bigbuyers
for climate & environment

an initiative of the Heavy Duty Electric Vehicles working group of the **Big Buyers for Climate & Environment**

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Public Procurement of Heavy Duty Electric Vehicles

Lessons learned from the Big Buyers for Climate & Environment working group

Acknowledgements:

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with the support of participants from the Big Buyers group

Collaborations
For this document and, in particular, the section on market analysis, the Big Buyers collaborate with PNO consulting, lead partners of the ENTRANCE project and the Norwegian NGOs 'Zero' - Zero Emissions Resource Organisation.
Information on their work is available at:
https://www.entrance-platform.eu/
https://zero.no/
Collaboration with linked initiatives focusing on zero emissions fleets supported the collection of useful material and lessons learnt: the climate group ZEV community and the Zero Emissions Urban Fleets (ZEUF) Network.
Market information was collected thanks to market dialogues with a variety of companies.

The Big Buyers working group on heavy-duty electric vehicles (HDEV)

The Big Buyers for Climate & Environment Initiative[1] supports collaboration between public buyers aiming to purchase innovative solutions and services which are not widely available on the market.

Waste collection, street cleaning, and maintenance vehicles are used daily in urban areas, and most public authorities are looking at changing their city fleet towards clean solutions in the short term. However, the market is not offering a wide array of HDEV and prices remain high with a lower level of performance compared to diesel or biogas equivalents. The charging infrastructure for these vehicles is also a crucial part of their development and implementation.

This document is to be considered a follow-up from the one produced after the first round of collaboration of the working group and aims at expanding or complementing some of the issues discussed.

Big Buyers Heavy Duty Electric Vehicles working group participants:

- City of Rotterdam
- City of Oslo
- City of Helsinki
- City of Lisbon
- City of Haarlem
- City of Amsterdam
- City of Cologne
- CIty of Gothenburg
- City of Porto

Affiliated entities:

- City of Tartu
- City of Malmo
- Belgian Post

- ➔ Lipasam
- ➔ ESMASA

[1] The Big Buyers Initiative is funded by the European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs. The sole responsibility for any error or omissions lies with the editor. The content does not necessarily reflect the opinion of the European Commission. The European Commission is also not responsible for any use that may be made of the information contained herein.

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Public Procurement of Heavy Duty Electric Vehicles

1. Why a collaboration on HDEV for waste collection, street cleaning and heavy delivery

Electric vehicle (EV) sales increased in the past few years, driven by a rise in available models, policy support, and rapidly improving technical viability and economic competitiveness of EVs for specific applications.

The increase in acquisition in many European countries can be attributed to national and/or local level targets to transition to public procurement of zero-emission vehicles and the EU Clean Vehicles Directive for member states. When it comes to trucks and delivery, the private sector is also playing an essential role by pushing the market towards new technologies.

The use of electromobility in waste collection, transport of heavy material and street cleaning promises a significant reduction in noise and pollutant emissions in line with many European entities' climate ambitions and air quality targets. EVs can also be used in low emissions zones, which are becoming increasingly common in many European cities.

Various market options are currently available for the electrification of passenger cars and light commercial vehicles. That's not the case for heavy duty vehicles. The market is still relatively small, lacking new models from existing manufacturers and options for retrofitting existing vehicles.

In this context, public entities are facing several issues, particularly cities looking to have a fully clean fleet by 2030 to comply with their climate neutrality ambition. The market cannot satisfy their needs, and prices remain high.

For them, it means a complete change in how the waste collection and street cleaning service is performed and, simultaneously, a very high cost for acquiring and maintaining the vehicles.

The big buyer's collaboration is looking into:

- further understanding market availability, prices and vehicle performances;
- having joint market dialogues with all the leading suppliers of HDEV and vehicles superstructure;
- understanding the real-life performance of vehicles and learning from the procurement work of entities that already employ them.

During the last three years, the group has met with various market operators: companies supplying heavy duty electric trucks, those specialised in waste collection superstructures, those working as service providers for waste collection, those specialised in street cleaning vehicles and those supplying recharging infrastructures.

The following document summarises some of the key takeaways and experiences from their collaboration.

2. Engaging market actors

Market and joint market dialogues remain one of the most successful activities of the HDEV Big Buyers working group.

