Daiwa House
Modular Europe

Index

1. Introduction and Accountability

In this report, we provide an update on the progress towards our company's objectives. This semi-annual report serves as an incentive to continuously work towards achieving the CO_2 reduction targets for scope 1, 2, and 3. Considering DHME's strong growth ambitions, it is expected that emissions will increase in absolute terms in the coming years. Therefore, in addition to absolute emissions, relative emissions related to the number of square meters produced have also been analyzed. However, this document will focus solely on absolute emissions to evaluate where the (potentially) higher emissions are coming from.

2. Progress on reduction targets

This document presents scope 1, 2 and 3 CO_2-reduction targets. For each objective, the business activity is presented with target, emissions, responsible, improvement methods and status.

Scope 1:

Scope 1	
Business activities	Gas consumption for heating, fuel consumption for transportation, generators and equipment
CO_2 emissions per weighted m^2	58,77 kg-CO_2/m^2
Objective	25% reduction (target value: 3945 T-CO2) in 2025 vs. 2019
Responsible	Board
Improvement method	► Making vehicle fleets more sustainable; ► managing driving behaviour; ► monitoring fuel consumption; ► replace gas-fired heaters; ► apply hybrid generators; ► Purchase electric loading crane; ► purchase electric/hydrogen-powered truck;

Analysis status 2024 H1:

General

- Scope 1 target: 25% reduction in 2025 compared to 2019 (gives 20% on total)6 years to: 25/6= 4.17% per year.
    - o CO_2- emissions 2019 H1: 2701 T-CO_2
    - o CO_2- emissions 2024 H1: 2.899 T-CO_2
    - o Increase of 7%
- H1 2023: 2502 T-CO_2 / H1 2024: 2.899 T-CO_2/ (increase of 16%)

Specific

Section	T-CO_2 H1 2019	T- CO_2 H1 2024	% increase
Natural gas properties	161	501	211%
Diesel project sites	251	1166	365%
Gasoline business travel	27	265	881%

Diesel business travel	335	408	22%
Diesel transportation	1928	550	-71%

Compared to 2019, the first four items are up. The company has grown a lot since the base year and this continues. The sale of the transportation branch initially caused a decrease in CO2 emissions, but due to the growth of the company we now measure 7% more compared to H1 2019.

Natural gas properties

This item continues to grow and accelerated this year with 49% growth compared to H1 2023. This can be explained by the commissioning of the German product location in Fürstenwalde. Fürstenwalde is heated by natural gas and due to its large size, energy-saving actions are not yet in line with the production halls in the Netherlands.

Gas consumption varies a lot per production site. In Montfoort, consumption is down 21% compared to h1 in 2023. Partly due to the sustainable installations such as the heat pumps and solar panels and good insulation. In Eemshaven, gas consumption has fallen by 1%. On the other hand, in Hulst consumption has increased by 866% compared to h1 2019. This increase seems very large, but compared to h1 2022 it is 20%. It is likely that 2023 was exceptionally low for Hulst. If Germany is not included in the total gas consumption of the production sites, we see a decrease of 31%.

Planned actions:

- It was determined that the new factory in Germany has a high gas consumption.
- Start internal analysis what causes the gas consumption in Fürstenwalde such as insulation, heating systems, welding activities etc.

Diesel project sites

Earthquake-resistant housing in Groningen (NCG projects) accounts for much of the diesel increase at project sites. Because the homes are built in a hurry and a grid connection cannot usually be realized, they must be powered by hybrid generators.

When comparing H1 2023 and H1 2024, 30% more diesel was used. Of the total diesel use in H1 2024, 84% was used by NCG projects.

DHME JS continues to rely on customers on these projects to reduce diesel usage on NCG projects. Another proposal was presented to the customer to use HVO100. Unfortunatly, due to the price of fuel type the proposal was still not accepted.

Planned actions:

- Expectations are a natural turnover in take down of NCG projects.

Gasoline and Diesel business travel

This half year a difference can be observed between Diesel and Gasoline use for business driving. Gasoline has increased 4% and Diesel has decreased by 11%. During this time, 9 fuel-efficient (energy label B) and 5 relatively fuel-efficient (energy label C) Diesel cars have been added.

These increases are the reflection of a growth in business travel between The Netherlands and Germany due to the new hall in Fürstenwalde. As well as, hiring more employees who received company cars.

It is interesting to see that in H1 2024, total emissions were 6% lower than the most recent report (H1 2023). The number of leased cars increased by 12% during this period. The share of electric cars has increased significantly, which could explain the overall decrease of fuel consumption for business travel.

