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Rijksoverheid

Clarification of the National Air Quality Cooperation programme

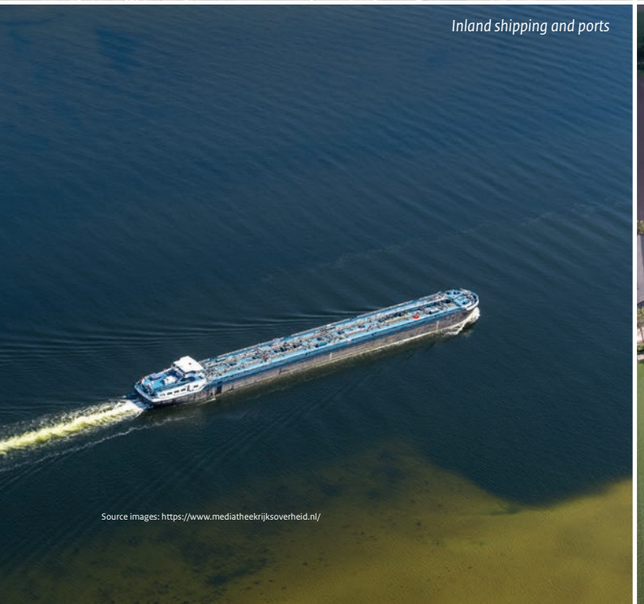
Health gains for everyone


Mobility


Mobile machinery


Industry


Homes - wood burning


Inland shipping and ports

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Agriculture

Preface

Clean air for everyone!

Clean air is of vital importance. For everyone. Even though air has become much cleaner in recent decades, air pollution remains a major health risk in our country. In the Netherlands we live on average nine months shorter due to air pollution. And in one in five children with asthma, the disease is related to air pollution.
In short, there is work to be done. Our air can and must be cleaner. That is why, at the beginning of 2020, the Cabinet will sign the Clean Air Agreement with provinces and municipalities.

"Breathing clean air is a right for everyone"

The aim of the agreement is to permanently improve air quality in the Netherlands. With our approach to national sources, we are aiming for a health gain of at least 50 percent in 2030 compared with 2016. That means that people will live longer, healthier and with higher quality.

The measures that we are proposing are feasible and affordable. And where possible they are in line with current initiatives.
In all sectors, from shipping to haulage and passenger transport, from industry to agriculture, the authorities are starting initiatives and actions for cleaner air in consultation with companies and citizens. Ideas for cleaner fuels, less particulate matter emissions, greater use of electric motors and bicycles are among the many proposals. Reducing the nuisance caused by wood smoke is also part of the Clean Air Agreement.

Public support for the measures is an important aspect of the agreement. Citizen initiatives will also be involved in its implementation, as well as ideas and innovations from the business community.

I want a country where everyone, young and old, in the city or beyond, and certainly people who are particularly sensitive to air pollution, can live, work, exercise and play without any problems. Breathing clean air is a right for everyone. Unfortunately, we cannot achieve our ambitions overnight. But if together we put our shoulders to the wheel, we certainly have the prospect of cleaner air for everyone.

Stientje van Veldhoven
Minister for the Environment and Housing
Ministry of Infrastructure and Water Management


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1. Introduction

Urgency

Air, we can't live without it. We breathe it in and out and enjoy the fresh air to the full.
Yet that air is not every way as fresh as we think. Even though we don't immediately notice it, there are more pollutants in our air than we would like. These substances come from numerous sources; from traffic exhausts to industrial chimneys. But also households, agriculture and shipping contribute to the pollution.
What's more, the pollution is also literally blown in from areas outside our national borders. With a strong east wind, the polluted air from the Ruhr area easily penetrates our country as far as the Randstad, and with a strong westerly wind, the Netherlands exports dirty air to our neighbours.
Although this contamination is not so visible, it is very noticeable. After smoking, air pollution ranks among one of the most important health risk factors, in the same order of magnitude as overweight1. In particular, it is particulate matter (PM10, PM2.5 and ultrafine matter), nitrogen dioxide (NO_2) and ozone that affect public health[1]. The presence of these substances in the air leads to a loss in life expectancy, affects the quality of life and has an impact on nature.
Every year, 11,000 people die prematurely due to air pollution. On average, Dutch people live 9 months shorter due to polluted air.
Air pollution even results in a lower birth weight and an increased death rate among newborn children[1]. The health damage not only saddles society with a lot of grief, but also with high costs. And just as important, quality of life is jeopardised.
Not everyone suffers the same amount of air pollution. Children, the elderly, asthma patients and people with cardiovascular disease are more sensitive to the effects of air pollution. These highly sensitive groups suffer earlier and more severely from irritated airways, and mucous membranes, shortness of breath, reduced ability to concentrate and reduced labour productivity[2].

1 RIVM: VTV survey (Public health future survey 2018) (Netherlands National Institute for Public Health and the Environment)
2 RIVM: Air quality and health gain 2015
3 IBO air quality 2019 (Interministerial Policy Review)

The degree of pollution is not the same throughout the country. The air is most polluted in the big cities, around busy roads and port complexes and near large concentrations of intensive livestock farms. Yet a considerable health gain can be achieved even in the cleanest places. Even within one and the same city the differences appear to be large. People who live along a busy traffic artery in the central area are exposed to polluted air considerably more and more intensively than those who live in a green suburb.
The differences in air quality and the differences in sensitivity mean that life expectancy is not the same for everyone and that one person experiences more problems than the other.
As authorities (central government, province and municipalities) we are concerned about that. It is why we are strongly committed to improving air quality. We have been working on this for quite some time, and with success. Air quality in the Netherlands has improved considerably in recent decades. Concentrations fell sharply between 1980 and 2015: nitrogen dioxide by 41 percent, particulate matter (PM10) by 73 percent and the smaller fraction of particulate matter by 80 percent3. These figures comply with European limit values almost everywhere, with the exception of a few busy roads in inner cities and some areas with intensive livestock farming.

Ambition

But we don't have clean air yet. The ambition of the Clean Air Agreement goes further. Air must and can be cleaner. Our ambition is to limit the emission of pollutants in all relevant sectors in order to achieve at least a 50 percent health gain in 2030 compared with 2016. This concerns health effects as a result of exposure to emissions from Dutch sources. A combined deployment of measures and commitment to ambitious international air policy must result in an average health gain of more than four months in 2030 and 4,000 to 5,000 fewer deaths per year from exposure to air pollution.

URGENCY CLEAN AIR AGREEMENT

9 months
premature death (average)
as a result of air pollution in 2016[1]

→ **11.000**
deaths/year
as a result of air pollution in 2016[1]

PURPOSE CLEAN AIR AGREEMENT

50%
health gain[2] in 2030 (compared with 2016) for the health effects from Dutch sources

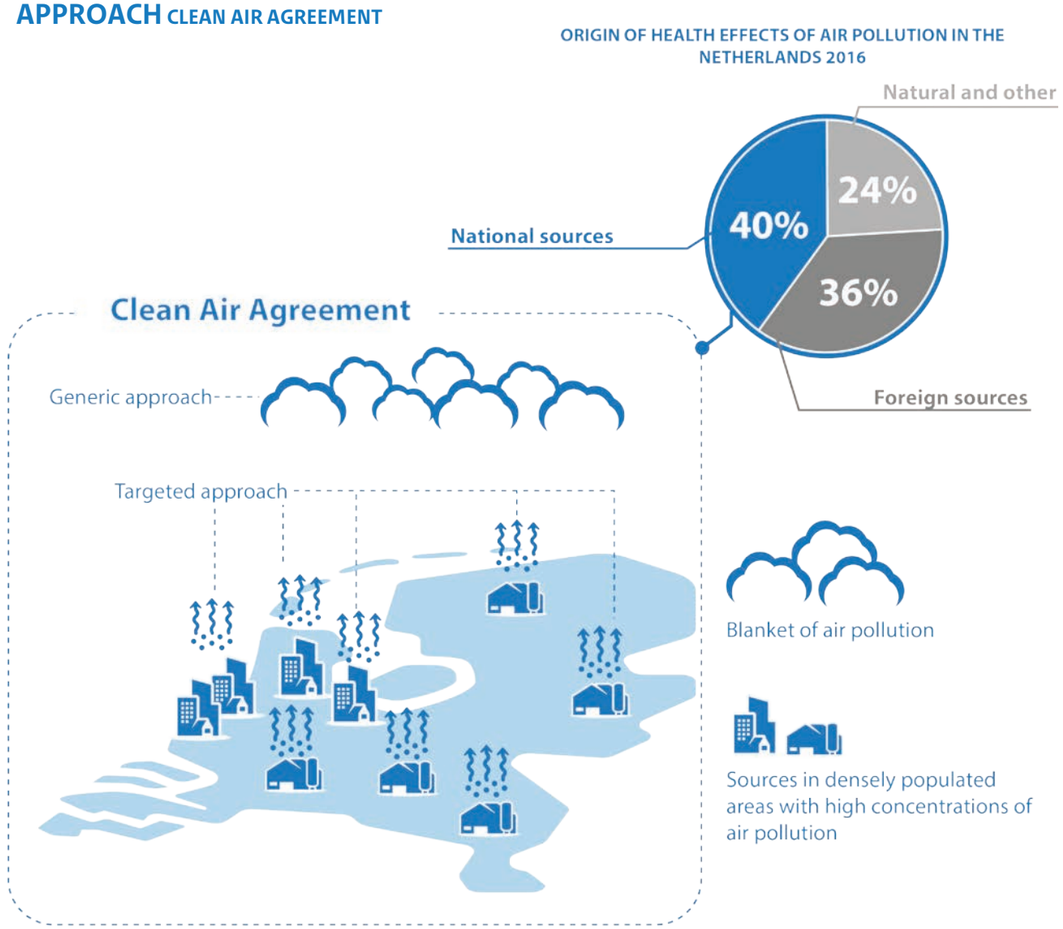
→ **+4** months life

→ **4.000 - 5.000**
fewer deaths/year as a result of air pollution in 2030

→ **+ 3 tot 6 billion euros**
societal benefits/year in 2030

Urgency and purpose of Clean Air Agreement..[1]

APPROACH CLEAN AIR AGREEMENT



The Clean Air Agreement contains generic and specific measures. Generic measures tackle (the blanket of) air pollution over the whole of the Netherlands. Specific measures focus on densely populated locations with high concentrations of air pollution, where the potential health gain is greatest. Reducing the blanket of dirty air produces health gains for the whole of the Netherlands, and health benefits can be considerable in the areas with the highest (peak) concentrations.