Some advantages of doing joint market dialogues are:

- Public authorities gain further understanding of market offers, new products, and availability in their own country. They can compare performances and prices.
- The information provided by market operators helps compare products and better understand which type of procurement procedure public authorities should adopt (service tender, leasing, innovation tender or mini competition).
- It has helped them understand which procurement criteria can be used in the tender, for example, on the sustainability of materials and safe battery disposal.
- Companies receive information in advance about public entities' needs and challenges, which can create successful collaborations on the ground.

In particular, joint market engagement allowed Big Buyers to present their work and ambitions as 'one voice' and gather more attention from companies, particularly those active on a European scale and not only at the local level. This influences their production trajectory and investment in new technologies to answer public buyers' needs.

Finally, the main outcome of such international collaboration was that waste collection services are organised so differently across cities and countries that it impacts market supply. Trucks often have to be adapted to each city's reality. In

the future, should buyers move towards unified or standardised demands, it would most likely result in cheaper products and faster delivery.

3. State of the art for HDEV

Products availability and recent technological development

In the last years, the Big Buyers group had the opportunity to meet with various suppliers of HDEV for waste collection and street cleaning, particularly with small and medium enterprises (SMEs) and suppliers from the Netherlands, Sweden, Finland, Spain, Italy and Germany. These meetings aimed to increase the group's knowledge and understanding of the most recent technological advancements for heavy duty vehicles for waste management, collection, and street cleaning.

Thanks to the information provided by suppliers, participants could compare products and performances, understand product availability and see whether the market can satisfy their needs. When it comes to zero-emission street-cleaning vehicles, despite high costs, the products can now meet most buyers' needs.

However, when it comes to heavy trucks, although there have been significant improvements concerning the battery properties, the range of vehicles remains insufficient for many potential users and due to the big size of the battery, the load is also inadequate. In addition, the manufacturers have focused mainly on larger vehicles in the early stages of development. Consequently, a limited selection of trucks in the smaller range is available. They usually come with a limited load capacity compared to their fossil-fueled counterparts because of the space and weight taken up by the batteries.

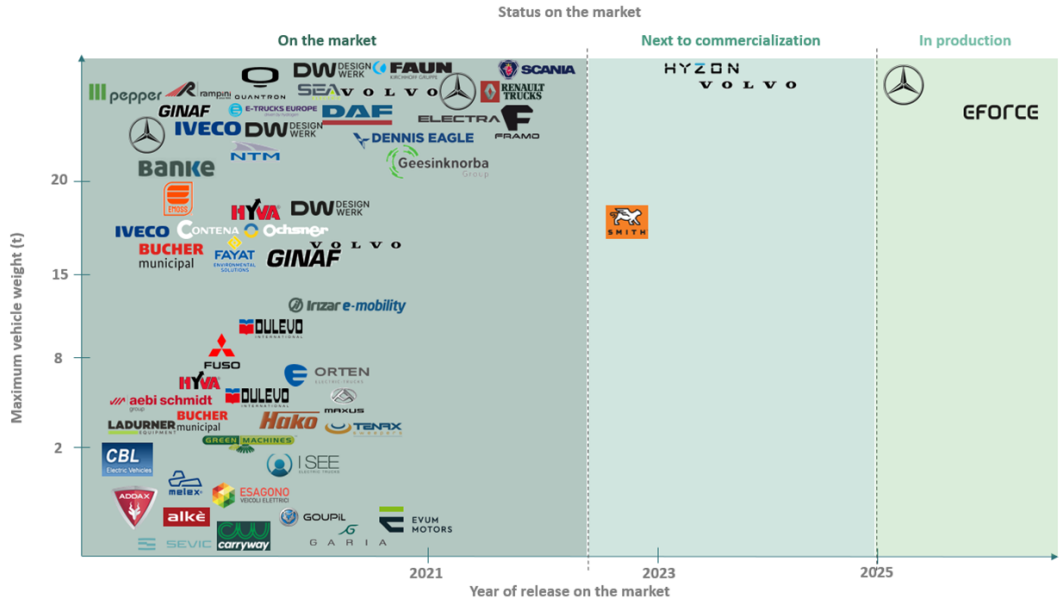
The Big Buyers group has found that only a handful of companies can supply buyers' needs, particularly for maintenance and after-sale support. This differs substantially from country to country.