Company policy is for new employees to receive an electric vehicle (EV's), unless there is a reason for a fuel car. Stimulation for EV's resulted in a 56% growth of the EV fleet in comparison to H1 2023.

Planned actions:

- Apply research HVO / Premium fuel for passenger cars and commercial buses

Diesel transport

The sale of Jan Snel's transportation division caused a decrease in diesel use in 2022. As of November 2023, there are 13 trucks in the transportation fleet that transport the units to project sites. The fleet grew by 1 additional vehicle. Since then, due to the growth of the company, the transport movements between the production locations and project sites have increased. The transportation fleet growth and the additional transport movements resulted in an increased Diesel consumption of 2% in the H1 2024 compared to H1 2023. A very conservative growth.

Planned actions:

- Apply research HVO for trucks
- Apply research for alternative fueled trucks (non-diesel)

Scope 2:

Scope 2 + Business travel	
Business activities	Indirect emissions electricity generation and air travel
CO2 emissions per weighted m²	01,38 kg-CO_2/m²
Objective	80% reduction (target value: 220 T-CO2) in 2025 vs. 2019
Responsible	Board
Improvement method	► travelling by train as an alternative to short flight; ► install PV systems on (new) halls; ► continue to buy 100% Dutch green electricity. ► continue to investigate possibility of charging electric cars with green electricity, off-site

Analysis status 2024 H1:

General

- Objective scope 2: 80% reductions in 2025 vs. 2019
  - H1 2019= 561 T-CO_2
  - H1 2024= 90 T-CO_2
  - Decrease of 84%
- H1 2023: 62 / H1 2024: 90 / (45% increase)

Specific

Item	T-CO_2 H1 2019	T-CO_2 H1 2024	% toename
Electricity	556	0	-100%
Charging on the road	0	11	n.v.t.
Air travel	5	79	57%

Electricity

Because all the electricity we purchase is green, the current calculation method dictates that no CO_2 impact can be calculated for this. Electricity consumption is expected to continue to rise in the coming years. This is due to the electrification of existing real estate, the construction and rental of new halls/offices and the electrification of the vehicle fleet.

Charging on the road

In 2021, the emission post 'charging on the road' was added. The percentage of electric vehicles in the business travel fleet is growing and they charge outside the production sites. In doing so, there is no control over the origin of the electricity. It is therefore assumed that this is grey electricity and emits CO_2. This can bee seen as a positive development, as electricity is prefered over petrol or diesel.
Consultations have been held with the supplier of the charging cards, however, it remains impossible to charge with green electricity. As soon as a solution to this is found, DHME will be contacted.

Planned actions:

- Inquire again supplier charging passes for green power (GVO's).

Air travel

There is strong international growth at the moment which means that air travel continues to increase. Due in part to the addition of the Fürstenwalde, Germany production site, air travel increased greatly to start up the plant and make it ready for production for the new project near Berlin. This resulted in a 57% increase in air travel compared to h1 2023.

Company policy is to travel distances below 700 km by train, if this is possible in an acceptable time frame. The time invested to travel by train from the Netherlands to Berlin continues to exceed the travel time by flight. Many workers are employed locally, however the expertise and management continues to fly regularly to oversee production activities.

Planned actions:

- Re-emphasize company rule to encourage train travel for travel distances under 700 km.

Scope 3:

Supply chain analysis has not changed compared to last year and thus the same dominance is maintained (materials and waste). Should business operations change to such an extent that changes can be expected here, the dominance analysis will be performed again.

Scope 3 - Materials	
Business activities	Chain emissions from use of materials
CO_2 emissions per weighted m²	171.7 kg-CO_2/m²
Objective	20% reduction (target value : 11.106 T-CO2) in 2026 vs. 2021
Responsible	Board
Improvement method	► Explore and deploy alternative materials to replace high-impact materials (top 3). ► Continue development process of new floor

Analysis status 2024 H1:

- Objective: 20% reduction(5020 T-CO2) in 2026 vs. 2021
  - H1 2021: 7266 T-CO_2 totaal
  - H1 2024: 7190 T-CO_2 totaal
  - Decrease of 1%
- H1 2023: 7248 / H1 2024: 7190 Reduction of 0,8%

The R&D department is looking at possible applications of Biobased Materials to reduce material bound emissions from the units. The National Milieu Database (NMD) is currently adapting the MPG calculation methods. This will influence their actions to achieve a good score. Phasing out or replacing the top 3 high impact materials remains challenging. This is in part because a buildings must meet certain quality requirements for fire safety, as well as energy needs of future users and acoustic use values.

