

VIKING ENGINEERING PTE LTD



Embark on your Green Voyage!



VIKING ENGINEERING PTE LTD

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Hydrogen fuel cell for Marine

For marine applications, we provide start-to-end solutions from feasibility study, design, engineering, conversion, to construction and aftersales lifecycle services for your peace of mind and reduced downtime to your operations



Marine hydrogen fuel cell power system

Our hydrogen fuel cell systems are customizable to suit your vessel needs.

Rated power	120 kW
Output voltage range	450 V – 750 V
Rated efficiency	40.40%
Dimensions	1550 × 1500 × 1330 (mm)



CCS certified



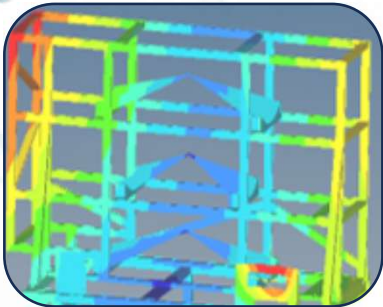
Modular design with multi-module automatic master-slave configuration.
Adaptive control



Explosion-Proof level
ExdIICT4



> 28 Quality Tests



Shock Proof and
Corrosion Resistant



SMART Monitoring

Products and applications for hydrogen fuel cell

With our know-how and CCS certified technology, more than 1000 modular units have been deployed in operation with zero incidents!

Electrolyzers

Our alkaline water electrolyzers and proton exchange membrane electrolyzers enables lower energy consumption, higher overall efficiency, and faster dynamic response can be achieved.

Hydrogen production	50 – 500 Nm ³ /h
Hydrogen purity	≥ 99.9995%



Methanol Reformer

Producing hydrogen gas with our methanol reformer system eliminates the risk from the transportation and storage of high pressured gas cylinders. Specifications can be customized.

Industrial vehicle

Capable of powering a forklift with load capacity of 3.5 tons with just one 15 kW hydrogen fuel cell.

Fuel cell battery	15 kW
Load capacity	3500 kg



Hydrogen refuelling/bunkering stations

Operational and in-service stations further solidify our technology in providing a hydrogen fuel cell system solutions.

We are able to design, build, and support your requirement for a refuelling/bunkering station with our in-depth know-how and engineering services.



Hydrogen fuel cell mobile power station

Eliminate NOx and SOx emissions by integrating the methanol reformer and the hydrogen fuel cell system. Our modular container-sized mobile power station can generate up to 400 kW of power on demand without the risk from the transportation and storage of high pressured hydrogen gas cylinders. Refuelling is as easy as refilling the tank with methanol. Furthermore, remote monitoring and control system ensures utmost safety for operators.



Hydrogen fuel cell specifications

Rated power	400 kW
Fuel storage	6000 – 8000 L
Energy storage	30 kWh (customizable)
Fuel consumption	1 kg/kWh
IP level	IP54 or better
Operating environment	-10 °C to 40 °C
Dimensions	6000 x 2500 x 2600 (mm)

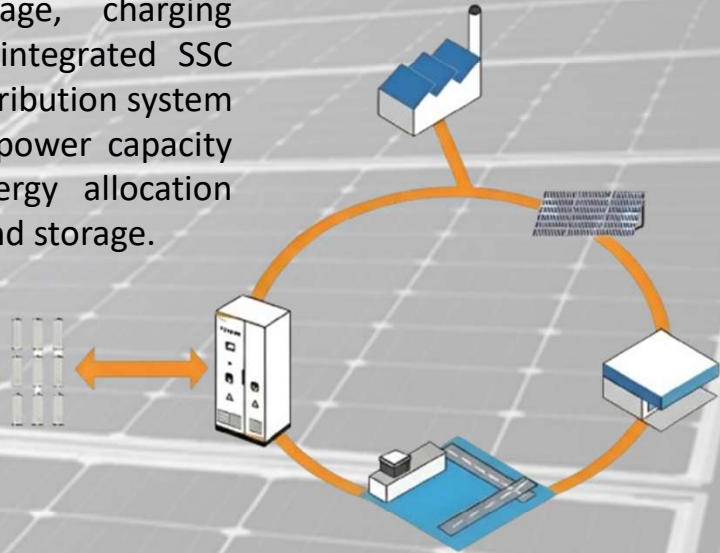
Methanol reformer specifications

Purity	H ₂ ≥ 99.99%, CO ≤ 0.2 ppm
Pressure	1 – 2 bar
Hydrogen supply rate	108 Nm ³ /h @ 1 bar

