

MP48DF Diesel Gas



Dual-Fuel ECU is fitted onto a standard diesel engine, which operates unchanged, except power is generated by mostly clean natural gas.

A measured quantity of natural gas is mixed with the air just before it enters the cylinder and compressed to the same levels as the diesel engine to maintain efficiency.

The natural gas mixture does not ignite spontaneously under compression, so with dual fuel ECU we continue to inlet a small quantity of diesel fuel to ignite the main charge of gas and air.

Natural gas burns cleaner than diesel due to its inherently low carbon content.

With natural gas replacement of the diesel we can obtain:

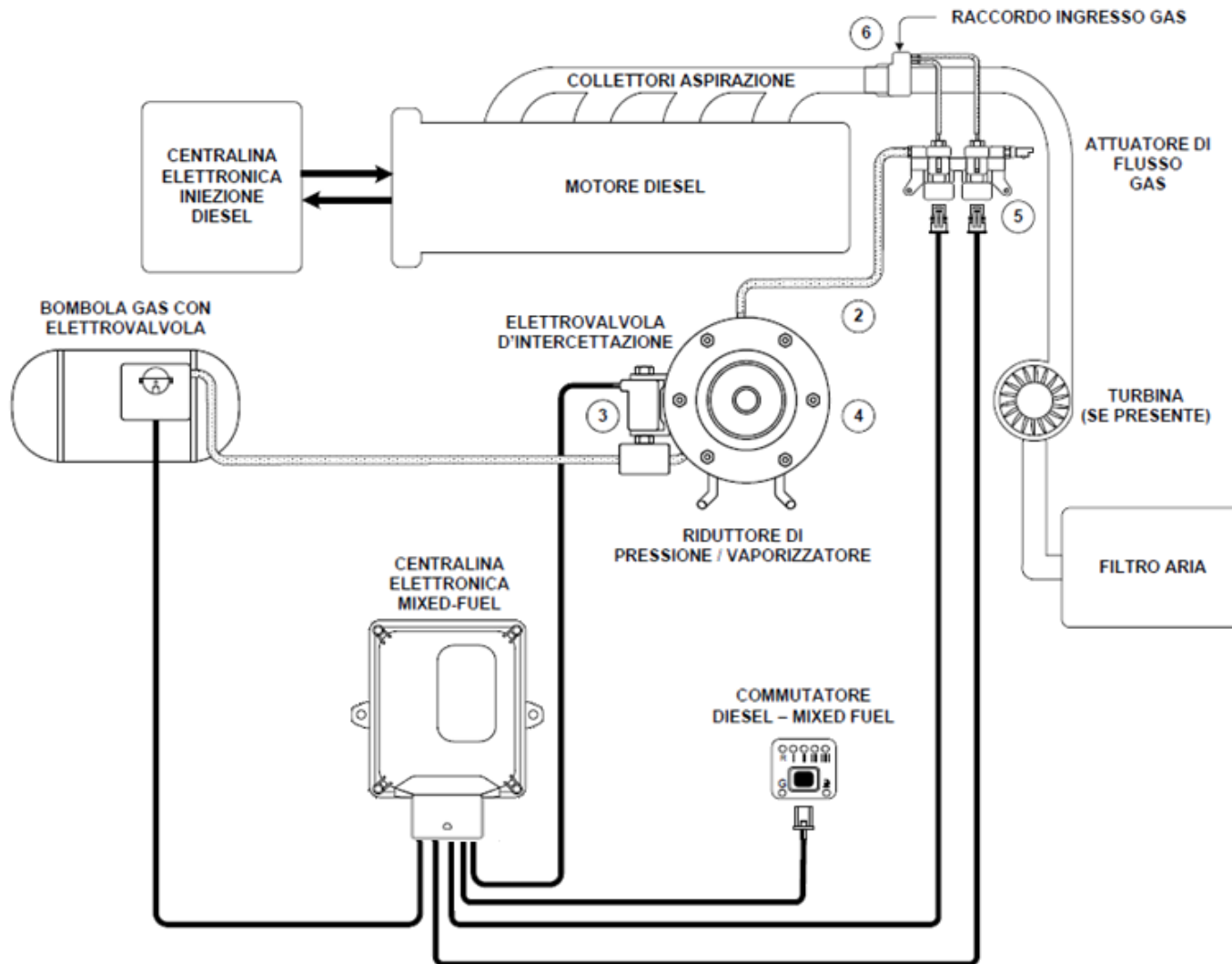
- CO2 emissions reduction.
- Particulate reduction.
- Equivalent performance.



