

# Market Update Note



3 February 2021

## Optimised L21/31 Mk. 2 engine design with improved fuel efficiency

### The MAN L21/31 Mk. 2 GenSet optimisation makes it a suitable choice for multiple applications

At MAN Energy Solutions, we aim at accommodating the market needs and requests from customers in our engine designs. We are therefore pleased to announce the upgraded L21/31 Mk. 2 engine with improved fuel efficiency throughout the load range without additional production costs.

The efficiency of the well-known L21/31 engine type has been improved by optimising:

- compression ratio
- injection timing and duration
- fuel nozzle configuration
- turbocharger matching
- air flow

Another important benefit is an increased flexibility in the choice of turbocharger that may reduce purchasing costs and the required installation space.

The result of the engineering is one engine designed and optimised for multiple applications:

- L21/31 Mk. 2 for diesel-electric propulsion and stationary plant applications
- L21/31 Mk. 2 part-load optimised (PLO) for auxiliary engine operation

#### Diesel-electric propulsion and stationary plant applications

An improvement of fuel efficiency by up to 2.5% in the entire power range obtained without increasing production costs makes the engine the optimal choice for diesel-electric propulsion or stationary power plant applications.

The red curve in Fig. 1 shows the improved SFOC performance values.

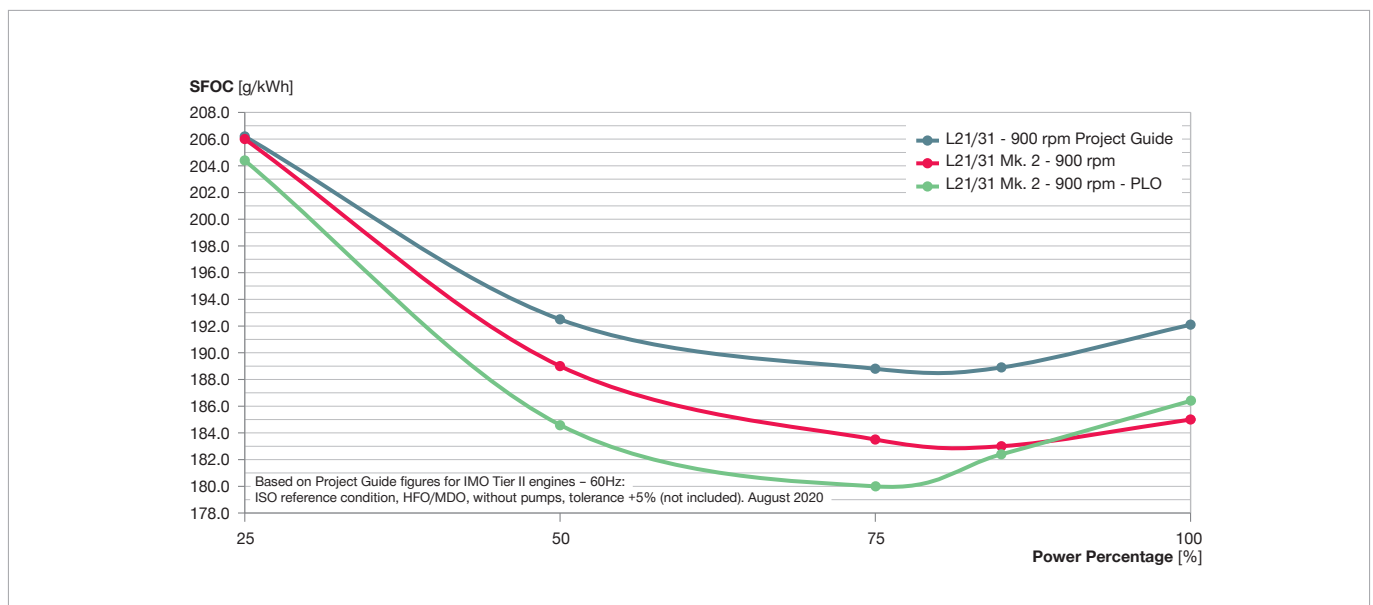


Fig. 1: Improved performance values for diesel-electric propulsion and stationary plant applications (red curve) and for auxiliary engine operation (green curve).

# Market Update Note



## MAN GenSet with part-load tuning is the market leader

Thanks to an optimisation of turbocharger matching and operating conditions, SFOC has been reduced by up to 5% in the part-load area.

