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Workshop - Bilbao – 27.09.2019

Stefan Fries

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faSt and Smart charging solutions for full size Urban hEavy Duty applications

769850-ASSURED-H2020-GV-2017

Project will develop **innovative** heavy-duty and medium-duty **vehicle solutions** with **interoperable charging infrastructure** concepts, enhancing performances, comfort and safety while reducing the TCO and contributing to a competitive and sustainable mobility

Period: October 2017 - September 2021 (4 years)

Project total cost: EUR 23,650 Mio/ **EU contribution:** EUR 18,657 Mio

Partners: 39 partners from 12 countries representing industry, research centres and local governments



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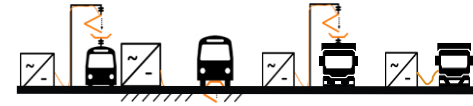


E-Mobility (eLkw + CNG-REX)

Einreichung Genehmigung Start Abschluss



Beginning	Okt. 2017.
Projectmanager	Stefan Fries / EZRPA
Call	H2020, GV-08-2017 boosting the electrification of urban commercial vehicles and their integration with high power fast charging infrastructure
Titel	ASSURED- f<u>A</u>st and <u>S</u>mart charging solutions for full size <u>U</u>Rban <u>h</u>Eavy <u>D</u>uty applications
Partner	IAV (development of REX) ABB distributor of charging station
End	Sept 2021

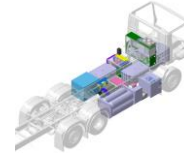


Objectives

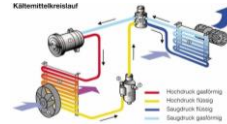


What is our focus?

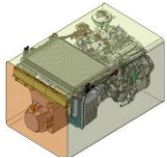
Development of e-drivetrain (combination of BEV + REX)



Optimization of energy-management and cooling-system



Integration of REX-System
(package and energy-management)



Adoption of HVAC system

Development of HMI



Demo at AWM in Munich

Adoption of simulation tools

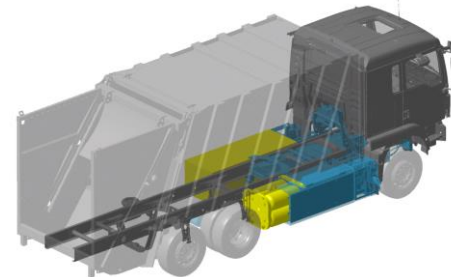
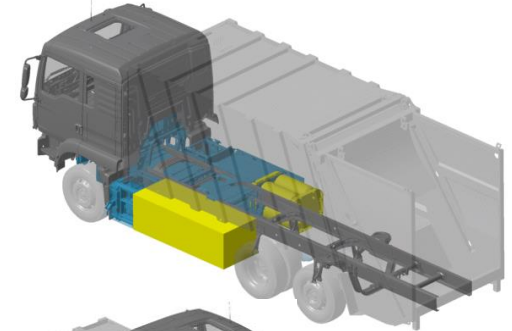
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1. Motivation and goals

- Packaging and design of a Truck optimized for refuse collection
- Design of ideal battery- and REX-size in means of power distribution
- Development and integration of a NG-REX-modul at the truck frame.
- Integration of REX-system to the energy management of the Truck
- Demo use by Abfallwirtschaft (AWM) in Munich.

