FOCUS INVESTIGATION

Focus on strategic stocks

2022

Netherlands Court of Audit

Contents

1. Introduction

During the Cold War, from 1952 to 1986, a Dutch organisation known as the Civil Defence was responsible for protecting the population against the immediate impact of war. The Civil Defence was later given a broader remit, when it was also made responsible for dealing with peacetime disasters. It was tasked with putting out fires, rescuing people and supporting the population in times when there was a threat of war.
The Civil Defence was established by the central government under the 1952 Civil Defence Act; it was a civilian organisation whose task was to help and support the population. At its peak, 165,000 people were involved in its activities. The organisation was abolished in 1986 as part of the reorganisation of disaster management, when its responsibilities were transferred to the fire service and the Red Cross, among other organisations. The Civil Defence maintained stocks of medical supplies and tools that could be used, for example, for rescuing people from damaged buildings. For a long time after the end of the Cold War, the issues of crisis preparedness and strategic stocks were not given much thought in the Netherlands. However, the COVID-19 pandemic and the war in Ukraine have prompted a rethink over the past few years, and this focus investigation is intended to contribute to this discussion.

At the time of our investigation, the war in Ukraine had sparked a 'gas crisis' in Europe. Gas deliveries from Russia to Europe through the Nord Stream 1 pipeline came to a partial or complete standstill in 2022, and this has created shortages in the gas market. European countries are looking for alternative sources. Under European law, countries are required to ensure that their natural gas reserves have at least 80% capacity by 1 November 2022. The Dutch government has taken action to achieve this goal. Substantially more LNG (liquefied natural gas) is also set to come to the Netherlands in 2022. The Dutch Gas Board (*Gasunie*) has chartered two LNG tankers that are moored in the *Eemshaven* (a large sea port in the north of the Netherlands). Gas shortages are having a direct impact on households and businesses in the Netherlands. Households have seen their monthly energy bills rise by tens and sometimes hundreds of euros. Businesses that are dependent on gas have been forced to reduce production, or sometimes even to shut down production completely, either temporarily or for good, simply because it is no longer cost-effective to continue full production.

These kinds of crises may prompt the government to rethink their strategic stocks. Our investigation analyses the strategic stocks held by the Dutch central government at this point in time, and the rationale behind them.

1.1 What are strategic stocks?

The central government maintains various types of strategic stocks, or arranges for others to maintain them, in order to have reserves available in case supplies come to a halt. As we have not found a definition of 'strategic stocks' in government documents, we have formulated our own definition. We take strategic stocks to mean 'additional stocks or reserves of raw materials or products that are held back from normal use so that they can be used in the event of a crisis-induced disruption of supplies.' Our investigation focuses on those strategic stocks:

- for which the central government is either fully or partially responsible;
- that meet the essential basic needs of households or businesses;
- that the central government believes must remain available at a time of crisis.

One particular strategic reserve that is beyond the scope of this report – in the light of the above definition – is the strategic gold reserve worth around €35 billion that is held by the Dutch central bank (DNB). The decision to maintain this gold reserve is based on the argument that it fosters financial stability. What distinguishes this reserve from the other strategic stocks discussed in this report is that it is not intended for use by households or businesses. Nor is it the idea that this reserve should become available in a crisis.

We define a crisis as 'a situation that requires government intervention as it poses a serious threat to people's lives or health, or may have a severe material or social impact.'

In other words, strategic stocks and crisis preparedness go hand in hand. This report focuses on strategic stocks in the context of their role in crisis preparedness in the broader sense of the word. The Minister of Justice and Security is the coordinating minister in relation to crisis management, a responsibility that has been delegated to the National Coordinator for Security and Counterterrorism.

1.2 Our investigation?

We analysed various products and raw materials in order to establish whether the government maintains strategic stocks of them (or has arranged for other parties to do so). We examine the government's arguments for deciding whether or not to hold strategic stocks of these products and raw materials. We also analyse the extent to which these strategic stocks are available and how they can be used in a crisis situation.