For example, adding wood in the cement floor is being looked at, but so far the acoustic values and insulation values cannot be met. The floor is still in full development. In addition, in two construction projects a higher percentage of recycled content and biobased materials where applied.

Scope 3 - Waste	
Business activities	Chain emissions from waste disposal
CO_2 emissions per weighted m²	62 kg-CO_2/m²
Objective	10% reduction (target value: 5.486 T-CO2) in 2026 vs. 2021
Responsible	Board
Improvement method	▶ Further subdivide waste streams into mono streams, identify buyers to optimally process streams and initiate processes to properly disaggregate.

Analyse status 2023 H1

- Objective: 10% reduction(2285.1 T-CO2) in 2026 vs. 2021
  - H1 2021: 2539 T-CO2
  - H1 2024: 3330 T-CO2
  - An increase of 31%
- H1 2023: 2820 / H1 2024: 3330 is an increase of 18%

Specific

Item	T-CO_2 H1 2021	T-CO_2 H1 2024	% toename
Mono	994	1763	77%
Mixed	1538	1561	1%
KCA	7	6	-11%

The increase in mono streams is a positive development in itself. There was a higher amount of mono streams vs. mixed waste, 53% vs. 47% in h1 2024, ever growing towards the goal of 80% monostreams by 2030. The decrease in mixed waste, needed to bring the total produced waste down by 20% in 2025, did not occur, however KCA waste decreased significantly.
The study on improved waste separation introduced in h2 of 2023 continues to show effects in 2024. The goal is to maintain this trend. In conclusion, despite the decrease in KCA waste, total waste increased by 31%.

4. Measures

For H1 2024 the following measures were planned:

Own initiative

SPIE Project investigating options towards disconnecting the gas and go 100% electric (6/2024)
Implement new waste separation signs to improve mono-streams (6/2024)

For H2 2024 the following measures were planned:

Selection of SKAO list of measures

Between 5% and 25% of electricity use is covered by own generation of renewable electricity (via own investment or lease) (01/2024) Only achieved for main production site. Further solar installments will be suggested in the project together with SPIE
At least 5% of the electricity consumption of all business premises is covered by own generation of renewable electricity (via own investment or lease) (07/2023) Not achieved due to the commissioning of the new factory.
The company can demonstrate that it operates at least one mobile tool based on zero CO_2 emission technology. (03/2024) Aerial platform in Montfoort is zero emission and the Automated Guided Vehicles (AGV) in hall 17.
At least 100% electricity for consumption at work (construction site) is green electricity and/or covered by national GVOs. (9/2024)
In projects where the company as main contractor provides fuel on the construction site, the company ensures that at least 10% of the total fuel refueled on the construction sites is demonstrably renewable fuel. (9/2024)

Own initiative

Waste management manual for hall managers (9/2024)
Change concrete mixture from De Goudse Beton Centrale for a CO_2 negative mixture by Concrify (11/2024) Tests with cement unsatisfactory
Develop heated mold to lower CO_2-emissions while drying cement floor

Own initiative (following year):

Look into business cases to implement the SPIE plan to make production sites more sustainable. (01/2025)
Phase out NCG projects (natural attrition) (1/2025)
Apply research HVO / Premium fuel for passenger cars and company buses (04/2025)
Apply research HVO for trucks (04/2025)
Public Transport Initiative to increase awareness on company policy (05/2025)
Continue new floor development process (5/2025) new cement mix is under revision
Further subdivide waste streams into mono streams, identify buyers to optimally process streams and initiate processes to ensure proper splitting. (ongoing)
Change lights at location Hulst to LED lights (7/2025)

Investigate Energy Hub with Green Deal Montfoort entrepreneur group to step towards zero gas on production site Montfoort (4/2025)

5. Progress uncertainties and estimates

The results presented should be seen as the best estimate of actual values. Virtually all data used to calculate the carbon footprint is based on invoices, data from insight portals or supplied by the supplier. As a result, the margin of uncertainty is small.

One uncertainty is in the possible human errors that can be made. First, for example, the supplier may transmit the wrong time period, which will be quickly noticed because certain months will remain blank, for example.
Second, typos can be made in copying the data, however, this chance is small since DHME works with a 4-eye principle. Copied data and references are (randomly) checked by another employee than the one copying the data.

Forecast

For H2 2024, there are a number of expectations that could impact carbon emissions:

- Commissioning of the production site in Germany will continue to affect natural gas and electricity consumption.
- The German production site will grow their number of units produced and an increase in material bound carbon emissions is to be expected.
- To reduce transportation Diesel emissions, HVO100 will be selected where possible.
- Problems with Netcongestion will continue and influence sustainability actions regarding the disconnection from gas supply.