Together we will make the difference

To achieve this ambition, we have drawn up the Clean Air Agreement. The agreement makes the transition from merely steering towards compliance with European limit values, to achieving health gains for everyone.
In the Clean Air Agreement, central government, provinces and municipalities will lay down what they will do to make our air cleaner. The more parties that participate, the greater the gain.

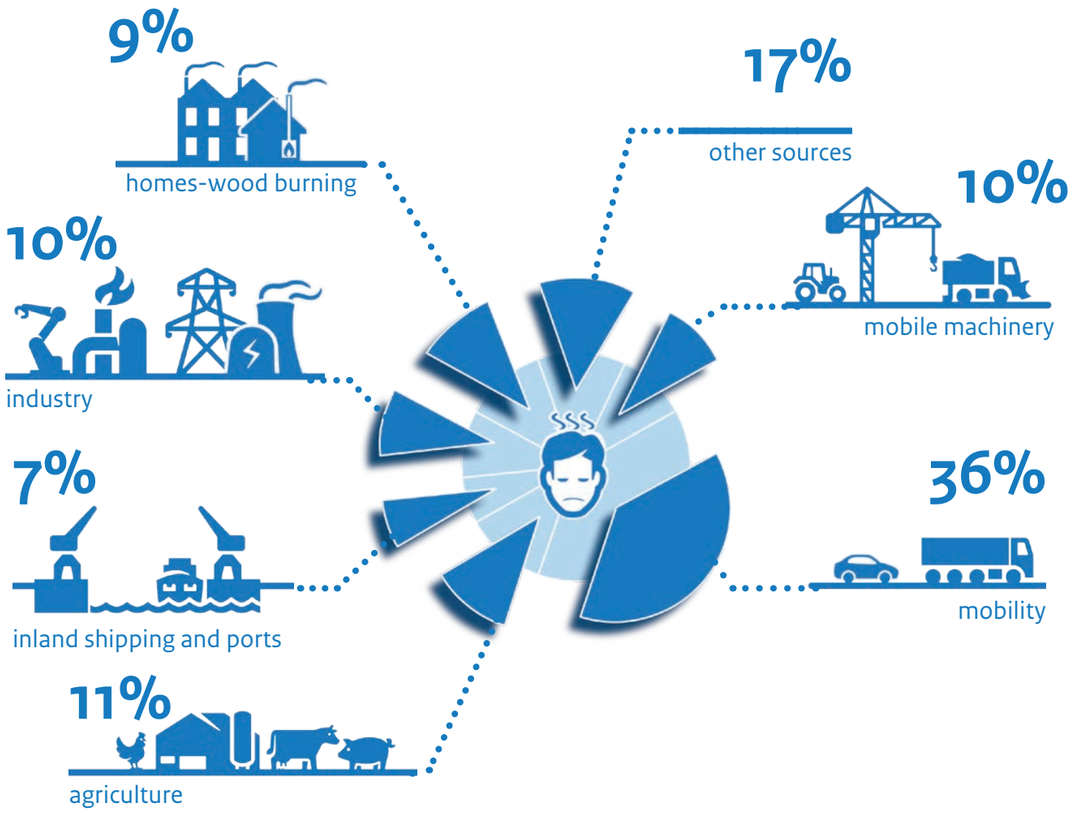
Measures; generic and area-specific

The objective of the Clean Air Agreement is to improve air quality throughout the Netherlands, removing the blanket of air pollution that covers our country as far as possible. To this end, the Clean Air Agreement specifies for each relevant sector (road traffic, mobile machinery, industry, households, shipping and ports and agriculture) the measures that will be used to reduce nitrogen dioxide and particulate matter emissions into the air and who is in charge. For aviation emissions in the Netherlands, the approach and measures will be elaborated in the Aviation Policy Document and the subsequent Airport Decisions.
In addition to this generic approach there is an area-specific approach. For densely populated areas with high concentrations of air pollution, a supplementary tailor-made approach is needed. This is where the highest exposure occurs and the potential health gain is greatest.

Measures will be developed for vulnerable groups, such as heating alerts in adverse weather conditions and/or poor air quality. Measures are also being investigated at local level, such as the introduction of low-wood-burning and non-wood-burning neighbourhoods.

1 RIVM: VTV survey (Public Health future survey 2018). This concerns premature deaths from exposure to particulate matter and nitrogen dioxide.
2 The health effects and health gains for the Clean Air Agreement are calculated on the basis of lost years of life.

CONTRIBUTION BY NATIONAL SOURCES



Contribution per sector to the health effect reduction in life expectancy. (2016) [1]

International agenda

Air quality does not stick to national frontiers. The international component cannot be missing in our approach. Approximately half of the health effects of air pollution in the Netherlands are caused by air pollution from other countries. The development of emissions from abroad cannot be directly influenced, but a solid Dutch commitment must certainly help.

That is why, in an international context, we are actively committed to a European-wide tightening of emission requirements and we are presenting our international agenda in the Clean Air Agreement.

Knowledge development and monitoring

Knowledge of air quality and how we can implement effective policy is constantly evolving.
For that reason, we are working on a knowledge and innovation agenda to gain a better insight into the effectiveness of the measures and to develop innovative approaches. We are deepening our knowledge of sources of air pollution and we are investigating the health effects of various pollutants.

As part of the agenda, a number of innovative pilots have been started, in which we are experimenting with local and regional authorities on innovative and far-reaching measures to tackle air pollution. These pilots include clean agriculture, healthy ports and the development of low-wood-burning/non-wood-burning neighbourhoods. We will carefully monitor the effects of our measures. To that end, RIVM has developed the Health Indicator (also see Chapter 2). This can be used to calculate the effect of air pollution on the life expectancy of the population. Not only nationally, but down to neighbourhood level. At least once every three years, starting in 2020, the health indicator will calculate whether the objectives of the Clean Air Agreement are still within reach or whether adjustments are needed.

Involvement and young people

Clean air concerns us all. Air quality affects people and companies and also our future generations. In addition, projects such as "Citizens Science" strengthen engagement with air quality policy. By involving residents in setting up a monitoring network, they will get an active role in monitoring air quality and we can collect a larger amount of data at a lower cost. This will also allow us to give substance to our adage "clean air is a joint responsibility" at the level of the individual citizen.

Relationship with national Air Quality Cooperation Programme

The Clean Air Agreement is of a different nature and has a different objective to the current National Air Quality Cooperation Programme (Nationale Samenwerkingsprogramma Luchtkwaliteit, 'NSL'). NSL provides for a joint effort by the central government and local and regional authorities to resolve the (remaining) overshoots of the European air quality limit values. The Clean Air Agreement, on the other hand, is aimed at achieving health gains for all through continuous improvement of air quality and works towards the WHO-recommended values in 2030. The NSL will remain in force until the Environmental Planning Act comes into force. For the period after NSL, the Cabinet intends to make administrative agreements with relevant municipalities and provinces in areas of attention, in order to further anchor the joint responsibility for tackling (imminent) overshoots.

Relationship Approach nitrogen deposition and the national Air Quality Cooperation programme

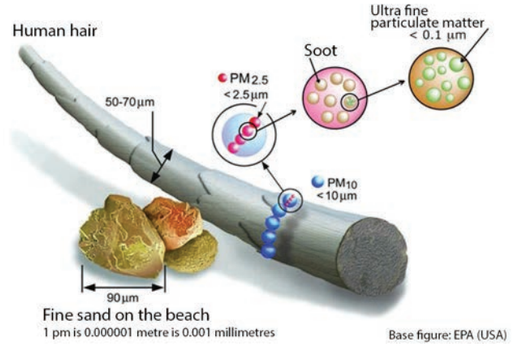
The nitrogen deposition approach and the national Air Quality Cooperation programme reinforce eachother: Many measures from the Air Quality Cooperation programme contribute to the nature goals by reducing nitrogen depositions. On the other hand additional measures from the Approach nitrogen deposition on the natural environment often lead to additional health gains. The measures in both policy documents are tuned with eachother within the central government. For the sector agriculture the nitrogen deposition approach is leading. The Air Quality Cooperation programme won't introduce new radical measures for the agricultural sector, but will focus on the effective implementation of existing policies and innovations.

Clarification:
The Air Quality Cooperation programme will focus on increasing health gains by reducing:

- Particulate matter: primary particulate matter like soot and secondary particulate matter that develops from, among others, ammonia (NH_3)
- Nitrogendioxide (NO_2)

The approach of reducing the 'blanket' of air pollution will will not only increase health gains but will also reduce the depositon on the natural environment.

TYPES OF PARTICULATE MATTER[2]



Schematic drawing of the size of particulate matter in comparison of a human hair.

1 RIVM 11

2 http://epa.gov/airquality/particlepollution/basic.html

Main air pollutants and sources1[1]

Nitrogen oxides (NOx): when nitrogen enters into connection with oxygen in the air, nitrogen oxides (nitrogen monoxide (NO) and nitrogen dioxide (NO_2), together NOx) are formed. The main sources of nitrogen oxides are traffic and shipping. The concentration of nitrogen dioxide is particularly high in urban areas and on motorways.

Particulate matter (smaller than 10 micrometres): particulate matter consists of particles and droplet-shaped substances in the air that cannot be seen with the naked eye (otherwise there is coarse dust). Direct emissions of particulate matter are referred to as primary particulate matter. Particular matter can also be formed when nitrogen oxides react with acidifying substances such as ammonia. In that case, we refer to secondary particulate matter. Particulate matter (abbreviation PM) has different forms:

PM10: particulate matter with a diameter of less than 10 micrometres. The main sources of PM10 are industry, traffic, agriculture and shipping.

PM2.5: particulate matter with a diameter of less than 2.5 micrometres. Sources are industry, traffic, agriculture, households and (seagoing) shipping. PM2.5 spreads like a blanket across the country (much stronger than PM10).

Soot: a special form of particulate matter is soot (elemental carbon) that has a diameter of less than 0.3 micrometre. Soot consists of carbon with compounds such as metals and is released during incomplete combustion processes.

