



REVIVE

Workshop E-Trucks Europe

*A project co-funded by
under the Grant Agreement n.779589*



FUEL CELLS AND HYDROGEN
JOINT UNDERTAKING



Project Overview

- **Call year: 2017**
- **Call topic: FCH-01.7.2017: Validation of Fuel Cell Trucks for the Collect of Urban Wastes**
- **Project dates: 1st of January 2018 – 31th of December 2021**
- **Total project budget: 8,7m €**
- **FCH JU max. contribution: 4,9m €**
- **Partners: Tractebel, Seab Servizi Energia Ambiente Bolzano SPA, Azienda Servizi Municipalizzati di Merano Spa, Suez Nederland Holding B.V., Gemeente Groningen, Gemeente Breda, Stad Antwerpen, Gemeente Amsterdam, Element Energy Limited, CEA, Waterstofnet VZW, E-Trucks Europe**

Project Summary - Objectives

Revive will accelerate the development of hydrogen fueled refuse trucks in Europe

Key objectives:

- Develop a high-performance fuel cell refuse truck
- Deployment of 15 trucks
- At least 24 months of demonstration in their operating environment
- Raise the profile of the FC technology as a viable option for waste collection
- Analyze the future business models for zero emission waste collection using hydrogen produced from waste sources through a dedicated 'Waste-to-Wheel' study



Project Summary - Partners

Members of the REVIVE Consortium

Vehicle operator

SEAB SPA
Stadtwerke Meran
Suez Netherlands
City of Groningen
City of Breda
City of Antwerp
City of Amsterdam



Manufacturers

E-trucks Europe

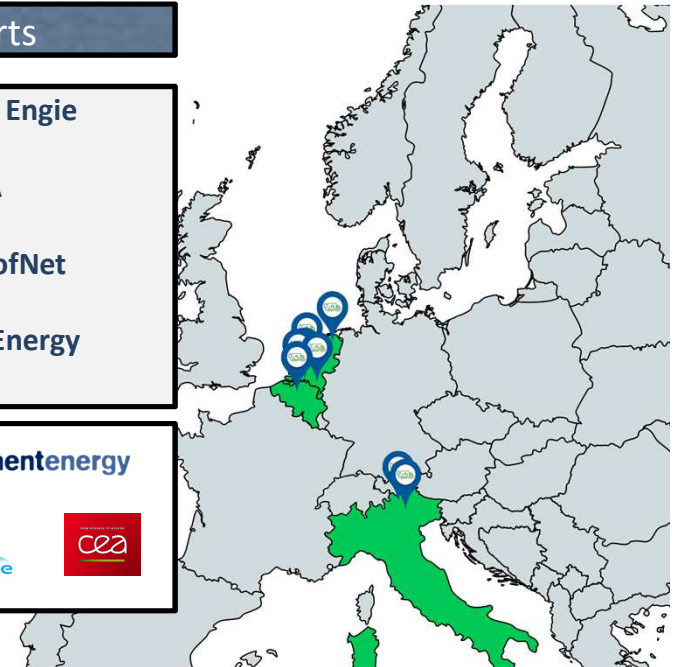


Experts

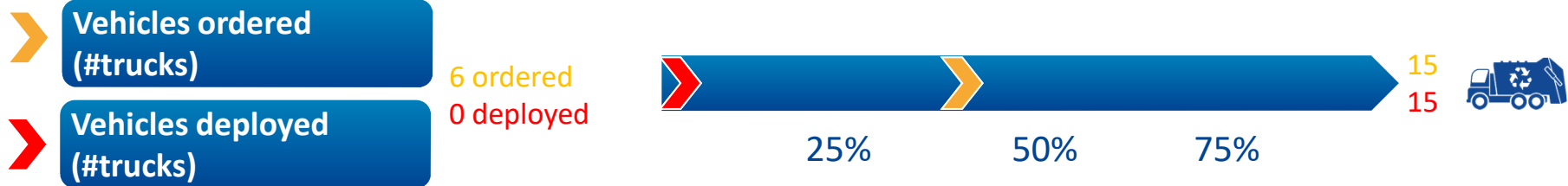
Tractebel Engie
CEA
WaterstofNet
Element Energy



Deployment sites



Project Progress – Truck deployment



- A total of **6 trucks** are being built for delivery in 2020
 - First truck expected **in February 2020, in Breda**
- Contracting discussion for the remaining trucks are at advanced stages
 - New deployment sites under discussion



Source: E-trucks Europe, Breda truck under construction

Risks and challenges

- **Availability of HRS infrastructure** -critical for project timing & has caused delays in the project
- **TRL of European FC suppliers** - TRL of selected suppliers lower than non-EU suppliers
- **No standard truck configuration** – Every unique truck configuration needs to go through the homologation process and requires new testing
- **Lack of regulation** – No EU/National directives to stall, maintain and repair H2 vehicles
- **Lack of standardization for HD applications**– Safe fill protocol, communication cable



Source: E-trucks Europe

Synergies with other projects

Interactions with projects funded under EU programmes



Life 'N Grab Hy



Phase 1 (yellow)

- Eindhoven
- Veldhoven

Phase 2 (green)

- Cologne
- Antwerp
- Rotterdam

Phase 3 (red)

- Aberdeen
- Bolzano *
- Merano *
- Bruneo *
- Düsseldorf/Herten

*Possible synergy by combining



Source: www.lifeandgrabhy.eu




Interreg North-West Europe HECTOR

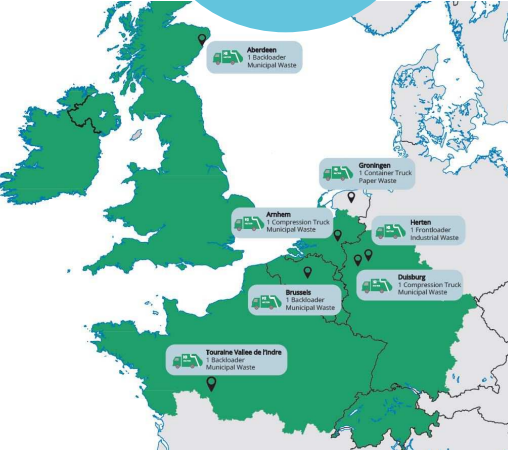
Letter of Cooperation for the
Life 'N Grab HY!, REVIVE & Hector - projects

Topics:

- ✓ Coordinate dissemination activities
- ✓ Common definition of policy recommendations
- ✓ Co-organisation of events



Hector



Source: www.nweurope.eu/hector

Contact Information

Dimitri Van den Borre

Project Manager Hydrogen

H2revive.eu

Tel. +32 2 773 96 40 - mob. +32 479 35 87 12

dimitri.vandenborre@tractebel.engie.com



REVIVE

These activities received funding from the **Fuel Cells and Hydrogen 2 Joint Undertaking** under grant agreement nr. 779589. This Joint Undertaking receives support from the **European Union's** Horizon 2020 research and innovation programme, **Hydrogen Europe Research** and **Hydrogen Europe**.



FUEL CELLS AND HYDROGEN
JOINT UNDERTAKING

