

# Decarbonising Transportation in The Netherlands – A Policy Case Study

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## Summary

This case study reviews the transportation decarbonisation policies of The Netherlands under *The Energy Agreement for Sustainable Growth* (EASG). The agreement was finalised after six months of negotiations between more than forty representative organisations and The Netherlands Government. The negotiating parties included representatives from labour unions, employers' associates, environmental organisations, finance groups, construction contractors, and government. The group concluded that The Netherlands should have a "full sustainable" energy supply by 2050.

The negotiations commenced after the end of six government cabinets in ten years. This political instability put The Netherlands at risk of breaching [EU targets](#) on decarbonisation and renewable energy. EASG sets out goals within twelve pillars of the Dutch Economy. The transportation decarbonisation targets are (1) a 60% sectoral reduction in emissions by 2050 compared to 1990 levels, and (2) a 25 Mt CO<sub>2</sub> reduction, or 17%, by 2030. The short-term policies largely take advantage of early momentum in electric vehicle (EV) uptake, while long-term policies are unclear and under development.

## Policy Description

In the years prior to *The Energy Agreement for Sustainable Growth* (EASG), the Dutch government saw six cabinets (but not entire governments) in ten years. As a result of political instability and inaction, The Netherlands was in danger of missing their [EU targets](#) on decarbonisation and renewable energy. The coalition government of 2012 requested advice from the Social and Economic Council (SER) on climate and energy policy. The government was seeking an assessment of the economy's ability to adapt to climate change considering rising energy prices and reduced fossil fuel availability.

SER replied with a pledge to create a *National Energy Accord for Sustainable Growth*. The council, businesses, and NGOs informed Government that a unified energy and climate policy was needed for foster investment and long-term planning. On 16<sup>th</sup> November 2012, the advisory report *Towards an Energy Agreement for Sustainable Growth* was adopted at SER's meeting, and the conference leading to the agreement began.

On 12<sup>th</sup> July 2013, an outline agreement was reached before Parliamentary recess. Six weeks later, on 28<sup>th</sup> August 2013, parties to the negotiations reached agreement on EASG. On 6<sup>th</sup> September 2013, after an eight month closed-door negotiation process, all forty seven parties to the negotiation signed the EASG. The EASG, comprising twelve pillars, outlines a number of long term targets for The Netherlands' decarbonisation pathway to reduce emissions by 60% from 1990 by 2050.

The Netherlands' Transportation Strategy falls under *The Energy Agreement for Sustainable Growth*.

## Targets

Transportation decarbonisation is one of twelve pillars of the agreement. The Netherlands' Transportation Strategy set transportation targets for decarbonisation.

These targets are aimed at introducing sustainable and efficient transportation. The parties to the negotiations of EASG set two, high-level targets:

- 60% reduction in CO<sub>2</sub> emissions by 2050 (compared to 1990); and,
- 25 Mt CO<sub>2</sub> reduction (-17%) in 2030 en route to attaining the 2050 target.

Using the above targets, the stakeholders of the transport industry drafted a “green agenda”. This agenda focused on twelve transportation industry specific key areas. The agenda noted the high-level targets (long term goals) agreed upon during the negotiations and formulated pathways to achieve these targets (short term measures).

These pathways centred around:

- sustainable fuel mix policy;
- EV charging stations, to be funded by public-private partnerships;

In addition to the high-level targets, the sector agreed on targets that would:

- Contribute to energy savings of 15-20 PJ by 2020 compared to 2012 baseline. For comparison, 1 PJ reduction is equivalent to the annual average electricity and gas consumption of 15,000 Dutch households.
- From 2035, all new passenger cars sold must be [capable of running CO<sub>2</sub> emission free](#). ([Sustainable Fuel Mix objective](#))

## Timescales

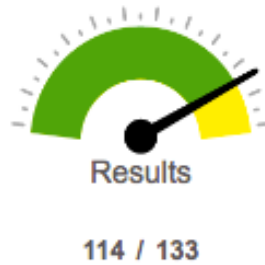
The Standing Committee is the governing body of the EASG. It comprises all parties to the Agreement and is chaired by a former Minister for the Environment. For accountability, the group produces an annual progress report, a [National Energy Report](#) containing a policy assessment, formal evaluation of the Energy Agreement in 2016 (released in Dutch, English to follow), and facilitates further evaluation of policy mechanism.

