SEAPOWER

Electrical Systems

POWER OF THE SEA

COLDIRONING

ALTERNATIVE MARINE POWER SYSTEM (AMP)

www.seapower.com.tr

COLDIRONING

ALTERNATIVE MARINE POWER SYSTEM (AMP)

SEAPOWER ELECTRICAL SYSTEMS CO. Inc.

Seapower R&D and Innovation Center, providing critical solutions in the field of power electronics, operates in the shipyard area of Altınova/Yalova on a 10000m2 site.

The company offers turnkey systems that reduce fossil fuel consumption of ships due to new regulations and improve EEXI and CII Rating values. SEAPOWER is also involved in green port transformation projects for ports.

SEAPOWER, a producer of static frequency converters, static ups, transformer for the ship and yacht building industries, manufactures shore power converters for yachts and grid frequency converters for ships with Marine class products. With its innovative and solution-oriented approach, SEAPOWER is a pioneer of quality both domestically and internationally. Known for its reliable products in the maritime sector, SEAPOWER is also an approved supplier preferred in the defense industry thanks to its innovative R&D capabilities.

SEAPOWER, being among the leading organizations in the energy sector with its customer-focused approach and contemporary management understanding, continues its work with a 100% customer satisfaction focus. With a top-quality service approach provided by our expert team, SEAPOWER aims to offer future-oriented technologies to its customers and to provide solutions for their evolving new technology needs through long-term business partnerships.

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100kVA
50MVA

SEAPOWER SHORE CONNECTION (COLD IRONING) APLICATION FOR VESSEL

SEAPOWER proposes environmental protection that are part of a cleaner and brighter future

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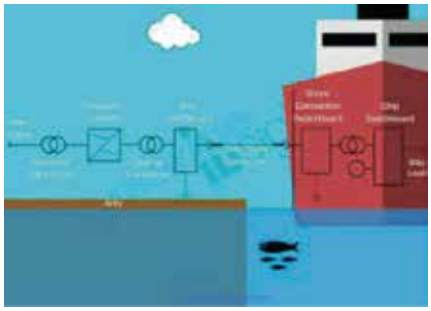
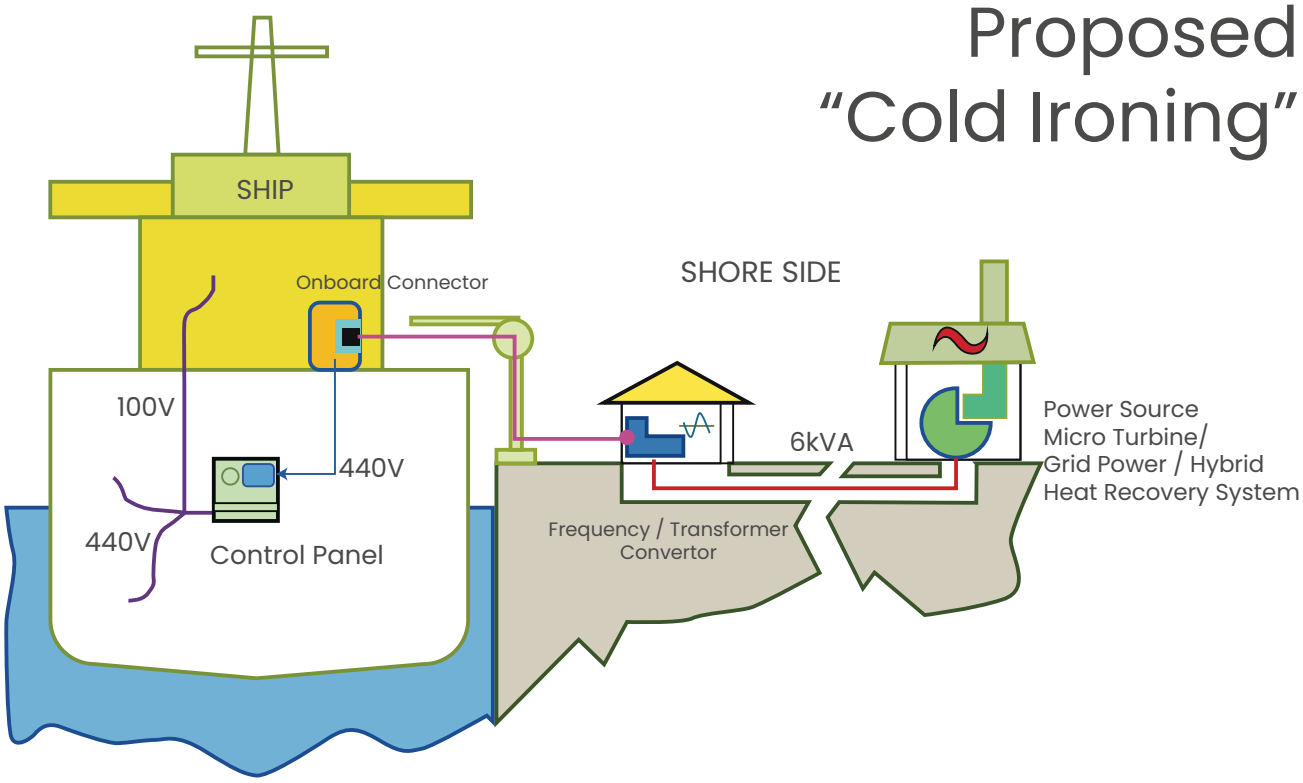
SEAPOWER SHORE CONNECTION (COLD IRONING) APLICATION FOR VESSEL

