



Water Bond Report

2025



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AT A GLANCE

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Preface



Lidwin van Velden

Chair of the Managing Board

As Dutch Public Bank founded by the water authorities water is at the core of our organisation. For the 11th consecutive year we have issued a Water Bond, to finance the activities of the Dutch water authorities. In 2025, we issued a 7-year EUR 1 billion Water Bond.

The water authorities are the founders of NWB Bank. What can you tell us about them?

"NWB Bank was founded in 1954 by the Dutch water authorities after a big flood hit the Netherlands in 1953. Under the guiding principle: *"never again"*, they recognized the need for major investments in water management and therefore the necessity of an own bank

to properly finance all those investments. Their role is even more essential today. Without their successful water management, large parts of the Netherlands — much of which lies below sea level — would be at risk of flooding. The water authorities are responsible for flood protection, maintaining strong dikes, and ensuring water availability and water quality across the country. In

our Annual Report, we feature [an interview](#) with Water Authority Brabantse Delta, which highlights their work and the innovations they are implementing.

You have received a new second party opinion (SPO) by S&P. Can you elaborate a bit?

"Yes, we are very pleased with the outcome. The updated assessment reaffirms the environmental integrity and transparency of our framework, which has been in place since its original publication.

Key highlights include the Dark Green rating, which is the highest possible sustainability rating. This indicates that the financed projects make a strong contribution to a low-carbon and climate resilient future. The other highlight is that our framework is confirmed to be fully aligned with the latest ICMA Green Bond Principles (2025), ensuring best practices in use of proceeds, project evaluation, management and reporting. We believe this strong assessment is also reflected in the high investor demand for our most recent Water Bond issuance."

"The updated assessment reaffirms the environmental integrity and transparency of our framework, which has been in place since its original publication."

In April 2026, you organized a reverse roadshow for your investors, what were the key take-aways?

“Yes indeed. We organized a two-day roadshow to highlight our labelled bonds and demonstrate the tangible impact of their investments. Around 50 investors from 10 different countries participated. Day 1 focused on our Water Bond, and day 2 focused on our Social Bond. In addition to presentations, we organized a site visit to the Delfland water authority, allowing investors to see first-hand how the investments translate into real-world outcomes. As a promotional bank, our aim is not to maximize profits but to prioritize the public interest and long-term value creation for society, and I am proud to show that.”

“I am proud to share the achievements to which our Water Bond has contributed.”



INTRODUCTION

Literally, 'Netherlands' means 'low-lying land', and that name is well deserved. Much of the country lies below sea level, which is how it is best known abroad. Water shapes the Netherlands in many ways. Despite its small size, the country has a coastline of around 525 kilometres, and four major European rivers – the Rhine, Meuse, Scheldt and Ems – flow through it into the North Sea. Without strong dikes and effective water management, around 70% of the country would be at risk of regular flooding. Living, working, doing business and enjoying recreational activities in the Netherlands depends on keeping water under control. That requires not only robust infrastructure, but also careful, continuous management. Given its importance, water management is largely entrusted to dedicated authorities: the water authorities. These are one of the four tiers of government in the Netherlands, alongside central government, the provinces and the municipalities.

Water authorities are one of the four types of government organisations in the Netherlands, alongside the national government, provinces and municipalities. As their sole responsibilities are water protection and water management, they focus entirely on these tasks. There are 21 water authorities, each responsible for its own region. They provide flood defences, regulate water levels and quality, and manage sewage treatment.

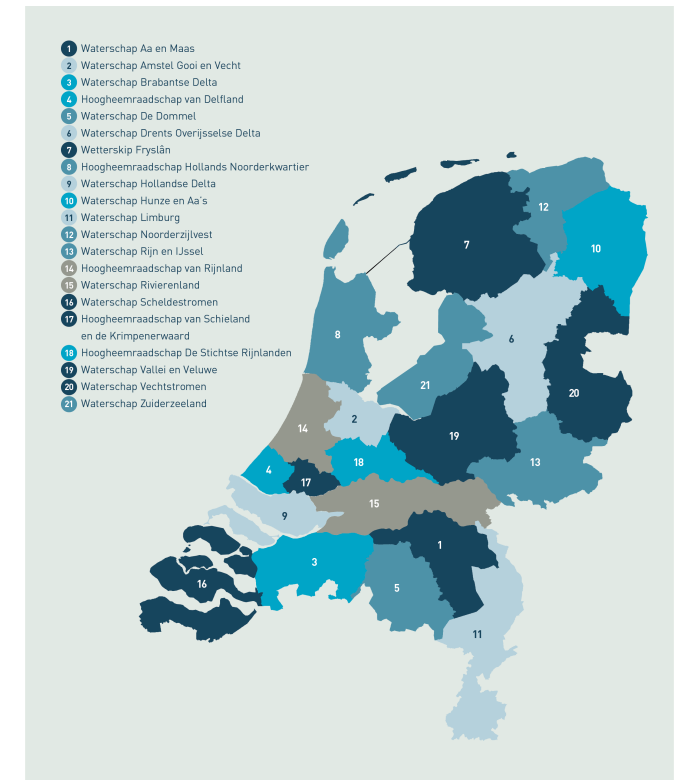
On the right the map of the Netherlands is depicted, showing in which part of the Netherlands the various water authorities operate. The water authorities carry out their tasks using an extensive infrastructure, which consists mainly of:

- 18,000 km of flood defences, protecting the country from high water;
- 240,000 km of waterways, where the water authorities provide sufficient water of good quality;
- 5,900 pumping stations and tens of thousands of smaller engineering structures that enable the water authorities to drain water during wet periods and to ensure a sufficient water supply during dry periods;
- 313 sewage treatment plants, which enable water authorities to purify wastewater from households and businesses, allowing it to be safely discharged into surface water.

Challenges

Water authorities are currently facing major challenges, largely driven by ongoing climate change. They are responding in two main ways. First, they are adapting their infrastructure to withstand the effects of climate change. This process is known as climate adaptation. Examples include reinforcing flood defences and redesigning water systems to handle both excess water and periods of drought. Second, water authorities are contributing to efforts to limit further climate change, a process known as climate mitigation. Examples of

measures that water authorities are taking in the context of climate mitigation include generating their own energy to carry out their tasks and recovering raw materials, particularly from the wastewater they treat from households and businesses. In addition to climate adaptation and climate mitigation, maintaining



clean, ecologically healthy surface water remains a core responsibility of the water authorities' work. By improving water quality, water authorities contribute to a healthier living environment and greater biodiversity. They fulfil this 'water quality task' by taking measures in surface waters and treating wastewater from households and businesses so it can be safely returned to nature.

Investments

This infrastructure requires continuous investment to keep pace with developments such as climate change, land subsidence, urbanisation, industrialisation and increasingly strict environmental standards. According to a study conducted by Andersson Elffers Felix (AEF) at the end of 2025 on behalf of the Union of Water Authorities (Unie van Waterschappen), the combined investment plans of the Dutch water authorities indicate an average annual net investment requirement of approximately €2 billion for the period 2025-2029. NWB Bank plays an important role in financing the water authorities' investments. The bank is also involved in financing the drinking water sector in the Netherlands, ensuring that residents and businesses have reliable access to high-quality drinking water.

The table below shows how the annual investment of €2 billion is distributed among the various tasks of the water authorities. It indicates which EU Taxonomy climate and environmental objectives these

investments contribute to. The final column uses numbers corresponding to the objectives listed below.

The climate and environmental objectives are numbered as follows in the final column:

1. climate mitigation;
2. climate adaptation;
3. sustainable use and protection of water;
4. transition to a circular economy;
5. prevention and control of water pollution;
6. protection and restoration of biodiversity and ecosystems.

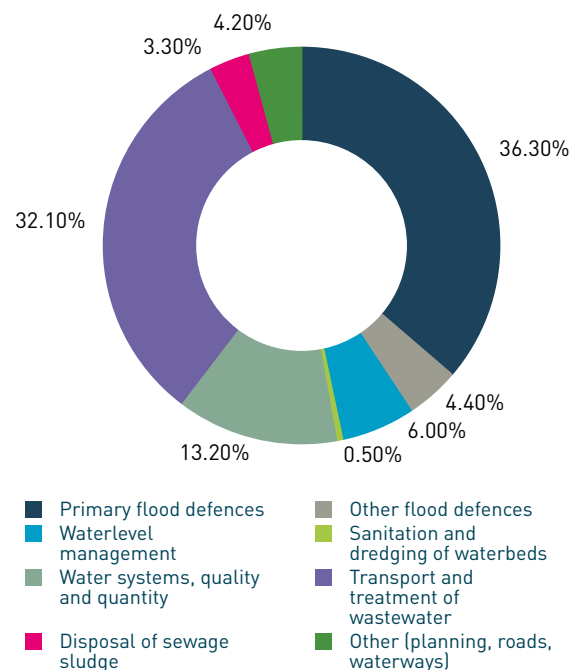
Average yearly investments 2025-2029	In million €	Contribution to EU taxonomy objective
Primary flood defences	1,115	2, 4, 6
Other flood defences	135	2, 4, 6
Waterlevel management	185	2, 3, 5, 6
Sanitation and dredging of waterbeds	15	2, 3, 4, 5, 6
Water systems, quality and quantity	405	2, 3, 4, 5, 6
Transport and treatment of wastewater	985	1, 3, 4, 5, 6
Disposal of sewage sludge	100	1, 4, 5
Other (planning, roads, waterways)	130	

Structure of this report

Both the Water Bond Framework and this newsletter are structured around the EU taxonomy objectives. The executive summary sums up the contribution per EU Taxonomy objective. In the remainder of this report, per chapter we highlight the EU Taxonomy objectives. We explain the most important activities that water authorities undertake to contribute to that objective.