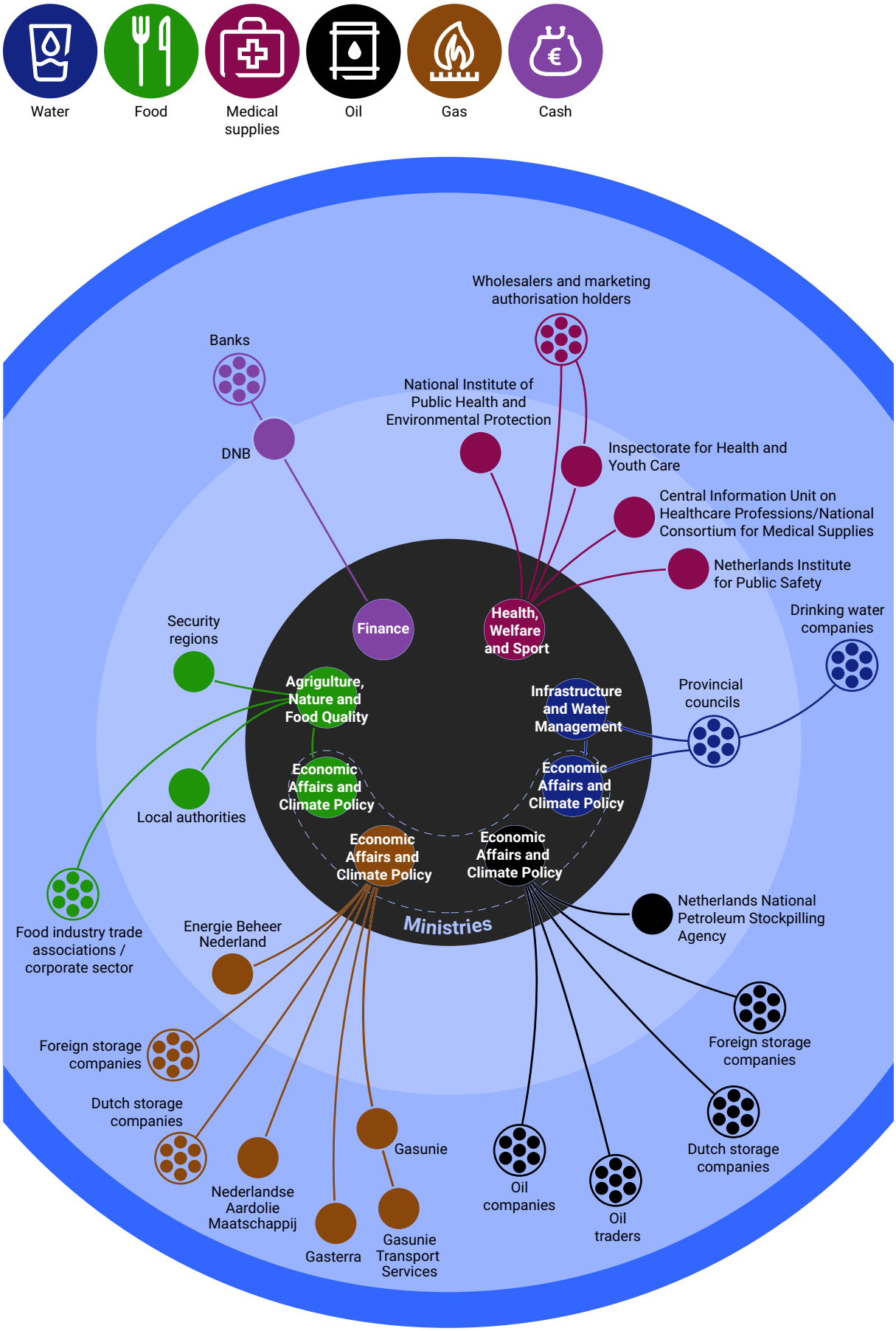
Focus investigation

This report presents the findings of a focus investigation carried out by the Netherlands Court of Audit. A focus investigation differs form an audit in that it is carried out in a considerably shorter period of time, looks at current events and answers specific, well-defined questions. A focus investigation culminates in a clear, concise report without opinions or recommendations. See https://english.rekenkamer.nl/about-the-netherlands-court-of-audit/what-we-do/innovation-in-audit/focus-investigations.

We have not included all possible strategic stocks in our investigation. One example is defence materiel, in which stocks, of both a strategic and a non-strategic nature, play a crucial role. In the past few years, we have published a number of audit reports on this subject (such as Netherlands Court of Audit, 2021b and Netherlands Court of Audit, 2022). For this reason, we have decided to leave defence materiel out of the scope of this investigation. We were also obliged to make certain decisions of a pragmatic nature. Our investigation is aimed at products that directly affect households and businesses, and which lie at the heart of public debate.

The following chapters discuss reserves of six different types, i.e. water, food, medical supplies, gas, oil and cash. The closing chapter, Chapter 8, includes a number of overall impressions and observations resulting from our investigation. Appendix 1 is a list of areas in which we believe it may be worth holding strategic stocks. Figure 1 shows the focus of our investigation, with links to the responsible ministries.

