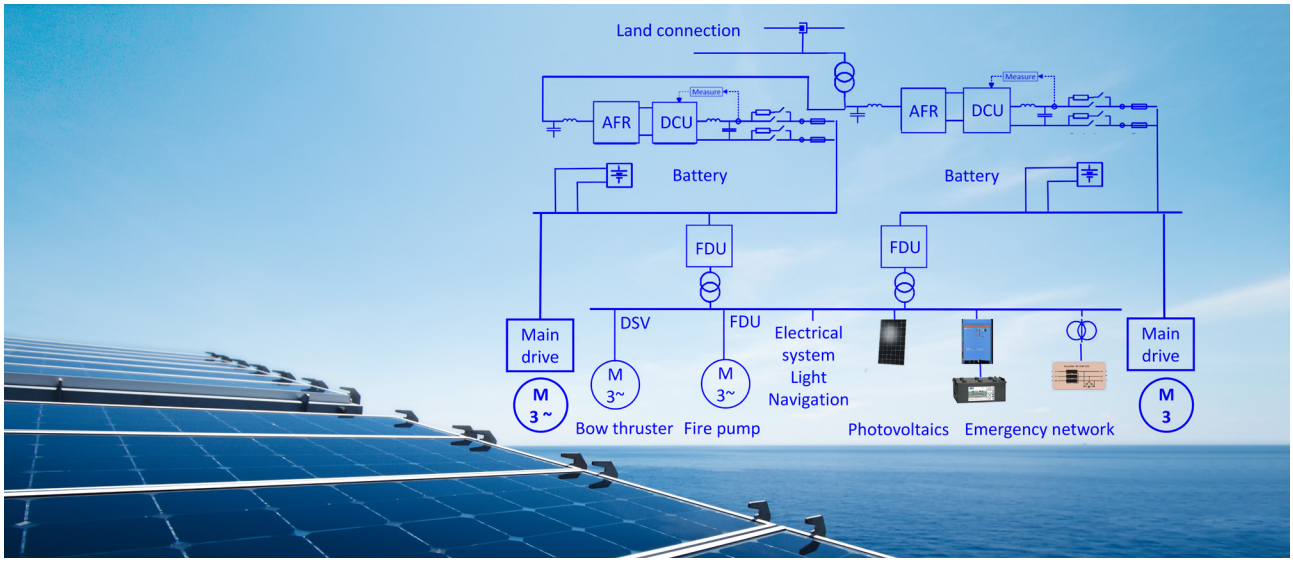
emotron
DEDICATED DRIVE
A CG Product

Step by step electrification with Emotron VFDs

Going from diesel driven to fully electric may seem daunting. CG Emotron has delivered electrical solutions for marine vessels since 2016 - including the supply of all variable frequency drives (VFDs), the control system and commissioning.

Before embarking on your journey from diesel to electric power, consider all your options and learn from a small tourist vessel that found a step by step solution with Emotron VFDs.



Step one: Diesel electric

Firstly, the benefits turning from diesel driven to diesel electric were considered.

By allowing the existing diesel motor to power a generator and controlling the output with an Emotron VFD, fuel efficiency is improved regardless of vessel speed.

Having installed a generator, VFD and electric motor, the first step towards electrification was made, and although still using traditional fuels to power the electric motor, fuel efficiency was greatly improved.

Considerations before electrification of vessels

Next, the possibilities to harnesss power from environmentally friendly power sources such as photovoltaics or land electricy was considered.

As the battery is the biggest piece of additional hardware required of any vessel electrification, it was important to consider how it would fit in the vessel.

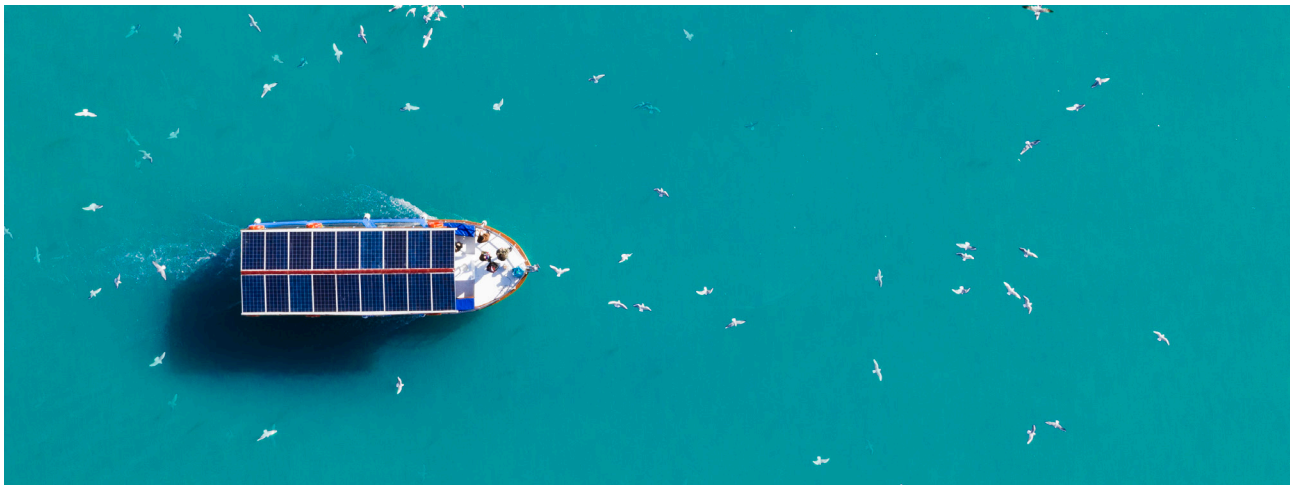
Photovoltaics was considered, and how this would fit on top of the roof.

Step two: Hybridization and microgrids

Following this investment of a battery, photovoltaics, microgrid system and land connection the vessel could charge while at berth and use the energy of the sun to top up power while in daily operation.

Fuel efficiency was greatly enhanced by DC-linked networks or ‘microgrids’, allowing systems to draw on a variety of energy sources including shaft generators and batteries or fuel cells.
Depending on journey length and vessel size and load, the ship runs almost entirely on electricity.

DC supply from a battery pack or generator AC supply.



Photovoltaics on the roof of a vessel

Additional power sources for full electric power

Based on battery choice, vessel size, length and carrying capacities CG Emotron will be able to guide you to a suitable electric microgrid system.

Software for steering control and main drive allows you to view live fuel consumption, giving you fulll control of your energy usage and expected speed and distance allowance from electric power sources.

Marine certifications

Variable frequency drives with marine certification DNV-GL or BV are generally used for marine electrification projects.

At Emotron, expert knowledge is always at your fingertips. Your marine project team will follow you every step of the way. We manage a design review followed by an in-house survey when necessary and have well-established contacts with all the major certifying bodies.

We test all of your components individually before commissioning, for your peace of mind.

DNV

We put all our energy into saving yours.

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