Ultrafine particles: the smallest faction of particulate matter (diameter less than 0.1 micrometre). Ultrafine particles are released during combustion processes, such as wood burning, and are emitted by cars and airplanes, in particular during take-off and landing.

Ammonia (NH_3): ammonia combines with nitrogen oxides in the air to form secondary particulate matter. The main source is agriculture. The highest concentrations of ammonia can therefore be found in the agricultural regions in central and southern Netherlands..

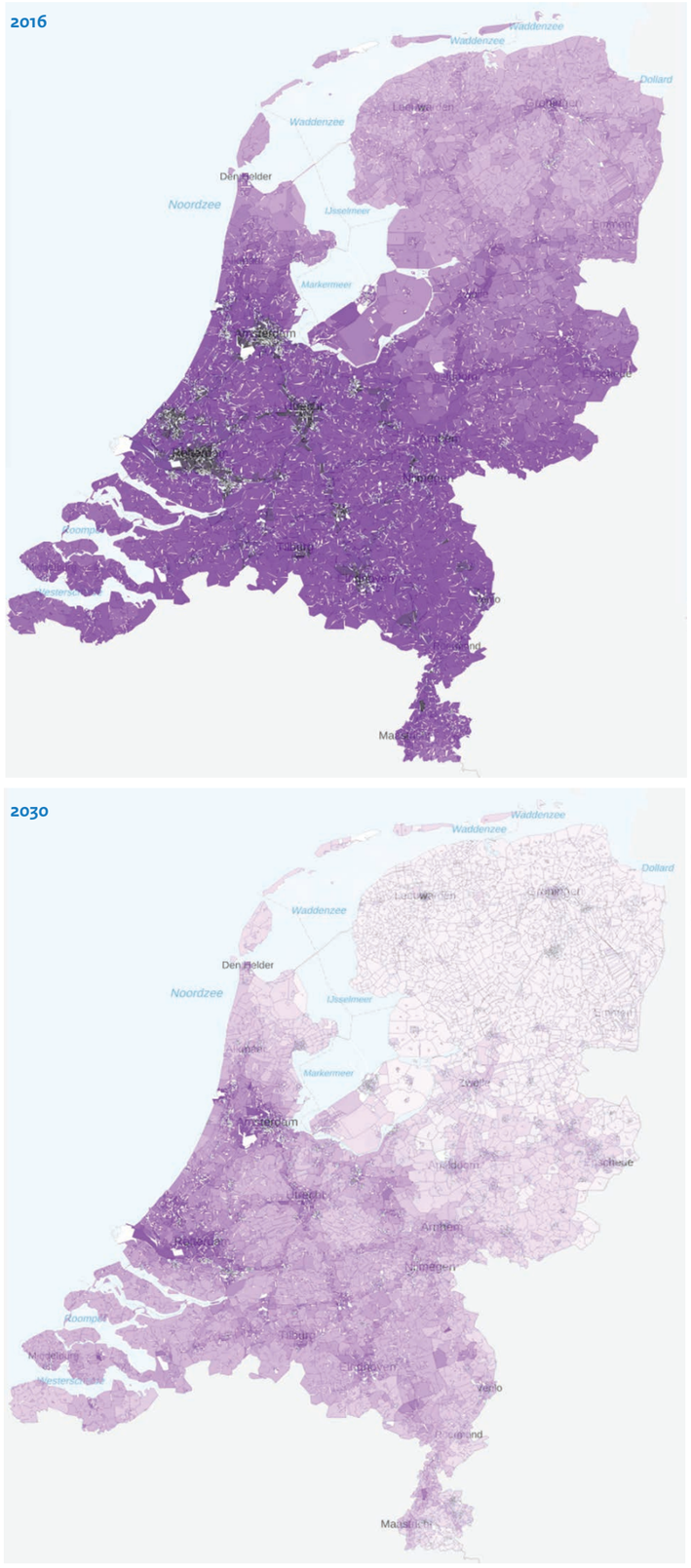
Sulphur dioxide (SO_2): sulphur dioxide is released during the combustion of sulphur-containing (fossil) fuels and thus forms secondary particulate matter.

Ozone (O_3): ozone is a gas formed under the influence of sunlight from carbon monoxide, nitrogen oxides and volatile organic compounds. The ozone concentration is influenced by the weather and is high on sunny, windless days. O_3 is very harmful at living level for plants, animals and human health.

The most harmful are particulate matter, NO_2, ammonia, sulphur dioxide and ozone. Because nitrogen oxides, ammonia and sulphur dioxide have the property of depositing on the soil (deposition), they also have a serious negative effect on the quality of nature and biodiversity in the Netherlands and neighbouring countries.
The measures in the Clean Air Agreement focus primarily on preventing health damage caused by nitrogen oxides and particulate matter (PM10, PM2.5 including soot). Many of these measures also reduce emissions of other substances.

NATIONAL SOURCES OF AIR POLLUTED SUBSTANCES

1 IBO luchtkwaliteit 2018



Loss of life expectancy due to air pollution 2016 (in months). The darker the colour, the greater the loss of life expectancy.

Maximum foreseen loss of life expectancy in 2030 (in months), on implementation of established policies. In 2030, the map will be considerably lighter for the whole of the Netherlands, which is equivalent to a higher life expectancy compared with 2016.

2. Impact of air pollution on health

Exposure to air pollution can cause people to die earlier and it gives rise to a range of health problems that affect the quality of people's lives and functioning at school and work. The greatest health gain can be achieved among groups that have been exposed to air pollution for years. This is often the case in large cities, near roads, industry and intensive livestock farms. Health effects also occur under the European air quality limit values, which is why the Clean Air Agreement will work towards the WHO-recommended values.

Harmful substances

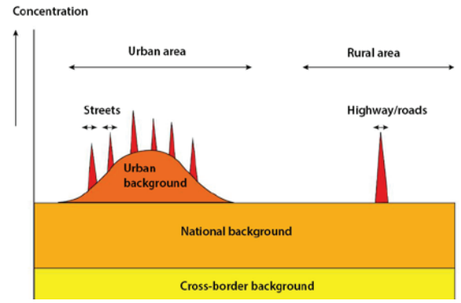
In terms of health damage, the most important components in contaminated air are particulate matter, nitrogen dioxide and ozone[2]. PM2.5 and soot are the most harmful components of particulate matter (see overview of harmful substances)[3]. Nitrogen oxides, ammonia and sulphur dioxide can lead to the formation of secondary particulate matter, which covers a large part of the Netherlands like a blanket and has a major influence on the annual average concentrations to which the entire Dutch population is exposed.
Because nitrogen dioxide, ammonia and sulphur dioxide deposit on to the soil (deposition), they are harmful to nature and biodiversity in our country and neighbouring countries.

Generic and targeted approach

Most health gains are achieved through a generic approach aimed at reducing the blanket of particulate matter throughout the Netherlands. Each reduction of the concentration of PM2.5 by 5 micrograms per m3 prolongs life by approximately three months2.
To protect highly-exposed and highly-sensitive groups, a targeted approach is required in addition to the generic approach. It is also necessary to map the peaks in air pollution and to take targeted measures together with local parties to reduce emissions from traffic, intensive livestock farming and wood burning, for example.

Highly sensitive groups

The Clean Air Agreement seeks to achieve a further decrease in the number of highly exposed people, and also devotes attention to people who are highly sensitive to health damage. These are mainly the elderly, children and people with a respiratory disease. To limit damage to these groups, the Clean Air Agreement focuses on policy on sensitive places, such as schools and hospitals.



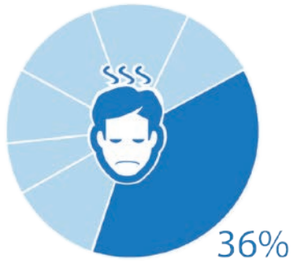
Structure of air quality[4]

Health indicator

The Health Indicator was developed to be able to monitor whether the totality of measures actually produces cleaner air (see illustration). The indicator measures whether the health effects become less negative.

1 RIVM: Health indicator
2 Health Council of the Netherlands, 2018, Health gains from cleaner air
3 RIVM: VTV survey (Public health future survey 2018)
4 RIVM: 2018. Municipal Health Service guideline for medical environmental science: air quality and health

Source image: https://www.mediatheekrijksoverheid.nl/



Contribution to health effects for road traffic in the Netherlands

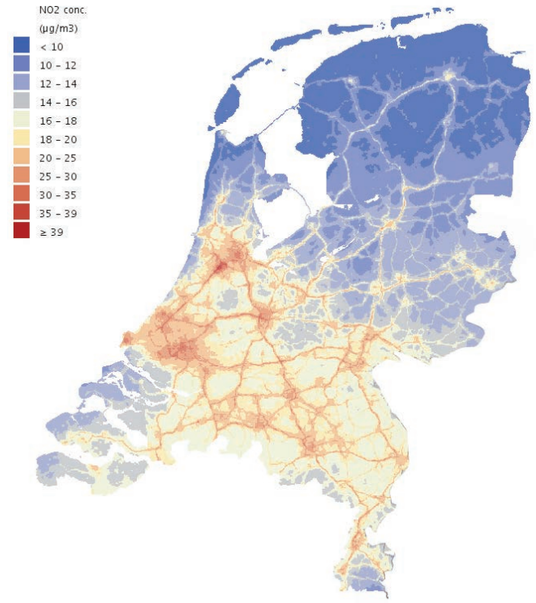
3. Approach to mobility

What's the problem?

From heavy goods vehicles to scooters .... everything on the road powered by fossil fuel causes air pollution. Older diesel vehicles are the biggest culprits. But mopeds can also be an important source locally around cycle paths. Exhaust fumes make people ill. In the Netherlands, 36 percent of the health effects of national sources are due to road traffic. In one in five children with asthma, the disease is related to air pollution from traffic[2].
The transition to electric and hydrogen vehicles will have a favourable effect on air quality. But cars last a long time and until then the health gain will come mainly from making diesel and petrol vehicles cleaner, having more bicycles, providing more and clean public transport and keeping (polluting) vehicles outside cities.

