

ESG Economist

The moving target of targeted emissions for mobility

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- ▶ **Dutch Climate policy aims for a 58% GHG emission reduction by 2030 compared to 1990 levels and net-zero in 2050**
- ▶ **The European Commission has proposed a GHG reduction target of 90% by 2040**
- ▶ **The mobility sector is lagging in reducing emissions and has a long way to go to hit targets**
- ▶ **The policy scenarios are based on current climate policy and newly proposed target by the EC**
- ▶ **The emissions reduction pathways are steep and the total cumulative carbon budgets are limited**
- ▶ **A further step up of emission reduction is likely so that the 1.5°C remains within reach**
- ▶ **Target emissions for the Netherlands and for mobility are a moving target that will become more difficult to reach**

Introduction

The Netherlands reduced greenhouse gas (GHG) emissions by 31% between 1990 and 2022. CO₂ emissions fell 22% in the same period. The mobility sector in the Netherlands showed less progress, with emissions falling by around 12%. Dutch Climate policy aims for a 58% reduction of GHG emissions by 2030 and has an indicative residual emissions target for the sector mobility which translates into a reduction of 37% by 2030. Sufficiently ambitious subgoals on the way to the often mentioned net-zero by 2050 are important, as achieving net-zero by 2050 is a necessary but not sufficient condition to limit global warming. Specifically, it is not only net-zero but also the path towards net-zero that is crucial as this will ultimately determine the cumulative amount of carbon and other greenhouse gases released into the atmosphere, which in turn determine the extent of global warming. In our ESG Economist of 5 February we focused on Dutch Climate policy including its indicative sector targets and how it compares to the carbon budget (see [here](#)). Recently, the European Commission proposed a new reduction target of 90% by 2040 (for a note on the new EC target see [here](#)). In this report we mainly focus on the emission scenarios for mobility and the mobility sub sectors under current policy and the proposed changes of the European Commission.

Dutch Climate policy

Dutch Climate policy has a target of reducing GHG emissions by 55 percent by 2030. To be on the safe side, Dutch policy aims for a 60 percent reduction. These macro targets have not been translated into formal sector targets. Instead, "indicative residual emissions 2030" are set for each sector. Indicative in the sense that too small a reduction in one sector can be compensated by an extra reduction in another sector, so that the 55 percent reduction for all sectors together remains within reach. The indicative residual emissions per sector add up to 58 percent reduction (GHG emissions from the Dutch territory in line with IPCC definitions). It involves the following climate sectors: industry, power, mobility, built environment, agriculture and land use. The indicative residual emissions for the climate sectors are greenhouse gas emissions in CO₂ equivalent. To compare the cumulative CO₂ emissions with a possible carbon budget, we have applied the same percentage reduction for indicative residual greenhouse gas emissions and CO₂ emissions. The results are set out in the table below. The mobility sector has a relatively high residual emission target for 2030. As a result, it needs to reduce emissions substantially after 2030.

Dutch policy indicative sector reduction targets and assumed CO2 targets							
GHG in megaton CO2 equivalent	1990	2022	2022 vs 1990 %	Target emissions 2030	2030 vs 1990 %	2030 vs 2022 %	2030 vs 2022 Mton
Power	39.6	30.7	-22	13.0	-67	-58	-18
Industry	87.0	49.8	-43	29.6	-66	-41	-20
Mobility	33.3	29.6	-11	21.0	-37	-29	-9
Agricultural	32.6	23.9	-27	17.9	-45	-25	-6
Built environment	30.1	20.1	-33	13.2	-56	-34	-7
Land use	6.2	4.4	-29	1.8	-71	-59	-3
IPCC climate sectors	228.8	158.5	-31	96.5	-58	-39	-62