Next to that the progress made so far is substantiated by presenting the latest available key figures¹⁾ which are most often from 2024. Important to note however is that although our bank does strive for the highest possible market share in financing the water authorities, this share is not 100% but the impact presented in this report is nevertheless on sector level.

EXPECTED RELATIVE DISTRIBUTION OF THE BUDGET



1) The figures used in this publication are taken from 'Waterschapsspiegel' (www.waterschapsspiegel.nl). On this website, the Association of Dutch Water Authorities regularly publishes an update of performance indicators. There is also a specific annual report about the water authorities' performance on sustainability which is called the 'Klimaatmonitor Waterschappen'.

EXECUTIVE SUMMARY

IMPACT OF THE WATERBONDS

TOTAL OUTSTANDING LOANS COVERED (2025)

€9.0 billion

(RY 2024: €8.9 billion)

EMISSIONS OF WATER AUTHORITIES, ATTRIBUTED TO NWB IN TONNES CO₂ EQUIVALENT (2024)

528,127

EMISSION INTENSITY FINANCED BY NWB IN TONNES CO₂ EQUIVALENT (2024)

59.0 of which

Scope 1: 48.1

Scope 2: 4.2

Scope 3: 6.7



IMPACT MADE BY THE SECTOR

Climate change mitigation

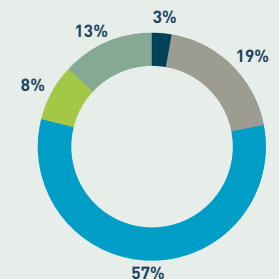
Emissions are limited as much as possible (CO₂eq footprint), next to that as much as possible renewable energy is generated or purchased. The increase in 2021 has mainly an administrative cause: purchased energy from Europe has not qualified as renewable since 2021, regardless of how it was generated. The footprint (scope 1, 2 and 3) decreased by 1.2% in 2024 compared to 2023¹⁾.

Most important source of the own energy production is the biogas from the 'sludge' produced out of the wastewater treatment process (+/- 64%). Other energy sources include wind power, solar energy, biomass combustion, hydropower, ground source energy and aquathermal energy.

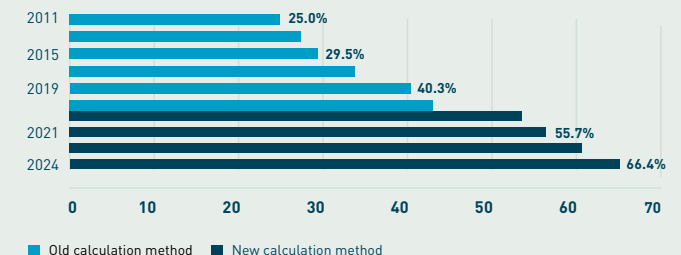
	2017	2019	2020	2021	2022	2023	2024
Water authorities' climate footprint in thousand tonnes CO ₂ Equivalent	931	788	739	900	901	787	778

Breakdown of the climate footprint by emission type

- Scope 1 - Energy and Transport
- Scope 1 - WWTP Methane
- Scope 1 - WWTP Nitrous oxide
- Scope 2 - Total
- Scope 3 - Total



Water authorities' share of own production in total energy use



Climate change adaptation

The Dutch Flood Protection Programme (HWBP) is a nationwide alliance of all 21 water authorities and Rijkswaterstaat, jointly responsible for strengthening and upgrading primary flood defences to meet the national flood risk standards by 2050.

KPI	2023	2024
Length primary flood defences planned (km)	888	887
Length primary flood defences completed (km)	219	225

1) Klimaatmonitor, 2024

EXECUTIVE SUMMARY

IMPACT MADE BY THE SECTOR

Transition to a circular economy

The performance of some core activities of water authorities generate large quantities of residuals, which are reused where possible.

Activity	Residual	Reusable material	2023	2024
Waterway maintenance	Biomass	Paper/composite		
Wastewater treatment	Purified wastewater	Freshwater source	8.6 mln m ³	10.5 mln m ³
	Phosphate	Fertiliser	108 tonnes	407 tonnes
	Cellulose	Paper/cardboard	3,461 tonnes	3,530 tonnes
	Kaumera	Cement binder/glue	1 tonne	10 tonnes

Pollution Prevention and Control

With wastewater treatment plants, water authorities remove the most harmful substances (nitrogen, phosphorus and oxygen-binding substance) out of the wastewater of the 18 million inhabitants and more than 2 million companies in the Netherlands. The quality of wastewater treatment is high in relation to the standards and continues to improve.

Percentage of substances removed from wastewater	2015	2017	2019	2021	2022	2023	2024
Nitrogen (norm: 75%)	83.4%	84.2%	85.2%	84.5%	85.8%	83.7%	84.4%
Phosphorous (norm: 75%)	85.3%	86.2%	86.7%	86.9%	87.3%	85.7%	86.4%
Oxygen-binding substances (norm: 90%)	92.6%	92.7%	92.6%	92.8%	93.2%	92.1%	91.8%

Sustainable use and protection of water

Water authorities are responsible for the quality of water in the systems they manage. The European Water Framework Directive (WFD) sets minimum water quality objectives that must be met by 2027¹⁾. For further context on progress towards these targets, please refer to the relevant chapter.

1) Interim evaluation of the water framework directive, see [website](#) for details.

	2023	2024	Impact results
Quality of surface water - % surface waters WFD targets achieved	0%	0%	0%-pt
Quality of surface water - Biological status (WFD Targets)	14.1%	15.0%	0.9% -pt
Quality of surface water - Ecological status (WFD Targets)	0%	0.1%	0.1%-pt
Quality of surface water - Chemical status (WFD Targets)	4.6%	1.0%	-3.1%-pt

Protection and restoration of biodiversity

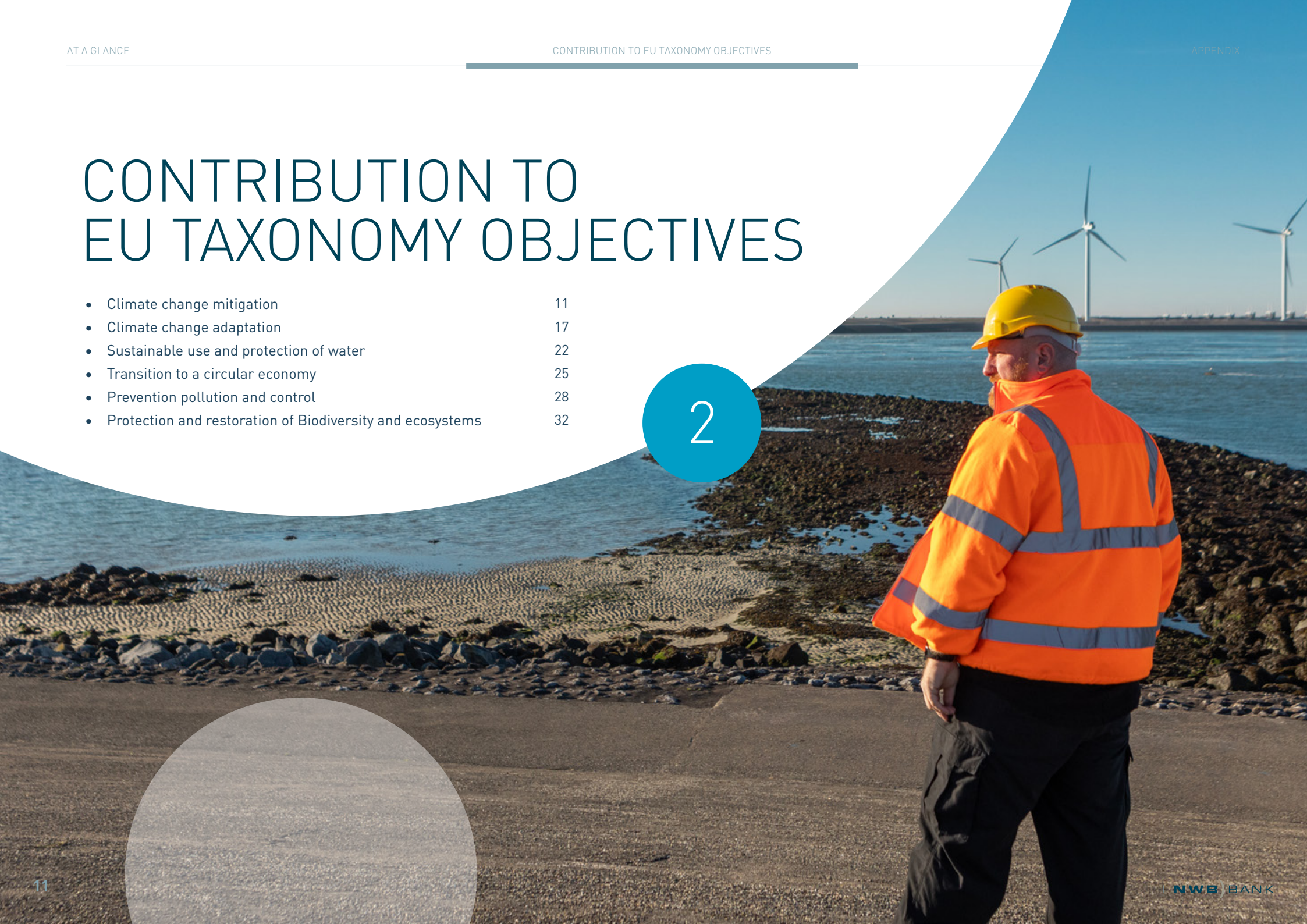
As not all water authorities are the same, it makes sense that their biodiversity policies and priorities differ according to local ecological conditions, challenges and opportunities. Water authorities have drawn up a biodiversity compass comprising five shared principles, enabling each authority to work towards biodiversity in its own way. These principles are:

- water authorities recognise their social responsibility for biodiversity;
- water authorities are part of a network that they seek to strengthen;
- water authorities can make a significant impact through small interventions;
- water authorities take biodiversity into account in all their tasks;
- water authorities collaborate and remain open to initiatives.