Figure 1 *Focus investigation*

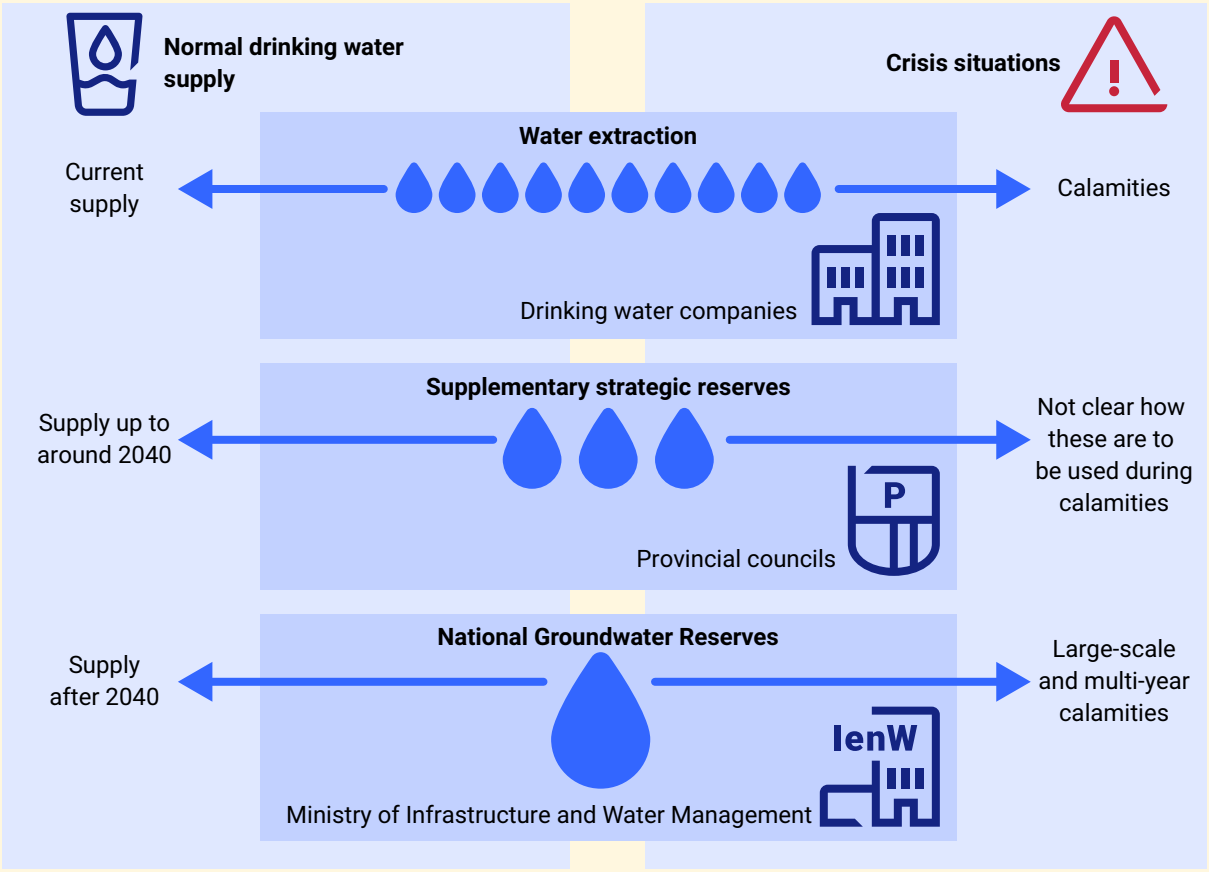


2. Water

The Drinking Water Act defines the public drinking water supply as a 'vital public service of crucial public interest.' Drinking water is a basic necessity. For this reason, it is crucial that sufficient supplies of drinking water are available. A large proportion of Dutch drinking water reserves are stored deep underground, which is something that the government must take into account in its contingency plans. There are various levels of responsibility for the continuity of the drinking water supply, as Figure 2 below shows.

Figure 2 *Drinking water responsibilities*

Three levels of responsibility for drinking water



Under the Drinking Water Act, drinking water companies are responsible for the continuity of drinking water supplies. They have various facilities available to them in case of emergencies. Provincial councils have identified Supplementary Strategic Reserves in order to guarantee supplies of drinking water up to 2040. In addition, since 2014, the Minister of Infrastructure and Water Management has been responsible for designating National Groundwater Reserves for use during large-scale, multi-year calamities, and also for guaranteeing drinking water supplies until 2100. In mid-2022, our audit found that little progress had been made in terms of achieving this objective, partly due to the divergence of opinion on the value and necessity of maintaining National Groundwater Reserves.

2.1 Drinking water policy

Under the Drinking Water Act, the Minister of Infrastructure and Water Management is responsible for 'the main elements and principles of the policy for implementing this Act, in relation to the production and distribution of safe drinking water and sustainable protection of the public drinking water supply' (Section 6 (2A) of the Act).

Under the Drinking Water Act, drinking water companies also have a duty of care to guarantee the supply of drinking water in their designated distribution area. Drinking water companies are also obliged to ensure the continuity of the supply of public drinking water in the event of any disruptions in the supply. Provincial authorities and water managers are responsible for protecting drinking water sources.

The European Water Framework Directive (2000/60/EC) requires all EU member states to identify water and groundwater reserves for the supply of drinking water, and to protect these reserves. In addition, the European Drinking Water Directive (Directive (EU) 2020/2184) requires all member states to document the risks relating to their drinking water reserves and the way in which these risks are managed. This risk-based approach must be applied to the delivery, treatment and distribution of drinking water. The ultimate aim of this Directive is to protect public health against the detrimental effects of the contamination of drinking water.

Drinking water companies are under an obligation to supply drinking water
There are ten drinking water companies in the Netherlands, all of which are publicly owned by provincial councils and local authorities. They are responsible for the infrastructure required for producing and supplying drinking water. In the event of a crisis or major incident (such as contamination), drinking water companies are responsible for guaranteeing the supply of drinking water. The Drinking Water Act requires drinking water companies to analyse the risks of disruptions, for example due to wildfires, flooding or deliberate acts of sabotage or vandalism. This analysis and the resultant measures must be set out in the drinking water company's supply plans. Under the Drinking Water Act, the Human Environment and Transport Inspectorate supervises drinking water companies and assesses their supply plans (with the aid of the National Institute for Public Health and the Environment).