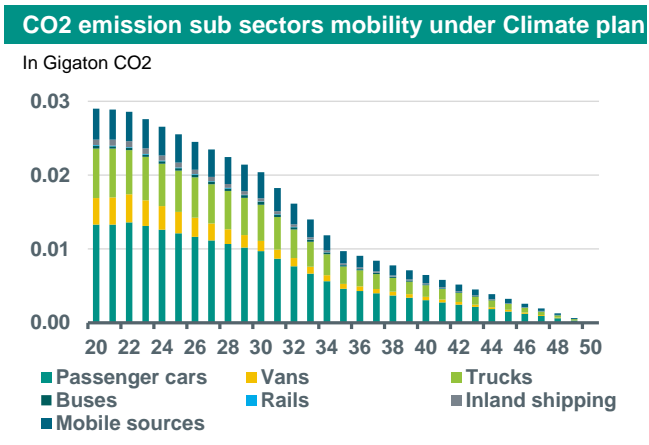
In megaton CO2	1990	2022	2022 vs 1990 %	Target emissions 2030	2030 vs 1990 %	2030 vs 2022 %	2030 vs 2022 Mton
Power	39.5	30.4	-23	13.0	-67	-57	-17
Industry	54.4	43.8	-19	18.0	-67	-59	-26
Mobility	32.9	29.0	-12	21.0	-36	-28	-8
Agricultural	8.0	5.5	-31	4.4	-45	-20	-1
Built environment	28.9	19.1	-34	13.0	-55	-32	-6
Land use	5.8	4.1	-29	1.7	-71	-59	-2
IPCC climate sectors	169.5	131.9	-22	71.1	-58	-46	-61

Source: CBS, IPCC, ABN AMRO Group Economics

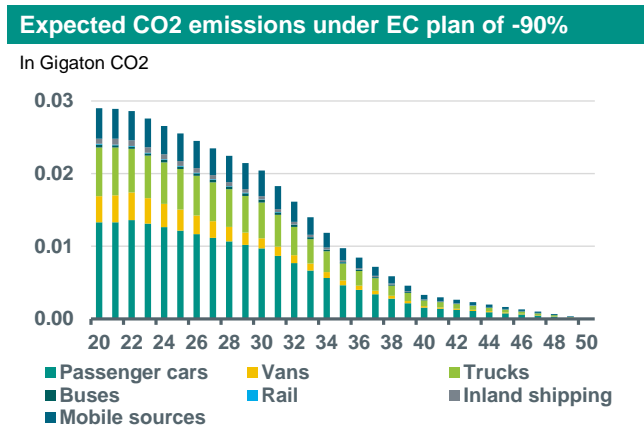
These targets are set for 2030. The Climate policy has also set intermediary GHG targets for 2035 (-70%), 2040 (-80%) and net-zero in 2050. We assume that these GHG reduction targets also apply for just CO2. For 2030 there are indicative sector specific residual emission targets while the targets for 2035, 2040 and 2050 are for all the climate sectors together. For simplicity we assume that country-wide intermediate and net-zero by 2050 targets apply for all the climate sectors.

Mobility sector

The mobility sector includes emissions from personal cars (accounting for 45.3% of total emissions of mobility), vans (12.3%), trucks (22.9%), buses (1.4%), rail (0.3%), inland shipping (2.4%) and mobile sources (such as tractors, forklifts, 14.3%). The graph on the left shows the annual expected CO2 emissions under the Climate policy. The graph below on the right shows the expected CO2 emissions if the proposal of the European Commission to reduce emissions by 90% by 2040 is accepted. For now, we take the overall reduction target into account. Going forward it is likely that the targets for the mobility sector are fine-tuned in line with the overall target.



