

Scotty – Core Noble Part

High Efficiency DC –DC on Vehicles is a Big Plus +



A way of improving efficiency with diesel engines, is where engine excess torque can be used to generate electrical energy and charge the battery. Minimizing the brake specific fuel consumption is by shifting the engine load into a more efficient area while maintaining the same engine speed.

In the example on right, the vehicle is moving at a constant speed. The vehicle speed translates in a point of engine torque (100 Nm) and speed (2500 rpm). The engine efficiency in this operating point, 455 g/kWh, is far from optimal. By increasing the engine torque to 250 Nm we decrease the brake specific fuel consumption to 320 g/kWh. The excess torque (150 Nm) will be compensated by the electric machine (-150 Nm) which will run in generator mode and produce electrical energy.