Under the Drinking Water Decree, drinking water companies are obliged to continue supplying 75% of their maximum daily capacity within 24 hours of a disruption. If they do not succeed in delivering the maximum daily capacity, they must distribute emergency drinking water from water tanks located at distribution points. Every

individual receives a daily minimum of three litres of emergency drinking water (two for consumption, and one for food preparation), as prescribed in the Drinking Water Decree. In certain situations, while tap water may be available, this may not be suitable for consumption, but may be used for showering or washing. This water is referred to as emergency water. By way of illustration, regular water consumption stands at around 130 litres per person per day (Statistics Netherlands, 2021).

Provincial Councils: Supplementary Strategic Reserves

Supplementary Strategic Reserves are areas in the Netherlands that the provincial councils designate as potential locations for drinking water production. These include both groundwater and surface water reserves. Under the Environmental Management Act (Ministry of Economic Affairs & Ministry of Infrastructure and Water Management, 2018), provincial councils are also responsible for planning a suitable protection mechanism. Supplementary Strategic Reserves are intended primarily as a means of guaranteeing continued delivery of drinking water supplies up to 2040.

To date, some provincial councils have designated Supplementary Strategic Reserves and included them in their regional physical environment plans. Other councils have not yet done this (Royal HaskoningDHV, 2021a). It is unclear for how long a period water can be extracted from the Supplementary Strategic Reserves in the event of an emergency. No area permits have as yet been issued for the Supplementary Strategic Reserves, nor have plans been published for the treatment and distribution of drinking water.

Both the demand for drinking water and the production capacity vary from one province to another. Some provincial councils are already producing drinking water at their maximum capacity. This means that no more water can be extracted than the present level, due to the environmental impact, for instance. In these provinces, drinking water companies may find themselves having to turn down requests from businesses, for instance, for additional drinking water supplies. This also means that, at current levels of drinking water extraction and in certain areas, drinking water cannot be supplied to new housing developments that have been planned. Some provincial councils have already spent decades trying to identify additional drinking water extraction areas.

Minister of Infrastructure and Water Management: National Groundwater Reserves

Due to the potentially far-reaching consequences of extreme (or crisis) scenarios for the public drinking water supply (e.g. floods, nuclear accidents and microbiological

contamination), the Minister of Infrastructure and Water Management is planning to designate national groundwater reserves as extra strategic reserves (Ministry of Infrastructure and Water Management, 2014). Against this background, the Minister has been seeking to develop a policy on the designation of National Groundwater Reserves since 2014. These reserves are defined as 'deep underground, very old and clean groundwater reserves that have been well-preserved for centuries' (Ministry of Infrastructure and Water Management, 2021a).

Groundwater and surface water

Approximately 60% of Dutch drinking water is extracted from groundwater, and the remaining 40% comes from surface water (Royal HaskoningDHV, 2021a). Surface water and groundwater reserves are not infinite: there is enough in theory, but extracting more water than nature is capable of replenishing has an adverse effect on the environment.

Overlap between National Groundwater Reserves and Supplementary Strategic Reserves

The Minister of Infrastructure and Water Management has set a number of objectives for potential National Groundwater Reserves. One of these, set in 2014, was 'the protection of deep groundwater designated as a national reserve in the long term' (Ministry of Infrastructure and Water Management, 2014). The Ministry of Infrastructure and Water Management now works with the following three objectives (Royal HaskoningDHV, 2021b):

1. The preservation of natural assets (i.e. protecting reserves for future generations);
2. Accommodating the rise in the demand for drinking water after 2040 (up to around 2100);
3. Establishing a back-up source for use in the event of large-scale calamities.

In 2022, the Minister of Infrastructure and Water Management commissioned the Deltares research agency to investigate the 'evidence base for the need for designating and for the possible size' of National Groundwater Reserves. This included preparing scenarios for disaster situations in which National Groundwater Reserves may be used, such as a major flood or an attack on oil storage terminals and nuclear plants, causing (large-scale) contamination of the drinking water supply. The research was prompted by a study by the Royal HaskoningDHV research agency in 2021, which revealed that there was still no clear picture of the specific disaster situations in which National Groundwater Reserves should be used. One of the tentative criteria is that it must be a large-scale calamity lasting for at least two years. Drinking water cannot be immediately extracted once an area has been

designated as a National Groundwater Reserve. Equipment such as pumps and pipes must first be installed. Researchers from Deltares reported that about two years are required to install the necessary infrastructure in order to be able to actually start using the National Groundwater Reserves.

Our audit shows that staff working for provincial councils would like the government to set clear targets for the National Groundwater Reserves. The situation in mid-2022 was that the stakeholders had not reached a consensus about the need for designating National Groundwater Reserves. Provincial councils have indicated that areas where Supplementary Strategic Reserves have been designated, are also regarded as potential locations for National Groundwater Reserves, which means that these areas are not sources of 'other' groundwater. In mid-2022, the Ministry of Infrastructure and Water Management was still debating whether or not any overlap between Supplementary Strategic Reserves and National Groundwater Reserves would be desirable. The Ministry is also exploring the possibility of distinguishing between two types of National Groundwater Reserves: one type that could be used for the regular, long-term supply of drinking water, and another that could be used for calamities (or for both purposes).