NITROGEN DIOXIDE CONCENTRATION IN THE NETHERLANDS 2017[1]

(in micrograms/m3)



1 RIVM: https://www.atlasleefomgeving.nl
2 P. Achakulwisut et al, 2019, The Lancet, Global, national, and urban burdens of paediatric asthma incidence attributable to ambient NO2 pollution: estimates from global datasets

Target:

71%

less health damage in 2030 than in 2016

Actor	Type of measure	Measures
Central government	EU emission requirements	• Active commitment to tighten European emission requirements for vehicles; including ambitious post-Euro 6/VI emission standards. • In 2021: introduce a soot test for diesel cars in the roadworthiness inspection.
Central government	EU emission requirements	• Emission measurement programme for cars, in order to properly substantiate the stricter European standards.
Municipality Province	Healthy mobility policy	• Explicitly include health objectives for cleaner air in the traffic and transport plans of participating authorities and in the Regional Mobility Programmes. • Include emission requirements for purchasing or licensing vehicles or transport services for participating authorities. By 2020, agree arrangements for concrete awarding criteria and for periodic tightening up to 2030. The aim is to replace (older) diesel vehicles as quickly as possible with cleaner (electric) alternatives. • View options (including existing instruments such as the GES method) to better identify the health effects of investments in infrastructure or a mobility fund, among other things. • Local mobility policy, including bicycle agenda, partial mobility, etcetera.
	Climate agreement	• Stimulation package for zero-emission road transport. • Administrative agreement on zero-emission public transport buses and zero-emission target group transport. • Zero-emission city distribution in 30-40 cities. • Fewer vehicle kilometres due to the employer's approach. • 30% reduction in transport kilometres in hinterland transport.
Central government	Inspections and taxes	• In 2020: introduce a soot surcharge in the motor vehicle tax. • In 2023: introduce a heavy goods vehicle tax. This will be a kilometre price for freight that will be lower the less polluting a truck is. The proceeds from this will be used for sustainable innovation in road transport. • Strengthen checks on whether road transport meets the standards. • Research into emission test for catalytic converters in the roadworthiness test. • Investigations into ad blue manipulation of heavy goods vehicles. • Investigate whether taxes can further reduce the negative health effects of road traffic emissions.

Stricter rules
Stricter European requirements for vehicles have already led to cleaner traffic. It shows that regulation works. A further tightening of the European emission requirements for vehicles (cars, trucks, mopeds) is an effective measure to reduce emissions from road traffic.
Tighter controls, for example on the operation of AdBlue systems, reinforce the effectiveness of the measures. Adding AdBlue to the exhaust system of diesel engines drastically reduces nitrogen oxide emissions. This is necessary to meet the emission requirements.
Taxes have a major impact on the composition of the vehicle fleet and are therefore a powerful tool for managing emission reduction.

Klimaatakkoord
The climate agreement contains many mobility measures and these too contribute to cleaner air. For example:
- commuting measures (employers' approach)
- electrification of transport
- improved spatial configuration locally
- local parking policy
- local policy for zero-emission urban distribution of parcels and freight
- emission-free passenger, group and public transport
- greater use of bicycles

The measures aimed at less transport and at electrification ensure less air pollution, especially in the longer term.

What do we want to achieve?
We want at least 71 percent less health damage to be caused by traffic emissions in 2030 compared with 2016.

In the Clean Air Agreement, municipalities, provinces and central government are pursuing four tracks:

- Tightening of European emission requirements
- Measures contained in the Climate Agreement
- Healthy mobility policy
- Tests and taxes for cars

Source image: https://www.mediatheekrijksoverheid.nl/

Alderman Arno Bonte, Rotterdam:

'The ambition of the Clean Air Agreement appeals to me'

Source image: gemeente Rotterdam

“Rotterdammers are less healthy than other Dutch people. Almost all sources of air pollution occur in Rotterdam: industry, intensive road traffic, shipping, wood smoke.
Our primary concern at the present time is that there are twelve streets in the city that are (almost) above the European standard for nitrogen dioxide. It means that many residents are exposed to air pollution. We are doing everything in our power to also be below the norm in those places in 2020. We want to improve the average air quality throughout Rotterdam. In 2025, we want air quality as prescribed by the World Health Organization (WHO), which causes hardly any more health damage.”

"With the Clean Air Agreement, Rotterdam feels supported"

Rotterdams pilots

In July 2019, Rotterdam unveiled its second Clean Air Policy Document, covering the period of 2019-2022, with seventeen measures to limit the damage to health caused by air pollution.
Three pilots will start in 2019 to give shape to the most urgent matters:

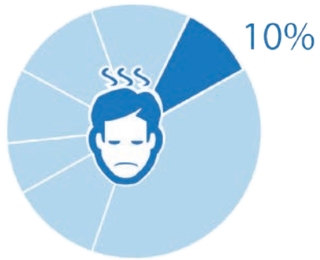
- Experiments to reduce the flow of traffic on the Maas Tunnel route. This polluting artery running right through the city attracts a lot of through traffic that could instead use the ring road.
- Smart construction logistics. “Rotterdam has an enormous building challenge in the existing city, so a lot of construction traffic runs through the city. Marshalling this traffic on the outskirts of the city and from there having bundled distribution, preferably electrically, provides a major health gain.”
- Shore power for seagoing vessels. “We have already achieved success for inland vessels in Rotterdam by banning the use of generators on board. This issue, specific to Rotterdam, has been included in the Clean Air Agreement."

Do not stop at the European standard

Central government is financially supporting the municipality in the clean air measures. “At least as important as such a financial contribution is to have on the national agenda that air pollution really shortens and spoils lives. And to make clear that we can only tackle this major problem together. If we take measures along busy arteries, I expect central government to design the national highways in such a way that they pollute the air less. Rotterdam feels supported by the Clean Air Agreement.”

“As far as I am concerned, we will work hard on the measures in the Clean Air Agreement because they also contribute to Rotterdam’s climate ambitions. All key issues are covered by the agreement. There are concrete arrangements that work well for municipalities and that are coherent. We will not sit back once the European standards have been met, we’ll stop only when people's health is no longer at risk. That ambition appeals to me.”

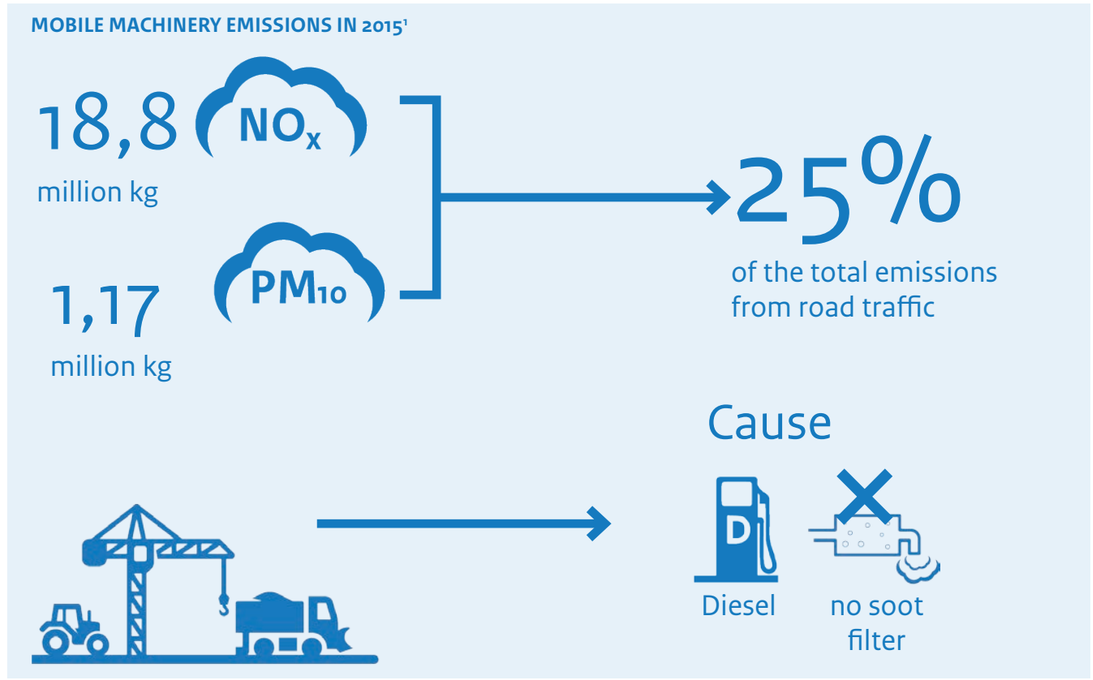
Source image: https://www.mediatheekrijksoverheid.nl/



Contribution to the health effects of mobile machinery in the Netherlands.

4. Approach to mobile machinery

What's the problem?
Emissions by mobile machinery are substantial (see mobile machinery emissions figures). These machines are often used in densely populated places, such as construction sites in the city or at festivals. During construction work, it is not uncommon for diesel units to be standing near the facade of houses for weeks at a time. Although this may seem harmless, the soot concentration at a distance of three metres from a generator set is up to seven times higher than the background concentration and the particulate matter concentration is up to two and a half times higher. With heavier generator sets, this emission is even greater. Emissions from mobile machinery, such as construction machines, sweepers and generator sets, are a known health hazard. Despite their limited number, these machines are responsible for ten percent of the health effects caused by national air pollution.



The mobile machinery sector is many times smaller than the mobility sector, but it does emit a relatively large amount of nitrogen oxides (NOx) and particulate matter (PM10), i.e. as much as a quarter of the total NOx and PM10 emissions of the mobility sector.

1 CBS (Statistics Netherlands)

Target:

75%

less health damage in 2030 than in 2016

Actor	Type of measurement	Measurements
 Central government  Municipality  Province	 Emission requirements	• Take the lead to increase the share of clean mobile machinery at central government, provinces and municipalities more quickly. • Agree arrangements for the drafting of emission requirements for mobile machinery in 2020 and about tightening up to 2030. • Research into the possibilities and effects of stopping diesel machinery without a soot filter in built-up areas. • Encourage the use of zero-emission machinery in tenders. Work as far as possible without emissions in 2030, as agreed in the Climate Agreement. • Investigate possibilities for including emission requirements in environmental permits and environmental zones for mobile machinery in, for example, green city centre management (especially in places with high exposure to air pollution). Investigate whether such measures have the desired effect.
 Central government  Municipality	 Emission requirements	• Look for opportunities to enforce the emission requirements in practice. If necessary, develop an inspection system for monitoring compliance with tendering requirements for cleaner mobile machinery. If possible, align with the system and certification of the CO_2 performance ladder.
 Central government	 Emission requirements	• Include emission requirements in the criteria for socially responsible procurement (SRI criteria) on the website of the Piano procurement expertise centre.
	 Europe	• Actively pursue further focussing of European emission requirements for NRMM (see sidebar), in addition to the Stage V requirements that will apply to all new engines from 2020 onwards.