- Part-load area covers the power range from approx. 40-65% MCR
- Part-load optimisation is recommended for GenSets which often run below 75% MCR

The green curve in Fig. 1 shows the improved performance values for the engine with part-load tuning. Part-load tuning is available as pre-sale for newbuildings and as a retrofit package for MAN GenSets in service.

## Reduced installation length

The MAN L21/31 Mk. 2 GenSet is a single unit on a tailored and integrated base frame, complete with alternator, engine, and built-in auxiliary systems.

The upgraded engine design reduces the installation length of the GenSet by more than half a metre. A reduction made possible by a shortened alternator, new flywheel and

flywheel housing, and the new turbocharger arrangement shown in Fig. 2.

The L21/31 Mk. 2 engine will be available in the next engine programme which will be released soon.

Furthermore, the Mk. 2 engine will be the new standard configuration within our DSO system.

For further details about our marine GenSet click here: [www.man-es.com/marine/products/four-stroke-engines/genset](http://www.man-es.com/marine/products/four-stroke-engines/genset)

Questions regarding this Market Update Note can be directed to our Two-Stroke Promotion & Customer Support, at [rasmus.bidstrup@man-es.com](mailto:rasmus.bidstrup@man-es.com)

For more details:

### MAN Energy Solutions

Teglholmegade 41

2450 Copenhagen SV, Denmark

Phone +45 33 85 11 00

[www.marine.man-es.com](http://www.marine.man-es.com)

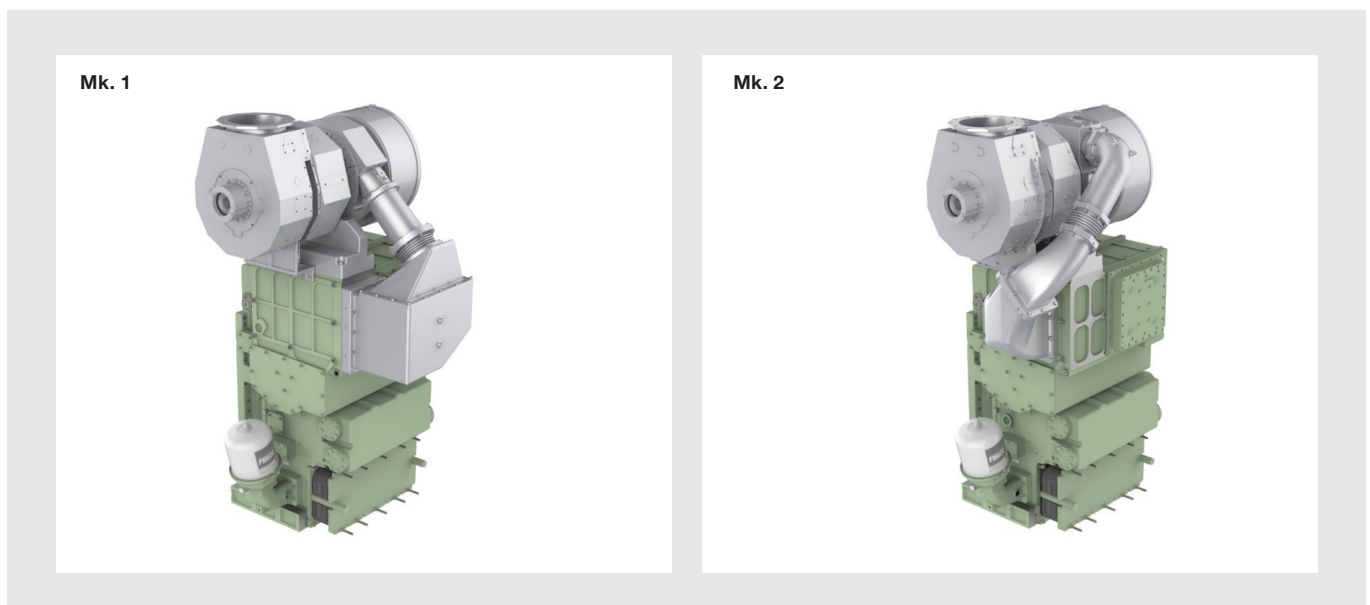


Fig. 2 Original Mk. 1 design and optimised Mk. 2 front-end arrangements