Within the transport sector and separate from the “green agenda” paper, the [Green Deal](#) seeks to consolidate all previous and future Dutch actions on EV mechanisms until 31st December 2020. It will produce a review in mid-2018, with aims to conclude the policy at the end of 2020. Specific actions or policies for future sustainable fuels have yet to be established.

## Communication

Progress is monitored on the [BEN dashboard](#) (see figure) for the public and participants. There are Annual progress reports, National Energy Report, a formal evaluation of the Energy Agreement was made in 2016. After the latest progress report, the EASG received criticism by green NGOs and left-leaning parties in Parliament as not being ambitious enough with decarbonisation targets.

## Current status



Example progress meter on [BEN dashboard](#) for measuring progress on policy agreements under “The Energy Agreement for Sustainable Growth.” Progress on individual policies is not measured. The metric chosen only show whether or not a policy exists.

### Context-specific factors

No clear policy trade-offs were made, as the negotiations occurred behind closed doors with policymakers and involved organisations. However it is important to note that the discussions which led to the EASG was a response to industry demand. The Social and Economic Council (SER), businesses, and NGOs informed Government that a unified energy and climate policy was needed for foster investment and long-term planning. It is unclear which business & industry sectors were the catalysing sectors for the improved policy.

### Sustainable Fuel Mix

[A Vision on Sustainable Fuels for Transport](#) provides the framework for achieving the transportation decarbonisation goals at a country-wide level. It was laid out after a consultation process involved over 100 organisations. The stakeholders represented fuel producers, vehicle manufacturers, energy companies, transport and shipping companies, local authorities, NGOs, and local knowledge centres. They agreed to bring forth a package of public and private measures that would ensure the decarbonisation goals are met, regardless of adverse economic conditions. To streamline discussion on reaching decarbonisation targets, the major transportation groups divided into six tables:

- Road transport-renewable liquid
- Road transport-renewable gaseous
- Road transport-renewable hydrogen
- Road transport-renewable electric
- Sustainable shipping
- Sustainable aviation

The six working tables [reported back](#) with specific action plans on how they will help support the EASG and transportation decarbonisation goals. Amongst other goals, they estimate that the Netherlands require approximately 3 million zero-emission vehicles by 2030. Passenger transportation and short distance freight transport are suitable for electric power sources from batteries or hydrogen fuel cells. These modes of transport receive the earliest action, because EVs already have market penetration. In the long-term, significant research and development will be needed in biofuels and hydrogen fuel to make them market-ready.

[The groups point to significant co-benefits](#) to decarbonising the transportation sector. Cleaner air and quieter public transport will result from electrifying public transportation. Smart grid technology development will be aided by EV uptake, and foster innovation in The Netherlands' Universities, and smooth renewable energy storage.

There will be an employment shift from manufacture, maintenance, and support of internal combustion vehicles to similar industries surrounding EVs. However, EVs are more reliable than internal combustion vehicles, and will require less maintenance. This shift could be supported by a facility the size of Tesla's Gigafactory to capitalize on the [€9.2 billion \(2015\) industry, and bring 6,500 jobs](#).

### EV Charging Station Rollout

From 2011-2015, The Netherlands became a leader in electric vehicle transportation. The country has the [second highest penetration of EVs globally](#). That success has also benefited employment, as the number of full-time jobs in the sector has [increased fivefold](#) in the five years leading up to 2013. CE Delft projects [a further sixfold increase in full-time jobs](#) from 1,600 in 2013 to 10,000 in 2020.

[The Green Deal Electric Transport 2016-2020](#) seeks to consolidate all previous and future Dutch actions on EV mechanisms until 31st December 2020. It is assumed that no more financial incentives will be needed to grow the EV sector in The Netherlands after 2020. However, a review of the progress of the policies will be released in mid-2018.

There are various working groups which connect the parties and / or their members. Examples are: Big Wheels, Consumer, Communication, Light Electric Vehicles, Charging Infrastructure Plug-in Hybrid Electric Vehicle and Internationalisation. Beyond the working groups, further knowledge development will occur at three technical universities teaching about electric vehicles.

