

GASON

Gas-Only internal combustion engines

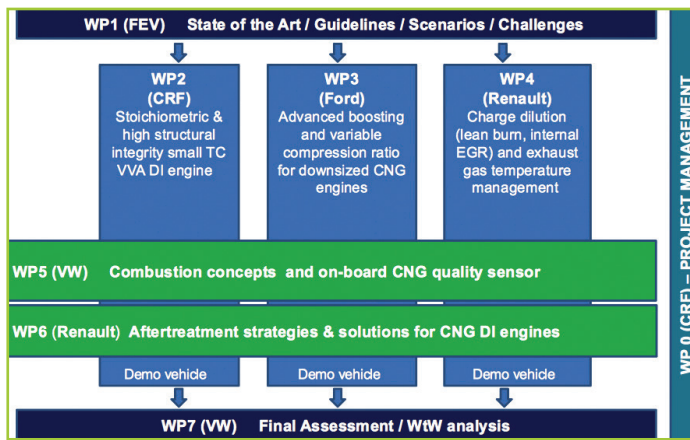


MOTIVATION AND OBJECTIVES

In order to realise sustainable mobility in Europe, future vehicles for road transport have to be significantly more efficient by 2020+. A considerable contribution to this target has to come from the energy efficiency improvement of the powertrain. On the other hand, a strong de-carbonisation process has been launched to drive the European transport sector to the 2050 target and the use of Low Carbon Alternative Fuels, like Natural Gas, plays a fundamental role to accelerate this process.

In this context, the GASON project aims to develop advanced CNG only, mono-fuel engines able to comply with the “2020” CO₂ emission targets, claiming the 20% CO₂ emission reduction with regard to the current best in class CNG vehicle segment, to fulfil the new homologation cycle and to guarantee a low fuel consumption in real driving conditions.

PROJECT PLAN, MILESTONES AND DELIVERABLES



TECHNICAL APPROACH

Starting from the experience gained in the previous EU FP7 funded INGAS project (www.ingas-eu.org), GASON is based on **3 parallel technology ways** that lead to a full development of demonstrator vehicles, all based on the integration of the gaseous direct injection system developed in the project, and focusing on the direct injection combination with the advanced Variable Valve Actuator VVA system (**WP2**), on an advanced boosting system matched with Variable Compression Ratio (**WP3**) and addressing a lean burn and/or charge dilution combustion approach and exhaust gas temperature control (**WP4**). A key issue of the proposal is represented by the development and application of the direct gaseous injection technology to enhance boosting efficiency at low engine speed with benefit both in terms of performance and CO₂ emission reduction. Alternative combustion concepts, a quality fuel sensor (**WP5**) and advanced after-treatment-solutions (**WP6**) complete the full comprehensive project approach.

ACHIEVEMENTS

Aim of the GASON project is to develop:

- CNG-only mono-fuel engines with improved efficiency and able to comply with post EURO 6 emission targets, the 2020+ CO₂ emissions target and new homologation procedures.
- Innovative injection, ignition and boosting system concepts.
- Advanced exhaust after-treatment system.
- Technological solution to detect the gas-quality composition.
- Non-DI CNG lean burn concept, as a possible future efficiency benchmark based on a Diesel engine.
- Advanced storage system to enable higher driving range equivalent to conventional fuel.

Budget	23.4 M€	Funding	16.7 M€
Duration	42 months	Start	May 2015
DG	Research & Innovation	Contract n°	652816
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Partners	CRF, Ford, Renault, VW, AVL, CEA, UPVLC, Continental, CVUT, Delphi, EMPA, ETH, FEV, IFPEN, Pierburg, Polito, PUT, Ricardo, Schaeffler		
Website	www.gason.eu		