CONTRIBUTION TO EU TAXONOMY OBJECTIVES

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CLIMATE CHANGE MITIGATION

STRATEGIC PARTNERSHIP ON ENERGY, WATER AND THE CLIMATE

On 1 February 2024, the Association of Water Authorities and the Ministry of Economic Affairs and Climate Policy formalised a strategic partnership on energy, water and the climate. Under this partnership, the government and the Association of Water Authorities will work together on the basis of reciprocity, openness, a willingness to learn and trust to address challenges at the intersection of energy, water and the climate. In this context, the water authorities will take a proactive approach to exploring new possibilities and opportunities. The collaboration focuses, among other things, on reducing greenhouse gas emissions, energy conservation, the spatial integration of renewable energy, grid congestion, smart energy hubs, the circular economy and innovation.

Sustainable energy use

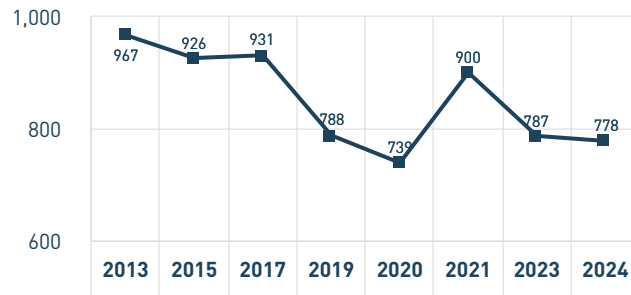
In their work, the water authorities see the impacts of climate change firsthand. They therefore consider it important to help mitigate further climate change and, as part of their remit, implement mitigation measures wherever possible. These efforts fall into two categories: contributions to the energy transition and to the circular economy, in particular the closing of loops. The latter is discussed in Chapter 6. This chapter discusses the measures taken by water authorities in relation to the energy transition. In practice, this means that, in carrying out their duties, the water authorities aim to generate as much sustainable energy as possible and to ensure that any energy they purchase is sustainably produced. Water authorities have set a sector goal of being climate neutral in 2035. Climate neutrality is achieved by, amongst others, greening procurement practices, reducing energy usage, greening energy usage, reducing nitrous oxide and methane emissions, capturing CO₂ during green gas production and sequestration, and onward supply of own generated electricity and green gas. The main ambition for climate neutrality is achieved by their own emission reduction, but residual emissions are compensated by onward supply of electricity and gas. Progress towards this goal is tracked in the annual Water Authorities Climate Monitor published by the Association of Water Authorities.

CO₂ equivalent footprint

The water authorities use their carbon footprint to measure the impact of their activities on the natural environment. The smaller the CO₂ footprint, the smaller the negative effects of the water authorities' greenhouse gas emissions on the environment. The water authorities carry out a wide range of activities to reduce the emissions responsible for their carbon footprint. Reported scope 1, 2 and 3 CO₂ equivalent emissions in 2024 totaled 777,725 tonnes of CO₂ equivalent emissions of nearly 100,000 households. Compared to 2023, this represents a 1.2% decrease. Scope 1 and 2 emissions fell by 1.6% mainly due to a shift from purchasing European green electricity to Dutch green electricity.

Nitrous oxide accounts for 66% of the climate footprint (scope 1 and 2), making it the largest emission source.

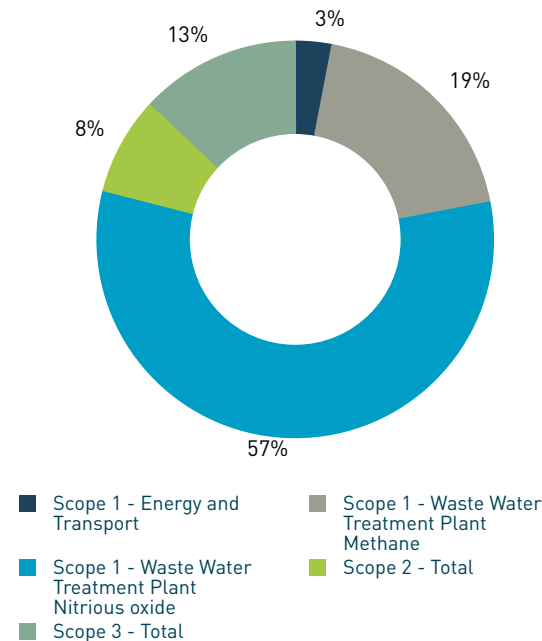
WATER AUTHORITIES' CO₂ FOOTPRINT DEVELOPMENT IN THOUSAND TONNES CO₂ EQ



In 2023, Statistics Netherlands (CBS) revised the national method for determining nitrous oxide emissions from water authorities, based on scientific research. This led to a lower emission factor and was retroactively applied to all years (1990-present). Consequently, reported nitrous oxide emissions are 31% lower than previously reported values. Methane and nitrous oxide emissions (except for biogas venting) are determined using IPCC models and are comparable to previous years. There is a clear increase in activities to reduce methane and nitrous oxide emissions, though effects are not yet visible due to model-based reporting.

The following figure shows how the 778-kilotonne CO₂ footprint in 2024 is distributed across activities. Methane and nitrous oxide, both released during wastewater treatment, are the largest sources of greenhouse gas emissions.

DISTRIBUTION OF CO₂ FOOTPRINT BY TYPE OF EMISSION¹⁾



1) Scope 1: includes direct emissions resulting from operational activities.
 Scope 2: covers indirect emissions from purchased or self-generated energy.
 Scope 3: includes other indirect emissions, such as those from employees commuting to and from companies working on behalf of the water authorities.

Grid congestion agreement for water authorities

On 5 November 2024, the water authorities signed a sector agreement with the government and the operators of the Dutch electricity grid on addressing grid congestion. The agreement is intended to ensure that water authorities can continue to carry out their duties, such as water management and treatment, despite

increasing demand for electricity. The agreement focuses on smart energy solutions and collaboration, including sharing electricity and limiting peak loads. The measures will be further developed by individual water authorities and grid operators.



SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

Self-generated energy

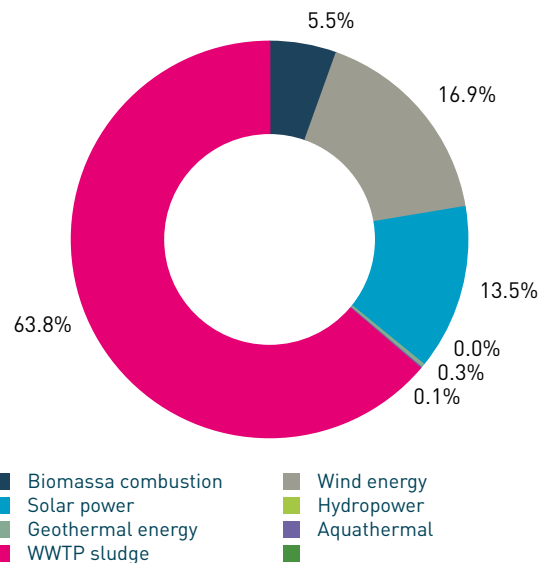
In carrying out their duties, the water authorities generate as much renewable energy as possible, particularly in the treatment of wastewater, one of their key responsibilities.

Sources of renewable energy generation

In addition to biogas, water authorities also generate energy on their sites and through their infrastructure from other natural sources, including wind, solar, hydroelectric power, and geothermal and aquathermal energy (for heating and cooling). The figure below shows the share of each source in the water authorities' renewable energy production in 2024. At 63.8%, biogas still accounted for the largest share of total renewable energy generation by water authorities. However, the share of wind power (16.9%) is increasing in particular. The share of electricity generated from solar energy (13.5%) decreased slightly compared to 2023. Other energy sources, including biomass combustion,

hydropower, ground source energy and aquathermal energy, currently account for only a small share of the water authorities' own renewable energy generation.

