Decreasing energy consumption with ABB Waste Heat Recovery System

Leveraged by shipping industry towards ABB Waste Heat Recovery System (WHRS) with ABB Power Turbine Generator (PTG) for container vessels to demonstrate how the renewable energy segments can be at the forefront. ABB WHRS technology can achieve both emissions and fuel costs across a range of ship sizes.

The Waste Heat Recovery System?

Large two-stroke engines are commonly used in today’s large container vessels, which have considerable power dissipation of exhaust gases. Significant proportion of fuel energy is not transferred through propulsion and is lost to exhaust gases. This loss can be as high as 20%, where the vessel is produced, otherwise loss efficiency annually.

The WHRS uses to recover energy, which is typically up to 10% of the main propulsion system’s power output, is converted for electricity through the PTG process.

Modern container ships also have a significant number of slots for refrigerated containers, which demand high demand for electrical power. WHRS technology can be used on various vessels, particularly well suited for WHRS technology.

As a result, WHRS can be used on tankers and bulk carriers, technology take-up to date has been centered primarily on larger container vessels.

What are the advantages of WHRS in a typical operation?

How does the Waste Heat Recovery System work?

The WHRS allows a vessel to produce more power at a very low cost, simply, by harnessing the excess power produced by the vessel’s main engine.

What are the advantages of WHRS in a typical operation?

- Increased fuel savings
- Reduced CO2 emissions

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<thead>
<tr>
<th>M/E load [%]</th>
<th>WHRS output [%]</th>
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<td>100</td>
<td>4</td>
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Evaluating the WHRS

In slow steaming operations on a typical container vessel, energy required is too high for the vessels main engine load, which would efficiently use, results in a significant amount of energy being lost to exhaust gases. WHRS recover energy, which is typically up to 10% of the main propulsion system’s power output, is converted for electricity through the PTG process.

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