100kVA
50MVA



Environmental protection has been an echoing topic over the last decade and, within all of the talk, ship emissions have been cited as a major source of pollution. So, knowing a thing or two, SEAPOWER is doing something about that. The SEAPOWER Shore Connection protects port environments by supplying moored ships with electrical power from shore, thus allowing ships to shut down onboard generator engines and, in the process, reduce harmful emissions from the ship's power systems.

Proposed "Cold Ironing"



100kVA
50MVA

SEAPOWER
SHORE CONNECTION
(COLD IRONING)
APLICATION FOR VESSEL

CARB Regulation;

Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port.

- Applicable to container, passenger and refrigerated cargo vessel visiting California Ports
- Vessel in-use operational requirements
- 80% of fleet shall meet the onboard auxiliary diesel engine operational time limits from 2020.
- 100% of fleet shall meet the onboard auxiliary diesel engine operational time limits from 2021.
- Bulk carriers, RORO ships and tankers are also expected to adopt the Regulation from 2025.

100kVA
50MVA

Sources:
Friends of the Earth International (2018),
DNV GL (2020),
European Alternative Fuels Observatory (2019),
World Ports Sustainability Program (2020),
International Association of Ports and Harbors (2011)
Globally Operational Shore Power (OPS) Ready Ports

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100kVA 50MVA

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NORTH SEA AND BALTIC SEA Regulation

Also The Chinese government has announced regulations to major harbor.
Container ship and passenger ship ports are exploring shore-to-ship power supply systems. Systems are Already up and running in Sweden and Germany, while under planning in Belgium.

Mediterranean Sea Becomes Emission Control Area (ECA)

As of 1 May 2025, the Mediterranean Sea has officially been designated as a Sulphur Oxides Emission Control Area (SOx-ECA) under MARPOL Annex VI. This regulation requires all vessels operating within the region to use marine fuels with a sulphur content not exceeding 0.10% m/m or to adopt equivalent emission reduction technologies such as exhaust gas cleaning systems.

The establishment of the Mediterranean ECA aims to significantly reduce air pollution caused by ships, improving air quality, human health, and marine environmental protection across coastal nations.

Mobile and Fixed Type Containerized Solution

- Easy loading and unloading of equipment for a route change, suitable for remodeling into an in-service ship.
- Cable reel can be loaded. Power receiving preparation time is shortest.
- Easy blackout-free power switching between ship and shore with one push of a button.
- Global standard as recognized by many major shipping companies.
- Highly reliable standard system with an excellent track record.