DISTRIBUTION OF WATER AUTHORITIES' OWN ENERGY PRODUCTION IN 2024 BY SOURCE

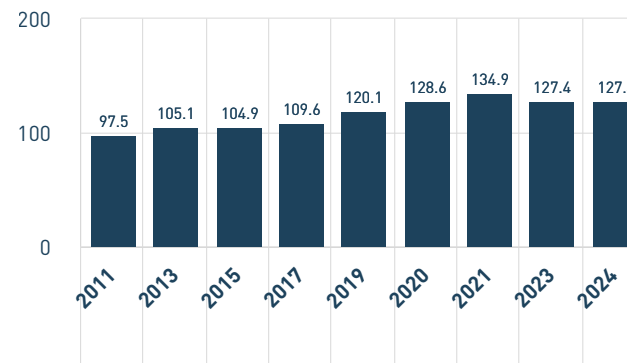


Biogas production

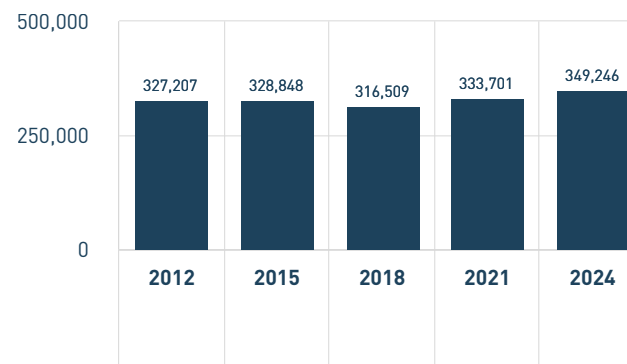
A by-product of wastewater treatment is 'sewage sludge'. This sludge can be used by bacteria to produce biogas. Together, the water authorities are among the largest biogas producers in the Netherlands. The biogas can then be used as a direct energy source for transportation and other vehicles, as well as for electricity generation. The following figures show both the volume of sewage

sludge processed and the biogas production of the water authorities, to the extent that it is put to use.

VOLUME OF BIOGAS PRODUCED AND PUT TO GOOD USE (IN MILLIONS OF M3)



VOLUME OF SEWAGE SLUDGE PROCESSED IN 1,000 KG OF DRY MATTER¹⁾



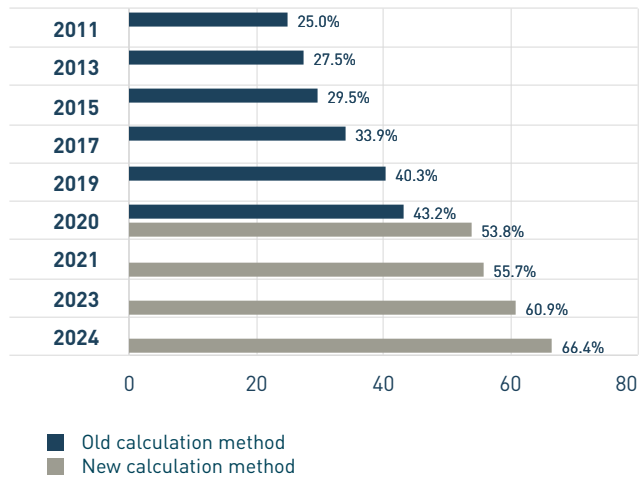
¹⁾ Data on sewage sludge production is collected once every three years.

Share of self-generated energy

Water authorities are striving to become energy neutral, meaning that the total amount of renewable energy they generate – together with energy generated by third parties on their sites – is equal to or greater than their energy consumption. The water authorities continue to make strong progress towards achieving full energy neutrality by 2025, while recognising that achieving full energy neutrality remains an ambitious goal. Contributing factors include negative electricity prices, grid congestion and delays in the implementation of new projects, partly due to difficulties in obtaining the necessary permits in time. Forecasts suggest that the target is likely to be achieved within a few years. These developments will be taken into account in the 2026 review of the water authorities' vision 'Towards climate neutrality'.

The table below shows the results achieved up to and including 2024. Due to a technical change in the calculation method, the figures up to and including 2019 are not comparable with those for subsequent years. The share of own renewable energy generation stood at 66.4% in 2024, compared with 60.9% in 2023.

SHARE OF OWN PRODUCTION IN TOTAL ENERGY USE



The water authorities not only use their land for their own energy generation, but also make it available to third parties, such as community cooperatives and businesses, to produce renewable energy. In 2024, this third-party production corresponded to 17.0% of the combined energy consumption of all water authorities, compared with 11.3% in 2023.



AQUATHERMAL ENERGY BY DE STICHTSE RIJNLANDEN WATER AUTHORITY

De Stichtse Rijnlanden Water Authority, whose area corresponds almost exactly to the province of Utrecht, has been treating around 65 million litres of wastewater per year at its Utrecht wastewater treatment plant since 2019. The incoming wastewater is relatively warm, as it partly consists of shower water, hot tap water, and water from dishwashers and washing

machines. As a result, the treated wastewater still has a temperature of around 12°C in winter and 22°C in summer. To use this residual heat, the water authority, in collaboration with energy supplier Eneco, developed a large heat pump installation at the treatment plant.

With the heat pumps in place, the heat is no longer lost: a heat exchanger extracts it from the wastewater, and the heat pumps raise the temperature to 70°C.

To connect the installation to the district heating network, a new 600-metre heat pipeline was constructed. The cooled water is then discharged into the River Vecht. The system provides sustainable heat equivalent to the heating needs of approximately 20,000 homes. Since becoming operational, it has reduced CO₂ emissions by around 30,000 tonnes per year.



CHARGING STATION NEXT TO THE AA EN MAAS WATER AUTHORITY'S SEWAGE TREATMENT PLANT

The Aa en Maas Water Authority, located in the eastern part of the province of North Brabant, plans to carry out numerous projects in the coming years related to flood protection and water system management. As part of its sustainability efforts, it aims to use electrified equipment wherever possible. However, long waiting times for new connections to the electricity grid have led the water authority to build its own charging station next to the wastewater treatment plant in Oijen. The equipment used by the Aa en Maas Water Authority in these projects can be charged at the site.

The charging station has four charging points for lorries and two facilities for charging the battery packs of electric cranes. Electricity is supplied by the sewage treatment plant, with its operational needs taking priority at all times. The station was constructed with support from the Flood Protection Programme (HWBP), which promotes clean and emission-free construction using electric equipment. The charging station enables the use of 5.8 million kWh of electricity instead of nearly 1.7 million litres of diesel, resulting in a CO₂ reduction of 5,376 tonnes per year.

CLIMATE CHANGE ADAPTATION

REINFORCING WATER DEFENCES AND ADAPTING WATER SYSTEMS

For the Netherlands, global climate change means rising temperatures, a greater likelihood of prolonged dry spells and at the same time more intense rainfall. Sea levels are also rising, leading to higher water levels in rivers and other watercourses, while periods of low (ground)water levels are also becoming more frequent. Until 2018, drought was expected to occur only a few times per century in the water-rich Netherlands. However, drought conditions occurred in 2018, 2019, 2020 and 2022. By contrast, 2023 and 2024 were extremely wet, with rainfall of 1,160 and 1,055 mm, respectively, compared with an average of 850 mm. Such weather extremes are expected to occur more frequently. This makes it necessary to adapt the water system to climate change in order to safeguard public safety and limit damage as much as possible. The water authorities play a key role in this, designing flood defences and water systems under their management to be climate resilient.

Without sturdy flood defences, two-thirds of the Netherlands would regularly flood. This area, home to over 10 million people and accounting for around 70% of the national income, lies below sea level. Floods endanger people's safety, damage buildings and infrastructure, and disrupt the economy.

The water authorities manage and maintain about 18,000 km of flood defences:

- 3,200 km of primary flood defences: primary flood defences are those that provide protection against flooding from the sea, major rivers and the IJsselmeer and Markermeer lakes and must meet a statutory safety standard;
- 10,700 km of regional flood defences: together with the 12 provinces in the Netherlands, water authorities determine which non-primary flood defences are so important that they must meet a safety standard;
- 4,000 km of other flood protection systems: flood defences that are not designated as primary or regional flood defences are not provided with a safety standard because they play a minor role in water safety and mainly have a function in the water system.

Flood protection

Strengthening primary flood defences

The water authorities manage and maintain 3,230 km of primary flood defences. These protect against flooding from the sea, the major rivers, and the IJsselmeer and Markermeer lakes. In 2017, new, stricter safety



standards were introduced, with which the primary flood defences must comply by 2050. In 2050, and already currently while leading up to the new standards, the Netherlands are exposed to the least flood risk in history. This risk includes impact of climate change. In other words, a flood defence's failure to meet the standard today does not necessarily indicate an immediate risk of flooding. However, it does mean that the flood defence must be reinforced in the short term. By starting these reinforcements now, the water authorities are ensuring that the flood defences will be ready for the expected situation in 2050.

The total length of the primary flood defences is divided into 216 standard sections, each with a safety standard tailored to the area it protects. By early 2023, the water authorities were required to assess all primary flood defences and associated structures (particularly

sluices and pumping stations) against the new standards. The results show that approximately 1,400 km of flood defences require reinforcement. These upgrades are being carried out under the national Flood Protection Programme (HWBP), launched in 2014 and funded jointly by the water authorities and the national government. By 2024, they had made €463 million available. Between 2014 and 2024, 225 km of flood defences were reinforced under the HWBP programme.

Strengthening regional flood defences

In addition to the 3,230 km of primary flood defences, the water authorities manage a further 14,500 km of flood defences. These also help protect against flooding. The 12 provinces determine which of these are sufficiently important to be designated as regional flood defences and assigned an official safety standard. Flood defences that are not designated as primary or regional do not have such a standard, as they play a more limited role in flood protection; their main function is water system management.

Regional flood defences have a combined length of 9,738 km and are subject to safety standards set by the provinces. The water authorities assess whether these defences meet the applicable standards. Separate agreements are made between water authorities and provinces regarding both the assessments and any subsequent reinforcement. As a result, assessments are not carried out simultaneously by all water authorities.