Furthermore, despite the Covid crisis seeming far away, companies still struggle with disturbances to the global supply chains and material availability, resulting in high costs and huge delays, or uncertainties for when the products will be delivered. The ongoing war in Ukraine also has a negative influence on the situation.

These factors put some doubt on whether cities and public companies will be able to fulfil their ambitions to have complete zero emissions fleets by 2030. There are high hopes that the next generation of battery technology and the advancement of hydrogen solutions will bring the right ingredients to the public entities' zero-emission ambitions.

Overview of products available on the market

The following section is developed in collaboration with partners of the ENTRANCE project, which performed a further products analysis and availability of Zero Emission Medium-and Heavy-Duty waste collection vehicles, starting from the information provided by Big Buyers, especially on the kind of information they were collecting to allow product comparison: power supply, weight (tonnes), payload, power/output engine, battery size, charging time and range availability. The complete analysis is available on the ENTRANCE platform[1].



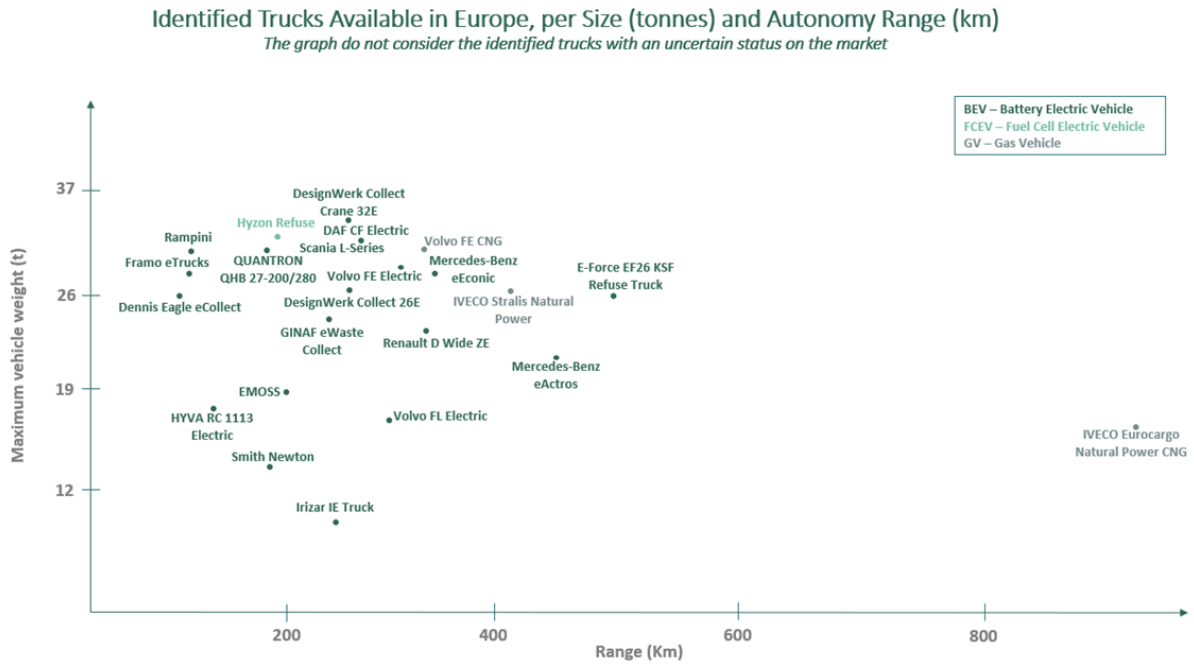
[2]As analysed by the ENTRANCE project

The largest manufacturing is in Germany, followed by Italy, the US, the Netherlands and the United Kingdom. In Europe, 75 different models were identified, provided by 52 other manufacturers. Almost all models are already on the market or will be shortly. Out of the 75 vehicles identified in Europe, only 27 are heavy-duty trucks (more than 20 tonnes).

Vehicles are compared by tonnes, recharging time and autonomy range. The manufacturers provide the information, and it is currently unclear whether they consider real-life operations performance.