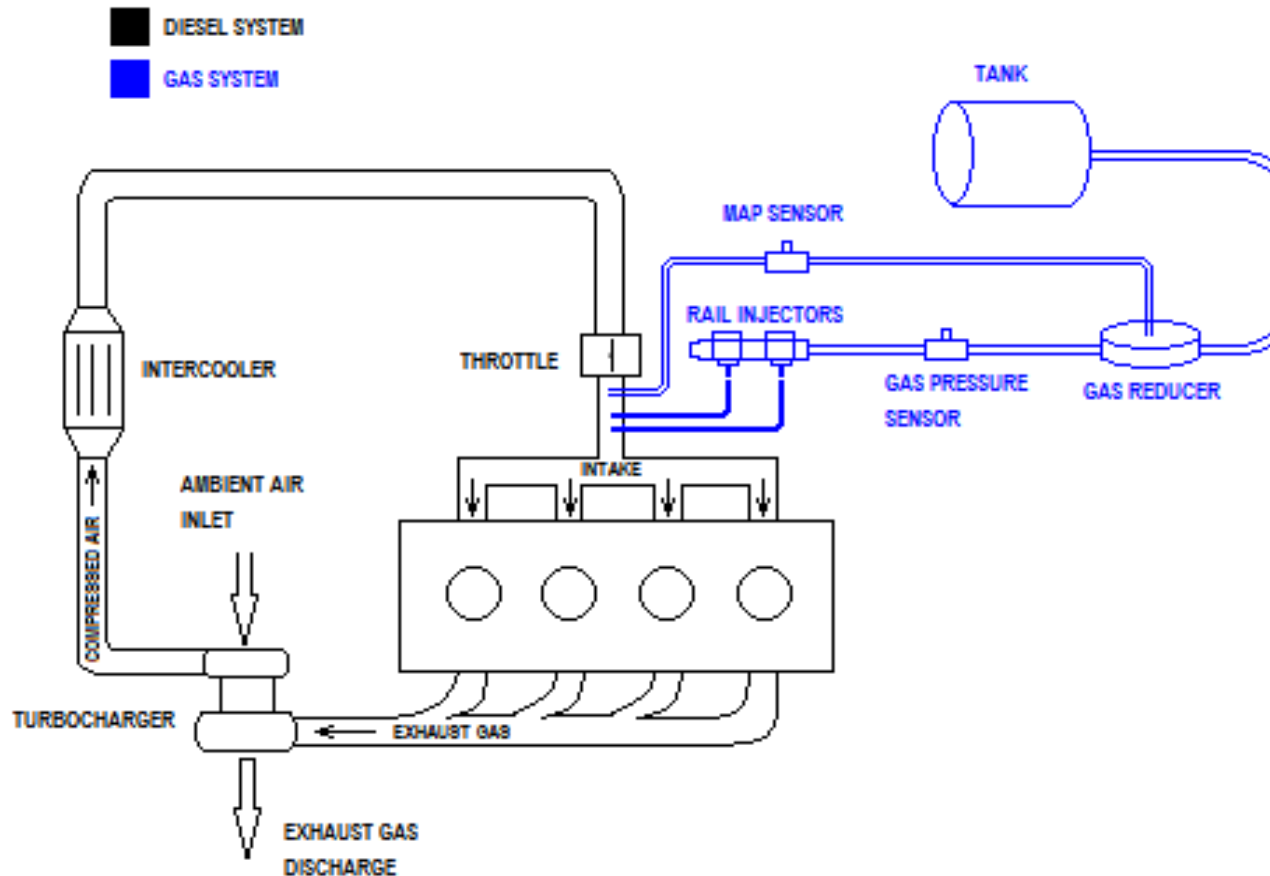


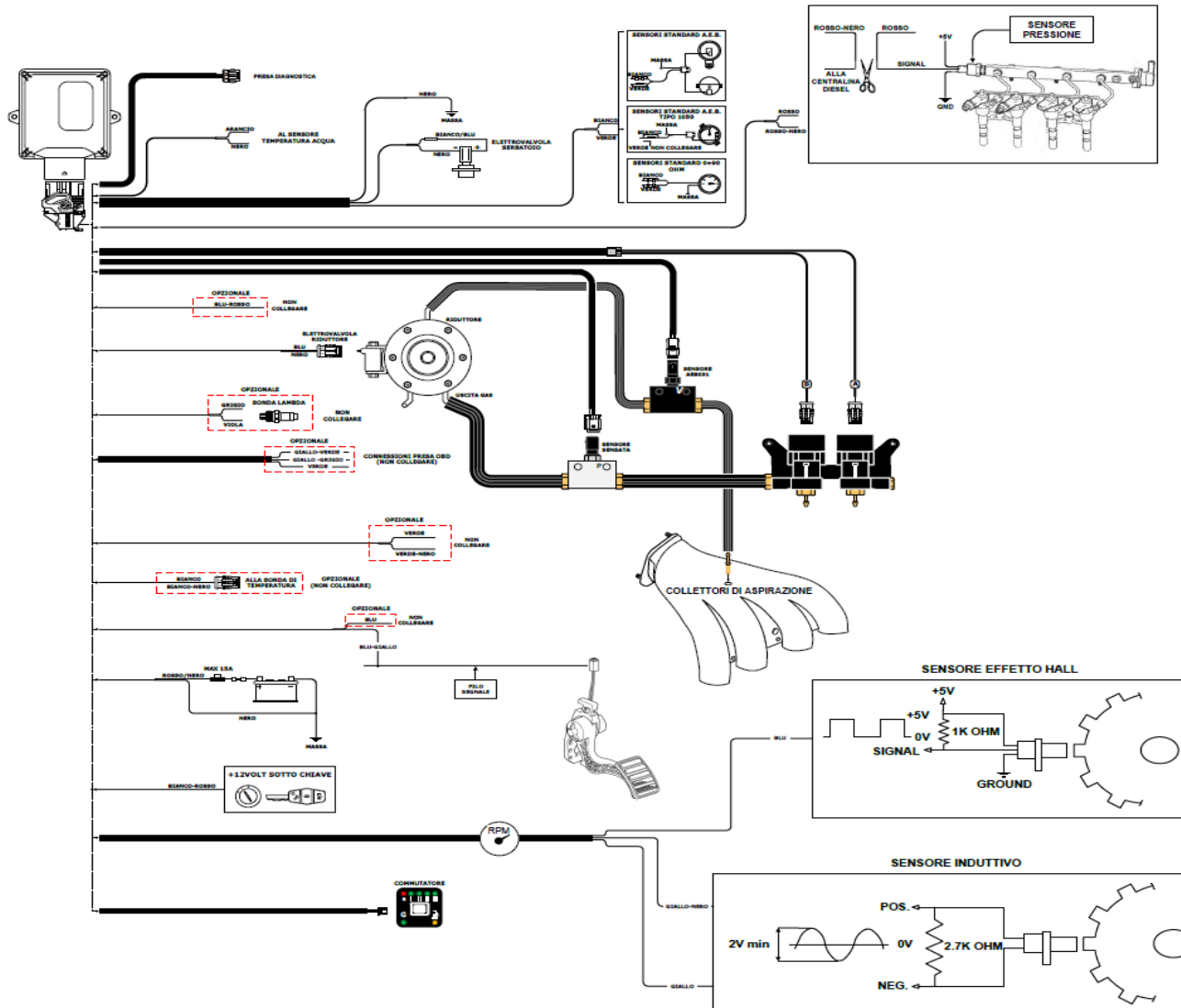
- Injection system for adding gas to diesel into the manifold intake (by usage of injectors).
- Reading of a wide band lambda sensor to get Air Fuel Ratio (λ title).
- Common rail pressure sensor emulation to reduce diesel consumption.
- Exhaust gas temperature detection.

