

Life 'N Grab Hy

clean cities, clean air with hydrogen



Experiences and results LIFE demonstration @Baetsen in Veldhoven, Best & Son

Walter Batenburg, Baetsen



Life N' Grab Hy
clean cities, clean air



BAETSEN

REMONDIS®

WORKING FOR THE FUTURE

Walter Batenburg

Operational Manager

A project co-funded by the Life Programme under the
Grant agreement nr. LIFE14 ENV/BE/000415



We are Baetsen (now part of Remondis Group)

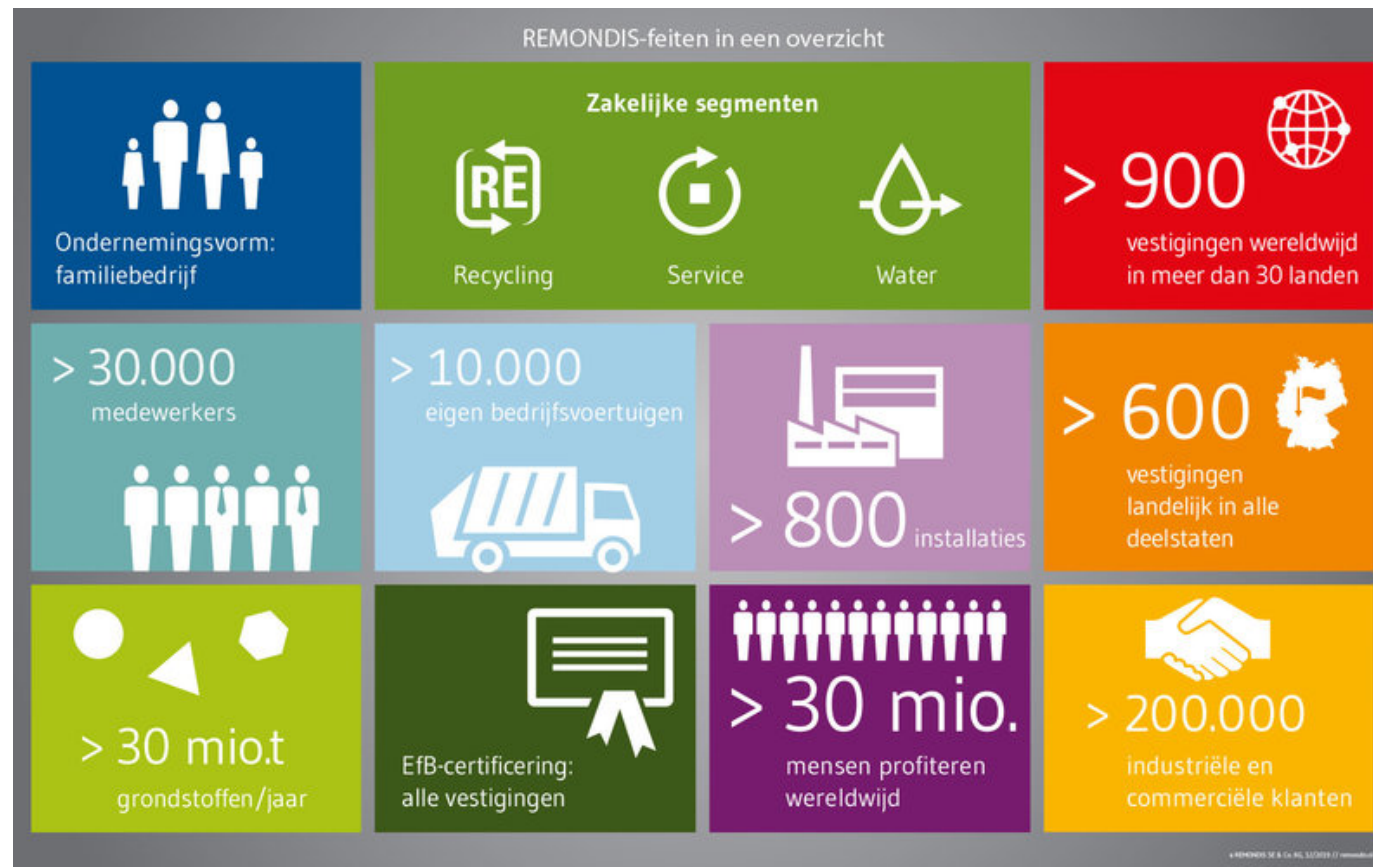
- Founded in 1960 by Thieu Baetsen.
- Family-owned company. Since 1-2-21 Owned by Remondis, still family-owned.
- Based in the South of the Netherlands (3 locations in Brabant and Limburg).
- App. 180 employees.
- Main customers: companies, municipalities and private individuals.
- Annual revenue 100 mil Euro.