Integrated Solar Stations

Integrated solar stations

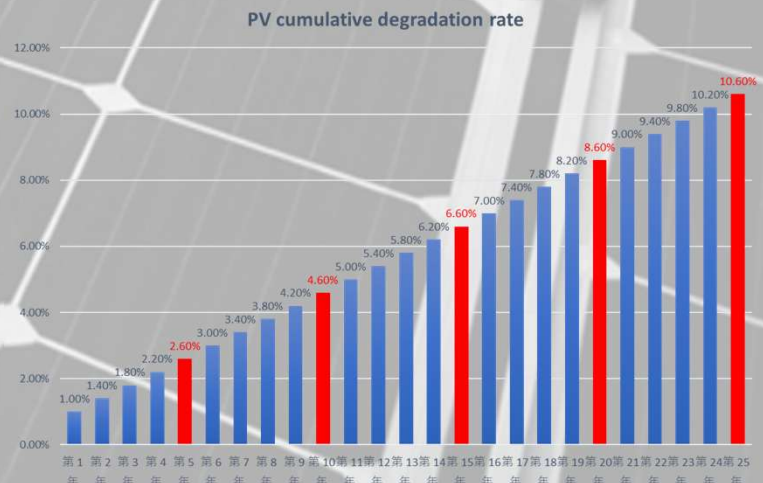
Integrating solar panels, storage, charging stations, and SMART EMS, our integrated SSC solution is a small scale power distribution system that addresses limited land and power capacity constraints while optimizing energy allocation through local energy production and storage.



Game-theory based coordinated energy dispatch strategy on a single platform that enables the integrated interaction and energy allocation among the distribution network, renewable energy sources, charging stations, and energy storage systems.



- PV panel lifespan: 25 years
- Efficiency: 82%
- 1st year degradation: 1%
- Subsequent years: as low as 0.4%



Electric Vessel conversion

Engineering Services

- Conceptual and feasibility design
- Detail Design and Engineering
- Specialist Engineering Services
- Procurement and Construction Support
- Post-construction and lifecycle services
- Commissioning

Specialized Vessels

- Commercial ships: Containerships, bulk carriers, tankers, LNG carriers
- Workboats & Special craft: Tags, anchor handling vessels, pilot boats, fishing vessels
- Offshore support vessels: Platform supply vessels, crew transfer vessels, construction support vessels
- Passenger vessels: Ferries, cruise ships, yachts, and mega-yachts
- Inland waterway vessels: inland cargo ship, tourist vessel, others.

Electric vessel conversion and new building

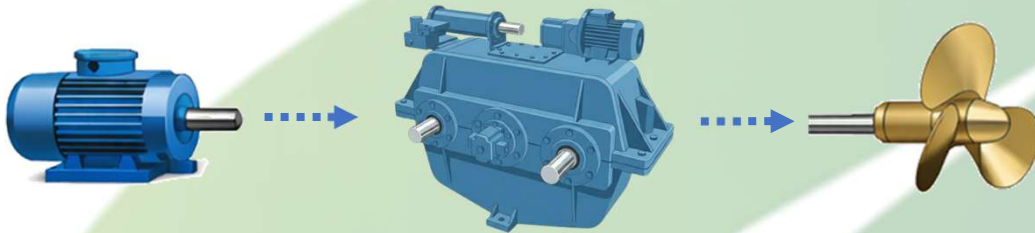
- Conversion of diesel engine driven to electrical motor driven propulsion system
- Dual drive system (diesel + motor)
- Green fuel
- New building with our green power systems

Green propulsion system solutions

At Viking, we offer various green propulsion system solutions such as full electric, hybrid, and methanol combustion systems.

