

# ME-LGI Engines

Liquid Gas Injection – Methanol and LPG



Engineering the Future – since 1758.

**MAN Diesel & Turbo**



# The ME-LGI Concept

## Liquid Gas Injection Engine

### The ME-LGI concept

The ME-LGI concept is an entirely new concept that can be applied to all MAN Diesel & Turbo low-speed engines, either ordered as an original unit or through retrofitting. With two new injection concepts, the ME-LGI greatly expands the company's dual fuel portfolio and enables the exploitation of more low-flash-point fuels such as methanol, ethanol, dimethyl-ether (DME) and LPG.

The new engine benefits from well-proven electronic controls that also encompass the fuel being injected by a so-called Booster Fuel Injection Valve. This innovative fuel booster, specially developed for the ME-LGI engine, ensures that a low-pressure, fuel-gas supply system can be employed, significantly reducing first-time costs and boosting reliability.

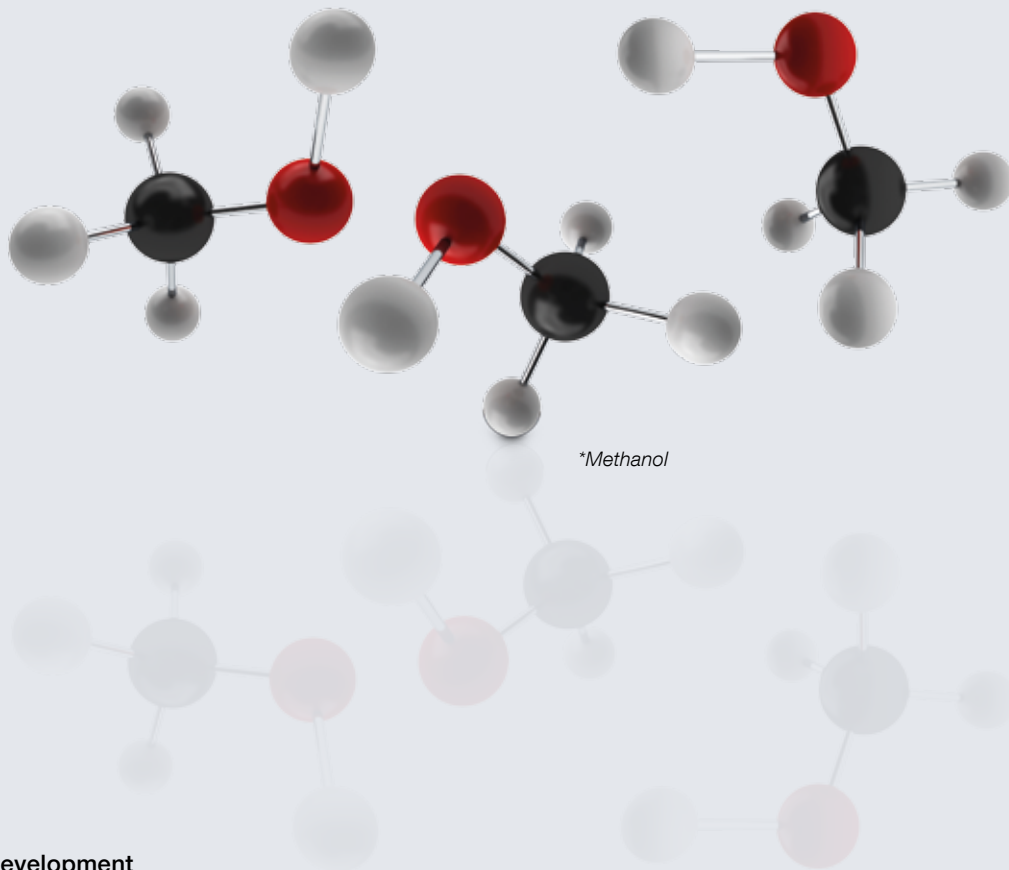
With increasing fuel prices and upcoming shipping regulations, MAN Diesel & Turbo has identified the need to develop an engine that enables ships to run on alternative fuels with enhanced environmental benefits. In this respect, the ability of the ME-LGI engine to run on sulphur-free fuels offers great potential for ship operation within SECA zones.

#### Expected emission reductions\*

	NO <sub>x</sub>	SO <sub>x</sub>	PM	CO <sub>2</sub>
LNG	20-30%	90-97%	90%	23%
LPG	15-20%	90-97%	90%	20%
MeOh	> 30%	90-97%	90%	NA

*\*Compared to the Tier II engine operating on HFO, conventional fuel valve and HFO pilot oil.*





### ME-LGI development

MAN Diesel & Turbo introduced its dual fuel, gas-injection ME-GI engine – for which it immediately received orders – in late 2012, confirming the growing market demand to have the option to run ships on LNG as well as HFO in the face of increasing fuel prices. Owing to the market interest, the company has now extended its dual fuel engine programme with an ME-LGI unit that can run on alternative low flashpoint liquid fuels.

Methanol and LPG carriers have already operated at sea for many years and many more LPG tankers are currently being built as the global LPG infrastructure grows. With a viable, convenient and comparatively cheap fuel already on board, it makes sense to save time for bunkering by using a fraction of the cargo to power the vessel with an important side benefit being the environmental benefits. In terms of emissions, MAN Diesel & Turbo states that it is already offering a Tier III compatible ME-LGI version. Both EGR and SCR solutions are available.

MAN Diesel & Turbo already reports significant interest in the ME-LGI engine and has already confirmed an order for a series of 50,000 dwt methanol carriers, each powered by an MAN B&W ME-LGI main engine running on methanol.

MAN Diesel & Turbo's experience with two-stroke, dual fuel engines operating on NG and LPG stretches back to the 1990s. As such, we have long been prepared for this market development and feel uniquely poised to deliver the optimal solutions.

The company states that it expects all of its existing MAN B&W two-stroke engines to be retrofittable – in a cost-efficient manner – to operation according to the LGI concept.



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