Remondis Group



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Baetsen Containers - Remondis

- 3 operational business units:

Building materials



Recycling



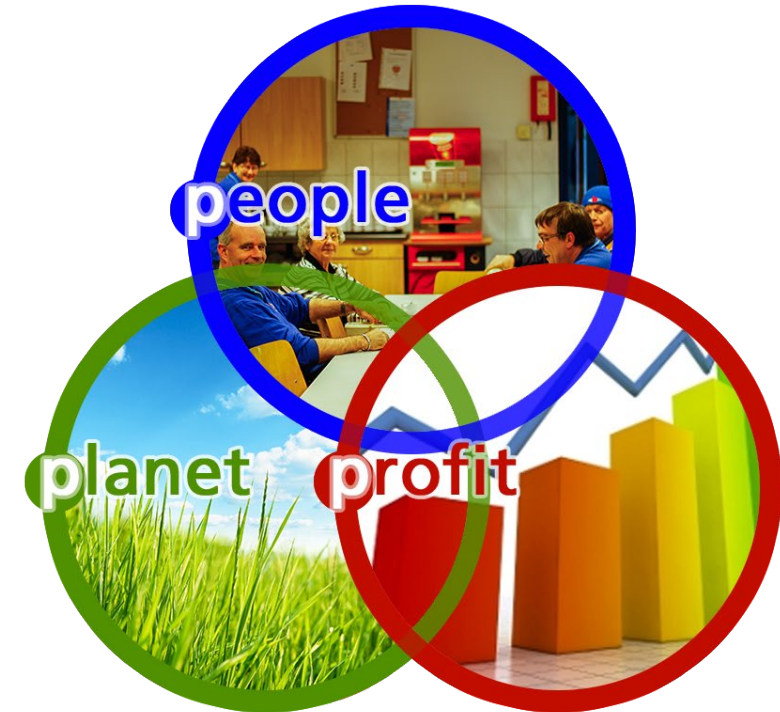
Containers



Baetsen Containers- Remondis & Corporate Social Responsibility



- People: safety, social return, awareness
- Planet: recovering raw materials, reduce emissions
- Profit: innovate and invest, healthy employer, cooperation





Baetsen Containers - Remondis & the Hydrogen truck

- Main clients for Baetsen / Remondis are municipalities.
- They award their waste collection through European tenders.
- An important requirement is a clean environment for the inhabitants of the municipality.
- Baetsen / Remondis has already converted her garbage truck fleet from diesel to CNG trucks and electric (2021), but wants to further move on.
- Taking part in the LIFE project perfectly matches Baetsen - Remondis goal to contribute to a cleaner environment for the present and future generations.
- Having zero-emission trucks in our fleet makes us ready for the future.





Experiment with the LIFE truck with hydrogen range extender.

Experiences:

- Staff enjoy working with the vehicle, both drivers and loaders because the vehicle is clean and quiet.
- Staff is much more rested at the end of the day.
- The driver must be extra alert to fellow road users, because it is a quiet vehicle, the vehicle is not heard coming into the street
- The combined range is not enough for one whole equivalent collection day.
- Overall there are not enough hydrogen refueling stations. None directly near the depot.
- Solving technical problems takes too long, this causes the vehicle to stand still for too long.
- As an organisation Remondis wants to achieve the objective of running zero – emission on cleaning vehicle by 2025-2030. The development in technology is important in this. The vehicle must be sustainable in use, but must also be fully suitable for carrying out work comparable with a conventional diesel vehicle.



The demonstration and feedback



Positive feedback by:

customers,

the drivers,

the loaders

Demonstration movie on:

www.lifeandgrabhy.eu/demonstartions



The local results (flyer)

- 213 days operation in 20 months time
- Distance covered 23.000 kms
- Refueling on average 17 kgs of hydrogen
- Saving in total 11.000 ltrs of Diesel

Green house gases:

GHG-Emissions ³			
PM	NOx	CO	CO2
17.4 kgs	50.1 kgs	79,7 kgs	38,7 Tons



Life 'N Grab Hy 
Clean cities, clean air with garbage trucks on hydrogen

Demonstration of the garbage truck on hydrogen in Eindhoven, Best and Son (the Netherlands)

April 2019 - December 2020
The truck is owned by waste collection company Baetsen

Results

The vehicle drove more than 23.000 kms during the 20 months of operation. It collected multiple waste fractions such as residual, biomass and PMD in the municipalities of Veldhoven, Best and Son in the South of the Netherlands.

In total Baetsen operated the vehicle 213 days, in a regime of 4 out of 5 working days. Occasionally the trucks was also used for paper collection during weekends.



Refuelling:

Throughout its lifetime in the project the vehicle refuelled 142 times. On average it refuelled 17 kilograms of hydrogen and this within 17 minutes¹. The refuelling time of a hydrogen truck is therefore comparable to a conventional Diesel truck. The truck refuelled a total of 2434 kgs of hydrogen.

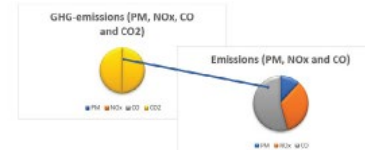
¹This is the long year average, refuelling goes faster in winter than in summer.

Impact

Green house gases:

During its operation the truck saved 9500 liters of Diesel (equivalent of the hydrogen refuelled) and 1535 liters of Diesel (equivalent of the electricity of the night charging), significantly reducing the Green House Gas-Emissions².

GHG-Emissions ³			
PM	NOx	CO	CO2
17.4 kgs	50.1 kgs	79,7 kgs	38,7 Tons



² Tank to wheel emissions have been taken into account.

³ kgs of GHG saved compared to EURO 3 Diesel (compared to 2014 at project start)

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Comfort

Beside the green house gas emissions that were saved, the vehicle operated with lower noise. This remarkably bettered the working conditions of the drivers and the loaders. Both were really enthusiastic about the trucks. In the meanwhile the trucks also emitting less noise to the environment.



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These activities have received funding from the European Union's LIFE Programme under the Grant Agreement nr. **LIFE14 ENV/BE/000415**