[1] https://www.entrance-platform.eu/

[2] The chart summarised the manufacturers based on the maximum vehicle weight identified and the year of entry into the market. All data are available on the ENTRANCE platform.



Among the many vehicles analysed were some of those already tested by buyers during their market engagement works. In addition, some newer models recently released on the market were also analysed, for example, the QHB waste collection vehicle from QUANTRON (based on the Mercedes-Benz Econic). Sales of most hydrogen trucks are expected to start only in 2023, with a few exceptions for the SCANIA vehicles, which are already operational in the city of Gothenburg[3].

4. Market gaps

While there is a strong interest in moving towards clean solutions for HDEV, particularly for long hauls, the market is still unable to satisfy public buyers' needs fully, particularly for vocational vehicles, such as waste collection, heavy delivery and street cleaning.

Vehicle prices remain high, and public buyers entities or their service providers (for example, for waste collection services) have to face several challenges and risks related to the daily use of electric vehicles. There is also a lack of models suitable for waste collection in cities, for example, 18 tons vehicles with good enough payload and smaller trucks to use in narrow urban streets.

Furthermore, many challenges remain outside the sphere of influence of buyers and producers: it is necessary to create suitable policies and economic

[3] https://www.scania.com/group/en/home/newsroom/news/2021/swedens-first-ever-hydrogen-powered-refuse-collection-truck.html

frameworks to roll out a recharging infrastructure that facilitates the operation of zero-emissions vehicles (ZEV).

The large gap in Total Cost of Ownership compared to diesel equivalents, combined with the operational limitations such as range constraints, running time, or payload losses, are the main factors hindering the transition to ZEV.

Big Buyers have reported the following challenges when looking at purchasing HDEV:

High-cost and high risk

A high upfront investment is required to change the city's fleet of HDEVs. A hydrogen truck can cost up to four times more than a biogas-powered equivalent and twice that for an electric truck. This excludes the cost associated with the charging or refilling infrastructure and maintenance.

Buyers have reported a lack of innovative financing solutions and taxation support systems which allow the deployment of HDEV solutions. In countries where such support mechanisms exist, the uptake can be faster. Similarly, aligning rules, strategies and roadmaps to have fully zero-emission vehicles across EU countries would facilitate their uptake.

Models and data are required to understand the possible differences in Total Cost of Ownership optimisation, renting and subcontracting of services. They would support the development of new business models, which would bring buyers from owning vehicles to contracting services.

The standardisation of the waste collection system across countries would also support wider uptake of trucks, as they do not have to be adapted to specific needs, which usually results in higher costs for the buyer. There is also uncertainty about future technological developments, which increases the risk of investing heavily in technology that could become obsolete with the advancement of new solutions.

The market vehicle specifications do not fit the buyers' needs, particularly regarding mid-sized vehicles for range and carrying capacity. The market does not offer smaller trucks, between 7 and 11 tonnes and 2.30m wide maximum, which is an issue for historic city centres with narrow streets.

Data and planning operation

The EV operation planning needs to consider mileage, speed, topography, temperature, superstructure use and driving culture. More data sharing and analytics are necessary for real-time optimisation, planning operation (i.e. collection routes) and maintenance. Similarly, charging times must be taken into consideration when planning operations.

As such, the operationalisation of EVs might need a complete rethinking of waste collection systems compared to using diesel or biogas equivalents. The development of city digital twins is seen as a way to calculate fleet, traffic, power, and dynamic conditions necessary for running vehicles.

Covid has caused significant issues for the delivery of EVs. While some companies are prioritising the delivery of electric trucks over their diesel equivalents, many are reporting more than one year of waiting time. Others have reported a slowing down in the supply of biogas trucks to focus on electric solutions.

After-sale support and dismantling

There is a lack of resellers' availability in many European countries, which affects product availability, particularly in some of Europe's peripheral regions. Local aftersales support (parts, software, maintenance, etc.) is an apparent necessity for buyers, as are provisions of training on the running and maintenance of vehicles. Similarly, there is a lack of competent maintenance services (chargers inoperability).

The roll-out is slower due to the perceived higher risk in running the vehicles, also by the service operators and drivers, and the lack of knowledge about their reliability. Training of workers for effective deployment is necessary to overcome this resistance.

