In order to stay competitive in an increasingly tough market, cutting vessel operating costs – especially fuel costs – is key. Additionally, NOX emission legislation is becoming more stringent, with both country and harbor-specific requirements coming into force. The Wärtsilä 46 Performance upgrade is a comprehensive, tailored package that boosts engine performance by optimising the combustion process and tuning the engine to the most frequently used operating range. This leads to lower operating expenditures and increased operational flexibility while helping you to comply with increasingly strict emission requirements.

**SOLUTION DESCRIPTION**

Optimising the combustion process is key to improving Wärtsilä 46 engine performance. Modern high-efficiency turbochargers enable the use of earlier inlet valve closing, known as the Miller concept. Adopting this concept reduces the engine combustion temperature, which has a direct correlation with NOX emissions.

The optimal time to perform the upgrade is during a comprehensive turbocharger overhaul, which typically takes place at around 50,000–60,000 running hours and resets the turbocharger to its original efficiency and reliability. The Wärtsilä 46 Performance upgrade is a comprehensive package that includes engine modification and tuning, leading to increased efficiency and operational flexibility.

**KEY BENEFITS**

- Enable fuel savings of up to 3%
- Reduce NOX emissions in order to comply with emission limits
- Increased operational flexibility
SCOPE OF SUPPLY
The upgrade is delivered as a turnkey project. Wärtsilä will propose a tailored performance package based on the typical operating range of your vessel. The upgrade typically includes a turbocharger specification update or turbocharger exchange, Miller modification (where required), engine tuning and related documentation (EIAPP amendment when required). The scope can also include a SOLAS update for the affected components, such as the turbocharger insulation.

WHY CHOOSE WÄRTSILÄ?
As an original equipment manufacturer, only Wärtsilä can provide a complete performance upgrade that includes engine modification and tuning instead of just a turbocharger upgrade. We are also a full-service provider for engine and turbocharger parts and maintenance through our global network of service and turbocharger workshops.