The Drinking Water Act defines the public drinking water supply as a 'vital public service of great public interest.' The need to supply everyone with sufficient clean drinking water at all times is indisputable. However, the need to protect the ground from which drinking water is extracted may sometimes be in conflict with other interests. For provincial councils, local authorities and other stakeholders (e.g. farmers), opposing interests are at play between the use and protection of the ground, for instance the need to protect drinking water reserves as opposed to the need to permit geothermal drilling (Netherlands Court of Audit, 2021). Moreover, many drinking water extraction areas are in the vicinity of Natura 2000 areas (the European network of protected nature areas). As a result, the extraction of groundwater may be detrimental to nature.

Planners must take account of uncertain future events in order to guarantee the availability of drinking water. Climate change, for instance, may cause salinisation, desiccation and large-scale flooding. Security of supply is a key area of concern in relation to drinking water. Sufficient water must be available in the long term, and in crises or calamities, drinking water companies must be able to switch to reserve sources where necessary – as is the case today.

2.2 Volume of drinking water reserves

Drinking water companies extracting surface water maintain a buffer capacity, both above ground and underground. This is available for immediate use, as the water has already been purified. Depending on each individual water company, the capacity of these buffers ranges from a couple of weeks to a number of months. A buffer lasts longer if households and businesses reduce their water consumption.

In order to cushion fluctuations in the demand for drinking water and in the event of short-term calamities, drinking water companies (both those dealing with groundwater and those dealing with surface water) also have operational reserves that they can use either immediately or at short notice. In other words, they have the necessary production equipment in place and their extraction permit (issued by provincial councils) also covers such reserves.

There are also non-operational reserves, which cannot be used immediately and serve to accommodate unforeseen events, e.g. a pumping station has yet to be built or expanded even though the relevant extraction permit has already been issued. In these sorts of cases, it takes five years on average before the reserves are ready for use.

According to their own industry organisations, some drinking water companies have additional back-up in the form of strategic groundwater reserves. These are also potential groundwater extraction areas for which the provincial councils have already issued an extraction permit, but for which no production equipment has been installed. The drinking water companies' strategic groundwater reserves are designed to become operational within a couple of years if there is a decline in the capacity of current sources, e.g. due to contamination and/or salinisation (Vewin, 2019).

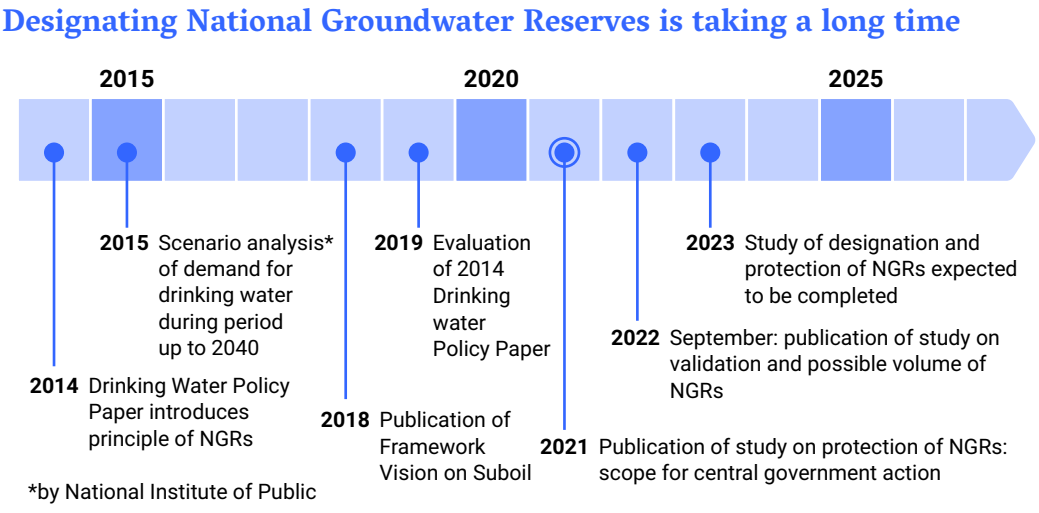
According to the maximum scenario on which the National Institute for Public Health and the Environment bases its projections, the aggregate demand for drinking water will increase by 30% in 2040 relative to 2015 (National Institute for Public Health and the Environment, 2015). Recent figures are in line with this scenario. In various regions, demand for drinking water has grown in line with the maximum scenario during the past few years (Royal HaskoningDHV, 2021a). The idea is that this rising demand will be met by Supplementary Strategic Reserves. However, given that Supplementary Strategic Reserves have not been designated and afforded protection in all areas, it is unclear at this point whether this is going to be enough. As a result of these developments, the Netherlands is now reaching the limits of its regular drinking water capacity. This amplifies the urgency for measures to prepare for a potential crisis.

The aim of the Minister of Infrastructure and Water Management is that the National Groundwater Reserves should meet the demand for drinking water after 2040, and should be available for use in the event of large-scale calamities (Deltares, 2021). The projected 30% rise in the demand for drinking water does not say anything about the amount of water that is needed in the event of a calamity, as this depends in part on the duration and severity of a calamity. Deltares incorporated calculations of reserve volumes, future demand for drinking water and possible shortfalls in the various scenarios for emergencies in which there could be a need for making use of National Groundwater Reserves. Deltares said that the calculations were complicated by the wealth of uncertainties and assumptions (as is clear from Deltares's draft report and our interviews with staff).

