

CNG600 – High Efficient Monofuel CNG Light Duty Vehicle

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Alternative Propulsion Systems and Energy Carriers

Austrian, European and global R&D- and demonstration projects,
research institutions and funding programs

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in cooperation with



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- ▶ Motivation
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 - ▶ Test Vehicle
- ▶ Real-world Measurement Results
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Motivation

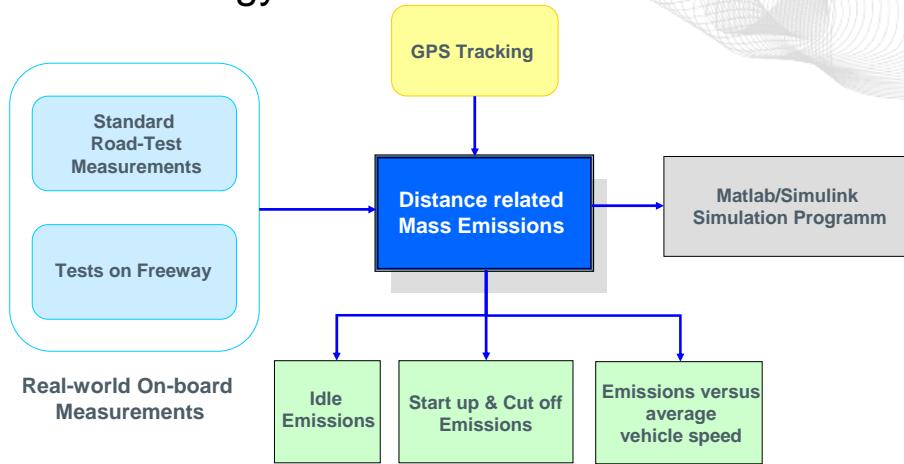
- **Road traffic knows three major emission problems:**

- ▶ Particulate matter (PM)
- ▶ Nitrogen dioxide (NO₂)
- ▶ Carbon dioxide (CO₂)

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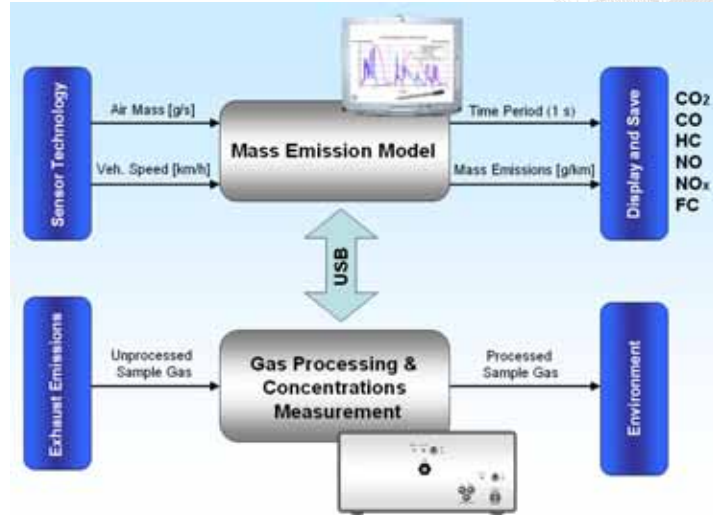
Methodology



On-board Measurement System & Test Vehicle



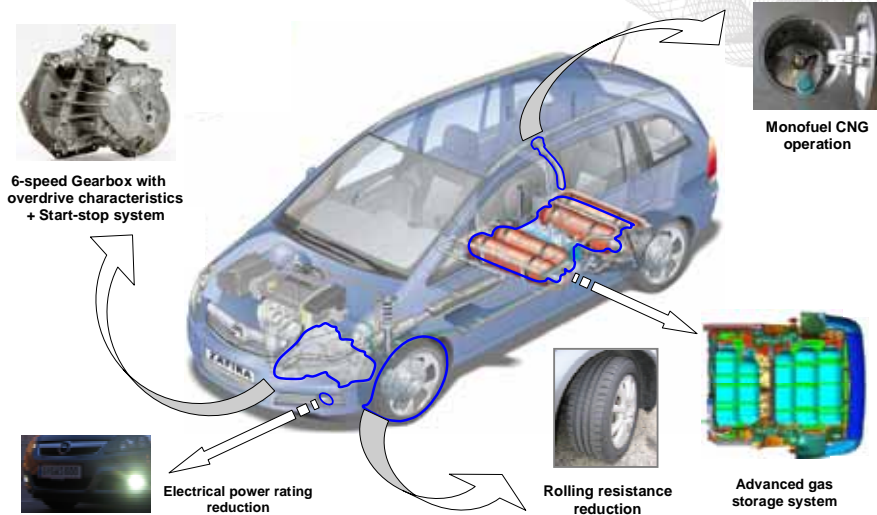
On-board Measurement System



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Rethinking Propulsion.

