

Marintec China 2009

Life-cycle Costs – The Impact of Fuel and Emissions

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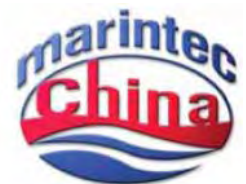
BW Fleet Management AS, Oslo



ENERGY CONSERVATION



- **Sea transport is efficient transportation**
- **The shipping industry must contribute with its share to reduce emissions and minimize negative impacts on the environment**





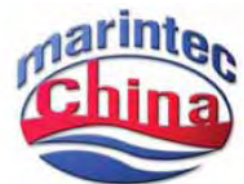
ENERGY CONSERVATION



- **The shipping industry cooperates with external bodies**
 - Classification societies
 - Authorities/regulatory bodies
 - Universities and research institutes

- **Coordinated activities**

- **Sponsorships for research and development**





ENERGY CONSERVATION



- **The shipping industry welcomes initiatives to reduce impacts on the environment**
- **New regulations are required as these set equal standards for the entire industry**
- **International regulations – not regional**

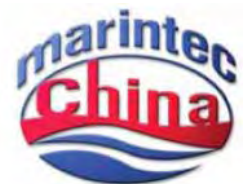




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- **Measures to reduce emissions need to be practical and easy to understand**
- **Equipment must be robust and not require cumbersome operational procedures and maintenance**
- **Requirements to documentation for compliance need to be simple to avoid additional bureaucracy**
- **Increased costs are likely to affect end users but fuel saving holds a potential for balancing some of the costs**