Designation of National Groundwater Reserves is taking a long time

As part of the Framework Vision on Subsoil, the government planned to designate National Groundwater Reserves in 2015 and at the same time to issue guidelines for the protection of these reserves. This process encountered a number of delays. The potential National Groundwater Reserves were eventually designated in the 2018 Framework Vision on Subsoil (Ministry of Infrastructure and Water Management and Ministry of Economic Affairs and Climate Policy, 2018). The timeline in Figure 3 below shows the process steps.

Figure 3 *Timeline for the designation of National Groundwater Reserves*



There are a number of reasons why the process has been so drawn out. There were staff shortages at the Ministry of Infrastructure and Water Management, as staff were required to work on other issues that were deemed more urgent. In addition, it took the Ministry some time to enthuse stakeholders for its plans.

2.3 Using drinking water reserves in a crisis

Who is responsible for ensuring that sufficient drinking water is available depends on the scale of a crisis. Under the Drinking Water Act, primary responsibility during a crisis lies with the drinking water companies, who have adopted detailed plans for providing the public with an emergency supply of drinking water within 24 hours. They have the equipment, such as tankers, water bags, pipes and taps, that is needed to distribute water at central locations designated by the local authorities. In the event of an extreme calamity in the future, National Groundwater Reserves may be made available under the aegis of the central government (Ministry of Infrastructure and Water Management, 2014). While the Supplementary Strategic Reserves held by the provinces could also be used in a future calamity, it is not clear which conditions would have to be met for this to be the case.

Drinking water companies are obliged by law to be able to supply drinking water for ten days in an emergency. In order to achieve this degree of self-sufficiency, they have their own emergency diesel generators and chemicals for purifying water. As far as water sources are concerned, the Netherlands is not dependent on other countries, but it does depend on other countries for the equipment and chemicals needed for water purification.

The Ministry of Infrastructure and Water Management is in the process of designating National Groundwater Reserves for use in prolonged, extreme crisis situations. As the designation of these National Groundwater Reserves is not going to take place in the foreseeable future, no actual emergency plans have yet been put in place for the use of these reserves. It normally takes between seven and ten years to prepare an area for water extraction, i.e. this is the time required for all the necessary permits to be issued, and sources, purification plants and infrastructure to be ready for supplying drinking water. In the event of a crisis in which the National Groundwater Reserves would need to be used, Ministry officials said that routine procedures would have to be bypassed. This eventuality has already been taken into account in the above-mentioned two-year time frame for operationalising National Groundwater Reserves in the event of a crisis.

2.4 Topical issues and future challenges

The 2021-2026 Drinking Water Policy Paper states that demand for drinking water is on the rise, at the same time as the natural availability of drinking water sources is on the decline. Although the Netherlands has enough water (including drinking

water) on an annual basis, there may be regional or seasonal water shortages. The question therefore is whether and for how long the current reserves will be able to provide households and businesses with sufficient water. The increasing drought trend also plays a role here. The presence of multiple water sources can help to make the Netherlands less vulnerable to such challenges. A number of drinking water companies are experimenting with these, including the possibility of desalinating brackish water.

Against this background, water conservation has been on the political agenda for some time now. Other than in many other EU countries, the Dutch government is not entitled to impose statutory water restrictions. The Ministry of Infrastructure and Water Management commissioned a study to examine the procedures and cooperative effort required in the event of a shortage of drinking water. The study also looked at the legal basis for a practicable, enforceable framework for imposing drinking water restrictions (Infram, 2021). The Drinking Water Act will have to be amended to allow for drinking water restrictions.

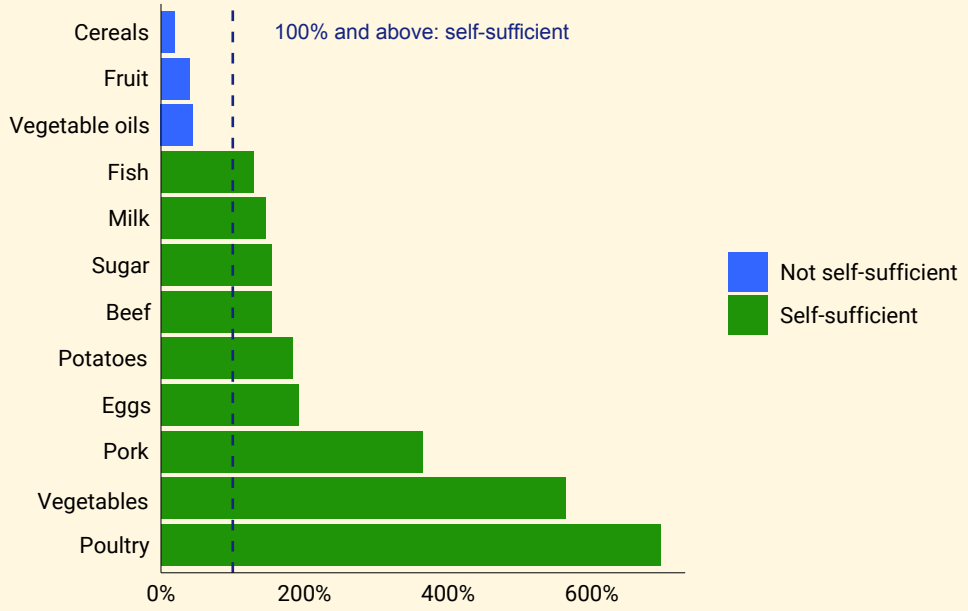
3. Food

The Minister of Agriculture, Nature and Food Quality is responsible for helping to ensure an adequate, sustainable supply of food, as well as food security and food quality at a European level (Ministry of Agriculture, Nature and Food Quality, 2022).