The offer to supply safe battery dismantling should be a condition related to all sales. When calculating the Life Cycle Assessment, it is still unclear the percentage of materials of trucks which can be safely reused.

Batteries

The current generation of batteries is still too heavy, which results in heavier trucks and less loading capacity. Furthermore, the currently available batteries on the market might have insufficient range for the need of buyers, especially when considering the distances travelled in combination with the weight of the load and the energy needed for operating various parts of the vehicles in varying environmental conditions.

The development of vehicle superstructure, for example, to operate electric cranes, doesn't match the progress of electric trucks.

There is insufficient market development for retrofitting solutions, and the few available options are not widely spread across Europe.

The materials for electric batteries need to be resourced in a fair trade way. Currently, not all companies can provide the required certifications.

Energy production and recharging infrastructure

Even if the market could fully comply with the needs of public buyers, the rollout of HDEVs cannot advance without proper recharging infrastructure. Its development is still costly, and low and expensive charging system investments are needed at the depots, logistics centres and other premises.

Cost-efficient and innovative solutions are necessary to maximise the charging capacity of the electricity network and support intelligent charging of big fleets, for example, at night. Vehicles should be able to choose between AC and DC charging depending on the available charging infrastructure at any given location to avoid lock-in solutions.

Finally, uncertainties related to energy costs and the lack of sufficient green energy production of both electricity and hydrogen remain a big obstacle.

5. Experiences and challenges from Big Buyers

City of Amsterdam

The city of Amsterdam owns more than 200 trucks which they want to replace with emissions-free ones by 2030.

In 2022, they purchased two VDL trucks delivered in the Summer of 2022. For the moment, their operationalisation seems to be positive. Other procurement activities are in the planning, but covid delayed them, and it stalled the collaboration with different city departments and alignment of the city budget.

Another city department initiated the procurement of the retrofitting of six hydrogen trucks. Still, the procurement procedure had to be cancelled since the winning company could not deliver the products.

City of Haarlem

The publicly owned company Spaarnelanden from Haarlem is estimating the additional costs required to change their fleet to electric by 2030. They are looking into opportunities to electrify their vans through refurbishment, and they plan to purchase hydrogen trucks in 2023.

They also have encountered many delays in deliveries due to covid, the war and a lack of raw materials. Therefore many of their purchasing plans are delayed.

One of the main challenges they face is training workers, particularly for the maintenance of electric vehicles and those they already own. For this reason, they purchased and retrofitted a truck to use as an experimental tool in training the company employees.

City of Rotterdam

Rotterdam is testing various suppliers' vehicles to check performance and compare data.

Most trucks are experimental, and the providers are still supplying the maintenance. Four out of their 153 waste collection vehicles and six of 73 street cleaning vehicles are electric.

Heavy duty vehicles are usually procured through European tenders using article 32 of the EU L 94/114, 'Use of the negotiated procedure without prior publication'. This can be applied to garbage collection rear loaders, garbage collection top loaders, and vacuum trucks on hydrogen. The city has already used this procedure five times and usually awards the procurement in 20 days. No suppliers have been complaining that there was no competition.

In their experience, testing vehicles with company drivers is an essential aspect of procurement. The trucks can require lots of maintenance, can malfunction, and require more than one charge a day.

It is hard for drivers to adapt to new vehicles (cultural change). If you are a regular driver, you work 80 hours a week, but if you're a city driver, you only work 36 hours a week; so, if something goes wrong with the vehicles, they'd have to work extra hours.