- Battery voltage: 12V
- Common rail engine with diesel pump electronically controlled.
- Analog accelerator pedal signal (within range 0÷5V or 0÷10V).
- Engine speed signal from VRS (variable reluctance sensor) or Digital Hall effect sensor (within 0-5V range) related to engine rotation (i.e. from crankshaft, camshaft,...).
- OBD connection (usable with our AEB Tester) or any other tools (i.e. original connection software) for checking error presence and resetting it.
- Analog sensor on the fuel high pressure rail.
- Air-fuel ratio (AFR) information for better calibration.



Gas has to be injected into manifold intake before the split for each cylinder and after air throttle body.



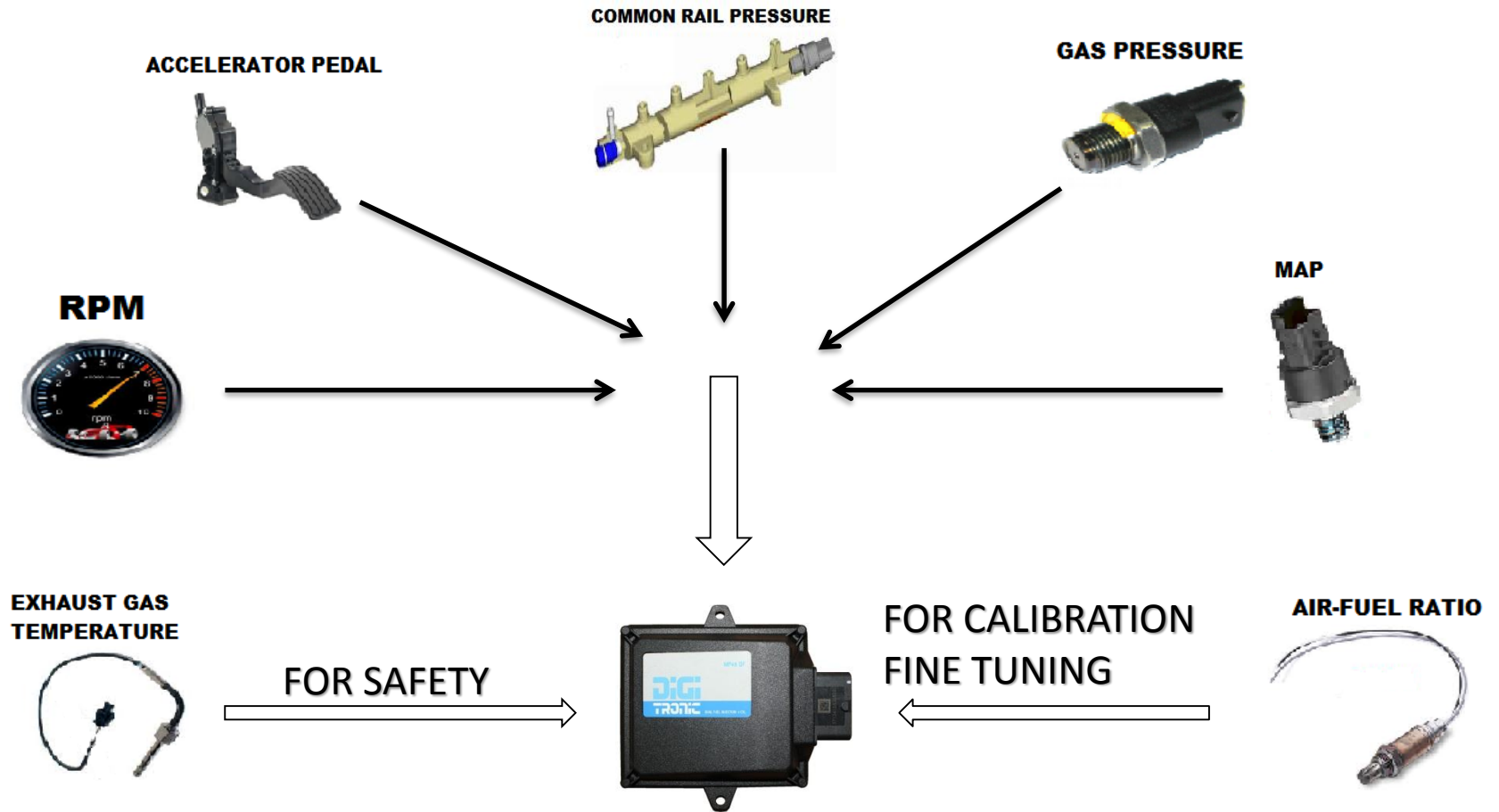


PATENT PENDING

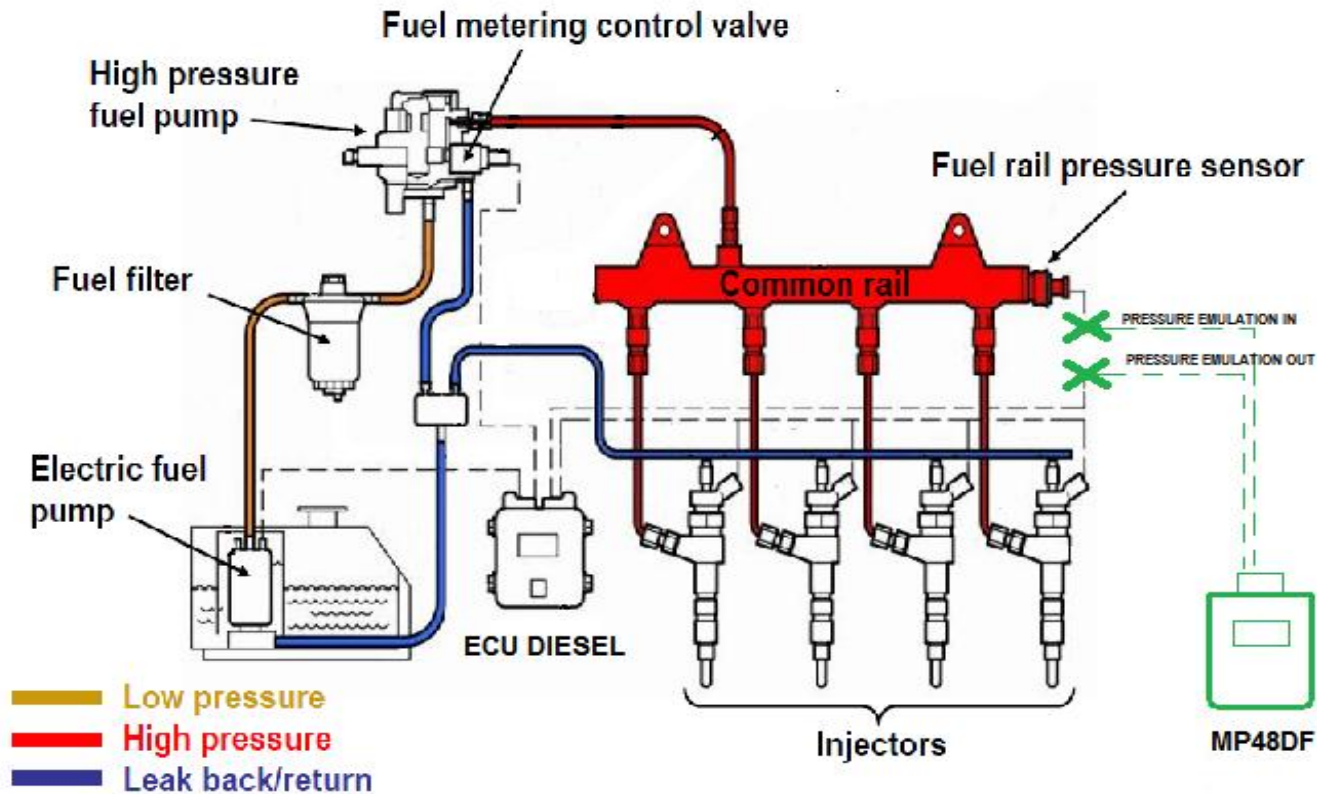


- Possibility to obtain parameters through OBD communication.
- Possibility to manage analogic sensors.
- Injection time compensation depending on manifold and gas pressure.
- Reading and emulation of original λ probe (linear).
- Reading of exhaust gas temperature through PT200 probe.
- Diesel substitution based on pressure emulation on common rail system.





