PROJECT

z-BURN

Zero-Emission Catalytic Burner for heating in Electric and Hybrid Vehicles

Funding: European (Horizon 2020)

Duration: Jul 2017 - Dec 2017

Status: Complete

Total project cost: €71,429

EU contribution: €50,000

CORDIS RCN : 211381

Objectives:

The increasing popularity of Electric Vehicles (EVs) and Plug-in Hybrid Electric Vehicles (PHEVs) is creating a growing need for auxiliary cabin heaters since the waste heat typically used to heat cabins from Internal Combustion Engines is either not available or insufficient. The need for auxiliary heaters are particularly acute for cold climates - Studies have shown EVs in normal cold climate temperatures (-7 degrees C) suffer a range decrease of up to 60%. However, cabin heating is also a very important issue even in normal temperatures.

Increasing sales of EVs and PHEVs are therefore creating a need for either fuel-operated or electric-powered auxiliary heaters. Current fuel-operated heaters are emission heavy and do not fall within current emissions regulations. Electric heaters draw power from the main battery, depleting vehicle range.

We are Zemission AB, pioneers of a market leading catalytic combustion burner for heaters: ‘z-BURN’. z-BURN offers a market first, multi-fuel, zero-emission burner delivering up to 92% efficiency vs 78% of current solutions. z-BURN delivers 100% reductions of Hydrocarbon and Carbon Monoxide, 94.5% reduction of PM(0.11 mg/km) and 90% reduction of NOx(4.5 mg/km). These levels go far beyond current Euro6 regulations and will easily achieve future emissions regulations. Successful trials with Volvo and Audi have validated z-BURN at TRL6 and market suitability.

Geely (Global Vehicle OEM) is interested in z-BURN for the new Lynk&Co brand PHEVs. With support from Geely’s Innovation Centre CEVT this opportunity will cover 270k units of our overall 500k unit PHEV forecast over 7-yrs. The benefits of Z-BURN are widely appealing to many OEMs for their PHEVs and eventually EVs.

This Phase 1 project will help validate the z-BURN business case and fully define our manufacturing scale-up plan. 5-yr forecasts show: sales of €32m & profits of €18.8m, with ROI of 6.3:1. 7-yr forecasts show: sales of €63.8m & profits of €37.6m with ROI of 13.6:1.

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:

Zemission Ab

Address:
OLE ROMERS VAG 12
223 70 LUND
Sweden

EU Contribution: €50,000

Technologies:

Manufacturing processes
Catalytic combustion burner for heaters

Development phase: Demonstration/prototyping/Pilot Production

STRIA Roadmaps: Transport electrification, Vehicle design and manufacturing

Transport mode: Road transport

Transport sectors: Passenger transport

Transport policies: Societal/Economic issues, Environmental/Emissions aspects

Geo-spatial type: Other