City of Cologne

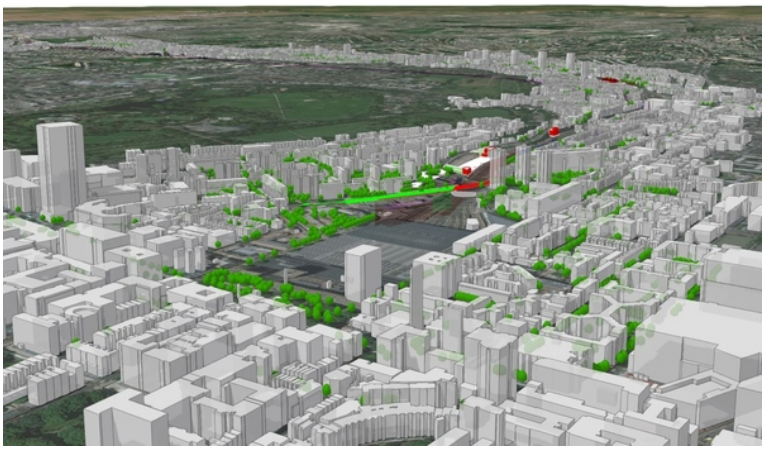
The city of Cologne and their waste company AWB Abfallwirtschaftsbetriebe Köln GmbH owns 1500 vehicles. The average truck needs to cover 44 km daily in its shift planning. Therefore the city is waiting for bigger HDEV on the market.

Their main issue is the recharging stations they need to plan into the city infrastructure.

City of Helsinki

The city of Helsinki and its municipal company Stara Logistics, own 1380 vehicles. They currently have 18 e-vans and plan to electrify the remaining 388 vehicles by 2029. They also own six small electrified multi purpose-vehicles, six hybrid mid-size trucks and one retrofitted heavy electric truck.

Helsinki emphasises electric retrofitting as a solution for diesel vehicles that are still in good shape. In Finland, there are at least three existing established retrofitting companies: Linkker, Proventia and Lielahden Autokeskus.



Helsinki is also investing in digitising its traffic, transport, street maintenance and logistics. This includes digital twins, advanced analytics, fast data connections, optimisation and robotisation.

City of Porto

The city of Porto and their municipality-owned agency Porto Ambiente, have several years of experience with electric vehicles for passengers and small operations. They own more than 350 electric vehicles, of which 120 are still running on diesel.

- During the last procurement tender, they could only be supplied with natural gas vehicles because:
- They have two shifts for waste collection, so they need trucks with large capacities, and they couldn't find any on the market.

- They have a problem with recharging: the city's elevation requires more battery usage.
- Overall the price and little product availability in Portugal remain the most significant obstacles.

Recently the rise in prices for biogas (four times higher) has made the operational costs for biogas vehicles an issue for running the operation.

City of Lisbon

The city of Lisbon is facing similar challenges as Porto. They are currently negotiating with Volvo to acquire new electric trucks, but the costs remain too high, and the performances do not suit their needs.

City of Oslo

The city aims to change its fleet to zero-emissions vehicles by 2025. Oslo has started the first zero-emissions construction site in the world, and 79% of the city's light duty vehicles are zero emissions. However, they now focus on street sweepers and waste collection vehicles. Since 2021 the city has put 12 million euros in additional budget funding for zero-emissions machines and vehicles. All municipality agencies are now preparing plans on when vehicles and machines will be replaced with zero emissions or biogas.

For its most recent procurement for the waste collection fleet renewal, it still had to purchase biogas vehicles due to the price and challenges given by its electric counterparts. Also, due to the long delivery time, it had to increase the number of vehicles demanded to supply future needs.

A further area of work the city will be looking into is how to electrify tractors, particularly those in operation outside of the town and in areas away from the grid, where hydrogen will be a possible solution.

Due to the economic condition provided by the Norwegian government and the low cost of electricity, although electric vehicles have an initial purchase price three times higher than conventional trucks, their total cost of ownership is much lower. However, things will change with Norway's highest increase in energy prices since 2022 (ten times higher).

Challenge: delivery times are a problem for electric and biogas vehicles. Cold weather has a negative impact on operating time for electric vehicles and machines. The city is less willing to replace existing vehicles with electric options due to a limited possibility of adapting early-stage electric vehicles to suit local needs and requirements, especially regarding low-entry cabs and the case of AC charging.

City of Gothenburg

In Gothenburg, the Sustainable Waste and Water Department oversees the waste collection. The municipality-owned company RENOVA collects from one-half of the city, while the company Nordisk Atervinning handles the other half. Trucks are usually leased by the companies and not purchased.

There are approximately 100 heavy trucks in the city, and all energy used for them has been fossil-free since 2015 (mostly biodiesel/HVO and some biogas). In 2016, together with RENOVA, the city made their first framework agreement to purchase the prototype of an electric waste collection vehicle.