2. Functionality and features

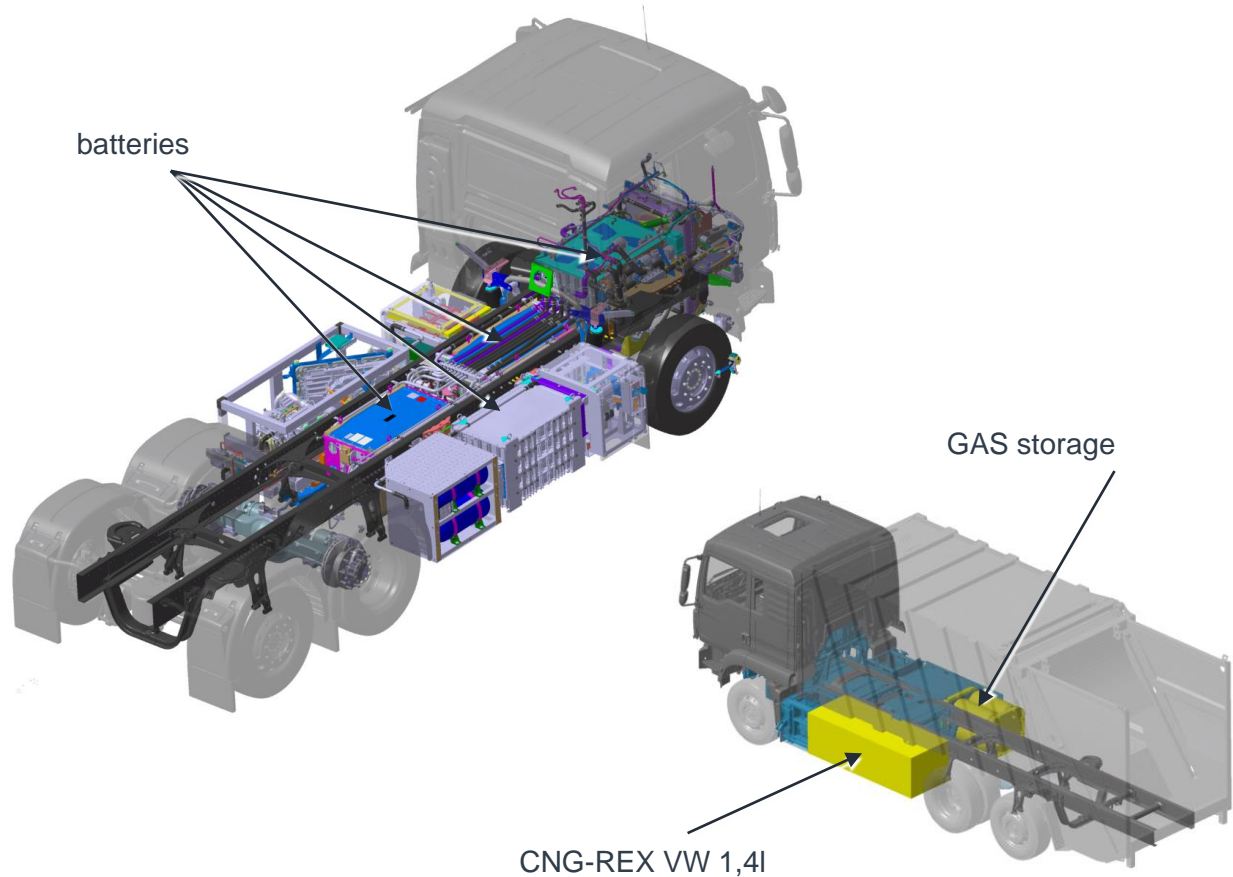
- Drivetrain and energy storage system optimized for refuse collection by combination of Battery and REX
- Increasing of driving range by usage of REX (transport of garbage to dumping ground) combined with refuse collection at zero emission in downtown areas
- Development of a compact and optimized drivetrain (wheelbase and energystorage) to meet customer demands



Packageing

overall view

Technical features	
battery capacity	ca. 150 kWh
REX-power	85 / 50 kW (Peak- / continous)
gas storage capacity	22 kg
propulsion power	240 kW Peak
gross veh. weight	26 t
payload	ca. 10 t
wheelbase	4125 mm
vehicle type	TGM 6x2/4 26t



Current Status

... an overview.

HV components mounted at truck

- Wiring almost finished

Air system packaged and mounted

- Set up finalized

CO₂ cooling system integrated

- Set up finalized

LV-wiring started + functional development close to 100%

- Setup of drive functions finished - ready for application
- LV-wiring will be started within next days

E-Axle

- Delivery planned in KW48



CO₂-cooling unit



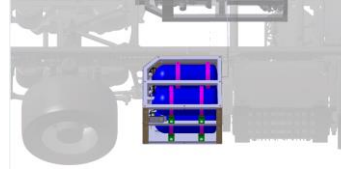
HV-power distribution unit



Air supply

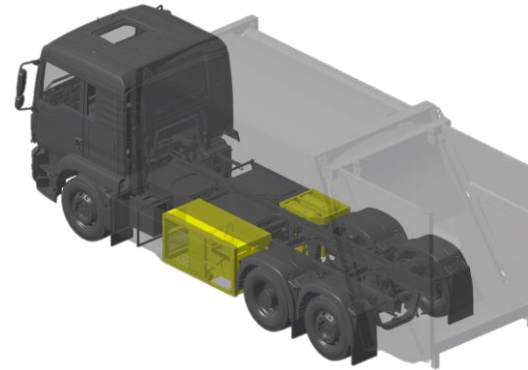
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IAV workpackage



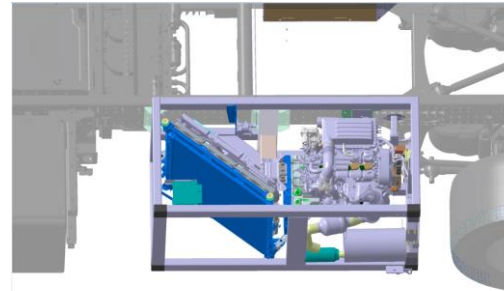
Development of CNG-REX- und CNG-storage-modul

- Components delivered to workshop
 - → VW Motor EA211 1,4l + HEM 80 generator
- Storage module mounted at truck
- First functional tests at test rig passed
- Finalizing of functional development



Next steps (IAV):

- Delivery of REX-module until end of October
- Integration / application to truck's energy management



Project – Milestones