In the Clean Air Agreement, we are following two tracks:

We set the emission requirements for mobile machinery, for example through public procurement contracts for road construction and water works.

We are trying to lower European standards still further.

What do we want to achieve?

Under the Clean Air Agreement, we will work step by step towards zero-emission mobile machinery. The agreement aims to reduce the health effects of these machines by 75 percent by 2030 compared with 2016.

For mobile machinery, a substantial health gain is possible by stepping up the pace at which the machines are made cleaner. Several cities have already begun exploring and introducing ways to reduce emissions

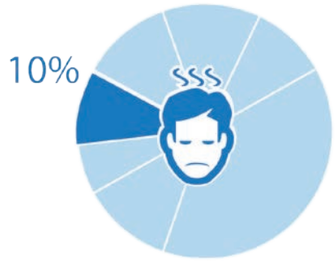
Pilot for mobile machinery in cities

We want to accelerate to a situation where we no longer use mobile machinery that emits harmful substances. This is especially true in cities.
With a 'zero-emission mobile machinery' pilot project, central government and participating municipalities are investigating the possibilities that exist in practice. We are looking at the machinery most harmful to health and what the clean alternatives are. We are also looking at suitable instruments (such as subsidies, scrapping schemes and other regulations) and at supervision and enforcement.

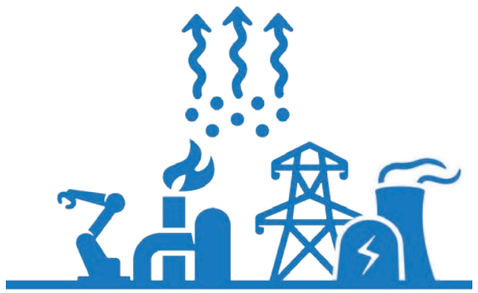
What is NRMM?

NRMM stands for Non Road Mobile Machinery. These are all vehicles and machines that are not necessarily intended for road transport. This includes diesel trains and inland waterway vessels, for example, but also construction, agriculture, road building and hydraulic engineering machines (such as cranes, tractors, generator sets and excavators) or maintenance equipment such as road sweepers.

Source image: https://www.industrietechniekoverheid.nl/



Contribution to health effects by industry in the Netherlands.



5. Approach to industry

What's the problem?

Fortunately, Dutch industry produces much cleaner in 2020 than it did a few decades ago. In the 1990s in particular, the emission of harmful substances fell sharply. Since 2010, however, this seems to have stabilised, while industry is still responsible for 10 percent of the health problems caused by air pollution originating in the Netherlands. If we do nothing, health damage will increase as a result of economic growth.
The highest concentrations of particulate matter are recorded at large industrial complexes, for example in blast furnaces and in the storage and transshipment of coal.

Generous margin

Industry must adhere to the general rules set by the government and to licensing requirements. Industrial enterprises are also required to use the best available techniques (BAT). These are the most effective techniques for protecting the environment as much as possible. The European Commission determines which techniques are usable and translates them into ranges for applicable emission limit values for industry (BAT conclusions or BREFs). European regulations offer the licensing authority ample scope to assess which BAT an industry must apply in specific situations. Reducing European leeway is good not only for reducing the concentrations of air pollution, but also ensures a level playing field in Europe.

Climate policy

The climate policy for industry and the Clean Air Agreement reinforce each other. For example, there will be less particulate matter in the air because from 2030 the burning of coal for electricity generation at power stations will be prohibited and there will be sustainable electricity generation using solar and wind energy.

Target:

Constant reduction in emissions of substances that are harmful to health towards 2030

Actor	Type of measure	Measures
Central government	Licence, enforcement and general rules	• The Human Environment and Transport Inspectorate (Ministry of Infrastructure and the Environment) will support provinces, municipalities and environmental departments with knowledge and capacity for the screening of licences, with the aim of achieving the desired BAT level. • Investigate possibilities (including via pilot, see sidebar) to better implement BAT conclusions by means of changes to general rules, information documents or knowledge networks. We want to report on this and start follow-up actions by 2021 at the latest. • Investigate which emission requirements can be tightened up in general rules and convert them into regulations as soon as possible.
	Europe	• Commitment to sharpen the application of the BAT conclusions in a European context (and to limit the leeway as much as possible) and to allow the lowest possible emissions.
	Climate policy	• Research has been started into the effects of emission requirements for small and medium-sized biomass installations.
Central government Province Municipality	Licence, enforcement and general rules	• From 2020, apply the strictest possible emission requirements (including the BREF range) as far as possible when the competent authority issues new licences or updates licences. Central government will facilitate the competent authority by providing knowledge and capacity. • Central government will investigate which emission requirements can be tightened up in general rules and convert them into regulations as soon as possible. • Investigate how better supervision can lead to lower emissions. Take measures, if necessary, to improve supervision and enforcement.
Province Municipality	Licence, enforcement and general rules	• Pursue tough licensing, update the licence database and where necessary tighten up supervision. • Apply positive results from the "tough licensing" pilot (see sidebar) when granting licences for industry.

The arrangements contained in the Clean Air Agreement for the industrial sector focuses on three areas:

We will apply stricter requirements when granting licences and will have stricter enforcement.

We are committed to a total reduction of emissions of harmful substances throughout Europe.

We also use climate policy measures for cleaner air.

What do we want to achieve?

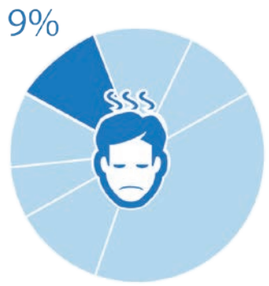
Through the arrangements laid down in in the Clean Air Agreement, we are striving to ensure that as we head for 2030 industry will constantly reduce emissions of substances that are harmful to health. For industry and the energy sector, the emission requirements applied in licensing will be tightened up. This will be done on the list of Best Available Techniques, for example. The recent tightening of licensing conditions shows that sometimes there is still considerable scope to limit emissions. Where possible, the general minimum (emission) requirements for industry and the energy sector will be improved through the regulatory regime. We want to advocate incisive BAT conclusions in Europe

Tough licence pilot

Tough licensing and good enforcement will enable us to achieve the Clean Air Agreement goals in a better way. This is especially true in the case of industry that causes a lot of local emissions (especially of particulate matter or nitrogen oxides), but also sectors that contribute to emissions that end up outside the Netherlands. Using a pilot project, we want to gain an insight into which policy the provinces and their environmental departments apply for licensing. We also want to make an inventory of the conditions that the provinces and environmental departments need in order to tighten the requirements for licences. The aim of the pilot is as standard to have tough licensing and effective enforcement in all provinces. As part of the pilot, we are also looking into whether new tools in the Environmental Planning Act can contribute to this goal.

Continue voluntarily

Within the pilot, we want to encourage the industrial sector to take anti-emission measures that go beyond the legal requirements and the best available techniques. Provinces, municipalities and environmental departments will be given a free hand to devise creative instruments for this purpose, together with the business community.



Contribution to health effects by wood burning in homes in the Netherlands.

6. Approach to residential wood burning

What's the problem?
Each year the Dutch burn 1,044 million kilogrammes of wood and 79 million kilogrammes of wood pellets (estimate by Statistics Netherlands) in fireplaces and wood-burning stoves. Wood is also burnt outside in fire pits and campfires. The wood used varies from dried firewood to garden or waste wood.

Opinions about wood smoke and wood burning are divided. Half of all Dutch people are positive about burning wood, in a fireplace or outdoors. About twenty percent of Dutch households have a fireplace or a stove, mainly for the warmth and cosiness. At the same time, about half of the people say they sometimes suffer from wood smoke from stoves or fire pits. Ten percent of the population wants a heating ban.

Wood burning for small-scale heat generation by such means as pellet stoves is increasing. There are quite a few misunderstandings about how sustainable it is to burn wood. As long as the wood does not come from far and no trees are specially felled for it, wood burning - if fired properly and moderately in terms of CO_2 emissions - is a sustainable heat source. But many existing wood-burning stoves are not equipped with techniques to prevent emissions such as those of particulate matter. Fireplaces and open fires outdoors can produce a lot of particulate matter inside and outside the home. The fact is that wood fires pollute the air and can cause health problems. Approximately 9 percent of the health damage caused by air pollution is due to wood smoke from the Netherlands. Wood smoke causes the most nuisance and health damage in densely populated areas, on days with unfavourable weather and incorrect heating behaviour. Particulate matter that enters the air through wood burning is harmful. For health reasons, it is better to limit emissions of substances through burning, from any source whatsoever (RIVM).

Dirty heaters
The European Ecodesign Directive4 enters into force on 1 January 2022, with stricter emission requirements for wood-burning stoves. Stricter rules already apply in Belgium and Germany. To prevent wood stoves that do not meet the latest requirements from being 'dumped' in the Dutch market, the central government wants to introduce the emission requirements from the European directive for new stoves in the Netherlands earlier.
There are now 65,000 pellet stoves in the Netherlands. Since 2016, the investment subsidy for renewable energy (ISDE) has been requested 34,000 times for pellet stoves. Pellet stoves emit less particulate matter than wood fires but have a negative effect on air quality because they are often on for a longer time as they are used as a main source of heating. The pellet stoves subsidy was discontinued on 1 January 2020.

Lack of knowledge
In particular, burning wet wood or waste wood or lighting the stove in weather conditions where the smoke lingers can result in very high local concentrations of particulate matter. Not everyone knows that a cosy fire has a negative impact on the health of those around the fire and people in the neighbourhood. Awareness is therefore important, so that people adjust their wood burning behaviour.
A heating alert has been in operation since the end of 2019. The Royal Netherlands Meteorological Institute (KNMI) and RIVM developed this system. When the weather is unfavourable for burning wood, a warning is issued via the heating alert.

