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Ship Retrofit for Emission Legislation Compliance

Solution Engineering tailored for all maritime applications

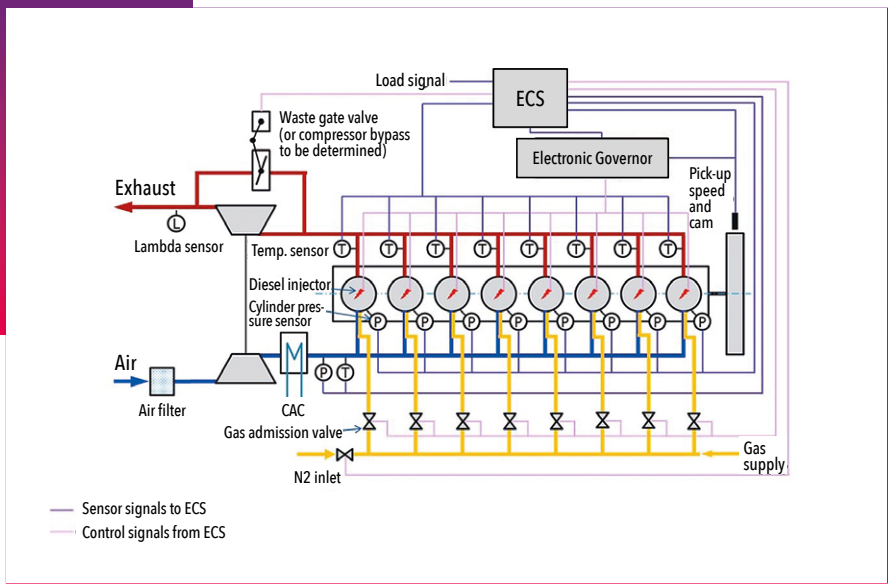
THE CHALLENGES

- Maritime transport emission regulations for CO_2, NOx and SOx are already in place and will be further strengthened
- In addition to IMO regulations, local rules have even more stringent requirements by the region
- Consequently, air pollution and GHG emission requirements affect both new-built ships and existing vessels in various applications
- With the long lifespan of ships, it is a challenge to foresee all upcoming emission regulations during planning and construction
- Non-compliant ships can be banned from operation in specific regions
- Upgrades on the engine and propulsion system often requires a major retrofit according to Classification Societies

BENEFITS

- AVL engineering solutions are focused on existing engines and propulsion systems to integrate improvements in the most efficient way and to be approved by class and authorities
- Engine emissions can be significantly reduced by converting the existing engines into modern highly efficient dual fuel system
- Advanced exhaust gas aftertreatment system solutions, optimized by our unique combination of simulation technologies, ensures the most efficient performance and sustainable lifetime at sea
- AVL provides dedicated solutions tailored for each set of specific customer requirements
- AVL's holistic methodology is successfully proven through decades of industrial application
- AVL retrofit solutions result in much lower investment costs compared to engine and propulsion system replacement
- Feasibility study adapting fuel operating mode (gas/diesel) enables vessel operation on the optimal fuel considering emissions requirements, fuel prices, vessel speed profile etc.

Retrofit with Scrubber Technology developed by AVL



Dual Fuel Retrofit for LNG operation

THE AVL SOLUTION

Dedicated conversion engineering for our maritime customers. The unique AVL design approach is verified by simulation tools including AVL BOOST™, AVL FIRE ™ and AVL CRUISE™ M. CFD calculations and operational simulation of engine as well as aftertreatment system ensure the most efficiency over the required lifetime. AVL's integrated measurement equipment provides an efficient and verified application.

AVL SERVICES IN DETAIL

- Feasibility study including retrofit concept and CAPEX/OPEX calculations
- Layout and tailored detail engineering
- Assessment of overall emission of ship/plant
- Specification of components and sourcing support
- Supervision of onboard installation, commissioning and acceptance test
- AVL EPOS™ for optimization of the engine, control and monitoring of engine performance, condition and emissions
- Project management support to liaise with the general contractor
- Rule-relevant reporting and alignment with Classification Societies
- Revision of engine manuals/handbooks to fit for the retrofit

THE ADDED VALUE

AVL's unique experience and reference in the fields of energy conversion technology, emission compliance, electrification, integration technology of conventional and hybrid powertrains makes AVL the preferred engineering partnerfor ship emissions compliance technology.

AVL's advanced solutions, leveraging proven simulation and measurement technologies, deliver optimized solutions tailored for the specific application with the most optimum economy.

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FIND OUT MORE

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