Low Energy And Near to zero emissions Ships

Demo Case
New ship handling tug & CNG powered tug

Demonstrator I: RSD (Reverse Stern Drive) 2513
- entirely new type with improved hydrodynamic characteristics and TwinFin technology
- increased efficiency by allowing a larger tug to do multiple heavy jobs in a safe way

Demonstrator II: ASD (Azimuth Stern Drive) 3212 CNG-E
- operates with compressed natural gas (CNG)
- MTU marine gas engines have proven low-particulate emissions when compared with diesel
- additional hybrid (E) propulsion

Comprehensive computational fluid dynamics (CFD) calculations and model scale tests (demonstrator I)
- optimized hydrodynamic behavior
- allows the use of a smaller crew (three instead of four to five)
- decrease in operational costs
- more tug jobs have been built and all completed their three sea trials successfully

Conclusion after test benches (demonstrator II)
The propulsion gas engine has been fully validated within the scope of the project’s test case and is available and ready-to-use for a variety of marine applications.

- operates with compressed natural gas (CNG)
- MTU marine gas engines have competitive performance when compared with diesel
- additional hybrid (E) propulsion

Results and exploitation

Application of inherently gas-safe engine room i.e.w. CNG resulting in a compact design solution of CNG propulsion.

Concept of TwinFin technology for a RSD Tug enables very compact tugs to perform operations faster, safer and more energy efficient.

Market uptake of natural gas propulsion train to a compact high performance harbour tug is taking place: First NG engines sold to customers.

Application of gas propulsion engine including adapted gas train: Ready to be exploited in a large variety of gas fuelled ships.

Creation of an adapted safety concept for gas fuelled engines for marine applications and criteria for approval of authorities for gas applications in ships.