Nuisance difficult to measure
Nuisance caused by wood smoke requires a local solution. Municipalities are already working on this matter. In practice, however, it is difficult to define what "nuisance" is, which in turn makes it difficult to substantiate a heating ban. Municipalities need a tool to objectify nuisance.

Target:

2%

less health damage in 2030 than in 2016

Actor	Type of measure	Measures
Central government	Cleaner heaters	• Laying down stricter requirements for wood-burning stoves, in 2020 instead of waiting until 2022. • In the Benelux and Europe, push for further tightening of the Ecodesign requirements for (private) wood and pellet stoves. • Abolish the ISDE subsidy on pellet stoves from 1 January 2020.
	Awareness	• Provide information material to provinces and municipalities about the health effects of wood smoke (both winter and summer heating). Distribute uniform information through all channels. • Publicise the heating alert. • Direct attention towards the health effects of wood smoke when we communicate with residents about the energy transition and low-wood-smoke neighbourhoods. • Launch a pilot for wood-smoke-free and low-wood-smoke areas. • Investigate the possibilities and effects of additional measures to prevent nuisance caused by incorrect heating.
Municipality	Tackle nuisance	• Update the "Toolkit for nuisance caused by wood burning" with central government. • Test measuring method to determine the nuisance and health impact of wood smoke, together with central government. • Forward complaints that come in via the national website www.stookwijzer.nu to municipalities, which can take action in the event of repeated nuisance. • Investigate additional central government measures to combat nuisance caused by incorrect heating, for example the introduction of the German system for checking good heating behaviour and certification of the installation of the stoves.
Province	Awareness	• Provide information actively about the health effects of wood burning, including via social media and websites of municipalities and provinces.

We are working on a three-pronged approach:

Reduce emissions from wood-burning stoves.

Make people aware of the consequences of heating for their own health and that of people nearby.

Help municipalities to tackle nuisance situations by developing a measurement protocol.

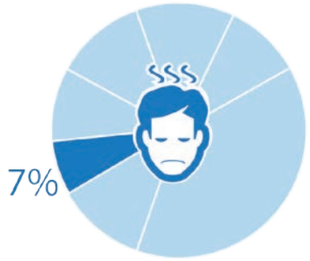
What will we do?

In the Clean Air Agreement, central government, provinces and municipalities have agreed on measures and actions to limit nuisance and health damage caused by wood smoke. If we fail to do this, more health damage is likely to occur.

Pilot for wood-free/low-wood areas

For at least one new-build neighbourhood and for an existing neighbourhood, we will investigate what is legally and practically involved in designing and maintaining a smoke-free or low-smoke neighbourhood. This pilot is only about heaters and fireplaces in the home. The aim is to have created wood-smoke-free/low-wood smoke districts or neighbourhoods by 2023.

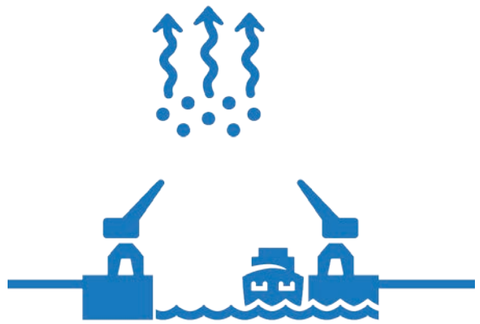
Source image: https://www.mediatheekrijksoverheid.nl/



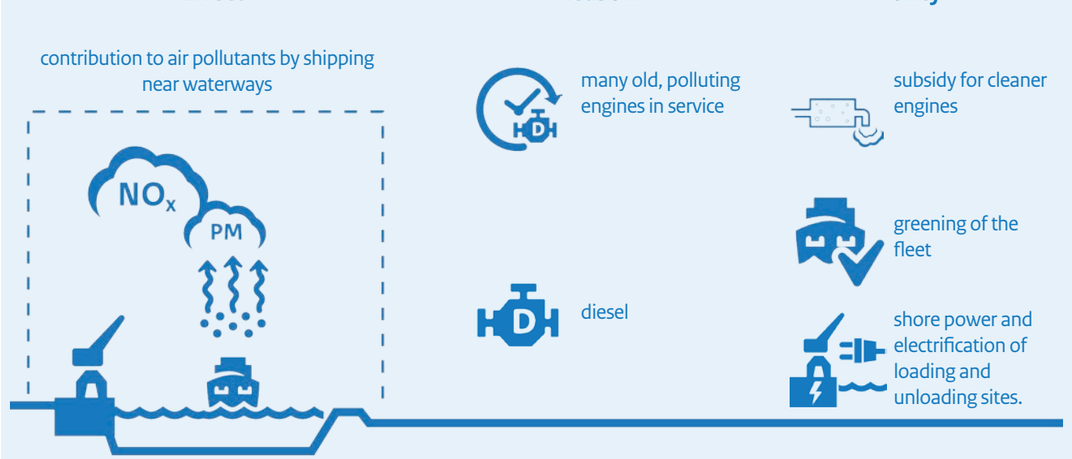
Contribution to health effects by shipping and ports in the Netherlands.

7. Approach inland shipping and ports

What's the problem?
Inland shipping influences the health of the Dutch population; 7 percent of the health effects of national air pollution can be traced back to inland shipping. The impact is great along waterways and around (inland) ports (see illustration of Emission of air pollutants from shipping and in ports). Vessels emit harmful substances into the air not only when sailing but also when docked in ports. This happens during loading and unloading and because vessels use diesel generators for their power supply. Inland waterway vessels have a service life of decades. Accelerated write-off and the additional costs of sustainable solutions give rise to financing problems.



EMISSION OF AIR POLLUTING SUBSTANCES BY SHIPPING AND IN PORTS[1]



1 https://www.rivm.nl/bibliotheek/rapporten/2018-0016.pdf

Target:

35%
fewer emissions of air pollutants in 2035 than in 2015[1]

\+

±0%
emission in 2050

Actor	Type of measure	Measures
Central government	Technology	• Advocate a new European fund that will be available by 2024 at the latest to encourage new engines for inland vessels and sustainable engine overhaul.
Central government	Fleet	• Include low emissions as a precondition for tendering, purchasing and licensing for infrastructure work, ferry services and water taxis, for example. • Central government, participating provinces and municipalities will switch to an electric fleet as far as possible.
Municipality Province	Zero-emission port	• Strive for a (mandatory) shore power connection for berths for inland shipping and passenger transport in an urban environment in 2025. • Investigate ways (subsidies or energy taxes) in 2020 to stimulate shore power usage among ship owners. • Investigate legal possibilities to make it obligatory to use shore power and/or prohibit generators and generator sets. • Investigate how measures such as a discount on the fee for port facilities for clean ships can make shipping more sustainable and how we can introduce a uniform Dutch system for such measures. • Explore the possibility of setting emission requirements for pleasure yachts, for example in areas with high exposure.
Municipality Province	Zero-emission port	• Draw up plans for sustainable inland ports; creating zero emission ports (dry side).

The Clean Air Agreement focuses additionally on the green deal for Maritime transport[1], Inland shipping and ports in three main lines:

We will encourage the purchase of cleaner engines.

We will make our own fleet greener.

We will work on zero-emission ports.

Clean ports pilot project
Ultimately, we want ports where there is little or no air pollution on shore and on the water. By means of the Clean Ports pilot project, we are developing infrastructure for a fully zero-emission port. At least one such port must be ready by 2030 at the latest. When developing the pilot, we will adhere to the arrangements contained in the Declaration of Nijmegen.[2]

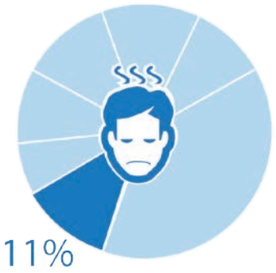
NRMM regulation for shipping[3]
Since 2019, new ship engines with a capacity of less than 300 kW must comply with the EU Stage V emission requirements contained in Regulation 2016/1628. From 2020, these requirements will also be applicable to new, heavier engines. This applies to engines installed in new ships and when replacing an old engine.
This regulation, also known as the NRMM (Non Road Mobile Machinery) regulation, aims to ensure that ships emit less particulate matter and harmful gases.

What do we want to achieve?

The sector and the authorities had already concluded various agreements prior to the Clean Air Agreement to make the shipping sector greener. In June 2019, for example, authorities and the business community signed the Green Deal for Maritime Transport, Inland Shipping and Ports.
The ambition enshrined in this Green Deal is to achieve virtually emission-free inland shipping in 2050. In the meantime, inland shipping will emit at least 35 percent fewer air pollutants in 2035 than in 2015. The goals and measures in the Green Deal will contribute, just like the Clean Air Agreement, to cleaner, healthier air. Although the two agreements have different starting points and objectives, they reinforce each other in a significant number of respects.
The arrangements agreed for shipping in the Clean Air Agreement apply only to the central government and to municipalities and provinces with substantial shipping and inland shipping facilities within their territory. Maritime transport is not included in the Clean Air Agreement.
The most important health gain will be obtained through the transformation of inland shipping into a clean logistics sector that emits virtually no harmful substances, with the use of shore power and cleaner engines and fuels.

1 https://www.greendeals.nl/green-deals/green-deal-zeevaart-binnenvaart-en-havens
2 See Declaration of Nijmegen at www.rijksoverheid.nl
3 https://www.rijksoverheid.nl/actueel/nieuws/2018/04/12/binnenvaart-sluit-akkoord-voor-minder-broeikasgassen

Source image: https://www.mediatheekrijksoverheid.nl/



Contribution to health effects by agriculture in the Netherlands.