If an assessment shows that a certain stretch of several kilometres of regional water defences sections does not meet the standards, the water authority and the province agree on a time frame for reinforcement.

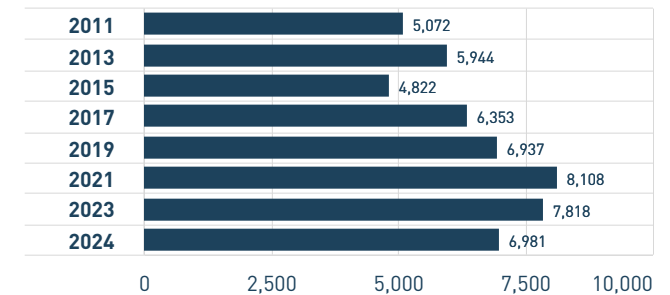
As of 31 December 2024, the situation regarding regional flood defences was as follows:

- 97% of the kilometres subject to a safety standard had been assessed (2023: 98%);
- 78% of the assessed kilometres met the applicable standards (2023: 87%);
- in 2024, the water authorities reinforced a total of 132 km of regional flood defences (2023: 95 km).

The table below shows that the length of regional flood defences meeting the standards is generally increasing, although there have been declines in certain periods. This is due to the introduction of stricter requirements for some regional defences over time. The decrease in regional flood defence kilometres meeting safety standards in 2024 does not necessarily indicate a deterioration of flood protection. The completion of a new assessment cycle resulted in more detailed inspections, improved data, and updated evaluation methodologies, leading to a more accurate understanding of the reinforcement needs.

REGIONAL FLOOD DEFENCES THAT MEET THE SAFETY STANDARD

in kilometers



Prevent flooding and water shortages: optimising water systems

The water authorities are responsible for ensuring an adequate supply of high-quality water within their management areas. In wet periods, this means preventing excessively high water levels, while in dry periods it involves ensuring that sufficient water remains available. In this way, the water authorities support sectors such as agriculture, recreation, nature conservation, drinking water abstraction, industry, shipping and fisheries by providing the right amount of water. Rapidly changing conditions require water authorities to implement a wide range of measures within their water systems to continue meeting these demands. Climate change in particular presents a major challenge, as water systems must be able to cope with both water surpluses and shortages. Current measures taken by water authorities include creating water storage areas

and increasing the capacity of existing water systems and pumping stations.

Flood prevention

Following serious flooding in various parts of the Netherlands, the first national agreements were established in 2003 through the *Nationaal Bestuursakkoord Water* (National Administrative Agreement on Water), aimed at preparing the country for different circumstances. As part of these agreements, the provinces set standards for each water authority area, and water authorities began implementing measures to ensure compliance. The table below shows that the proportion of water authorities’ management areas meeting these standards has increased over time.

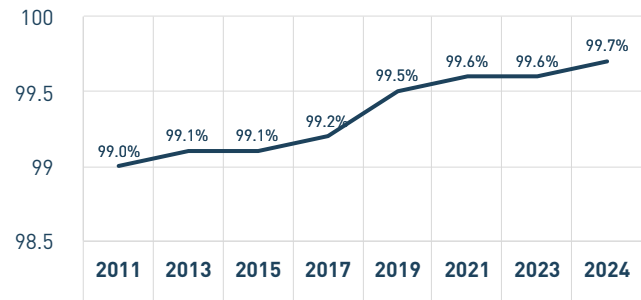


Preventing water shortage

Until recently, prolonged periods of low rainfall in the Netherlands were considered extremely rare. Prior to 2018, the last such period occurred in 1976. However, extended dry spells were recorded in 2018, 2019, 2020 and 2022. As a result, certain parts of the Netherlands experienced water shortages, despite the country’s water-rich status. This has caused problems not only for nature and agriculture, but also for shipping, the stability of flood defences and drinking water supplies. Retaining and supplying water have therefore become increasingly important aspects of the water authorities’ work. This presents a particular challenge for water authorities in the east and south of the Netherlands, as their higher elevation means they can supply water to only a limited part of their area during shortages. Retaining rainwater and maintaining groundwater levels are therefore the primary strategies in these regions.

Although 2024 was a wet year, the water authorities still had to supply approximately 1.9 billion m³ of water from outside their own areas to ensure sufficient availability (2023, also a wet year: approximately 2.5 billion m³).

PERCENTAGE OF SURFACE WATER MANAGEMENT AREAS MEETING STANDARDS



SELF-CLOSING FLOOD BARRIER BY THE LIMBURG WATER AUTHORITY

The Limburg Water Authority, whose management area corresponds to the province of Limburg, must reinforce approximately 175 km of flood defences along the Meuse by 2050. In some locations, this affects built-up areas, such as the village of Steyl. Constructing a traditional dike here would block residents' view of the river throughout the year.

For this reason, a self-closing flood barrier has been chosen, which rises automatically during high water without human intervention.

This is the first time that a special structure of this type has been built in the Netherlands. Under normal water levels in the Meuse, the barrier remains concealed

within a square. This ensures that views of the Meuse from the village, and of Steyl from the river, remain unobstructed. In the event of high water, the deck floats and the section of the square that functions as a flood barrier rises automatically. Around 140 metres of barrier, approximately 3 metres high, protects Steyl and the surrounding area from flooding.





DREDGING WITH ELECTRICALLY POWERED EQUIPMENT BY THE BRABANTSE DELTA WATER AUTHORITY

To ensure that water can be supplied and drained efficiently, waterways must be dredged regularly to maintain sufficient depth. The Brabantse Delta Water Authority, located in the west of the province of North Brabant, has been using electrically powered equipment for dredging wherever possible since 2025, as part of efforts to make its energy use more sustainable. In a major 19-kilometre project in a wide watercourse, this involves the use of a fully electric pontoon, an electric crane and an innovative electric workboat.

The main challenge in this project was finding a suitable charging point along the water, close to the dredging site. This charging point was eventually located at a company on an industrial estate. With a full battery, the vessel can operate for up to two days, depending on dredging intensity and the distance to the charging point. Previously, dredging operations consumed around 400 litres of diesel per day, generating polluting fumes and causing noise pollution. The electric approach eliminates fuel consumption, emissions and noise. The work vessel

is equipped with batteries with a combined capacity of 2,200 kWh, charged using green electricity from wind and solar sources. Using electrically powered equipment for the 19 km project ensures that 198,000 kWh of electricity is used instead of 56,600 litres of diesel. This results in a reduction in CO₂ emissions of 184 tonnes.

SUSTAINABLE USE AND PROTECTION OF WATER

MEASURES IN SURFACE WATER

In addition to the tasks described in the previous chapters, the water authorities are also responsible for water quality in the systems under their management. They fulfil this role in two ways. First, they treat wastewater from Dutch households and businesses so that it can be safely discharged into surface waters without causing harm (this is discussed in more detail in Chapter 7). Second, they implement measures in their water systems that contribute to clean, ecologically healthy surface water. This chapter focuses on these measures, which enhance living conditions in and around the water. This benefits the plants and animals that live in the water. Good biological and chemical water quality increases biodiversity in and around the water. But of course, users of the water also benefit from improved water quality, including farmers, sport fishers, recreational boaters and swimmers.

Examples of measures the water authorities implement to improve the water quality of their water systems include ecological maintenance and mowing regimes, the creation of nature-friendly banks, the re-meandering of watercourses, stream restoration and the construction of fish passages. The European Water Framework Directive (WFD) plays a key role in this context, setting minimum water quality standards to be met by 2027 for larger water bodies, known as WFD water bodies. In the Netherlands, the water authorities manage approximately 660 of the more than 700 WFD water bodies²⁾. Meeting these targets remains a major challenge. Water still contains relatively high levels of substances such as pesticides, fertilisers, heavy metals and other chemical compounds, while the way many water bodies are managed also has an impact. The WFD Impulse Programme, launched in 2023 with the involvement of the water authorities, aims to ensure that as many targets as possible are achieved. A key challenge associated with the Water Framework Directive (WFD) is the ‘one out, all out’ assessment principle. Under this approach, a water body can only achieve good status if all relevant ecological and chemical quality elements meet their respective standards. Consequently, a single failing parameter can prevent an otherwise significantly improved water body from achieving overall compliance. This makes the WFD targets particularly challenging to attain in the Netherlands, where substantial progress

has been made in many areas, but isolated exceedances of environmental standards can still determine the final classification.

	2023	2024
Quality of surface water - % surface waters WFD targets achieved	0.0%	0.0%
Quality of surface water – biological status (WFD Targets)	14.0%	15.0%
Quality of surface water – Ecological status (WFD Targets)	0.0%	0.1%
Quality of surface water – chemical status (WFD Targets)	4.1%	1.0%

In the Netherlands, the provinces are ultimately responsible for the 740 officially designated swimming sites in Dutch outdoor waters. The water authorities are responsible for water quality and play an important role, particularly at the 500 officially designated swimming locations situated in waters where they are required to maintain good water quality. During the swimming season (1 May to 1 October), information on the quality of swimming water in the Netherlands is available at <https://www.zwemwater.nl/> and via the Zwemwater app.

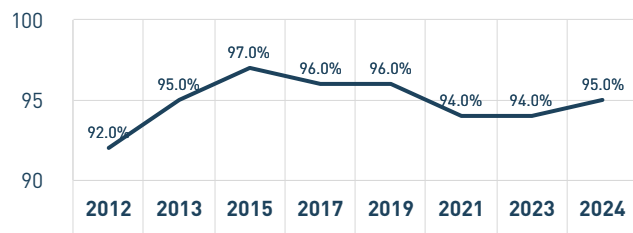
The water authorities monitor the quality of water at swimming locations within their areas. They advise provinces on issuing warnings, negative swimming advisories or bans when health risks are present.