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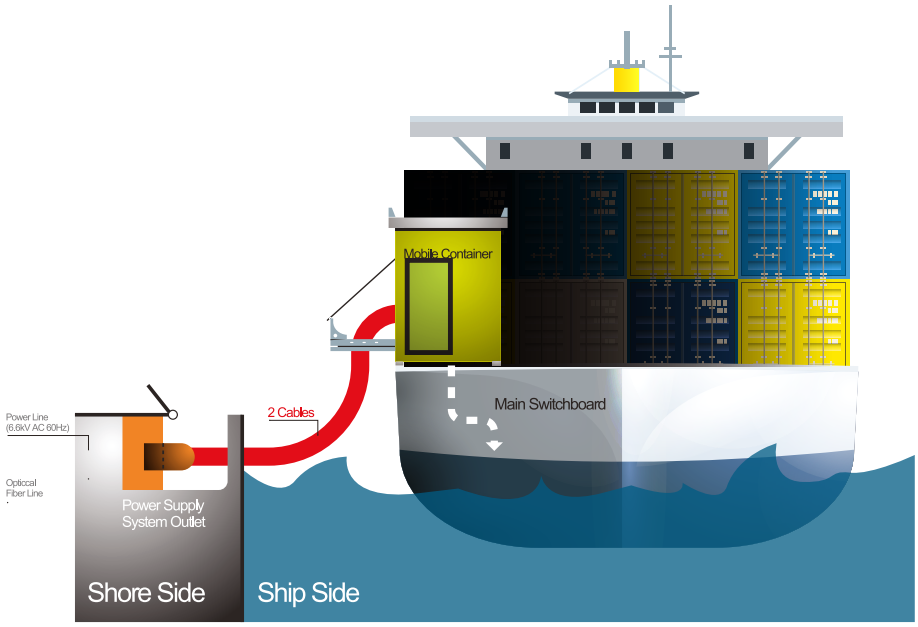
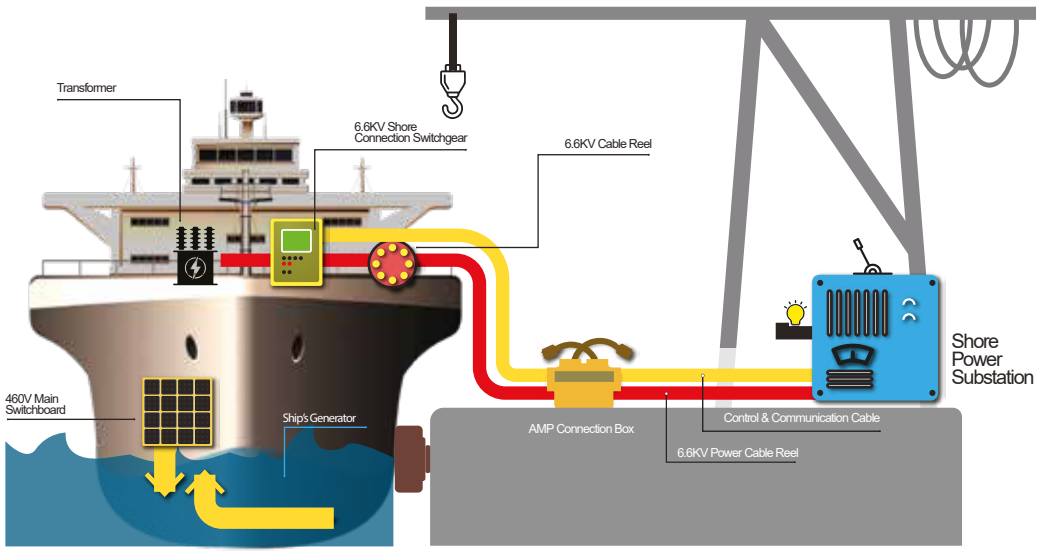
Mobile and Fixed Type Containerized Solution