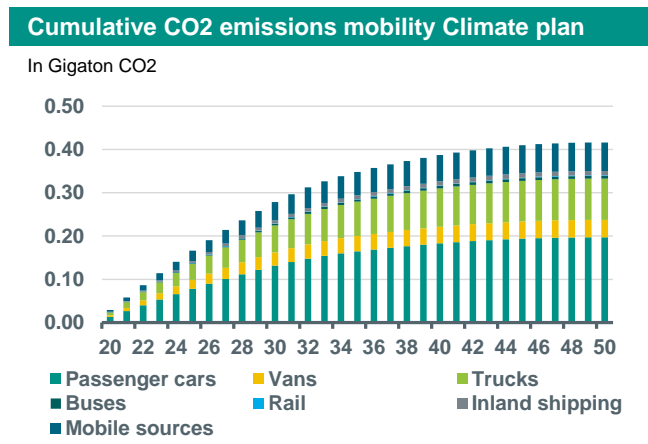
Source: CBS, ABN AMRO Group Economics



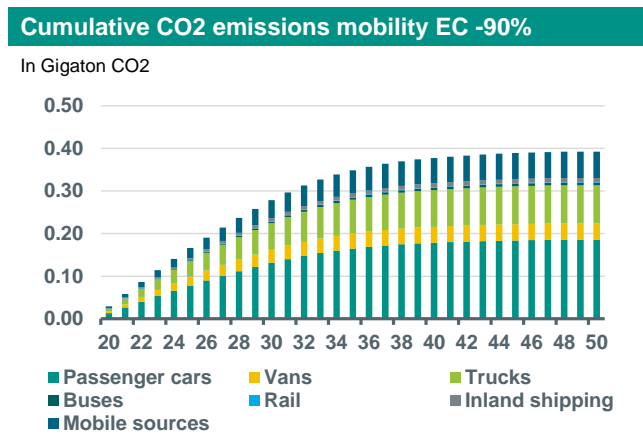
Source: CBS ABN AMRO Group Economics

From these expected CO2 emission pathways for mobility for the current policy and for the proposal of the European Commission we can estimate the cumulative CO2 emissions implied by these pathways. The graph below on the left shows the cumulative CO2 emissions of mobility and its subsectors under the Climate policy. The cumulative emissions of mobility would be 0.42 Gigaton CO2 with passenger cars being responsible for 0.2 Gigaton CO2 in the period 2020-2050 or roughly half. The Netherlands would emit cumulatively 1.85 Gigaton CO2 until 2050 (see [here](#)) so the mobility sector would thus be responsible for around 23% of this. The graph below on the right shows the cumulative emissions under the EC proposed 90% reduction target. With the 90% reduction target the cumulative emission would be around 1.72 Gigaton compared to the

1.85 Gigaton and the mobility sector would probably emit cumulative CO2 emissions of 0.39 Gigaton versus 0.42 Gigaton under the current policy for the period 2020-2050.



Source: CBS, ABN AMRO Group Economics



Source: CBS ABN AMRO Group Economics

We have estimated the cumulative emissions for the Netherlands, climate sector mobility and subsectors mobility under the current policy and the proposed 90% emissions reduction by 2040 for the periods 2020-2050 and 2023-2050. The results are in the table below. These cumulative emissions could be used to compare the Dutch Climate policy and the policy towards mobility with the continuously changing available carbon budget for 1.5°C (see a note on this [here](#)). We think that it is crucial to have not only emission pathways but also take into account cumulative emissions to see if these pathways are really in line with the 1.5°C available carbon budget (based on current share or any other more stringent distribution method of this carbon budget).

Cumulative CO2 emissions mobility 2020-2050

	Current policy	EC proposal -90% by 2040
2020-2050		
Total Netherlands	1.85	1.72
Total mobility	0.42	0.40
Passenger cars	0.20	0.19
Vans	0.04	0.04
Trucks	0.10	0.09
Buses	0.01	0.01
Rails	0.00	0.00
Inland shipping	0.01	0.01
Mobile sources	0.07	0.06
Total mobility	0.42	0.39

Source: CBS, ABN AMRO Group Economics

Cumulative CO2 emissions mobility 2023-2050

	Current policy	EC proposal -90% by 2040
2023-2050		
Total Netherlands	1.43	1.31
Total mobility	0.33	0.31
Passenger cars	0.16	0.15
Vans	0.03	0.03
Trucks	0.08	0.07
Buses	0.01	0.01
Rails	0.00	0.00
Inland shipping	0.01	0.01
Mobile sources	0.05	0.05
Total mobility	0.33	0.31

Source: CBS ABN AMRO Group Economics

Conclusion

In earlier reports we concluded that the Dutch Climate policy and its estimated cumulative CO2 emissions are in line with the carbon budget (on current share) for the 2020-2050 but falls short for the carbon budget for 2023-2050 (see [here](#)) reflecting that emissions remained high in 2020-2022, which shrank the carbon budget. This would result in the same conclusion for the Dutch mobility sector and sub-sectors. So the Dutch climate policy and the policy towards the mobility sector needs to be more ambitious. Recently the European Commission has proposed a target of reducing GHG emissions by 90% by 2040. We concluded that this proposed new emission target is ambitious but our analysis of the remaining carbon budget suggests that somewhat higher emission reduction would likely be necessary for the EU (including the Netherlands) to remain consistent with a 1.5 °C trajectory (see [here](#)). This could imply that the emissions reduction pathways and the total of cumulative emissions for the mobility sector need to also be steeper. So the target emissions for the Netherlands and for mobility are a moving target that will become more difficult to reach.

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