

# Engine manufacturers' considerations on Emissions Reduction in Inland Waterway Transport



*WWW.EUROMOT.EU*



# Outline

- Engine related CO<sub>2</sub> reduction potential
- Current EU approach for
  - GHG and emissions reduction
  - Fuel qualities
- Use of biofuels

# Evaluation of the CO<sub>2</sub> reduction potential

- Potential to further reduce the fuel efficiency of a standalone engine is restricted
- Trade-off between CO<sub>2</sub> reduction and ambient air pollution measures, e.g. lean NO<sub>x</sub> operation, filter regeneration,....
- Substantial CO<sub>2</sub> reduction requires to consider the vehicle and its operation
- Development at United Nations IMO Energy Efficiency Design Index and Energy Efficiency Operational Index (EEDI and EEOI) for certain types of seagoing ships

# Current EU emissions reduction approach

- Member states and European Commission are heading for further reducing ambient air pollutants to comply with ambient air requirements according to Annex 2 of 2008/50/EC
- EC DG ENTR Study on actual GHG activities contracted to RPA, results anticipated to be publicly available in May 2012
- CO<sub>2</sub> reporting during engine type-approval: Amendment proposal to 97/68/EC, similar to USEPA GHG reporting scheme

# EU fuel quality approach for NRMM

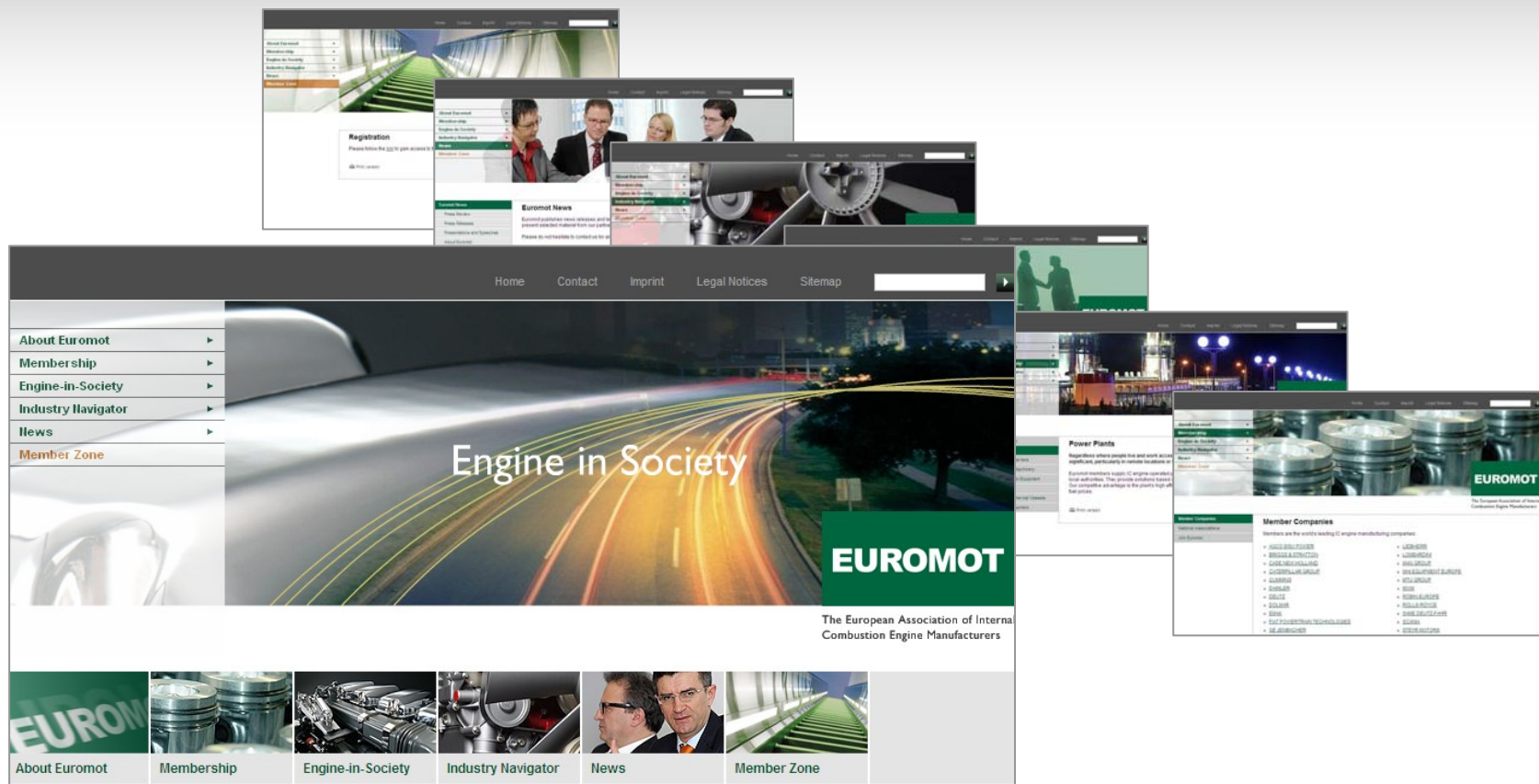
- 10/20 ppm S Gas oil in 2009/30/EC
  - “[... ] gas oils intended for use by non-road mobile machinery (including inland waterway vessels), agricultural and forestry tractors and recreational craft [...]. From 1 January 2011, the maximum permissible sulphur content of those gas oils shall be 10 mg/kg.”
  - “Member States shall ensure that liquid fuels other than those gas oils may be used in inland waterway vessels”
  - Engine manufacturers request for aligning with EN590 on-highway Diesel fuel specifications was not followed up, even the limited set of specifications for Diesel fuel in Annex II does not apply to NRMM
  - Issues on geographic availability of 10/20 ppm S fuel (National derogations) in EU27
  
- Gas fuel: Gas engines to be included into a next review of 97/68/EC

# Biofuels

- 2009/30/EC
  - Allows Member States placing on the market of Diesel fuel with >7% FAME
  - Encourages CEN “[...] to continue working rapidly on a standard allowing the blending of higher levels of biofuel components into diesel and, in particular, to develop a standard for ‘B10’.”
- Concerns on vessels operating with an ill-defined and broad variety of Gasoil/Diesel/Biodiesel blends which might be incompatible with Stage IIIB and IV engine and aftertreatment technology
  - Example RCD: <B10 fuel incompatibility with nitrile rubber fuel hoses

# Biofuels

- Issues for engine manufacturers
  - Specifications: Clearly defined qualities demonstrated to be compatible with Stage IIIB/IV engine and aftertreatment technology
  - Demonstrated microbial and thermal mid-term stability
  - Availability of consistent qualities across all of EU27
- Other qualities than B7 will require individual manufacturers' approval



*WWW.EUROMOT.EU*

*WELCOME to EUROMOT online: your eBookmark for engine power worldwide*





**2011**  
**YEARS**  
Promoting Engine in Society

