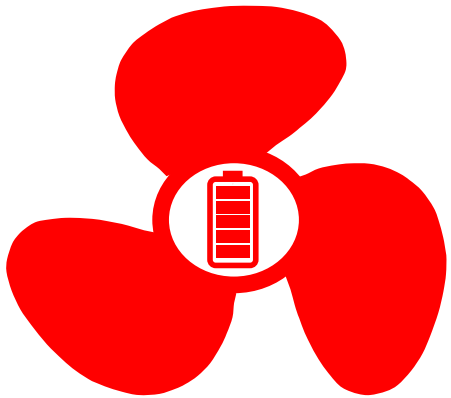
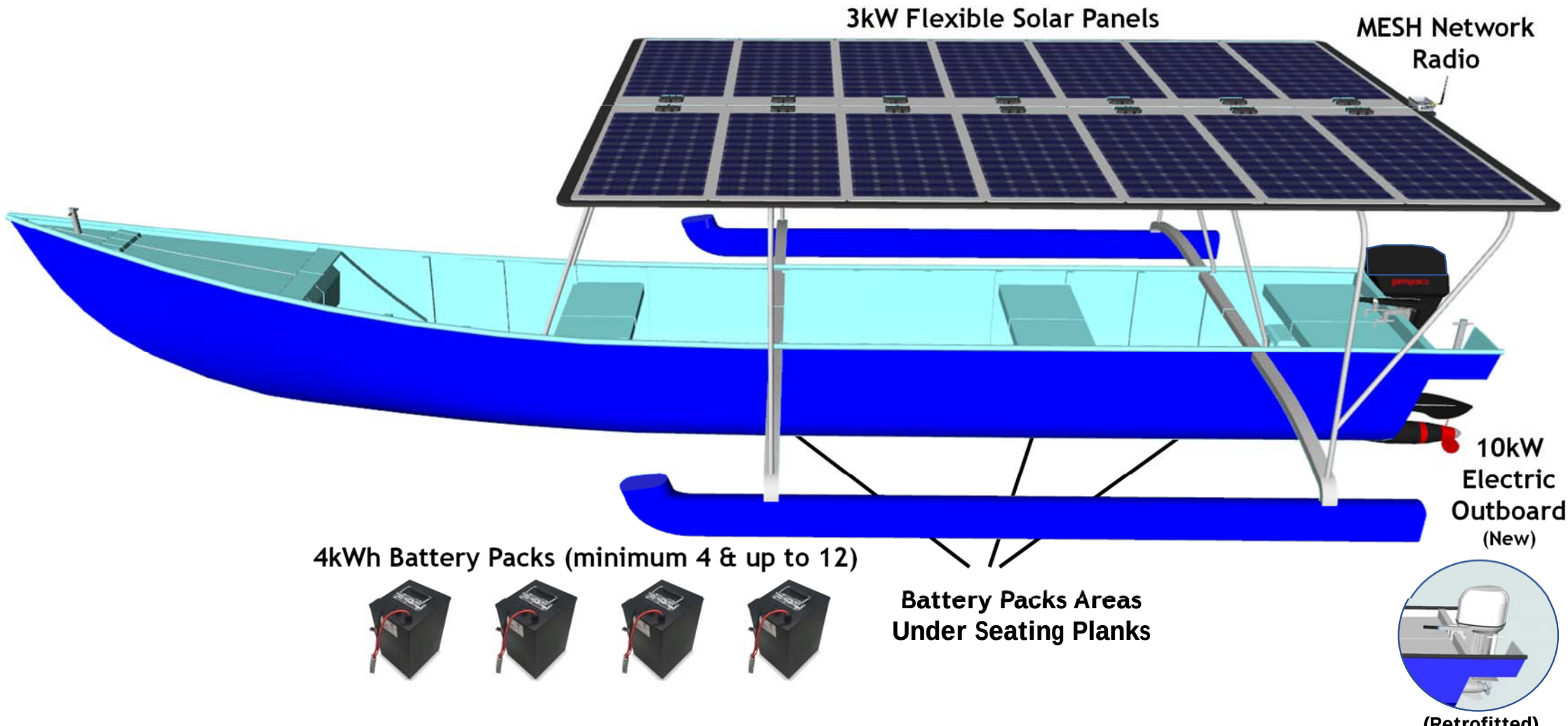