To understand the feasibility of employing an electric truck, the city analysed: Km longer distance, km short distance, topography, the effect used by the superstructure, temperatures during winter, climate control in the cabin, balancing carried effect and carried load (one battery with 50KWh meant 500kg less on the truck). After a successful pilot through the new service contract for waste collection, they asked possible operators to employ at least five electric trucks. Nordisk Atervinning won the contract.

While the vehicle operation is mainly a positive experience for the company, the charging remains a challenge as there is currently only one public charging point for heavy trucks in the city. Strong collaboration with the manufacturers remains fundamental in quickly dealing with any possible challenge. Data collection remains a priority to better plan the vehicles' functioning and anticipate potential issues, such as driving in cold temperatures.

As of 2022, Gothenburg has the first hydrogen truck provided by SCANIA. While hydrogen trucks can potentially compare to diesel vehicles in terms of range and load capacity, their cost is currently four times higher than a diesel truck without counting the operational costs.

There must be a good infrastructure with both quick-loading stations for batteries and filling stations for hydrogen.

Today, only one station is available. Another commercial station is planned this year. Electric trucks are suitable for the central area, but hydrogen might be a better option for longer distances.

6. Recommendations for public buyers

Below are some of the main recommendations and key takeaways from the Big Buyers collaboration, which members felt essential to share with their fellow Big Buyers colleagues looking into purchasing HDEV.

Successful market collaboration for piloting solutions
As mentioned, open conversations and discussions with suppliers are critical to successfully deploying HDEV.

The operationalisation of vehicles is not always straightforward: maintenance and reparation require expert support. Zero-emissions vehicles often need to be tailored to the specific circumstances which require flexible contracts. Many delivery delays have been reported, but some companies are prioritising the delivery of zero-emissions models over their diesel equivalents to support their corporate social responsibility and climate plans.

Furthermore, it is not only about buying a truck. Its deployment requires considering infrastructure, night charging, fast charging or hydrogen filling stations. It is essential to consider an entire ecosystem of companies and actors involved in the daily use of trucks.

Many cities use field assessments during vehicle tendering, before the market consultation and afterwards during the award or verification.

Suppliers also indicated that a practical evaluation is common but must be assessed objectively. For example, it should include a detailed route of an existing shift, with the number of stops, lifts, container volume, breaks, pour times, etc.

The costs for a practical test are high, and it is sometimes tricky for market parties to have vehicles available.

Data and batteries performance

Making the right procurement decisions takes a lot of planning and data. The acquisition of a few different models allowed cities to understand and compare products and collect data based on the use of vehicles in real life.

In particular, data is necessary to understand the total cost of ownership (TCO) and the differences between electric and hydrogen vehicles.

It is also crucial to use daily data to calculate the best balance between energy carried and the load and potentially adjust waste collection shifts accordingly.

Batteries' performance depends on several factors:

- The temperature, load, tyres, and average speed. The battery age and the driving performance will impact battery consumption by at least 20%.
- Data is also relevant to understand the possible degeneration of battery capacity throughout the years. Battery and maintenance are usually supplied by companies between 5 to 8 years.

A battery will fail if it is completely discharged. To prevent this, software blocks a percentage of the installed battery. The capacity of the propulsion battery can be specified in 'installed/gross capacity' or 'usable/net capacity'.

It is not always clear which one is meant, but there is a substantial difference (+/- 15%). It is, therefore, important to specify this correctly in the award criteria.

It's all about people!

One of the most significant steps in moving from using diesel or biogas vehicles toward electric is the involvement of their primary users, namely those who will need to use them daily to perform street cleaning or waste collection.

Big buyers had to deal with initial resistance from the users, who often had to change their way of working or re-thinking a standard daily shift when using electric vehicles. The main issue is usually connected to the battery power and recharging time, which might need to come earlier in some cases, disrupting the regular running of the shift.

However, workers have also reported several advantages, mainly related to noise reduction, which impacts their daily work.

Big Buyers suggests the creation of discussion groups, which also include decision-makers and technical employees of waste collection and street cleaning

companies. This will allow them to jointly discuss any added value or issues connected to using different vehicles and their features.