The Netherlands does not have strategic food stocks that can be put to use in a food crisis. A study performed by Wageningen University in 2013 showed that the Netherlands produces sufficient food to be self-sufficient, even in a crisis (Wageningen University, 2013). Figure 4 shows that this is still the case.

Figure 4 *Food self-sufficiency in the Netherlands*

Provided changes are made to the national diet, the Dutch do not need food imports



Source: https://www.fao.org/faostat/en/#data/FBS

Nevertheless, the Ministry of Agriculture, Nature and Food Quality is seeking to ensure that the country is prepared for a food crisis. Ministry officials informed us that a great deal of ground still needs to be covered in order to cope with a possible food crisis. The Ministry has been preparing manuals and covenants since 2018. It is not clear what action needs to be taken in terms of emergency food relief in the first few days of a crisis. The central government, the security regions and local authorities all have their own responsibilities, but the manual currently under preparation will need to specify precisely who should do what in the event of a food crisis, Ministry officials explained.

3.1 Food supply policy

In normal circumstances, the Minister of Agriculture, Nature and Food Quality has only a minor responsibility for the supply of food. The handbook that Ministry officials say they have been working on for a number of years states that, if food supplies are in danger of running short during a crisis, the Minister is responsible for ensuring that essential foodstuffs are supplied to the public. The Netherlands has no centrally managed or organised strategic food stockpile. Ministry officials say that this is not necessary as the Netherlands produces sufficient food, see Figure 4 above.

International policy

Article 39 of the Treaty on the Functioning of the European Union sets out how the food supply and food security should be safeguarded at a European level. The European Commission (EC) believes that European coordination should be strengthened during a crisis, in order to prevent food shortages, and has prepared an emergency plan to this end. The plan aims to ensure that sufficient, varied, nutritious, affordable and safe food is available to all EU inhabitants at all times. The details of the emergency plan still need to be worked out, both for the EU as a whole and for individual member states (European Commission, 2021).

The war in Ukraine has prompted the EC to adopt measures requiring EU member states to send the EC monthly reports on their reserves of cereals, oilseeds and rice (Implementing Regulation (EU) 2022/791). In this way, the EC wants to keep tabs on the reserves held by the member states, so that measures can be taken where necessary. That said, the EU does not oblige its member states to maintain reserves, nor does it bar them from doing so. Members of the World Trade Organization (WTO) – including the Netherlands – have reached agreements on the limits of maximum reserves, the reasoning being that the stockpiling of food reserves– either by the government or with government support – should not lead to the disruption of markets.

3.2 The Netherlands produces sufficient food

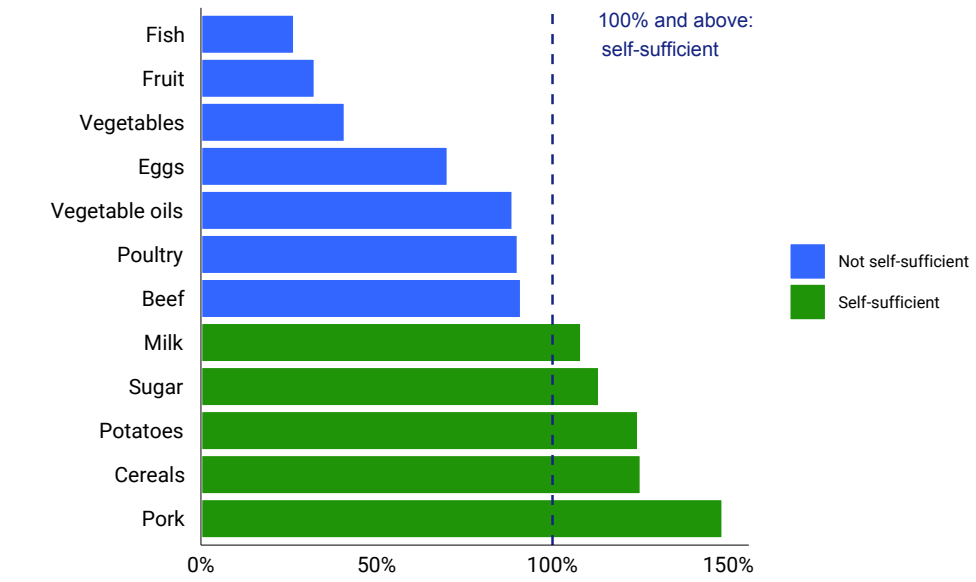
The Minister of Agriculture, Nature and Food Quality claims that there is no need for the Netherlands to maintain strategic food reserves. The Ministry bases its opinion on various studies performed by Wageningen University that show that the Netherlands produces sufficient food to feed its own population – provided that certain changes are made to the national diet (Wageningen University, 2013 and

2022, among other studies). This also follows from the data produced by the Statistics Department of the Food and Agriculture Organization (FAO, part of the United Nations). Figure 4 (in the box at the beginning of this chapter) shows that, as far as a number of specific foodstuffs are concerned, the Netherlands produces less than it consumes. Provided that the Dutch make certain changes to their national diet and produce more vegetable oils (such as rapeseed oil), there is no need for the Netherlands to import food in a food crisis.

