

# TASK 3.1: Variable turbocharging

## Objectives:

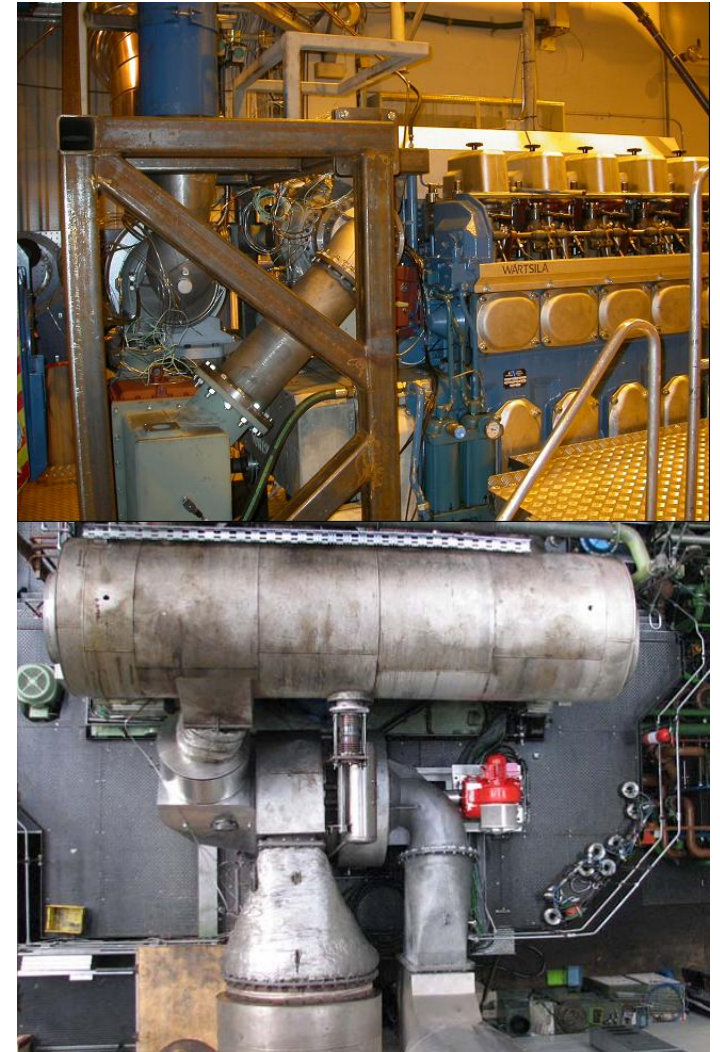
- High pressure turbocharging concepts for two and four stroke diesel engines
- Variable geometry turbocharger components for two stroke diesel engines
- Investigation of electrically assisted turbocharger (PTI/PTO) for two stroke diesel engines

## Final Results & Achievements:

Potential for power take in / take out as well as two-stage turbocharging systems have been evaluated with simulations and later verified with prototype tests on 2- and 4-stroke engines respectively.

Power take in systems have great potential in improving part load behavior on 2-stroke engines as the turbocharging efficiency, and thus the boost pressure, is considerably increased.

Two-stage turbocharging systems were shown to improve engine performance of 4-stroke engines considerably, showing big NOx reduction potential in certain load points together with some saving in the fuel consumption. Good part load performance is safeguarded with use of a variable inlet valve closure system, enabling change of Miller degree inside the cylinder depending on engine BMEP.



Partners:



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