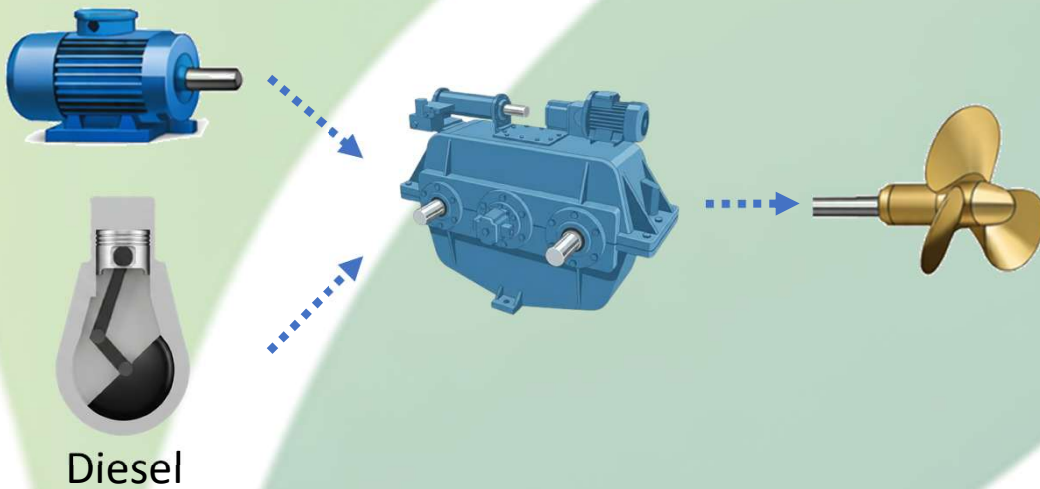
1. Full electric propulsion

Electric motor



2. Hybrid propulsion

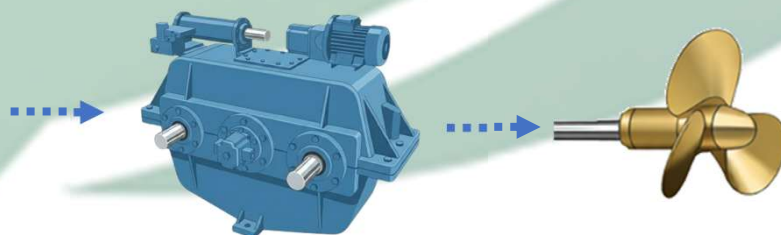
Electric motor



3. Methanol combustion propulsion



Methanol



New build or conversion, feel free to contact us for a discussion!!

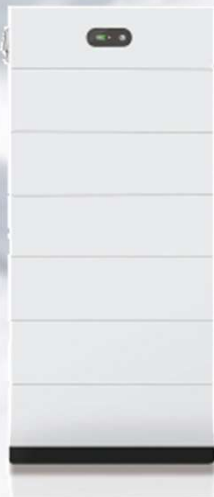
Power Storage Systems



Titan

- Enhanced power quality
- Supports 3 phase unbalanced load
- Modular system for easy installation
- Up to 720 kW of PV input
- Remote monitoring support

Storage	Up to 5MWh
Charge-discharge	0.5C/0.5C
IP level	IP54/IP55



Helios

- Equipped with automotive-grade BMS chips and standard fire-suppression aerosol modules.
- Enables monitoring, efficient energy allocation, and optimized dispatch of power
- Cell standards higher than typical automotive batteries
- Storage range from 15 kWh – 2 MWh



Solaris

Capable of load shifting, demand management, dynamic capacity expansion, emergency backup, power quality optimization, demand side response, and electricity trading.

Storage	10 – 215 kWh
Charge-discharge rate	0.5C/0.5C
IP level	IP55
Operating environment	-30 – 55 °C, 5-95%RH