## Survey Report 2

GP Groot

(Construction and demolition waste recycler)

### **GP Groot**

Contact person: Mr. Wim Horeman (Director), Ms. Sasha Visiting location: Alkmaar, The Netherlands



#### Company Profile

- The company was founded in 1917 and has a history of 107 years. It began with businesses such as coal transportation and milk can collection. Since then, 65 gas stations have been opened.
- In 1973, landfill disposal was started and the land was expanded. In the early 1970s, when there were no regulations on landfill disposal, waste was increasing.

#### Company Profile

- In 1988, landfill regulations began and costs were incurred for landfill disposal in the Netherlands. Initially, the charge was collected by volume, but now it is collected by weight (tons). Since then, landfill disposal has gradually expanded, although regulations have been tightened.
- In recent years, the company has been working towards achieving carbon neutrality.

#### **Company History**

# GP Groot, our 107-year-old history





GP Groot starts transporting coal

1917



First sand transport for road construction

1935



1966



Opening landfill Alkmaar

1973



Opening first NXT petrol station

2017



First hydrogen gas station

2024



Purchase first T-Ford

1921



Opening first petrol station



2010

Opening first waste sorting plant



- It collects about 1.9 million tons of waste per year for treatment and recycling (100~500 tons of debris per year). It collects waste generated mainly in the north of the Netherlands.
- Sorting has a capacity of 37 tons per hour and can process 140,000 tons per year.
- Of the waste collected, 75% is sorted and recycled and 25% is incinerated for energy recovery.
- Wood and biomass waste is either incinerated or produced as solid fuel (RDF). Limestone (used in ordinary European dwellings) from house renovation is separated and collected.

- There are two systems for waste disposal: collection and sorting. In some cases, the waste is sorted by container at the stage it is brought in (metals, plastics, etc.), but in urban areas, waste is mixed and transported in containers as there is no space for multiple containers at the construction site for sorting.
- Minerals and concrete shells mixed with wood waste are used as raw materials for concrete production.
- Waste containing materials that cannot be incinerated in the Netherlands may be transported to Germany for incineration.
- The Netherlands has a small land area and limited capacity for landfill disposal (the Dutch share of landfill disposal is 2%).

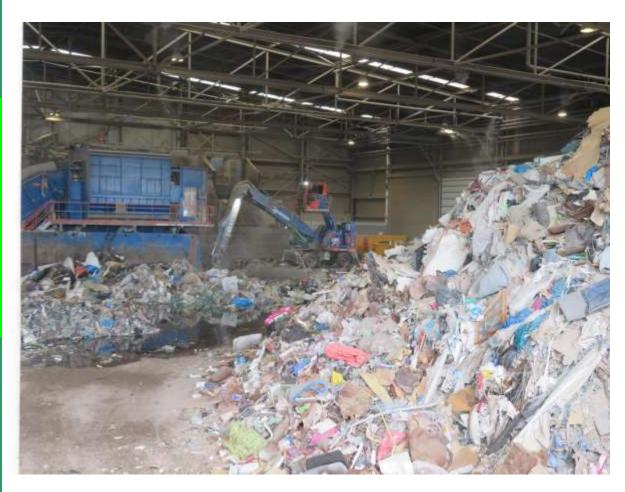
• Efforts continue to dig up and clean waste from old landfill sites for utilizing it as recycled material. Recent wastes are increasingly made of plastics and metals, which can be hazardous in landfill. Old landfill waste is less harmful, so it is dug up, cleaned and recycled as a resource. The plan is to continue digging up waste for the next 10 years, but it is not known whether this will continue further after 10 years.

- In the future, plastic and wood recycling facilities will be introduced.
- For the disposal of demolition waste and waste generated by companies, there is no obligation to sign of commissioning agreements or issue manifests, as in Japan.
- Demolition waste is to report the annual volume collected to the competent ministry.

#### Transition to a Circular Economy

- The energy transition is also underway. The company has six electric vehicles, hydrogen-powered vehicles, hydrogen buses (public driving) and hydrogen stations (hydrogen is supplied by hydrogen companies).
- Mono-materials are difficult because products are composed of a composite of various materials and contain adhesives and other inclusions. Many manufacturers do not consider recycling, so it is necessary to appeal for recycling awareness on the part of manufacturers. In collaboration with the Technical University of the Netherlands, research is being conducted into methods of recycling and the environmentally conscious design of construction materials to increase the possibility of recycling. 9

## Photos: Waste stock yard (indoor)





## Photos: Transport vehicle





## Photos: Waste collecting





### Photos: Sorting line





#### Challenges in the Waste Disposal and Recycling Business

- Gas cylinders may be replaced in the renovation of houses, and they may be mixed in with demolition waste.
- Lithium-ion batteries
   explode once every two
   days, and fire protection
   equipment has been
   strengthened.

