

LONG RUN

D7.1 – Specs and characteristics of the implemented solutions

Research Innovation Action

EUROPEAN COMMISSION
Grant Agreement No. 874972

HORIZON 2020 PROGRAMME
Topic LC-GV-04-2019
Low-emissions propulsion for long-distance trucks and coaches

Deliverable No.	LONGRUN D7.1 - resubmission	
Related WP	WP7	
Deliverable Title	Specs and characteristics of the implemented solutions	
Deliverable Date	2020-10-30	
Deliverable Type	REPORT	
Dissemination level	Confidential – member only (CO)	
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Approved by	Lukas Virnich	13/12/2021
Status	Final	23/12/2021



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 874972.

Publishable summary

The long-haul transport sector and its heavy-duty vehicles are extensively used in Europe. Heavy-duty vehicles transport 75% of freight over land in Europe. Because of their load capacity and annual mileage, heavy-duty vehicles are also a significant source of greenhouse gas (GHG) emissions in Europe. Hence the reduction of real driving emissions and fuel consumption has become a main societal challenge.

To reduce GHG emissions and contribute to the project's objectives, IRIZAR has proposed to develop a Hybrid vehicle with SotA ICE fueled with HVO, incorporating advanced HCM control module and smart HVAC. The proposed development will aim to achieve a 12% energy saving when compared to the i6s 2018 reference vehicle. Not only that, it will achieve a 12% reduction of CO₂ related the energy savings. All these developments, findings and results will contribute to definition of the inputs-outputs for VECTO adaptations.

The planned activities for this stage of the project have been successfully executed and completed. The main specifications and characteristics of the implemented solutions for the Hybrid vehicle with SotA ICE fueled with HVO have been analyzed and defined. A baseline vehicle has been established and all possible solutions have been studied to fulfil the work package objectives. In addition, initial simulations have been performed to guarantee the selection of the implemented solutions, thus assuring the achievement of the project targets.

According to the initial state of the development of a Hybrid vehicle with SotA ICE fueled with HVO, all specifications and characteristics have been defined and successfully satisfy the project targets up until this point.

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Appendix A – Table of Abbreviations

Symbol / Short name	
ISG/BSG	Integrated stater generator / belt driven starter generator
ADAS	Advanced Driver Assistance Systems
ICE	internal combustion engine
HCM	Hybrid Control Module, Irizar's dedicated Hybrid Control Unit
HCU	Hybrid Control Unit
OBCM	On Board charging manager
ECM	Engine Control Module
TCU	Transmission Control Unit
EBS	Electric Brake System
EPS	Electric Power Steering
BMS	Battery Management System
LV	Low Voltage
HV	High Voltage
ECU	Electronic Control Unit
VECTO	Vehicle Emissions Calculation Tool
GHG	Greenhouse Gas
SotA	State of the Art
HVO	Hydrogenated Vegetable Oil
HVAC	Heating Ventilation and Air Conditioning