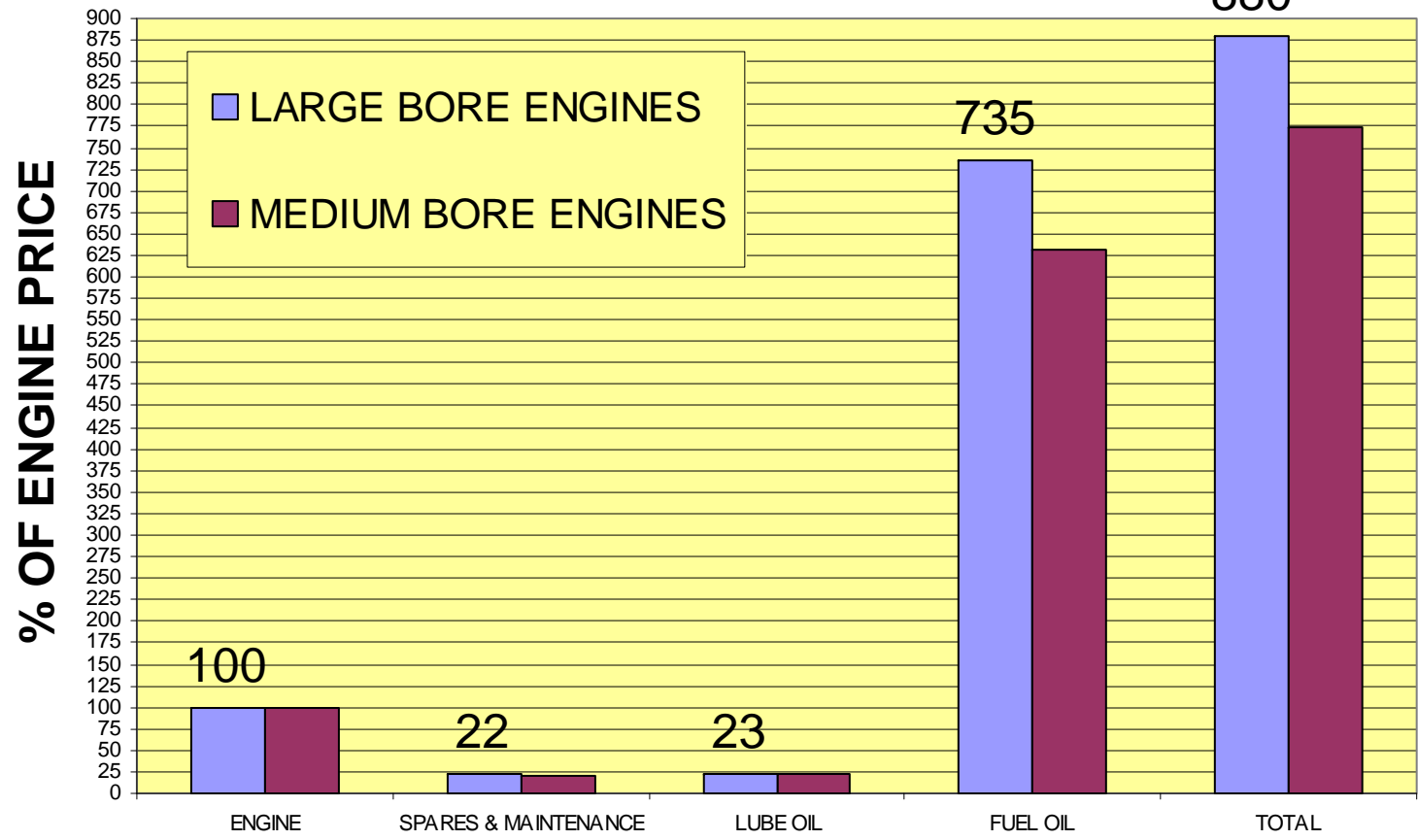




FUEL COST

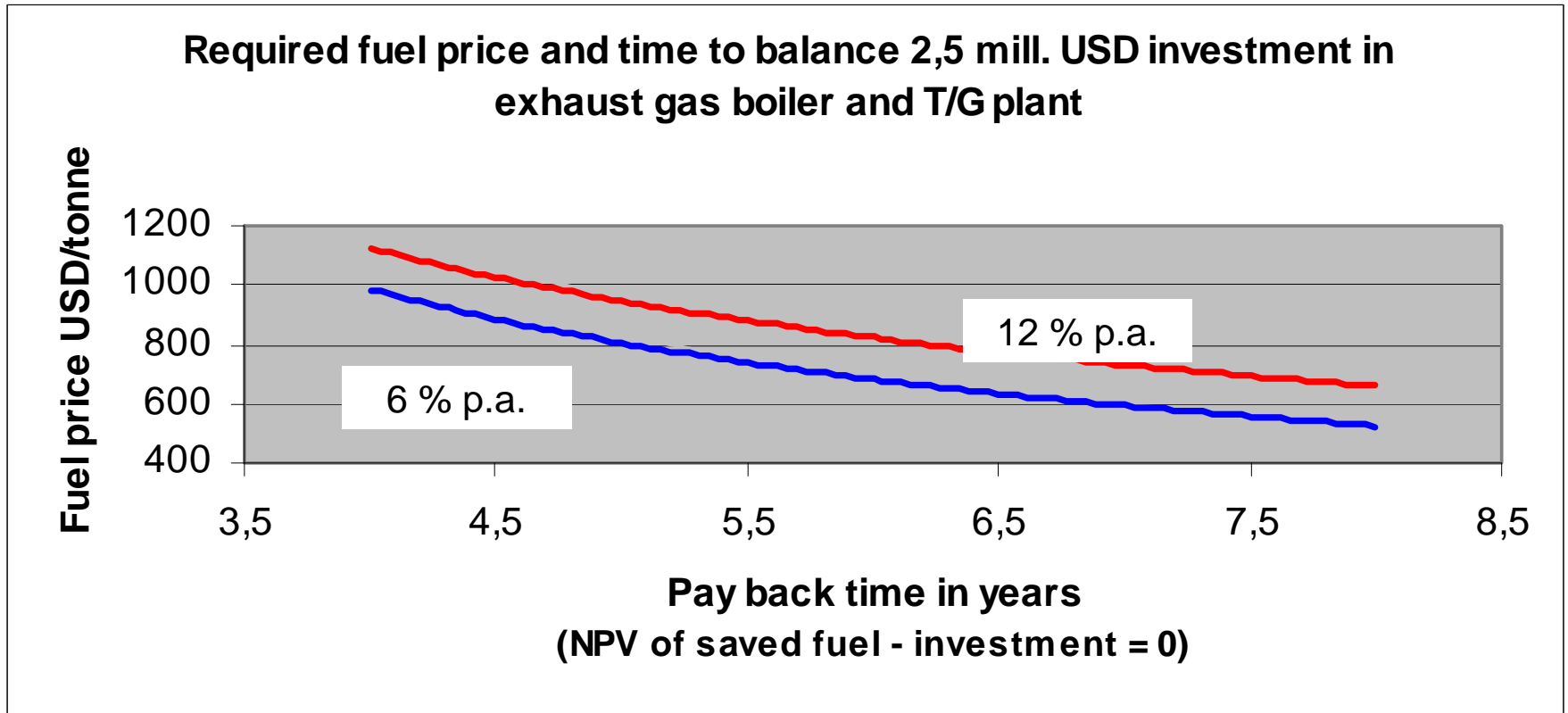


MAIN ENGINES, LIFE CYCLE COST (16 YEARS)





EXHAUST GAS HEAT RECOVERY



Case: Average electric load 500 kW for 280 days annually



ENERGY CONSERVATION



Thank you!