gempacs

Electric Propulsion & Electric Boats
Charging Strategies

Version 2.2

gempacs Typical Boat Model



Charging Strategies & Solutions

Now

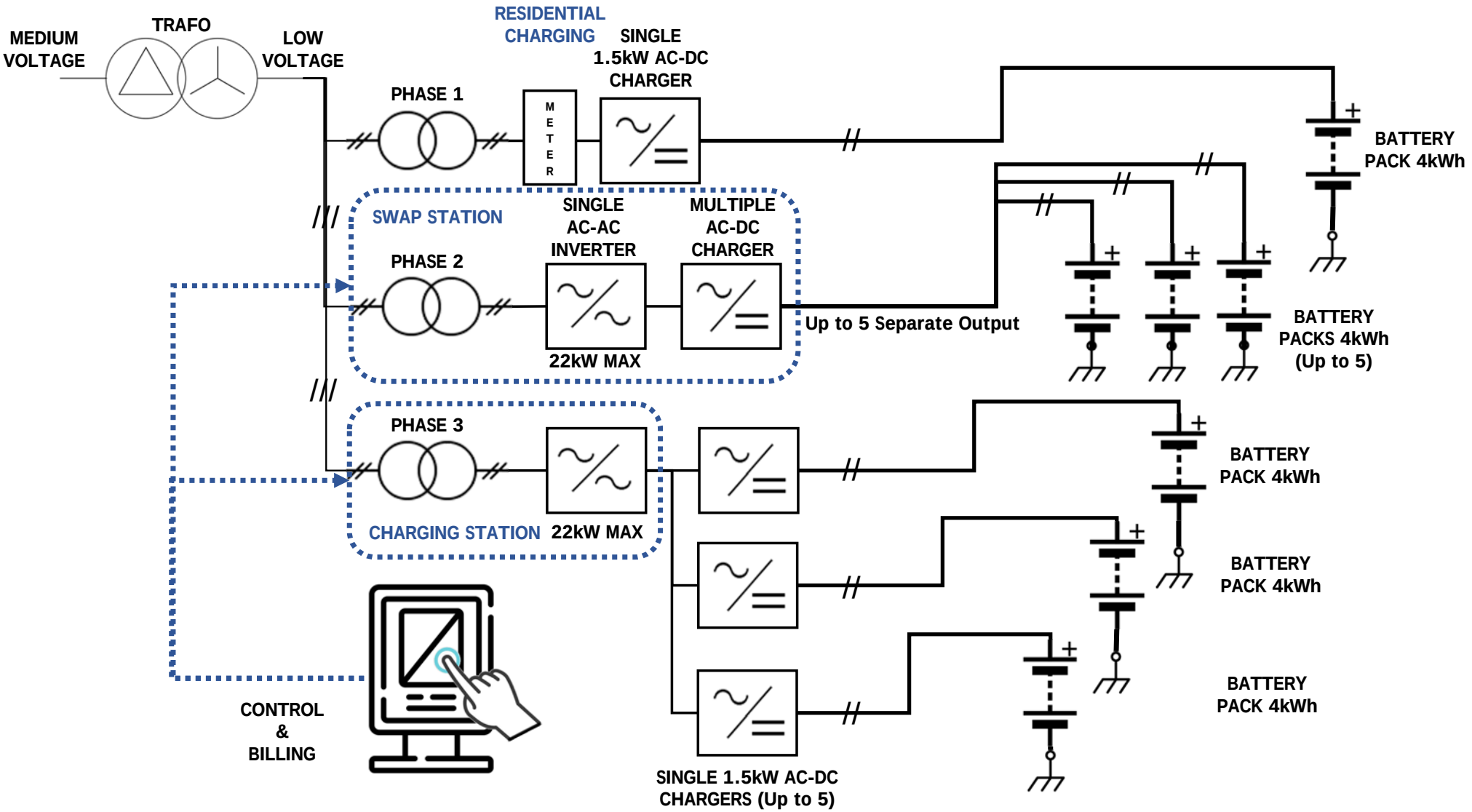
1. Beach Side Charging.
2. Pier Side Charging.
3. Onboard Solar Charging.
4. Battery Swap on Land/Piers (Battery Swap Stations).

The Future

1. Battery Swap in Water (Battery Swap Boats).
2. Nearshore and Offshore Battery Charging/Swapping Stations.

There is no “One Size Fits All” Solution.
Each of these solutions solve specific problems for specific locations. We can use them all, to adapt to specific conditions and volumes of boats requiring charging or swapping.