Some buyers also put mandatory requirements in their tendering, like the possibility of testing vehicles before the purchase to assess their features, particularly regarding user comfort.

An example from Haarlem: criteria to test the user comfort of the vehicles before purchase. Tests are done in partnership with workers.

User comfort:
- sound and vibration experience in the cabin
- driving properties
- operation and features of the automatic gearbox
- position and ergonomics of the controls
- Get in/out of the cabin/seating area
- Legroom
- Seating position/adjustment option
- Visibility for the driver all around, for people of different heights

Driving the vehicle:
- Driving characteristics, smooth, easy steering and manoeuvring
- Operation and features of the automatic gearbox
- Connecting and using our auxiliary tools
- Position and operation of the buttons and levers
- High tipping, coupling and uncoupling bucket

Quality, finish and technique:
- Quality and finish of the shovel
- Accessibility oil, adblue, refuelling etc.
- Accessibility of daily maintenance and checks (oils, lamps, grease nipples)
- Accessibility for maintenance and repairs by workshop employee
- Diagnose, connect equipment
- How is safety guaranteed, sharp parts, mudguards, view of the vehicle all around, mirrors

Operating the hook lift system
- operation of the superstructure
- ergonomics of control buttons
- safety at work

Operating the loading crane
- operation of the support legs
- control of the various functions via the remote control
- work with the different functions of the remote control
- safety at work
- speed of the loading crane

- ability to work accurately with the loading crane

Various construction (loading crane, hook lift system and tipper)
- quality and finish of the structure
- accessibility for daily repair and maintenance
- accessibility for repair and maintenance by the workshop
- possibility of diagnosing malfunctions by the workshop
- safety during the work process

Miscellaneous Chassis
- quality and finish of the chassis
- storage space in the cabin
- accessibility for daily repair and maintenance (lamps, etc.)
- accessibility for repair and maintenance by the workshop
- possibility of diagnosing malfunctions by the workshop
- safety for other road users
- safety during the work process

Use of innovation procurement and mini competition

Rotterdam has been using innovation procurement and mini competitions to purchase vehicles and test their performance in real life. This allowed them to acquire vehicles from different companies. They currently have three suppliers for truck chassis (DAF, Volvo, MAN).

The advantage of mini competitions are:

- they don't depend on one supplier;
- their pricing is determined in the mini competition (current prices);
- it gives the buyer the ability to purchase new products.

Big buyers are also looking into changing their tendering and moving from acquiring vehicles to purchasing services. By doing so, they would leave to operators issues related to maintenance and recharging and instead use performance-based contracting.

Annex

List of companies engaged by the Big Buyers:

Online engagement :

- VDL Translift
- Addax Motors
- BPW
- Terberg
- Daimler
- Renault

Recharging infrastructure suppliers:
- Ballard power system
- Eneco e-mobility

Factory visits:
- Aebi-Schmidt
- Scania
- Volvo Trucks

AT IFAT, the Big Buyers group had market dialogues with:
- Trombia on their new automated street sweepers and snow cleaning technology
- Tenax and Green-G electric vehicles - two Italian companies offering street sweepers ideal for zero-emissions city centres
- Design Werk focusing on electric trucks and battery technology available on many Volvo trucks
- Bucher municipal specialised in all different type of electric city fleet vehicles
- Ros Roca, a Spanish subsidiary company of Terberg environmental offering a variety of technology solutions for waste management and recycling
- FAUN and GeesinkNorba both manufacturers of waste disposal vehicles

External resources

- TNO report TNO 2022 R11862 Techno-economic uptake potential of zero-emissions trucks in Europe 3 October 2022

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Big Buyers for Climate & Environment

This guidance is based on the experiences and expertise of the members of the Big Buyers working group on heavy duty electric vehicles, active since May 2019. The Big Buyers Initiative is a European Commission platform for promoting collaboration between big public buyers in implementing strategic public procurement. By working together to aggregate demand and jointly approach market actors, public buyers can maximise their market power and impact, promoting the creation of new solutions more targeted to their needs.

ICLEI Europe and EUROCITIES are currently running the initiative on behalf of the European Commission, DG Internal Market, Industry Entrepreneurship and SMEs (DG GROW).