

PROJECT

HDGAS

Heavy Duty Gas Engines integrated into Vehicles

Funding: European (Horizon 2020)

Duration: May 2015 - Apr 2018

Status: Complete

Total project cost: €27,791,129

EU contribution: €19,890,588



Call for proposal: H2020-GV-2014

[CORDIS RCN : 194858](#)

Objectives:

The overall objective of HDGAS is to provide breakthroughs in LNG vehicle fuel systems, natural gas and dual fuel engine technologies as well as aftertreatment systems. The developed components and technologies will be integrated in up to three demonstration vehicles that are representative for long haul heavy duty vehicles in the 40 ton ranges. The demonstration vehicles will:

1. comply with the Euro VI emission regulations
2. meet at minimum 10% CO₂ reduction compared to state of the art technology
3. show a range before fuelling of at least 800 km on natural gas;
4. be competitive in terms of performance, engine life, cost of ownership, safety and comfort to 2013 best in class vehicles.

Three HDGAS engine concepts/technology routes will be developed:

- A low pressure direct injection spark ignited engine with a highly efficient EGR system, variable valve timing comprising a corona ignition system. With this engine a stoichiometric as well as a lean burn combustion approach will be developed. Target is to achieve $\geq 10\%$ higher fuel-efficiency compared with state of the art technology;
- A low pressure port injected dual fuel engine, a combination of diffusive and Partially Premixed Compression Ignition (PPCI) combustion, variable lambda close loop control and active catalyst management. Target is to achieve $> 10\%$ GHG emissions reduction compared with state of the art technology at a Euro VI emission level, with peak substitution rates that are $> 80\%$;
- A high pressure gas direct injection diesel pilot ignition gas engine, that is based on a novel injector technology with a substitution rate $> 90\%$ of the diesel fuel. Target is to achieve same equivalent fuel consumption ($< 215\text{g/kWh}$) and 20% lower GHG emissions than the corresponding diesel engine.

HDGAS will develop all key technologies up to TRL6 and TRL7 and HDGAS will also prepare a plan for a credible path to deliver the innovations to the market.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Avl List Gmbh

Address:

Hans-List-Platz
8020 Graz

Austria

Organisation Website:

<http://www.avl.com>

EU Contribution: €2,433,461

Partner Organisations:

Volvo Bus Corporation

Address:

Fästningsvägen 1
40508 Gothenburg
Sweden

Organisation Website:

http://www.volvo.com/bus/global/en-gb/home_new.htm

EU Contribution: €1,522,150

Rheinsche Bahngesellschaft Aktiengesellschaft

Address:

LIERENFELDER STRASSE 42
40231 DUSSELDORF
Germany

Organisation Website:

<http://www.ricardo.com>

EU Contribution: €1,170,750

Technische Universitaet Graz

Address:

Rechbauerstrasse
8010 Graz
Austria

Organisation Website:

<http://www.tugraz.at>

EU Contribution: €237,750

Robert Bosch GmbH

Address:

Robert-Bosch Platz
70839 Gerlingen-Schillerhoehe
Germany

Organisation Website:

<http://www.bosch.com>

EU Contribution: €2,416,313

Iveco Espana SI

Address:

Avenida De Aragon
28022 Madrid
Spain

EU Contribution: €839,125

Nederlands Organisation For Applied Scientific Research**Address:**

Schoemakerstraat 97
6060 DELFT
Netherlands

Organisation Website:

<http://www.tno.nl>

EU Contribution: €230,733

Hochschule Esslingen**Address:**

KANALSTRASSE 33
73728 ESSLINGEN
Germany

Organisation Website:

<http://www.hs-esslingen.de>

EU Contribution: €355,201

Fpt Industrial Spa**Address:**

Via Puglia 15
10156 Torino To
Italy

EU Contribution: €3,249,814

Man Nutzfahrzeuge Ag**Address:**

Dachauer Strasse 667
80995 MUENCHEN
Germany

EU Contribution: €1,876,788

Daimler Ag**Address:**

Mercedesstrasse
70327 Stuttgart
Germany

Organisation Website:

<http://www.daimler.com>

EU Contribution: €1,057,359

Idiada Automotive Technology Sa**Address:**

L Albornar
43710 Santa Oliva
Spain

EU Contribution: €1,341,463

Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft M.b.h.**Address:**

Inffeldgasse 21a / 1. Stock
8010 GRAZ
Austria

Organisation Website:

<http://www.v2c2.at>

EU Contribution: €87,369

Uniresearch**Address:**

DELFTTECHPARK 37 J
2628 XJ DELFT
Netherlands

Organisation Website:

<http://www.uniresearch.nl>

EU Contribution: €169,181

Sag Motion GmbH**Address:**

LEND 25
5651 LEND
Austria

EU Contribution: €1,786,558

Politecnico Di Milano**Address:**

Piazza Leonardo Da Vinci 32
20133 Milano
Italy

Organisation Website:

<http://www.polimi.it>

EU Contribution: €311,188

Westport Power France**Address:**

Rue De La Republique
69002 Lyon
France

EU Contribution: €270,813

Dinex Ecocat Oy**Address:**

Vihtavuorentie 162
41331 Vihtavuori
Finland

EU Contribution: €188,475

Borgwarner Ludwigsburg GmbH**Address:**

MOERIKESTR 155
71636 LUDWIGSBURG
Germany

EU Contribution: €112,350

Ita-Suomen Yliopisto**Address:**

Yliopistonranta 1 E
70211 Kuopio
Finland

EU Contribution: €233,750

Technologies:

Road vehicle propulsion
Heavy duty engine design for alternative fuels

Development phase: Demonstration/prototyping/Pilot Production

STRIA Roadmaps: Low-emission alternative energy for transport

Transport mode: Road transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Decarbonisation

Geo-spatial type: Other