2) The others are managed by Rijkswaterstaat

Reduced water quality can have many causes, with bird and animal droppings and sewage system overflow being the most common. In 2024, the water authorities advised the provinces to issue warnings for 170 locations (2023: 191 locations) and negative swimming advisories for 68 locations (2023: 75 locations). No location was advised to be closed to swimmers (2023: 1 location). Improving swimming water quality requires collaboration between the water authority, the site manager and the province. In 2024, the water authorities took action 22 times to ensure a location's water met the required standard for swimming (2023: 23 times).

One indicator of surface water quality is the proportion of bathing sites that comply with the European Bathing Water Directive. In 2024, 95% of the 500 sites managed by the water authorities met the directive's requirements. The table below shows the trend since monitoring began in 2012.

PERCENTAGE OF BATHING WATER SITES MANAGED BY WATER AUTHORITIES THAT COMPLY WITH THE EUROPEAN BATHING WATER DIRECTIVE





IMPROVING WATER QUALITY USING HYDROGEN-POWERED EQUIPMENT AT THE RIJNLAND WATER AUTHORITY

The Rijnland Water Authority, which primarily covers the northern part of the province of South Holland, is working to improve water quality in the 'Amstelveense Poel'. As part of a pilot project, sediment is being dredged from part of the lake, after which a new layer of sand is applied to the bed. As the water authority aims to operate in a fully circular way by 2050, it is reducing its

reliance on fossil fuels and testing new technologies in its projects. One such innovation is the use of hydrogen fuel cells in dredging operations.

The project at the Amstelveense Poel also serves as a pilot for hydrogen as an energy source. A hydrogen-powered generator supplies electricity to the project's

equipment, including electric cranes and a workboat, as well as to the site facilities. Thanks to the generator used during the pilot, 1,605 kg of green hydrogen was used instead of 8,313 litres of diesel. Over 39 days of dredging, this resulted in a CO₂ reduction of 25 tonnes, equivalent to a 93% decrease.

TRANSITION TO A CIRCULAR ECONOMY

RECOVERING RAW MATERIALS

As the world's population continues to grow, raw materials are becoming increasingly scarce. This makes it all the more important to use them efficiently. A circular economy can play a key role in this, ensuring that raw materials are used more efficiently and reused, without harmful effects on people or the environment. It also contributes to climate mitigation by reducing CO₂ emissions. In the Netherlands, a raw materials agreement (*Grondstoffenakkoord*) was concluded in 2017, with the aim of achieving a fully circular economy by 2050. The water authorities have signed this agreement and are therefore committed to this goal. They have also set an interim target: reducing the use of primary raw materials with a negative environmental impact by 50% by 2030. In addition, they contribute by recovering materials and raw resources from sewage and from materials released during the management and maintenance of their infrastructure.

The water authorities recognise that the linear economy, in which new materials and raw materials are continuously consumed, is unsustainable and creates significant problems. For water authorities, 'circular operations' means taking into account the life span, renewability and environmental impact of materials from design through to implementation and management. They also have the necessary resources and scale to make a meaningful impact. Each year, they purchase over €4.5 billion worth of products and services. By setting requirements for materials, for example, minimising the use of scarce or environmentally harmful raw materials, they can exert significant influence. Contractors are also increasingly required to use electric machinery and lorries wherever possible. The goal is to achieve fully circular procurement by 2030. In addition, water authorities aim to reuse the large volumes of residual material generated by their operations. The water authorities also make efforts to ensure that large quantities of residual materials generated in the course of their work can be reused. These include, for example, biomass generated during waterway maintenance, which can be processed into paper and composite materials. In addition, the water authorities use innovative techniques to recover substances such as phosphorus, cellulose and Kaumera from wastewater.

Extracting raw materials from wastewater

Following upgrades to wastewater treatment plants, several water authorities are now able to recover reusable substances from sewage, including phosphate, cellulose and Kaumera. However, the most important reusable resource remains the treated water itself. Water authorities are also working to produce biopolymers such as ALE, PHA and building blocks for bioplastics. To achieve this, they collaborate with businesses and research institutions to develop test setups and pilot projects. The results achieved so far are outlined below.

Treated wastewater

The wastewater treated by water authorities is used as a freshwater source in summer to help combat drought. It can also be used for other purposes, such as industrial applications. In 2024, water authorities supplied 10.5 million m³ of treated wastewater as a raw material (2023: 8.3 million m³).

Phosphate

Phosphorus is an important fertiliser that occurs in sewage water as phosphate. It can be recovered from sewage water as struvite, a highly fertile fertiliser, or from the ash remaining after sewage sludge incineration. In 2024, 14 water authorities recovered a total of 407 tonnes of phosphate (2023: 108 tonnes recovered by seven water authorities).

Cellulose

Cellulose enters sewage primarily through toilet paper. It can be recovered from solids screened out during treatment and reused to produce paper or cardboard. In 2024, three water authorities recovered a total of 3,530 tonnes of cellulose (2023: 3,461 tonnes by the same three water authorities).

Kaumera

Kaumera is a new raw material extracted from the sludge granules formed during a specific type of wastewater treatment known as the Nereda process. It can be used as a binding and adhesive agent in the concrete industry, or as a water-repellent coating in agriculture and horticulture. The world's first Kaumera extraction plant opened in Zutphen in 2019, followed by a second facility in Epe in 2021. In 2024, these two facilities extracted 10 tonnes of Kaumera (2023: 1 tonne).



CIRCULAR RENOVATION OF A PUMPING STATION BY THE ZUIDERZEELAND WATER AUTHORITY

(Sewage) pumping stations, wastewater treatment plants and other technical installations of the water authorities contain a wide range of materials, including steel, concrete, copper and plastic. In the past, many components were replaced during renovations and disposed of as waste. Today, water authorities take a more circular approach, focusing on what can be

reused. The Zuiderzeeland Water Authority, primarily located in the province of Flevoland, is applying this approach in a pilot project during the renovation of the sewage pumping station in Marknesse.

By assessing components more critically and reusing them where possible, their lifespan is extended,

meaning they need replacing less often. Components are also increasingly refurbished instead of replaced, and in some cases replacing only small parts is enough to make a product reusable. This reduces the use of raw materials and lowers CO₂ emissions. It also saves costs by limiting the need for new materials.

PREVENTION AND CONTROL OF (WATER) POLLUTION

SEWAGE TREATMENT

With 313 wastewater treatment plants, water authorities treat the wastewater produced by the Netherlands’ 18 million residents and 2.5 million businesses. The primary aim of wastewater treatment is to remove the substances most harmful to surface water. This ensures that treated wastewater can be discharged into surface water without negatively affecting water quality. Wastewater treatment therefore makes a significant contribution to water quality, a topic discussed further in Chapter 5. Today’s wastewater treatment plants are also increasingly seen as energy and raw material factories, as water authorities use wastewater as much as possible to generate sustainable energy and recover raw materials. These topics are discussed in Chapters 3 and 6.

An important part of achieving good water quality is high standards of wastewater treatment. The removal of oxygen-binding substances and nutrients, such as phosphorus and nitrogen from wastewater is essential to maintaining healthy surface water bodies. The European Directive on urban wastewater treatment, Council Directive 91/271/EEC, states that at least 80% of the present phosphorus and at least 70%-80% of the present nitrogen must be removed. Undeniably, it would be best to remove 100% of these substances, as this would mean that our wastewater would not add any harmful substances or nutrients to our environment. At present, wastewater treatment plants easily meet the targets set by the European Directive, with percentages ranging from 84 to 92%.

The following table shows how much wastewater and sewage has been treated by the water authorities in recent years, and how much pollution has been removed. Pollution load is expressed in terms of population equivalents (p.e.). One p.e. corresponds to the pollution load of one inhabitant of the Netherlands per year. In total,

the water authorities treated 2.23 billion m³ of wastewater in 2024 (2023: 2.25 billion m³). As the average volume is 2.0 billion m³, this indicates that 2024 was a wet year.

Removal of harmful substances

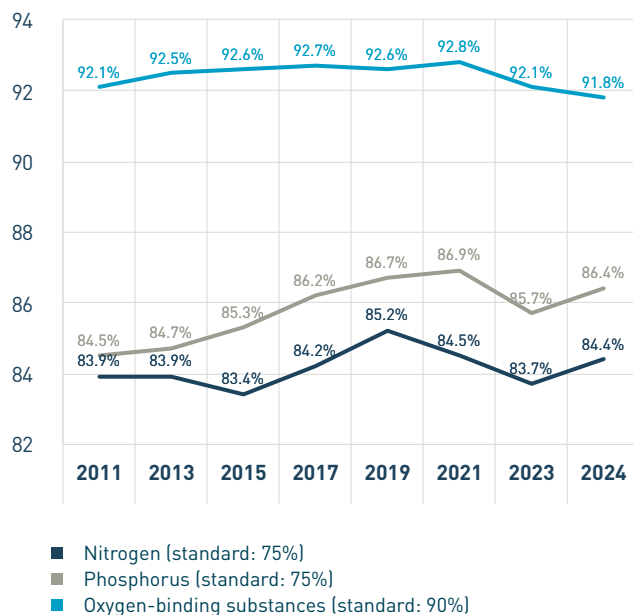
The water authorities remove the substances most harmful to surface water: nitrogen, phosphorus and oxygen-binding substances. Nitrogen and phosphorus are nutrients that, when present in surface water at excessively high concentrations, promote algae growth. This has particularly adverse effects on aquatic plants and fish species that require clear water to survive. Oxygen-binding substances are organic compounds, such as proteins, carbohydrates and fats, that bind oxygen and thereby reduce the amount of oxygen available to plants and animals.

