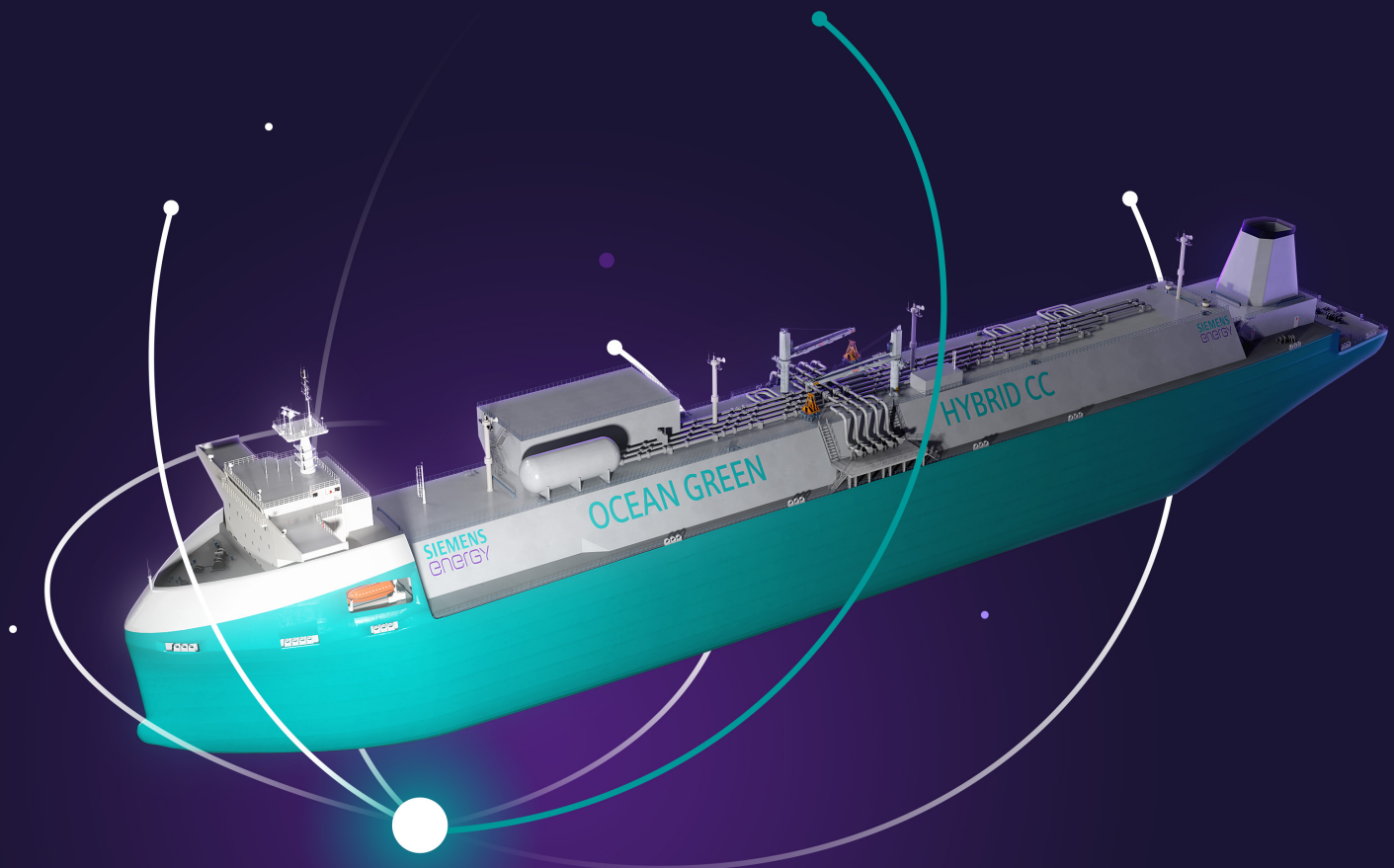
SIEMENS energy

Ocean Green

The Path Toward Carbon-Free Ocean Crossing



siemens-energy.com

Decarbonizing the entire energy value chain is the biggest challenge of our generation – and cutting down greenhouse gas emissions in LNG production and transport is part of it.

Siemens Energy has developed the Ocean Green concept, a new low emission power and propulsion system for deep sea shipping and in particular LNG carriers. The Ocean Green is a new inventive hybrid combined cycle power and propulsion plant utilizing gas turbine as the main engine in combination with steam turbine and energy storage for the electrical propulsion and distribution system.

The Next Generation LNG & Hydrogen Carriers

The transport of LNG across the world's oceans requires more efficient solutions due to increasing environmental regulations as well as requirements to reduce cost. The incorporation of Siemens Energy marine type energy storage has proven a wide range of benefits for more than 60 references in the marine industry. The energy storage will enable stable, reliable, and high efficiency generator operation with power peak shaving, power boost, and black-out prevention. The reduced heating demand will further reduce fuel consumption and improve performance.