Test Vehicle



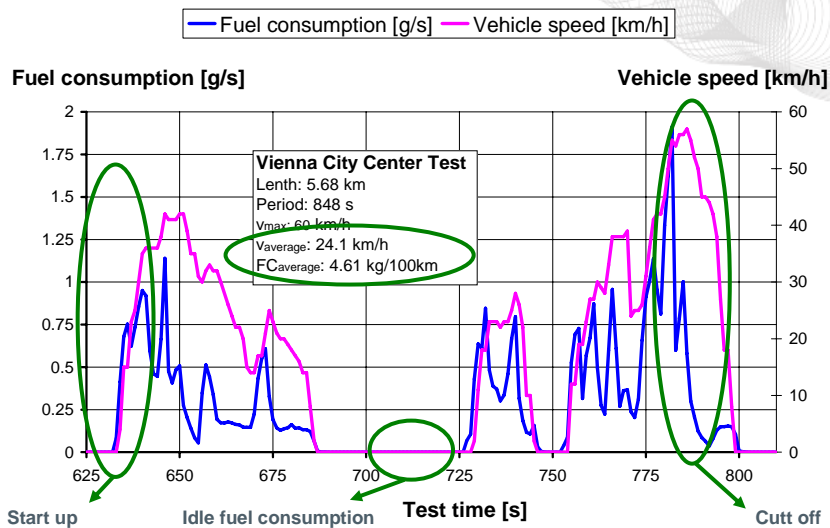
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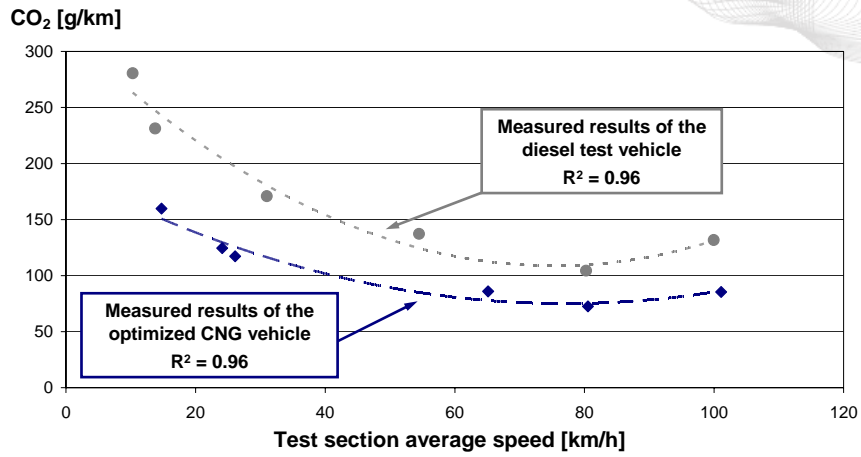
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Generation of Emission Rates from Real-time Data



Real-world CO₂ Measurement Results and Benchmarking with Diesel Powertrain



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Real-world Measurement Results

Regulated Exhaust Emissions			
	CO [g/km]	HC [g/km]	NO _x [g/km]
CNG URBAN	0.71	0.12	0.05
DIESEL URBAN	0.42	0.31	1.15
CNG FREEWAY	1.27	0.07	0.23*
DIESEL FREEWAY	0.05	0.02	0.18

* NO_x equivalent from NO measurement

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Conclusions

- Real-world emission performance investigated with a new PEM.
- CO₂ emission values of the monofuel CNG around 30% lower than the emissions of a regular diesel vehicle.
- NO_x emissions of the CNG car at city driving one order of magnitude lower than the emissions of the diesel vehicle. On the freeway the NO_x emissions on the same level.
- CO and HC emissions of the diesel car at the freeway section significantly lower.



Thank you for your attention!



Rethinking Propulsion.