100kVA
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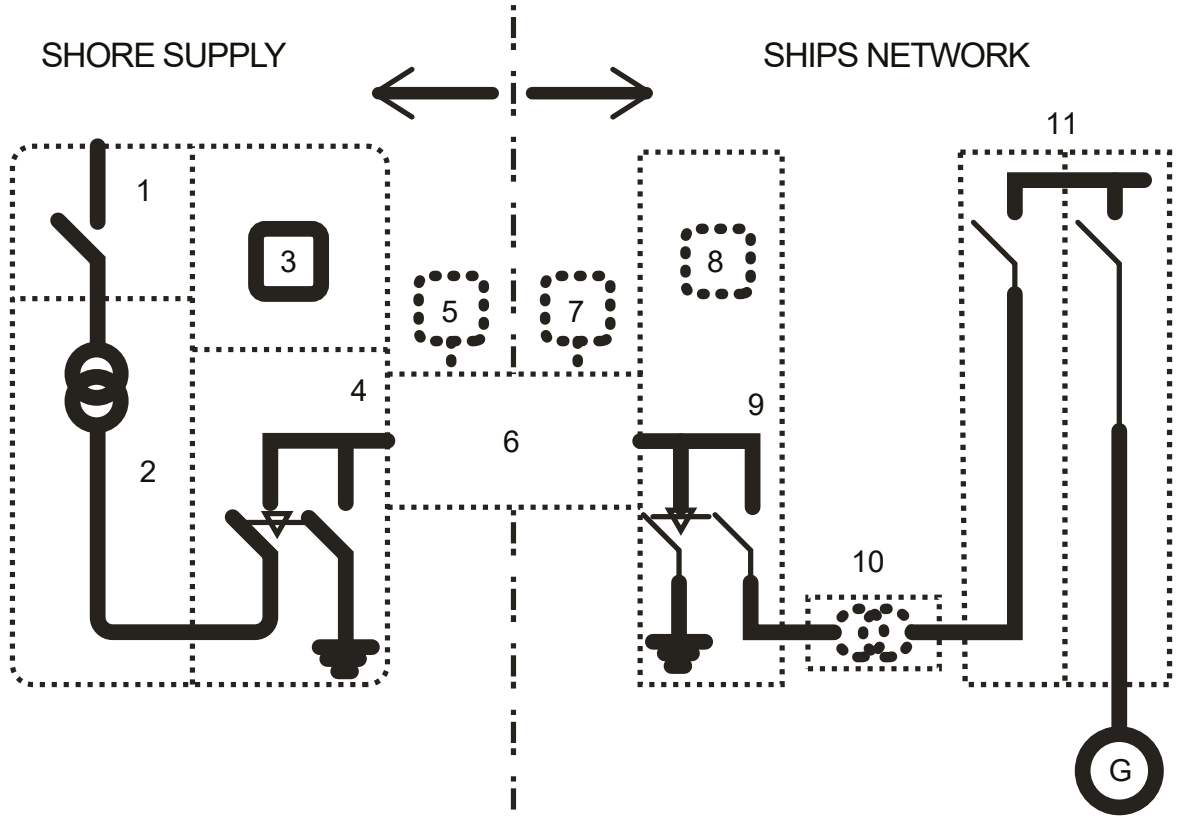
SEAPOWER SHORE CONNECTION (COLD IRONING) APLICATION FOR VESSEL



Block diagram of a typical HVSCS arrangement

1. Shore Supply System
2. Shore -Side Transformer
3. Shore - Side Prorection Relaying
4. Shore - Side Circuit - Breaker and Earth Switch
5. Control Shore
6. Shore - to - Ship Connection and interface Equipment
7. Control Ship
8. Ship Protection Relaying
9. On-Board Shore Connection Switchboard
10. On-Board Transformer (Where Applicable)
11. On-Board Receiving Switchboard Ships Network

mt CONVERTER

mt UPS

mt RECTIFIER

mt TRANSFORMER

mt CHARGER

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SEAPOWER ELECTRICAL SYSTEMS CO. Inc.

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