Charging Methods Diagrams



Low Voltage Distribution – Charging on Beaches

Beach Side Charging

PLN Charging Points Available and Deliverable

Beach Side Charging

- PLN is providing the Charging Points nearby the area where the Fishing Boats are recovered, at NO COST for Gempacs.
- Fishing Boats are charged by the 1.5 kW AC-DC Charger (IP67 Protected) connected to the PLN Charging Point with an AC cable (Average Length 25 meters).
- There are no CAPEX Costs expected for this type of charging method.

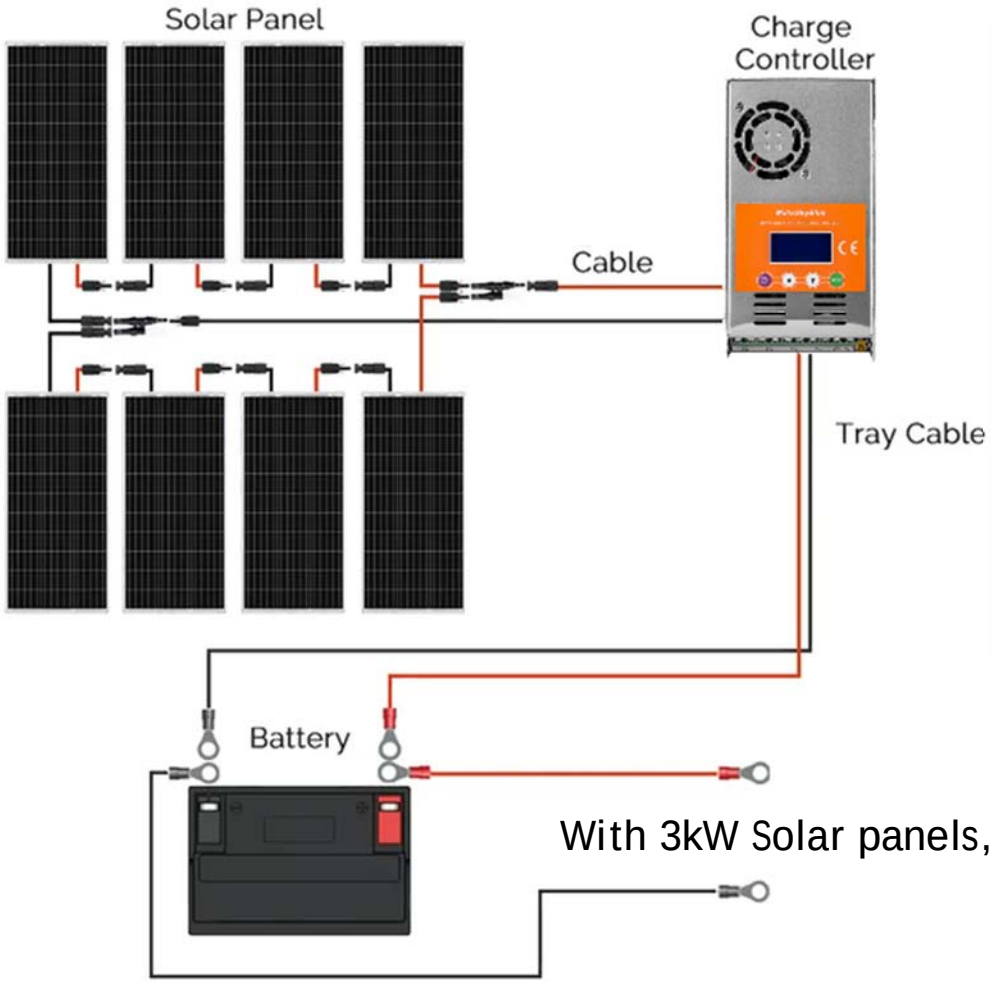
Pier-Side Charging

Pier Side Charging

- PLN is providing the Charging Points nearby the Fishing Boats Stalls, at NO COST for Gempacs.
- Fishing Boats are charged by the 1.5 kW AC-DC Charger (IP67 Protected) connected to the PLN Charging Point with an AC cable (Average Length 25 meters).
- There are no CAPEX Costs expected for this type of charging method.
- Fishing Boat Stalls at the Pier are nominally assigned to the Fishermen (dedicated).

Battery Swap Station

On Board Photovoltaics Charging



With 3kW Solar panels, four battery packs can be fully recharged in eight hours

Solar Powered Cold Storage

The Future - Battery Swap Boat

The Future - Floating Solar Charging Station

The Future - Offshore and Nearshore Charging