

Action plan CO₂ reduction measures 2023-2028

This is an edited version of the Action Plan CO₂ Reduction measures 2023-2028 signed on 28-08-2023

Scope 1 & 2 including business travel

Goal

In 2028 our emissions in scope 1 and 2 including business travel is 30% lower compared to reference year 2022 (in kg CO₂)

2022	2028
21.262	14.883

The combined measures in scope 1 and 2 below should be sufficient to achieve this goal.

Scope 1 Gas Use

Goal

In 2028 our emissions through gas use are 49% lower compared to reference year 2022

2022	2023	2024	2025	2026	2027	2028	
7.26	6.86	6.07	5.37	4.75	4.20	3.71	kg CO ₂ per m ²

Measures 2023

- ✓ Purchase and installation of smart thermostat
- ✓ Installation of smart gas meter

Expected reduction 5.5 %

Measures 2024

- ✓ Installing 1 hybrid heat pump

Expected reduction 11,5%

Measures 2026

- ✓ Installing 1 hybrid heat pump

Expected reduction 11,5%

Measures 2028

- ✓ Installing 1 hybrid heat pump

Expected reduction 11,5%

Scope 2 Business Travel by Car (Operations)

Goal

In 2028 our emissions through business travel by car (operations) are 49% lower compared to reference year 2022 (in kg CO₂ per FTE)

2022	2023	2024	2025	2026	2027	2028
41	39	34	28	25	23	21

Measures sep 2023 – dec 2024

- ✓ At least 1 electric private car can show charging by renewal energy only. This will change the conversion factor from grey to green for the km driven of at least 1 electric private car.

Expected reduction 2023: 3,75%

Expected reduction 2024: 11.25%

Measures 2025

- ✓ All shared car use is electric (grey).
- ✓ At least 2 electric private car can show charging by renewal energy only.

Expected reduction: 17%

Measures 2026

- ✓ 1/3 of all kilometres driven by private car will be done by electric private car (grey) instead of petrol

Expected reduction: 9%

Measures 2027

- ✓ 2/3 of all kilometres driven by private car will be done by electric private car (grey) instead of petrol

Expected reduction: 9%

Measures 2028

- ✓ 100% of all kilometres driven by private car will be done by electric private car (grey) instead of petrol

Expected reduction: 9%

Scope 2 Business Travel by Car (Projects)

Goal

In 2028 our emissions through business travel by car (projects) are 54% lower compared to reference year 2022 (in kg CO₂ per FTE)

2022	2023	2024	2025	2026	2027	2028
123	121	115	100	82	67	56

Measures sep 2023 – dec 2024

- ✓ At least 1 electric private car can show charging by renewal energy only. This will change the conversion factor from grey to green for the km driven of at least 1 electric private car.

Expected reduction 2023: 1.75%

Expected reduction 2024: 5.25%

Measures 2025

- ✓ 86% of shared car use is electric (grey).
- ✓ At least 2 electric private car can show charging by renewal energy only.

Expected reduction: 13%

Measures 2026

- ✓ 1/3 of all kilometres driven by private car will be done by electric private car (grey) instead of petrol

Expected reduction: 18 %

Measures 2027

- ✓ 2/3 of all kilometres driven by private car will be done by electric private car (grey) instead of petrol

Expected reduction: 18 %

Measures 2028

- ✓ 100% of all kilometres driven by private car will be done by electric private car (grey) instead of petrol

Expected reduction: 18 %

Signing

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Date	28-08-2023
Label	CO ₂ Reduction plan
Responsible manager	Helga Lasschuijt– QHSE manager
Responsible directors	Manfred Wansink and Ton Venhoeven

Signed, Amsterdam

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Helga Lasschuijt

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Ton Venhoeven



Ton Venhoeven (Oct 9, 2023 10:55 GMT+2)

Underlying Calculation of Measures

Scope 1 Gas Use

Smart Thermostat

It is clear we do not 'know' our new office space well: we do not know where the opportunities lie. Therefore we will take the following measure

- ✓ Purchase and installation of smart thermostat
- ✓ Installation of smart gas meter

With better understanding of we expect to be able to take immediate measures, such as use of a heating schedule (temperature low after working hours)

- ✓ For a residence a smart thermostat can reduce 18% of gas use.
- ✓ We estimate that hour spent at home is 52 hours per week
- ✓ We estimate that for an office 40 hours, which is 77% of the residential hours
- ✓ So in the office we could reduce 14%
- ✓ It only concerns the new part of the office, which is 375 m² (39%) of the total of 955 m²
- ✓ All in all, the expected reduction that can be realized is 5,5%

Source Milieu Central

Hybrid Heat Pump

There are 4 boilers at the office, 2 in the old space and 2 in the new space.

One the boilers in the new space looks old and we would like to install a hybrid heat pump. But it is not sure whether this is possible in our listed building from 1895.

Assuming we can install a hybrid heat pump, we can calculate reduction as follows:

- ✓ For a residence a hybrid heat pump can reduce 60% of gas use.
- ✓ So in the office we could reduce 46%
- ✓ It only concerns ¼ of all heating installations
- ✓ All in all, the expected reduction that can be realized by replacement of 1 boiler with a hybrid heat pump is 11,5%

Source Milieu Central

We will replace the remaining boilers with 1 new heat pump every 2 years.