SHARE OF SUBSTANCES REMOVED FROM WASTEWATER

Share of substances removed from wastewater	2011	2013	2015	2017	2019	2021	2023	2024
Volume of treated waste and sewage water in million m3	1,916	1,873	1,887	1,927	1,910	1,964	2,251	2,229
Volume of treated waste and sewage water in million p.e.	24.9	24.6	25.5	26.3	27.0	26.8	26.0	26.4
Volume of removed pollutant load in million p.e.	23	22.8		24.4	24.9	24.8	24.3	24.3

Under European regulations, the water authorities are required to remove at least 75% of both nitrogen and phosphorus from wastewater. For oxygen-binding substances, no requirements are included in the regulations, but in the Netherlands it is common practice that at least 90% of these must be removed from the wastewater. The following graph shows that the quality of wastewater treatment relative to the standards is high and has, on balance, further improved in recent years.

QUALITY OF WASTEWATER TREATMENT



The slightly lower proportion of pollutants removed in 2023 and 2024 compared to previous years can be attributed to the extremely wet conditions in both

years. In wet years, wastewater becomes heavily diluted with rainwater, and the diluted water is much more difficult to treat than wastewater with higher pollutant concentrations.

Other substances in wastewater

Microplastics, medicines and drugs

In recent years, an increasing number of substances that were not traditionally present in wastewater have appeared. Examples include microplastics, found in detergents, shampoos and shower gels, as well as medication and drug residues. Water authorities are adapting their treatment plants to remove these environmentally harmful substances from wastewater. In addition to removing these substances, the water authorities are collaborating with other partners to prevent them from entering wastewater in the first place. They follow the motto: 'If it doesn't end up in the wastewater, we won't have to remove it.' This also applies to larger waste items, such as baby wipes, sanitary pads, cleaning gloves and face masks, as well as other substances that place a heavy burden on treatment plants, such as cooking oil.

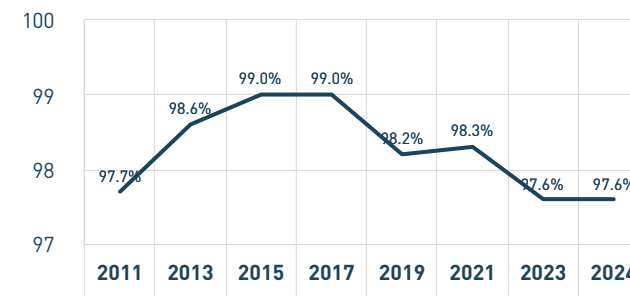
Compliance with discharge requirements

The requirements that a sewage treatment plant's wastewater treatment must meet are tailored to the surface water body into which the treated wastewater is discharged. For example, if the receiving body of water borders a sensitive nature reserve, the

requirements are stricter than for discharge into a less sensitive environment. These requirements are included in the discharge permit held by every wastewater treatment plant. The quality of the discharged water is closely monitored to verify compliance with the permit requirements. In practice, instances where permit limits are exceeded are usually due to a specific cause and are incidental. Examples include disasters or renovations, which can temporarily reduce the facility's performance.

Water authorities jointly report on the extent to which discharge requirements are met using the 'compliance rate' indicator. This indicator shows the percentage of measurements in which the quality of the discharged, treated water meets the permit requirements. The following table shows a high compliance rate. In 2023 and 2024, the facilities were under heavy strain due to extremely wet weather. This is why the compliance rate was lower in those years than in previous years.

COMPLIANCE PERCENTAGE OF TREATED WASTEWATER DISCHARGES





INNOVATIVE PROCESSING OF SEWAGE SLUDGE BY THE HOLLANDS NOORDERKWARTIER WATER AUTHORITY

Sewage sludge is produced as a by-product of wastewater treatment. Currently, the Netherlands lacks the capacity to process all its sewage sludge. The Hollands Noorderkwartier Water Authority, which is responsible for water management in the northern part of the province of North Holland, has therefore provided a loan to the company 'Van Slib Grondstof

Maken' (VSGM, 'Turning Sludge into Raw Materials') to enable them to process sludge in an innovative way. Thanks to this loan, a processing capacity of 120,000 kilograms will be established over time.

The loan granted to VSGM, a company specialising in circular sludge processing from wastewater treatment, is intended to improve processing continuity and adapt the technology to process larger quantities of sludge with the specific properties of Dutch sludge.

Traditionally, sludge is incinerated, composted or sent to landfill, resulting in CO₂ emissions or pollution. VSGM, however, uses an innovative method for circular sludge processing, producing a new material that can be used as a raw material in the construction industry, for example, as a cement substitute. This technology produces almost no nitrogen emissions and very low CO₂ emissions, contributing to a more sustainable future.

PROTECTION AND RESTORATION OF BIODIVERSITY AND ECOSYSTEMS

BIODIVERSITY COMPASS

As not all water authorities are the same, it makes sense that their biodiversity policies and priorities differ according to local ecological conditions, challenges and opportunities. Water authorities have drawn up a biodiversity compass comprising five shared principles, enabling each authority to work towards biodiversity in its own way. These principles are:

- water authorities recognise their social responsibility for biodiversity;
- water authorities are part of a network that they seek to strengthen;
- water authorities can make a significant impact through small interventions;
- water authorities take biodiversity into account in all their tasks;
- water authorities collaborate and remain open to initiatives.

The term 'biodiversity' refers to the variety of plants, animals, microorganisms and fungi, as well as the communities they form and the ecosystems in which they live. Biodiversity is one of the most important systems on Earth, determining the quality of our living environment. Biodiversity ensures clean water, clean air and fertile soil. As in many other countries, however, biodiversity in the Netherlands is under threat. Climate change is expected to further increase biodiversity loss. Scientists have found that even slight warming can have a significant negative impact on species and populations. Many native species are disappearing due to the changing climate, while invasive non-native species are multiplying explosively. Climate change is also happening faster than many species can adapt. The water authorities wish to contribute to the restoration of biodiversity. They are doing so not out of a statutory obligation, but out of a sense of social responsibility to contribute, within the scope of their duties, to robust biodiversity.

CONTRIBUTIONS BY THE WATER AUTHORITIES

Water authorities apply their expertise to collaborate with land users, land managers, and other government bodies to implement measures that help preserve and enhance biodiversity in the Netherlands. They strengthen nature through the design and management of surface waters, dikes and their own land. Examples of measures

taken by the water authorities to promote biodiversity include creating flower-rich embankments and natural riverbanks, restoring meandering streams, providing migration facilities for fish and linking nature areas. The water authorities have a particular advantage in this regard, as the network of waterways and dikes they manage covers the entire Netherlands. This network is referred to as the Blue-Green Network.

Water authorities work together with farmers to improve water quality, for example through the Delta Plan for Agricultural Water Management. Many water authorities also maintain flower-rich dikes in their areas, combining safety with environmentally friendly management. The plants and flowers on a dike create a strong root mat that is just as erosion-resistant as a clay layer. Some water authorities, such as the Amstel, Gooi en Vecht Water Authority, have designated certain waterways as 'green ditches', which only require clearing once every three years. This is good for biodiversity!

Additionally, the measures taken by water authorities to reduce nitrogen emissions are crucial for maintaining biodiversity. Excessive nitrogen deposition in the natural environment leads to a decline in biodiversity. This disrupts the balance of nature. This is one of the reasons why the water authorities are partners in the Clean and Emission-Free Construction programme, which aims to

reduce nitrogen emissions during the construction of infrastructure and buildings.

Finally, the water authorities' efforts to combat invasive alien species also contribute to biodiversity conservation. These are plants and animals that are not native to the Netherlands but are spreading here. They threaten biodiversity by displacing native plant and animal species. Examples include muskrats, beavers, American crayfish and Japanese knotweed. The water authorities combat these species in water systems and on their own land, while also conducting research into how their populations can be controlled.





FISH PASSAGE FOR LOW-LYING NETHERLANDS BY THE DELFLAND WATER AUTHORITY

In the Delfland Water Authority in the west of the province of South Holland, the land, like that in the other water authority areas, lies largely below sea level. To keep the land dry, many windmills, and later polder pumping stations, were built to lift excess water into the higher-level canal system. It is important for fish to be able to migrate between the regional canal system and the often plant-rich polders. Pumping stations obstruct fish migration and can even injure fish as they pass through the pumps. Traditional fish passages are not suitable for migration between

polders and the regional system, as they tend to act as inlets, allowing water to flow into the polder. That's why Delfland developed a new type of fish lift suitable for such situations in collaboration with a company: the 'Vislift UP'.

The first fish lift of this type was built as a pilot project alongside the Voordijkshoornsepolder polder pumping station in Delft. This fish passage is equipped with automatic image recognition technology, which provides the water authority with information on which

fish species migrate from the canal system to the polder, when and in what numbers. The fish lift continuously creates an attractive current to draw in nearby fish and encourage migration. This promotes fish stocks and is therefore beneficial for biodiversity. The fish lift also plays a role in monitoring water quality. It contains various sensors that continuously monitor the water and can issue warning signals to Delfland, such as alerts for low oxygen levels. This enables the water authority to take appropriate action.