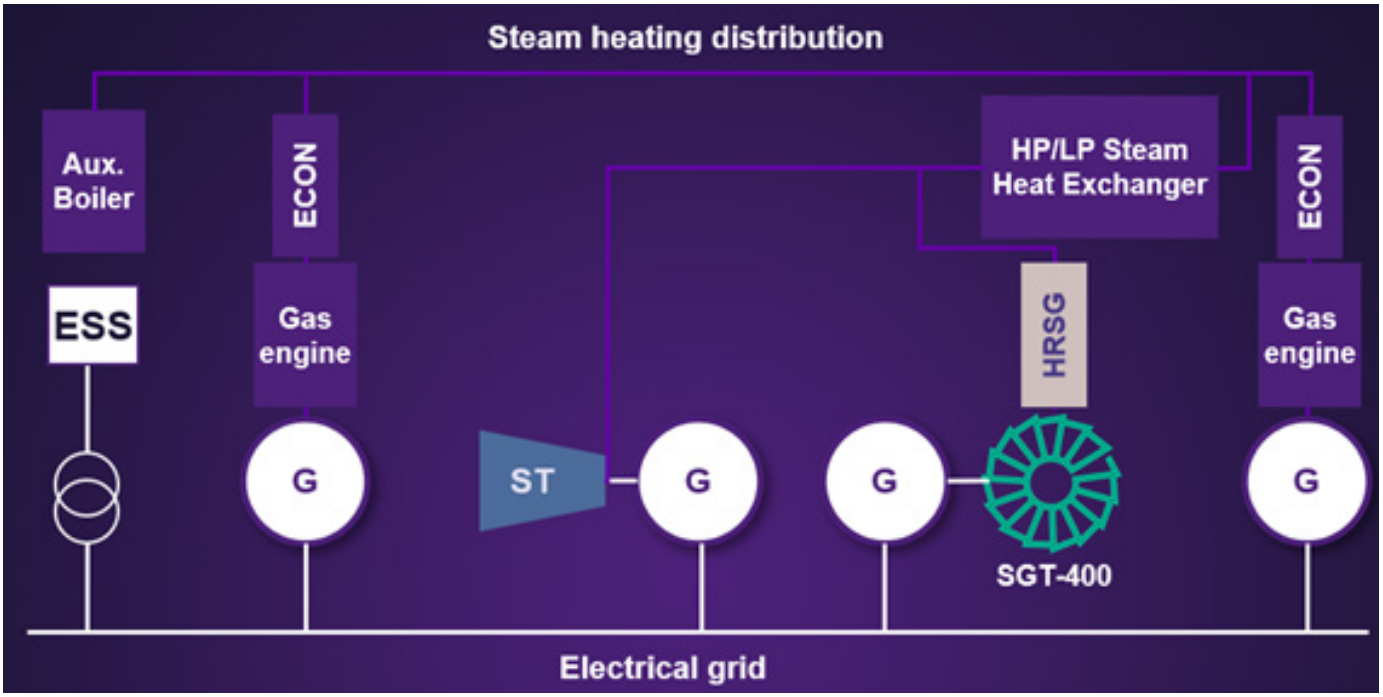
As new environmental restrictions are implemented across the globe, ship operators have become increasingly focused on reducing emissions of their operations, and at the same time the need of reducing the cost of operations. In comparison to existing best in class power and propulsion technology, the Ocean Green Hybrid CC will significantly reduce greenhouse gas emissions and help vessel owners comply with the new IMO regulations. The compact engine room layout, enabled by the SGT-400 gas turbine, allows for increased cargo capacity, thereby improving the unit freight cost.



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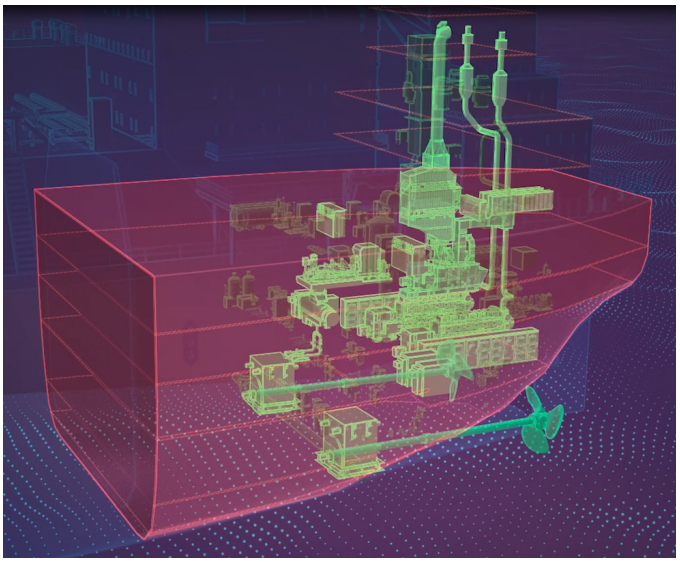


Siemens Energy's Ocean Green Hybrid CC:



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Future-proof design complying to IMO CII regulation decarbonization trajectory



Improved vessel design

- Compact machine room design using SGT-400
- Increased cargo capacity by
- Simplification by removing auxiliary systems
- Improved maneuvering capabilities

Operational flexibility

- Low energy consumption during waiting operations

Gas Turbine Lifecycle Support

- Global service provider
- Significant reduction of maintenance time
- Fast Emergency Exchange
- Optimised Maintenance Plan
- Maximised turbine availability through 24/7 Remote Monitoring
- Full Training and Support available on site and remotely.

Reduced operational cost

- Reduced unit freight cost
- Reduced maintenance cost
- Less manning
- Reduced fuel and lubrication consumption

Environmentally friendly

- Reductions in GHG
- Significant reduction in methane slip
- Low noise and low vibrations
- Zero emission road map

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