



# Demonstration of a garbage truck on hydrogen at the Stadtwerke in Hürth (Germany)

January 2020

The truck is owned by waste collection company Baetsen

In January 2020 a 2 weeks demonstration of the garbage truck on hydrogen, owned by Baetsen, took place in the city of Hürth, a municipality south of Cologne. The Stadtwerke Hürth, that co-owns the hydrogen refuelling station on the Knapsack Industrial plant for buses, was very interested in starting a demonstration with a hydrogen garbage truck. After their experience with buses, they wanted to experience the potential of these trucks, because they are also responsible for the municipality's waste collection. They want to contribute to a more environmentally friendly waste collection in the future.



## Refuelling:

During the demonstration period the vehicle refueled a total of **98,19 kgs** of hydrogen in **6 refuelling events**.

## Results

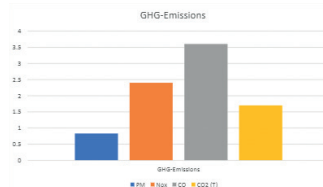
During its 2 weeks operation of the hydrogen garbage truck covered **431 kms in the daily operation**. It collected residual waste in mini containers, operating in a period of **8 operational days** within the 14 days timeframe.

## Impact

### Green house gases saved:

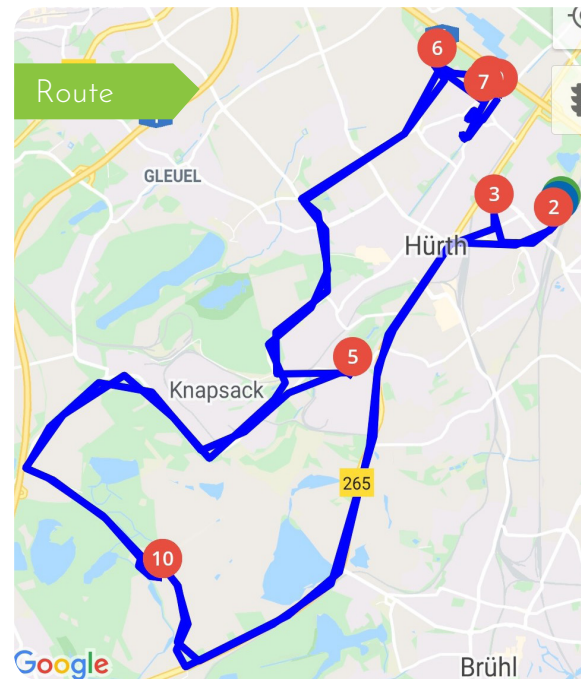
During this short demonstration in the municipality of Hürth, the truck was able to reduce Green House Gas-Emissions<sup>1</sup>.

GHG-Emissions <sup>2</sup>			
PM	NOx	CO	CO2
0,83 kgs	2,4 kgs	3,6 kgs	1,7 Tons



<sup>1</sup> Tank to wheel emissions have been taken into account.

<sup>2</sup> kgs of GHG saved compared to EURO 3 Diesel (compared to 2014 at project start)



## Comfort

Beside the reduction of green house gas emissions, the vehicle operated with lower noise emissions (-4Db in comparison to a standard diesel operated vehicle), leading to better working conditions.

The most noticeable and positive effect for the drivers and loaders working on the back of the waste collection vehicle, resulting from the interviews held with the people that operated the vehicle, was the lower noise level of the truck. They were more relax and less tired after a day's work.

Driver: "It's more relax to drive this truck during a full day of operation, although it is not a low-entry cabine"

Loader: "You really notice the difference in noise emissions and the tailpipe emissions compared to our diesel operated truck, which are load and smell".

The general public also noticed and mentioned, that less noise was emitted to the surrounding environment by the truck passing by in the streets.

## Conclusion

Although the truck is not designed for the specific local conditions in Hürth (f.e. hills), it was a great opportunity for the organisation to learn more about hydrogen technology and to gain experience in driving this hydrogen garbage truck with low noise and zero-emissions.

Stadtwerke Hürth sees a future for hydrogen in their fleet, especially when the truck (originally designed for flat area's) will be adapted to the hilly local situation.