General information

The City of Amsterdam stated that for our location, green gas boiler in combination with a heat pump via the existing gas pipes is the recommended way to go natural gas-free by 2040.

<https://www.amsterdam.nl/wonen-leefomgeving/duurzaam-amsterdam/bedrijf-bedrijfspand-verduurzamen/aardgasvrij-ondernemen/>

Scope 2 Business Travel by Car (Operations)

Charging electric car with 100% renewable energy

2022	km	Conversion factor	Kg CO ₂	
Business travel private car	6.539	0,193	1.262	58,48%
Business travel private car electric (grey)	6.940	0,104	722	33,45%
Business travel private car electric (green)	0	0,002	0	0
Business travel shared car (petrol small)	596	0,174	104	4,81%
Business travel shared car electric (grey)	677	0,104	70	3,26%
Total emissions travel operations			2.158	

In 2022 a total of 6940 km was driven by 2 electric private cars, with a total of 722 Kg CO₂. 40% of these kilometres were driven by one of the partners. This partner will install a private charging station at home with 100% renewal energy.

- ✓ 40% of 6940 km calculated with conversion factor 0.002 = 6 Kg CO₂
- ✓ 60% of 6940 km calculated with conversion factor 0.104 = 391 Kg CO₂
- ✓ That is a total of 397 Kg CO₂ compared to 722 Kg CO₂
- ✓ This is a reduction of 45%
- ✓ Electric private car use accounts for 33,45% of all car travel

The expected reduction for car travel in 2023-2024 is 15% (over 16 months)

Shared car: more electric

We expect new electric cars to have a greater range, which makes it feasible to take an electric car for destinations further away. The use of shared car for operations is never more than 400 km. We therefore think it is possible to have all shared car use in 2025 electric for kilometers driven for operations (not for projects).

In 2022 47% of kilometers driven by shared car were on petrol

- ✓ In 2022 total of Kg CO₂ driven by shared car (electric grey + petrol) = 174
- ✓ If 100% is driven by electric shared car (grey), it would have been 132 Kg CO₂. This is 24% less
- ✓ Shared car travel accounts for 8% of all business travel emissions

The expected reduction for car travel in 2025 is 2%

Change from petrol to electric

In 2022 still 60% of all emissions were caused by kilometers were driven by petrol private cars. We expect more people will by electric cars over the next years. The number of kilometers driven with a petrol car may reduce with 1/3 per year as of 2026.

- ✓ In 2022 100% of petrol cars km = 1.262 Kg CO₂ .
- ✓ In 2028 100 % will driven by Electric (grey) and 0 % with petrol = 680 kg CO₂.
- ✓ This is a reduction of 46%
- ✓ Emissions by petrol private cars account for 58%, which means a total reduction of 26%
- ✓ We will average this reduction with 9% per year

Scope 2 Business Travel by Car (Projects)

2022	km	Conversion factor	Kg CO ₂	
Business travel private car	11.271	0,193	2.175	39,66%
Business travel private car electric (grey)	15.618	0,104	1.624	29,61%
Business travel private car electric (green)	0	0,002	0	0
Business travel shared car (petrol small)	6.459	0,174	1.124	20,49%
Business travel shared car electric (grey)	5.396	0,104	561	10,23%
Total emissions travel Projects			5.485	

In 2022 a total of 15.618 km was driven by 2 electric private cars, with a total of 1.624 Kg CO₂. 22% of these kilometres were driven by one of the partners. This partner will install a private charging station at home with 100% renewal energy.

- ✓ 22% of 15.618 km calculated with conversion factor 0.002 = 7 Kg CO₂
- ✓ 78% of 6940 km calculated with conversion factor 0.104 = 1.265 Kg CO₂
- ✓ That is a total of 1.272 Kg CO₂ compared to 1.624 Kg CO₂
- ✓ This is a reduction of 22%
- ✓ Electric private car use accounts for 29,61% of all car travel

The expected reduction for car travel for projects is 7% over 16 months

Shared car: more electric

We expect new electric cars to have a greater range, which makes it feasible to take an electric car for destinations further away. 14% of all of shared car use for projects is more than 400 km. We therefore think it is possible to have 86% shared car use in 2025 electric for kilometers driven for projects.

In 2022 55% of kilometers driven by shared car were on petrol

- ✓ In 2022 total of Kg CO₂ driven by shared car (electric grey + petrol) = 1.685
- ✓ If 86% is driven by electric shared car (grey), it would have been 1.349 Kg CO₂. This is 20% less
- ✓ Shared car travel accounts for 31% of all business travel emissions

The expected reduction for car travel in 2025 is 6%

Change from petrol to electric

In 2022 40% of all emissions were caused by kilometers were driven by petrol private cars. We expect more people will by electric cars over the next years. The number of kilometers driven with a petrol car may reduce with 1/3 per year as of 2026.

- ✓ In 2022 100% of petrol cars km = 2.175 Kg CO₂ .
- ✓ In 2028 100 % will driven by Electric (grey) and 0 % with petrol = 1.172 kg CO₂.
- ✓ This is a reduction of 46%
- ✓ Emissions by petrol private cars account for 40%, which means a total reduction of 26%
- ✓ We will average this reduction with 18% per year









2023.10.05 Plan of Action CO2 Reduction measures 2023-2028

Final Audit Report

2023-10-09

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