- Rail pressure emulation used to reduce diesel mass injected



Test made on Fiat Bravo 1.6 105cv Euro4 converted to CNG

❑ Medium consumption diesel only: 18 Km/l

❑ Medium consumption of diesel in dual fuel mode: 30 Km/l

❑ Gas substitution percentage: 40 %

❑ Fuel cost - only diesel: 0,1 €/Km

❑ Fuel cost – diesel + CNG: 0,08 €/Km

❑ Saving percentage in € : 20%



Ref. Italian diesel and CNG cost



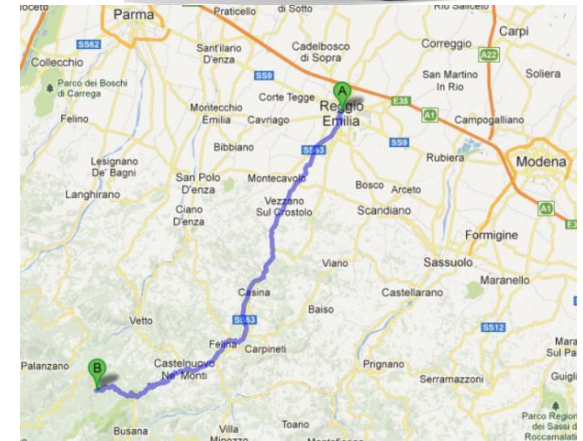
Test made on Iveco Daily 2.3 Euro3 converted to CNG

- ❑ Medium consumption diesel only: 8,68 Km/l
- ❑ Medium consumption of diesel in dual fuel mode: 18,33 Km/l
- ❑ Gas substitution percentage: 53 %

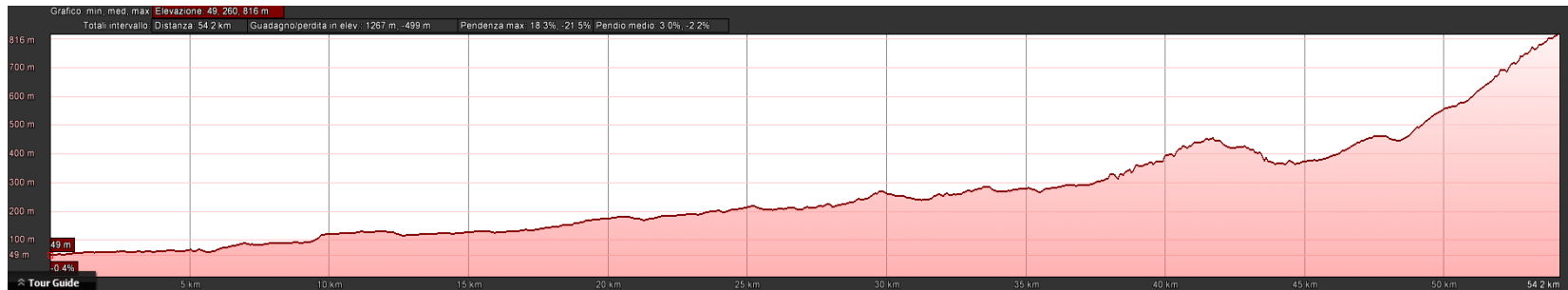


Test made on Iveco Daily 2.3 Euro3 converted to CNG

- ❑ Medium consumption diesel only: 8,68 Km/l
- ❑ Medium consumption of diesel in dual fuel mode: 18,33 Km/l
- ❑ Gas substitution percentage: 53 %



Test done from point A to point B and return 800 mt gap



Thank you

