Wärtsilä Electronic wastegate upgrade

The wastegate valve is used in Wärtsilä 34SG engines to allow the charge air pressure to be adjusted depending on the engine speed and load. Our upgrade gives you a faster valve reaction time, improving engine stability. You also benefit from more comprehensive wastegate operation data, such as the actual valve position compared to the set position. This information allows for a controlled engine stop and proactive maintenance in cases where wastegate valve deviation exceeds limits.

**TECHNICAL CONCEPT**

The Wärtsilä Electronic wastegate upgrade improves engine loading and load rejection as well as engine stability. The lower engine load fluctuation has a positive impact on NO\textsubscript{x} emissions and minimises NO\textsubscript{x} fluctuation.

The electrically actuated wastegate valve is designed for medium-speed engine applications, particularly Wärtsilä 34SG gas engines. The update has been tested in the Wärtsilä engine laboratory along with long-term field validation with excellent results. The main components include:

- Butterfly valve
- Electrical actuator
- Integration hardware including shaft coupling

The updated electronic wastegate valve and actuator fit in the existing engine layout, and as the electrical actuator is service-free, no additional regular maintenance costs are incurred. Minor changes are required for piping, support and thermal insulation covers. There is a direct hardwire connection to the engine control system and the plant automation system will also be updated if needed. There is no need for an air-reducing control component, removing the risk of potential problems such as air leakage. All installations and engines will be reviewed on a case-by-case basis.

**KEY BENEFITS**

- Enables faster reaction times for the wastegate valve position control, improving engine stability
- Provides wastegate valve diagnostics and operation data via the Wärtsilä Operator Interface System (WOIS), enabling a controlled engine stop and maintenance in case of deviation
- Slightly reduces NO\textsubscript{x} emissions due to lower engine load fluctuation
- The new set up uses fewer components than the previous one so there is less need for maintenance and operator intervention
- Improves wastegate valve performance and reliability
**SCOPE OF SUPPLY**

The Wärtsilä Electronic wastegate upgrade is a turnkey solution that includes:

- The complete electronic wastegate
- Bracket
- Insulation
- Power supply cabling
- Control cabling
- WOIS/PLC software update
- WECS/UNIC software update
- Engine wiring diagram update
- Installation and commissioning
- Manual and spare part catalogue update
- Depending on its existing level, the plant automation system will be updated (determined on a case-by-case basis)

The Wärtsilä Electronic wastegate upgrade is also included with our engine performance upgrades, low-load optimisation upgrades and fuel conversions.