8. Approach to agriculture

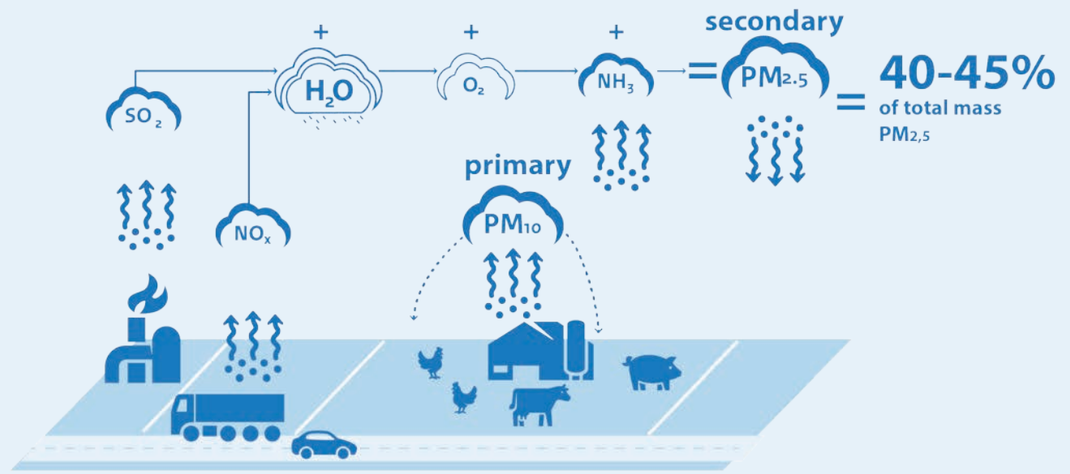
What's the problem?

Livestock farming causes 11 percent of the health effects attributable to national air pollution. Livestock farms directly emit particulate matter (primary particulate matter), especially poultry farms. This concerns mainly skin, manure, feed and litter particles. People who live in the vicinity may be affected. In the densely-populated Netherlands, livestock farms are located relatively close to homes. In addition, ammonia emissions create secondary particulate matter. Cattle farming is the largest cause of ammonia emissions. It takes a while for ammonia to react to secondary particulate matter. In that time, it can spread evenly over great distances, like a blanket over the country.

Current agreements

Various arrangements have been agreed with the sector to combat the emission of ammonia, particulate matter and odour nuisance. The Outline Agreement contains arrangements between central government and pig farmers on subsidised rehabilitation of pig farming and on the reduction of emissions from stables. Agreements have been made with the poultry sector for halving particulate matter emissions within ten years. The approach to nitrogen focuses on reducing ammonia. Implementing the measures contained in the Climate Agreement can also reduce the emissions of ammonia and particulate matter. Arrangements for agriculture apply only to central government and to other parties with substantial emissions from agriculture within their territory. In consultation with each other, the parties agree in the implementation agenda for whom participation based on the contribution of agriculture to the health effects is relevant.

ORIGIN OF INORGANIC PARTICULATE MATTER IN THE NETHERLANDS[1]



1 Municipal Health Department guideline for medical environmental science: air quality and health (RIVM report 2018-0016)

Target:

37%

less health damage in 2030 than in 2016

Actor	Typeo of measure	Measures
 Central government	 Arrangements	• Ensure compliance with the arrangements agreed with the poultry sector for halving the emission of particulate matter within 10 years. • Statutory determination of the generic reduction if the measures taken by the poultry sector do not yield sufficient results.
	 More efficient technology	• Periodic tightening up of the emission requirements for ammonia and particulate matter for stables in the "Human Environment Activities Decree". • Include emission requirements for the housing of free-range animals and animals that are kept organically in the "Human Environment Activities Decree". • Explore better results of low-emission techniques, such as air washers and low-emission floors for dairy cattle. • Strive for a substantial reduction of air emissions from stables for pig, poultry and dairy goat farming. • Subsidy scheme for innovations and source-oriented sustainability. • Subsidy scheme for ending pig farms (subsidised remediation).2 • Facilitate research into sensors that measure actual emissions at the cattle farm location. Investigate whether the use of such sensors can be anchored in legislation and regulations and how this contributes to the reduction of emissions.
 Central government  Municipality  Province	 Collaboration	• Effective implementation of the Outlines Agreement.[1]

In the Clean Air Agreement, the arrangements focus on two lines:

1. We will monitor compliance with the arrangements for emission reduction that are already in progress with various subsectors.

2. We will strive for efficient techniques to further reduce the emission of pollutants.

Outline agreement

In the Outline Agreement[1], central government agreed seven outlines with the supply chain parties from the Vital Pig Breeding coalition, provinces (North Brabant, Limburg, Gelderland, Overijssel and Utrecht) and the Association of Netherlands Municipalities (VNG). These parties are thus tackling the most urgent health and environmental risks posed by pig farming and provide a strong incentive for the further sustainability of livestock farming. The approach follows two tracks:

- Reducing odour nuisance from pig farms in dense areas, by remediating or terminating sites or farms that want to stop.
- Developing and investing in new stable and husbandry systems in order to substantially reduce harmful emissions from pig, poultry and dairy goat stables directly at the source in the medium and long terms.

Approach to poultry particulate matter

Due to the health risks of high particulate matter concentrations around poultry farms, central government and the poultry sector have agreed to have the emission of particulate matter reduced by 50% within ten years. This agreement is in line with the response to the "Animal husbandry and local health" study (VGO) and is part of the ongoing enhancement of sustainability of the poultry farming. The sector is working towards not exceeding the WHO-recommended exposure limits for particulate matter (PM10). The poultry farming sector is taking generic measures for this purpose and is also taking additional measures in existing stables in areas where particulate matter emissions are highest.

Approach to nitrogen

Ammonia plays an important role in nitrogen deposition in nature reserves. Until recently, the Nitrogen Approach Programme (PAS) regulated ammonia reduction. Following the Council of State's decision on the PAS, it has become clear that this policy must be revised. The new approach to nitrogen will focus, among other things, on the reduction of ammonia in livestock farms and will thereby also contribute to the health objectives of the Clean Air Agreement. At the end of September, the Advisory Board on Nitrogen Problems (Remkes Committee) recommended measures to reduce the nitrogen surplus in various industries, including agriculture. The Cabinet and provinces are considering a new approach. Concrete measures for the long term towards 2030 will contribute to cleaner air in the Netherlands.

Pilot project for emission reduction in livestock farming

A pilot will start in 2020 to support provinces and municipalities in reducing emissions from livestock farms. The pilot is aimed at reducing ammonia, particulate matter and odour and should serve as a good example for other regions. In the short term, the aim of the pilot is to encourage businesses to make better use of existing techniques that reduce emissions. It is important for knowledge to be transferred to farmers and agricultural advisers, but also to regulators and licensing authorities. For example, improved supervision and enforcement of low-emission techniques, such as air washers and low-emission floors for cattle. A CHW experiment (Crisis and Recovery Act) gives provinces and municipalities more legal options to change existing situations. A number of provinces have already submitted an application for this purpose. Municipalities within these provinces can avail of the possibilities of this experiment.
Partly based on experiences in the short-term approach, central government and a number of provinces and municipalities are developing building blocks for emission reduction under the Environmental Planning Act. This concerns the deployment of the various instruments offered by the Environmental Planning Act. These include establishing ambitions in the environmental vision, drawing up a programme and embedding of rules in the environmental plan. By sharing the results of the pilot project, other municipalities can take advantage of it.

1 https://zoek.officielebekendmakingen.nl/kst-28973-200.html#ID-849400-d36e94 (Parliamentary document 28 973, No. 191)

2 Open for applications, see https://www.rijksoverheid.nl/onderwerpen/veehouderij/duurzame-varkenshouderij/subsidieregeling-sanering-varkenshouderij.

Source image: https://www.mediatheekrijksoverheid.nl/

Alderman Aart de Kruijf, Barneveld:

"There is no right to burden the environment"

Source image: gemeente Barneveld

"In Barneveld, the emission of particulate matter from poultry farming is an important factor, certainly now that battery cages have been prohibited and chickens can rummage around again and take dust baths. After the animal welfare changes, poultry farmers must now invest in the welfare of people. It's tough, but there's simply no right to burden the environment. That's how realistic entrepreneurs are. "

Twin tracks

"Since 2016, Barneveld has been working with three neighbouring municipalities on improving air quality. In consultation with businesses, we came up with two tracks: adjusting the licensing process and allowing faster innovative technologies that can reduce the emission of particulate matter.

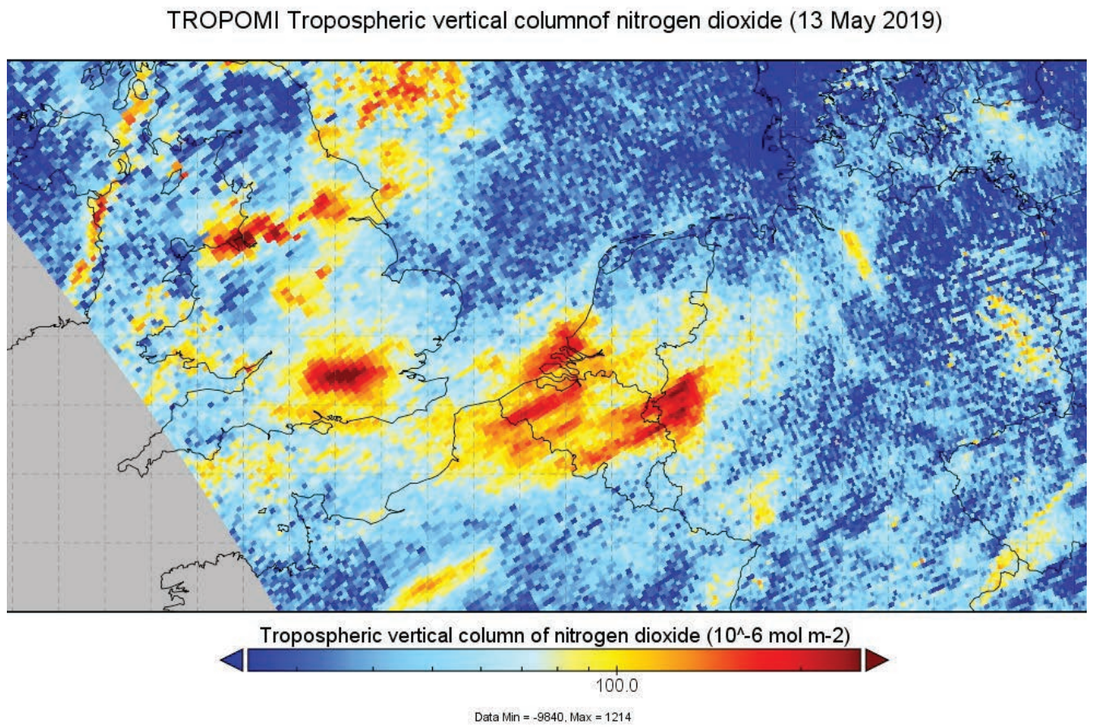
Another 30 percent less particulate matter with new licensing policy

