power systems. The generator(s) then "keep quiet", which ensures peace and quiet on board and in the harbor.

The "**Green Battery Pack**" is then only charged, without energy being taken from the consumers. The charging capacity is fully available for the next cruise.

### *Your direct benefits thanks to "Green Power Supply" systems*

**Optimised manoeuvrability**

Optimum manoeuvrability in marinas, as the starting speed of the electric motors is zero and can be raised slowly, step by step. No "jump" when the throttle is engaged: the vessel can be manoeuvred much more precisely and safely.

**Saving of fuel /diesel**

The total capacity installed on board is less than that of conventional systems, resulting in lower fuel consumption.

**Same speed values**

Yachts equipped with the electric "Green Power Supply" system achieve the same speed values as yachts with conventional diesel engines.

**Significantly lower fuel consumption**

Due to the power management system, the generator(s) runs only when needed and therefore in the most efficient way. This also saves fuel.

**Reduced weight**

The two electric drives are weighing less than two diesel engines for the propulsion system

**Optimized ecological balance of the yacht**

Less NoX (nitrogen oxides) and Co2 (carbon dioxide) emissions due to lower fuel consumption. This means that even ports with high emission requirements or emission bans can be called at.

**Less maintenance effort**

The electric drive engines for the propellers are completely maintenance-free.

**Reduced noise emission**

Low noise and vibration levels due to the absence of diesel engines with gearboxes - The generator is completely encapsulated against noise emissions This contributes to optimum comfort on board.

**Redundancy and sleep**

Ideal for catamarans: With the generator(s) both electric engines and both propellers can be operated simultaneously, which means redundancy and safety at sea.

When the batteries are full, you can also sail with only one electric engine. Both ensure an undisturbed sleep in the other hull.

**User-friendly operation of the system**

The system instruments provide an overview of the entire system, whereby it is also visible which functions are active and what status they have. The Can-Bus technology ensures reliable control of the electronic components of the generator set. The CAN bus (Controller Area Network) is a serial bus system. Its purpose is to reduce wiring harnesses and thus save costs and weight.

**Highest reliability proven**

Two successful test years of the manufacturer in Holland with 4 large yachts and 15 commercial vessels have proven the highest reliability in the operation of the systems.

**Cost/benefit ratio**

A CATAMARIS catamaran (Catmar Explorer 5, 6 and 7) equipped with the "Green Power Supply" propulsion and energy system is only marginally more expensive than a conventional system with 2

diesel engines and separate generators, depending on the overall configuration desired by the customer.

Bonn - Katwijk - Les Sables d`Olonne

In summer 2020



*Unique aluminium catamarans for highest sophisticated requirements*