To achieve the growth of EV deployment through a consumer market, funding is available to improve the charging infrastructure. *Living Labs* will initiate research into smart charging and storage by EVs for the variable use of renewable energy to the grid improvement. This research initiative will provide space for leaders in the field of EV to redeem (international) earning potential.

Two additional EV targets were established: 200,000 EVs by 2020, and 10% of new cars will be EVs in 2020. There are currently [115,000 EVs](#) utilising nearly 12,000 public and 14,300 semi-public charging stations. Of these 612 are fast chargers. There are a further 72,000 private charging stations in The Netherlands. This is a rapid improvement from the [5,800 public, and 7,200 semi-public charging stations in 2015](#).

In [July 2015](#), the EU Commission approved a plan for the Netherlands to make available €33 million of public funds for installation and operation of EV charging stations. The plan falls under the Green Deal scheme for publicly accessible charging infrastructure. The scheme allows local authorities to choose their level and type of participation considering local needs. The public funding first comes from local authorities, and if private investment is secured, national-level funding is made available. The scheme will run for three years until 1<sup>st</sup> July 2018, with annual reviews.

The rollout of the charging stations quickly found further problems in costs. [Four months after the initial plans](#), a constituent group convened to give a first assessment of the roll-out. The group consisted of representative local authorities, Government, EV station installers, and NGOs for EV transportation. The group concluded that existing EV stations are yet to operate profitably, and would need further investment from local and national government to meet 2020 targets. They proposed an additional €5.7 million of public funds during the three-year scheme. The funds would subsidised €900 per station in the first year to €300 per station by the end of scheme.

In addition to these funding issues, there have been legal issues. Fastned won a licence from the Dutch government to build 200 electric vehicle fast-charge stations. They contracted ABB to build the stations located "[within 50 kilometres of all the country's 16.7 million inhabitants](#)," and were challenged in court. Fastned's plan to build the charging stations next to petrol stations on highways was challenged by the association of petrol station operators. The association argued that they had an exclusive government permit to sell transport fuels at those locations. A judge ruled in favour of Fastned, and allowed the start-up to compete alongside the petrol stations.

## Electric Public Buses

The Government set a [2025 goal of complete electrification](#) of the public bus system. As of April 2016, only 52 of 5,000 public buses and trollies in the Netherlands on the electric grid, meaning The Netherlands are committed to replacing 99% of the public bus fleet in the next 8 years.

## Electric Trains

The Dutch Government announced plans to entirely electrify its country's train system with wind power by 2018. Last month, [Government announced](#) they had achieved this goal a year earlier than expected. While this achievement is being celebrated as a triumph towards decarbonisation, it is also an important indicator of an efficient EU electric grid.

The Netherlands generates 7.4 billion kWh of wind power, compared to 12.5 billion kWh wind power demand. The train system is 10% of this demand, roughly equal to all the households in Amsterdam. To meet the gap in renewable supply, Dutch company Eneco, procures Guarantees of Origin for certificates of renewables. Therefore, this transportation decarbonisation goal was met by (1) improved wind farm capacity in The Netherlands, Belgium, and Finland; (2) a market mechanism which allows for purchasing and transmitting renewable energy across Northern Europe; and (3) efficient interconnection between EU nations.

## Conclusions

- The Netherlands transportation decarbonisation policies under The Energy Agreement for Sustainable Growth seeks to reduce transportation emissions by 60% by 2050 (compared to 1990) with an intermediate goal of 25 Mt CO<sub>2</sub> reduction (-17%) in 2030. Decarbonisation targets were made because of government inaction, and industry desire for long-term policy.
- Full electrification of the train system was made possible by early completion of wind farms in Northern Europe.
- Transportation decarbonisation policies take advantage of early Electric Vehicle (EV) market penetration. The Green Deal helps facilitate EV infrastructure investment through public-private partnerships. The Dutch government will look to close this mechanism in 2020, when they expect charging infrastructure will be sufficient and/or economical to support continued EV development.
- Transportation decarbonisation targets contain small policy changes in the short-term, and require further research for long-term goals. Pre-market technologies are being researched at Dutch labs and universities. These future technologies will support current EV infrastructure which has seen rapid success thanks to regular industry-led consultations.