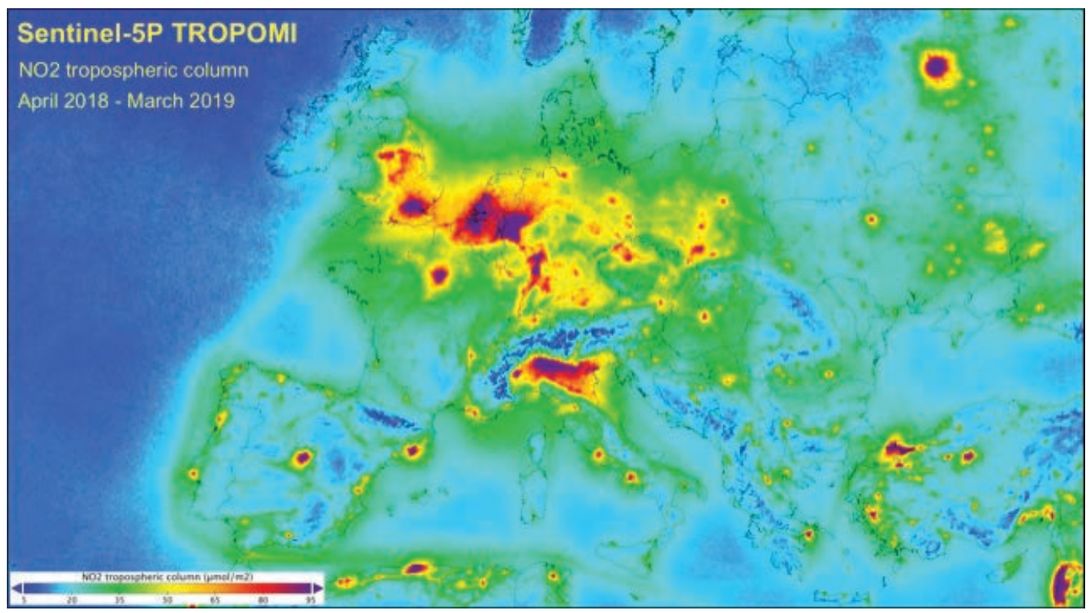
Poultry farmers who now apply for a licence for new buildings or expansions must also modify the existing stables in a way that reduces particulate matter emissions. That is a condition for obtaining the licence. It works. The first 100 licences that were issued reduced the emission of particulate matter by those companies by an additional 30 percent.

Innovations that limit the emission of particulate matter were implemented by means of pilots at various poultry farms to measure the effects. At the same time, we entered into discussions with the central government. National regulations had been found to limit usage. In consultation with the Ministry of Agriculture, Nature and Food Quality and the Ministry of Infrastructure and Water Management, the measurement protocols were simplified and the required test period was shortened. Thanks to this pragmatic policy change, these innovations get into the list of permitted technologies faster. "

Roadworthiness-like system

"The dialogue with central government and the region is in a productive setting, were we use each other's expertise and create practical regulations. For example, we suggested designing a roadworthiness-like system for poultry farms that do not have ambitions to set up new buildings. These companies will also perform annual maintenance to make sure the company produces cleanly. We need central government to set national rules for this. These rules will be put in place, I have no doubt about that.
The Clean Air Agreement offers an opportunity to distribute initiatives that have a regional impact on a national level. The agreement ensures that manpower and resources are released to oversee pilots that tempt businesses to invest. I experience the collaboration with the government as a real synergy. "





The imagery of the Tropomi satellite instrument shows the spatial distribution of the amount of NO2 in the EU. Wind force and wind direction play a major role[1]

9. International clean air policy

Efforts in the EU and the Benelux

Air pollution from other countries causes slightly less than half the health effects in the Netherlands. Conversely, much of the air pollution generated in the Netherlands ends up abroad. By aiming for an ambitious international policy, the central government is trying to reduce emissions in other countries as well. This helps not only the Netherlands, but all member states.

EU source policy

Central government is pursuing the tightening up of European source policy for emissions from road traffic, industry, shipping (both waterborne transport and seagoing shipping), mobile machinery, agriculture and households (wood-burning stoves). Where possible, central government is seeking cooperation with the other parties in the agreement. The central government will also align its efforts with other sustainability goals such as climate targets and transition agendas and policies for making agriculture and livestock farming more sustainable. Central government and participating provinces and municipalities are looking at how the Netherlands can make more effective use of international schemes and innovation funds to accelerate the reduction of emissions and to support an effective air policy.

Benelux and general EU air quality policy

The government is also focusing on tightening up general European air policy contained in the Air Quality Directive and, in particular, tightening up the obligations for particulate matter (PM2.5). In addition, central government is striving to improve cost effectiveness by also placing international emphasis on general health gains and less on limit values. Central government will work with other member states to achieve this goal.
In spring of 2020, the central government will organise a "Clean Air Dialogue" with the European Commission, so as to highlight the importance of ambitious air policy for municipalities and provinces participating in the Clean Air Agreement.
The Dutch approach will further be discussed by the Expert Panel on Clean Air in Cities and the Taskforce Health under the UN-ECE Convention for Long-Range Transboundary Air Pollution (LRTAP).
Additionally, the Netherlands is taking the initiative to organise a joint "air and health" conference in a Benelux context and together with the states of North Rhine-Westphalia and Northern France. Air pollution (including NO2 and particulate matter) is clearly visible in these areas on satellite images (see the satellite images/maps on the right). This blanket of pollution does not stop at national borders. Joint measures are the most effective way forwards.

On an international level, we are focussing on two lines:

We are committed to an ambitious international air policy, both global and European.

We are committed to an ambitious source policy.

1 NO2 satelliet Tropomi. KNMI / ESA

Source images: https://www.mediatheekrijksoverheid.nl/

Target:

through international cooperation
a sharp reduction in health damage due to air pollution

Actor	Type of measure	Measures
Central government	International air policy	• Commitment to ambitious international air policy aimed at tightening up the Air Quality Directive and in particular PM2.5. • Focus on greater cost-effectiveness through more international health gains and less pegging to limit values. • Involving other parties from the agreement, where this is possible and promising. Coordinating efforts with other sustainability goals such as climate goals and transition agendas and policies for making the agricultural sector more sustainable. • Focus on tightening up emission requirements for international shipping in a European and global context through the International Maritime Organization (IMO). The aim is to make the North Sea an NECA (NOx Emission Control Area) area, which means that emissions into the air can decrease considerably. • Exploring the possibilities for making more effective use of international schemes and innovation funds for the accelerated reduction of emissions and for supporting effective air policy.
	European air policy	• Pursuit of active cooperation with other member states to fine-tune the ambitious international air policy in European decision-making. • Organising a Clean Air Dialogue with the European Commission in spring 2020. The Dutch approach will be presented in the context of the UN-ECE Convention on Long-Range Transboundary Air Pollution (LRTAP) and more specifically in the Expert Panel on Clean Air in Cities and the Taskforce Health under the same convention. • Focus on tightening up European source policy, including tighter Industrial Emissions Directive and BAT conclusions, emission requirements and practical effectiveness for road traffic, mobile machinery and shipping, for wood-burning stoves, agriculture and sustainable procurement.

Source image: https://www.mediatheekrijksoverheid.nl/

10. Approach to awareness and involvement

Approach to awareness and involvement

Everything starts with being aware. As long as people do not know the problem and do not recognise the impact of that problem on daily life, they will not understand the possible solutions and the associated consequences (limitations, costs).
Strengthening awareness must help to bring about greater involvement and support for the measures.
Through the Clean Air Agreement, we want to make society more aware of the need to take measures by actively involving the public at large. The cooperating authorities, together with the business community and citizens, are exploring what is needed to be able to contribute actively to getting and keeping air cleaner.

Youth Summit

More than ever, young people are concerned about climate and environmental quality. The parties that have signed the Clean Air Agreement will organise a national youth summit. The outcomes will be offered to the directly involved administrators at central government, provincial and municipal level, who in turn will examine how the advice from the youth summit can be included in the implementation agenda of the Clean Air Agreement.

Clean air conferences

Every two years a Clean Air Congress will be organised to review the steps we have taken together. During the conference, successes will be shared, an evaluation will be made of the extent to which we are on track towards achieving health gains and where opportunities exist to take a step further. Every two years this conference will provide more momentum to spotlight the subject of "clean air".

Target:

Increase awareness

Actor	Type of measure	Measures
 Central government	 Youth summit	• Organise a national youth summit. The outcomes will be offered to the Minister for the Environment and Housing, deputies of the provinces and aldermen of the municipalities. • Investigate how the advice can be included in the implementation agenda of the Clean Air Agreement and then incorporate it in the arrangements and monitoring.
 Province		
 Municipality		

Information and "citizens science"

All parties involved in the Clean Air Agreement will inform residents and companies about air quality and health effects, about the measures they are taking to achieve health gains and the possibilities for deploying "citizens science".

Citizens science actively involves people in a social problem. As citizens science taps into new knowledge and sources of information, new perspectives can also come emerge.

In the “participation pilot" (see sidebar), we will invite people to actively collect data, perform their own analyses and think about how the conclusions can be acted upon. By involving citizens in research, the link between scientific research and what is going on in society will be reinforced. This can contribute to a better understanding of scientific research and, conversely, to a better understanding of social issues among scientists and knowledge institutions.

Pilot Participation

The central government, in collaboration with RIVM, will provide access to measuring stations from the 'Landelijk Meetnet Luchtkwaliteit' for participating municipalities and/or provinces of the pilot. Participants will be responsible for placing these measuring stations while RIVM remains responsible for maintance and upkeep. Civilians and companies can place (satelite)sensors around a measuring station so as to measure the air quality on a local scale.
RIVM will develop a (web)platform to exchange data from local areas with data from the 'Landelijk Meetnet'. In the pilot research will be conducted to assess how, in a durable way, accurate information can be generated whereby civilians, decentral governments and the central government exchange relevant data about air quality.
Participating municipalities contribute to costs of the placement and upkeep of the staion and its sensors.