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3

WATER AUTHORITIES DILEMMA TOWARDS THE EU TAXONOMY

Water authorities as decentralized governmental bodies, are currently not in scope of the CSRD and EU Taxonomy. This means that they do not have a formal reporting obligation on the EU Taxonomy. This makes it difficult for us as their bank to determine to what extent the financing we provide is in line with the Taxonomy. Another complicating factor is the fact that the financing we provide is merely so-called budget financing, intended to use for activities related to their statutory tasks and clearly not earmarked for one specific project as is the case with project financing.

Water authorities recognize the importance of the EU Taxonomy and, although not in scope (yet), put effort to be able to report on the extent of compliance and eligibility. In that respect we closely collaborate with the 'Unie van Waterschappen' to monitor and discuss most recent developments.

A number of economic activities that the water authorities carry out or are included in the EU Taxonomy (i.e. construction, expansion or renovation of a sewage treatment plant, the digestion of sewage sludge, the construction of infrastructure for water transport, dredging, the restoration of wetlands, the peat meadow approach and the production of biogas).

NWB Bank uses this appendix to demonstrate how the activities of the water authorities, and thus its current Green Bond framework, might align to the existing technical screening criteria (hereafter TSC) in relation to the EU Taxonomy environmental objectives. In previous editions of this Water Bond newsletter we already showed the degree of potential alignment. In this edition we show the outcome of our analysis on the water authorities activities, financing categories and their Taxonomy alignment. The analysis teaches us that it is very complicated to determine to which extent the activities comply with the Taxonomy. Next to that it proves that the effort required to meet the number of TSC to be qualified as sustainable is very high. The TSC seem to be defined for commercial/industrial treatment activities, and do not always align with the public sector management approach by the water authorities. Also the TSC for waste water collection and treatment (activities 5.3 and 5.4) have a focus on energy efficiency that is misplaced: certain new technologies have a significant lower climate footprint, while their (renewable) energy consumption is higher.

On the next two pages the outcome of our analysis is outlined. The discussions and analysis will be continued coming year to support our voluntary reporting ambition on the EU Taxonomy alignment.

Environmental objectives

Climate change mitigation

Economic activity / Technical Screening Criteria

5.3 Construction, extension and operation of waste water collection and treatment

The net energy consumption of the waste water treatment plant equals to or is lower than:

- a) 35 kWh per population equivalent (p.e.) per annum for treatment plant capacity below 10.000 p.e.;
- b) 25 kWh per population equivalent per annum for treatment plant capacity between 10.000 and 100.000 p.e.;
- c) 20 kWh per population equivalent (p.e.) per annum for treatment plant capacity above 100.000 p.e.

Outcome analysis

In order to relate the actual energy consumption to the standards of the TSC, information about the net energy use and the capacity of the water authorities sewage treatment plants is required.

- Gross energy consumption per water authority is available. Net consumption can be obtained by combining the share of the water authorities own energy generation with the gross energy consumption. However the share of own generation is only known at the level of the entire water authority and not at installation level, which results in inaccuracy.
- Next to that, water authorities distinct energy production on its own property and outside its own grounds. For calculation purposes the first one seems most logic to be used here.
- It is unclear whether the population equivalent needs to be determined on current capacity level or the designed capacity level. For now the first one is used in the indicative calculations (the latter one will show better results)

As a result it is hard to report a comprehensive number per water authority that is approximately correct in terms of quality and quantity.

Outcome 2021: For 313 out of the 315 in 2021 active wastewater treatment plants, enough data is available to relate energy consumption to the TSC, resulting in the following comparison.

Capacity (population equivalent)	Number of treatment plants	% of treatment plants energy use ≤ TSC	% of treatment plants energy use > TSC
< 10,000	29	65.5%	34.5%
10,000 - 100,000	200	37.5%	62.5%
> 100,000	84	28.6%	71.4%

Climate change mitigation

5.4 Renewal of waste water collection and treatment

- The renewal of a collection system improves energy efficiency by decreasing the average energy consumption by 20 % compared to own baseline performance averaged over three years, demonstrated on an annual basis. That decrease of energy consumption can be accounted for at the level of the project (i.e. the collection system renewal) or, across the downstream waste water agglomeration (i.e. including the downstream collection system, treatment plant or discharge of waste water).
- The renewal of a waste water treatment plant improves energy efficiency by decreasing the average energy consumption of the system by at least 20 % compared to own baseline performance averaged over three years, demonstrated on an annual basis.
- For the purposes of points 1 and 2, the net energy consumption of the system is calculated in kWh per population equivalent per annum of the waste water collected or effluent treated, taking into account measures decreasing energy consumption relating to source control (reduction of storm water or pollutant load inputs) and, as appropriate, energy generation within the system (such as hydraulic, solar, thermal and wind energy).
- For the purpose of point 1 and 2, the operator demonstrates that there are no material changes relating to external conditions, including modifications to discharge authorisation(s) or changes in load to the agglomeration that would lead to a reduction of energy consumption, independent of efficiency measures taken.

Water authorities do not have data available that shows specifically that renewal of sewage treatment plants results in a 20% decrease in average energy consumption compared to own baseline performance.

Data is available on the annual energy consumptions of the various installations, but no information (yet) on the years in which renovations have taken place.

For expenditures, proxies can be taken based on capital costs of the investment expenditures (in 2022 307 million). However, these capital costs are part of the larger amount of the operating costs of wastewater treatment plants (not only for construction / acquisition).

Environmental objectives	Economic activity / Technical Screening Criteria	Outcome analysis
Climate change mitigation	5.6 Anaerobic digestion of sewage sludge 1. A monitoring and contingency plan is in place in order to minimise methane leakage at the facility. 2. The produced biogas is used directly for the generation of electricity or heat, or upgraded to bio-methane for injection in the natural gas grid, or used as vehicle fuel or as feedstock in chemical industry.	As an elaboration of the 'Towards climate neutrality' vision, an action plan has been drawn to limit methane emissions from sludge cleaning as much as possible. As part of that measures to be taken per water authority per sewage treatment plant to reduce methane emissions are identified. In 2021 water authorities fermented 81% of the sludge into biogas. The costs of sludge cleaning are part of a larger amount of sludge processing costs. At the moment no information available to isolate these costs.
Climate change adaptation	14.2 - Flood risk prevention and protection infrastructure	The technical screening criteria are qualitative in nature, which makes it hard to determine from the available data whether and to what extent activities and projects of the water authorities comply with the Taxonomy. Also this makes it hard to get aligned clarity from the individual water authorities.

WATER BONDS OUTSTANDING AND USE OF PROCEEDS 2025³⁾

Total outstanding loans to water authorities	€ 8,962,603,662.00	Outstanding Water Bonds		€ 6,885,965,340.00	
		ISIN	Currency	Nominal (mln)	Maturity
		XS1386139841	USD	1,250	2026-03-24
		XS2553554812	EUR	500	2027-09-11
		XS1757822496	SEK	2,000	2028-01-24
		XS2180643889	USD	500	2030-05-28
		XS2834365277	EUR	1,000	2031-06-05
		XS3187827251	EUR	1,000	2032-09-24
		XS2613821300	EUR	1,500	2033-04-20
		XS2057845518	EUR	500	2034-02-10
		XS2334267098	EUR	710	2051-04-26

3) EY has provided reasonable assurance on our Financial Statements 2025, including the reported amount of ESG bonds outstanding, consisting of Water Bonds and Social Bonds. The Financial Statements also include the amount of outstanding loans to water authorities.

SECOND OPINION BY S&P GLOBAL RATINGS

Our Water Bonds are considered 'Dark Green' by S&P Global Ratings. Please see below their assessment summary in *italic*. The full report can be found on our [website](#).

NWB Bank finances the balance sheet activities of Dutch water authorities. It therefore does not have visibility into the allocation of proceeds at the project level. That said, based on the expected budget distribution of the water authorities, NWB Bank expects that 81% of the proceeds will be dedicated to adaptation, 12% to mitigation, and 7% to biodiversity. The issuer expects a minimum of 70% of proceeds to be allocated to new financing projects, while the remainder will be directed to refinancing.

Based on the project categories' Shades of Green detailed below, the expected allocation of proceeds, and consideration of environmental ambitions reflected in NWB Bank's Green Bond Framework, we assess the framework as Dark green.

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Statements in this report that are not historical facts are 'forward-looking statements', including forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are based on intent, belief or current expectations of future events of the Company's management and are subject to risks, uncertainties and assumptions. Should one or more of these risks or uncertainties materialise, or should underlying assumptions prove incorrect, the actual results of the Company may vary materially from those expressed in or implied by the forward-looking statements. Given these risks and uncertainties, you are cautioned not to place substantial reliance on forward-looking statements, which are made only as of the date of this report.

For a discussion of some of the important factors that could cause the Company's results to differ from those expressed in or implied by the forward-looking statements, please be referred to the Offering Document that will be delivered in connection with any Securities offering. The Company disclaims any obligation to update, or to announce publicly any revision to, any of the forward-looking statements contained in this report.

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Picture of De Poel in Amstelveen - page 25: Daan Vazquez©

Questions or comments

If you have any questions or comments about this Water Bond report, please do not hesitate to contact us by email at persinfo@nwbbank.com.

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