Food reserves in other countries

Some other countries do stockpile food reserves. Germany and Switzerland, for instance, do so, as they are less self-sufficient than the Netherlands. Figure 5 below shows Germany's self-sufficiency.

Figure 5 *Food self-sufficiency in Germany*

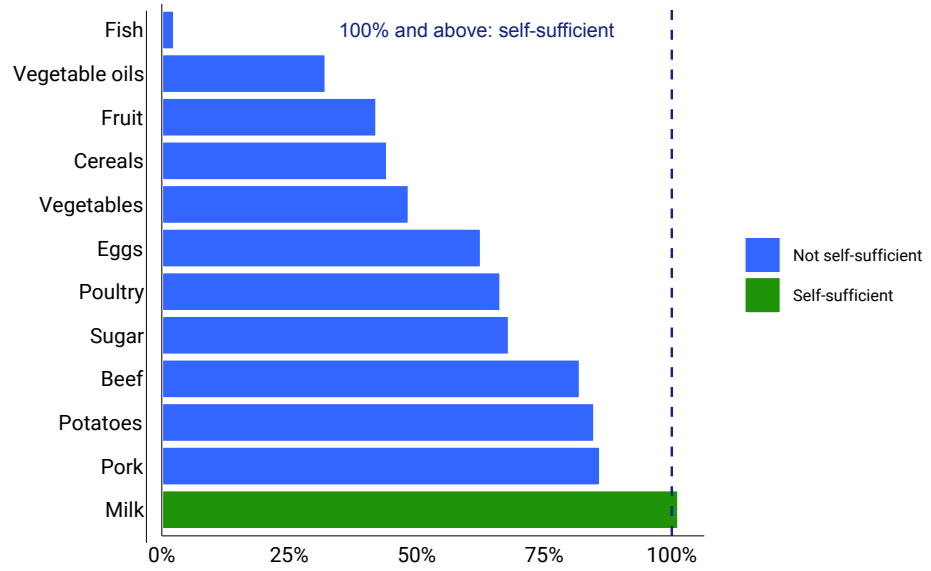


Source: https://www.fao.org/faostat/en/#data/FBS

Germany's federal government has stockpiled strategic food reserves. The German government believes that a swift response to food shortages depends on food reserves being at hand at all times. The German Federal Office for Agriculture and Food is responsible for the purchase, sale and monitoring of national crisis reserves. The strategic reserves consist of ready-to-use products such as rice, pulses, milk powder and condensed milk, as well as products that need to be processed, such as wheat, rye and oats. These strategic reserves of basic foodstuffs are designed to provide the German population with at least one meal a day for the duration of a crisis.

Figure 6 *Food self-sufficiency in Switzerland*

Switzerland relies heavily on imports



Data source: https://www.fao.org/faostat/en/#data/FBS

After the end of the First World War, Switzerland began to build up a strategic food reserve for use during a food shortage. Switzerland relies heavily on imports. Businesses producing and/or importing essential foodstuffs may be ordered to maintain a strategic reserve of the foodstuffs in question. An organisation called Réservesuisse is responsible for monitoring the country's strategic food reserves. The main reserves maintained by the Swiss comprise rice, sugar, edible oils and fats, coffee, cereals and animal feed. The aggregate reserve consists of enough essential foodstuffs to cover a period of between two and four months.

The Minister of Agriculture, Nature and Food Quality does not analyse the risks posed to food security by extreme drought or flooding. Were the Netherlands to be flooded, for instance, the population would depend on emergency food aid from foreign countries.

3.3 Crisis preparedness

A food security manual is being prepared

The Ministry of Agriculture, Nature and Food Quality has been working on a handbook entitled *Food Security: Essential Foodstuffs in Crisis Situations* since 2018. The draft manual records the responsibilities, procedures, roles and mode of operation in food security crises. In crisis situations, the relevant stakeholders must decide when is the right time to scale up the degree of harmonisation and cooperation among the authorities, commercial parties and other stakeholders. The manual identifies four stages in describing the roles played by the various stakeholders in managing a food supply crisis. The crisis strategy emphasises the need for the central government, working in conjunction with commercial businesses, provincial councils and local authorities, to compile and distribute emergency food packages to the population in the affected areas.

Food distribution covenant is in the making

In an exceptional crisis situation, the Minister of Agriculture, Nature and Food Quality is empowered to invoke the Food Supply (Emergencies) Act to requisition raw materials, foodstuffs or logistic services from private operators. As this is an option that the Ministry would prefer not to use, it has been working on a covenant since 2018. This private-public covenant, entitled *Food Distribution in Crisis Situations*, should in future enable public authorities and industry associations to guarantee (the distribution of) sufficient food supplies in the event of an emergency, without having to resort to emergency legislation.

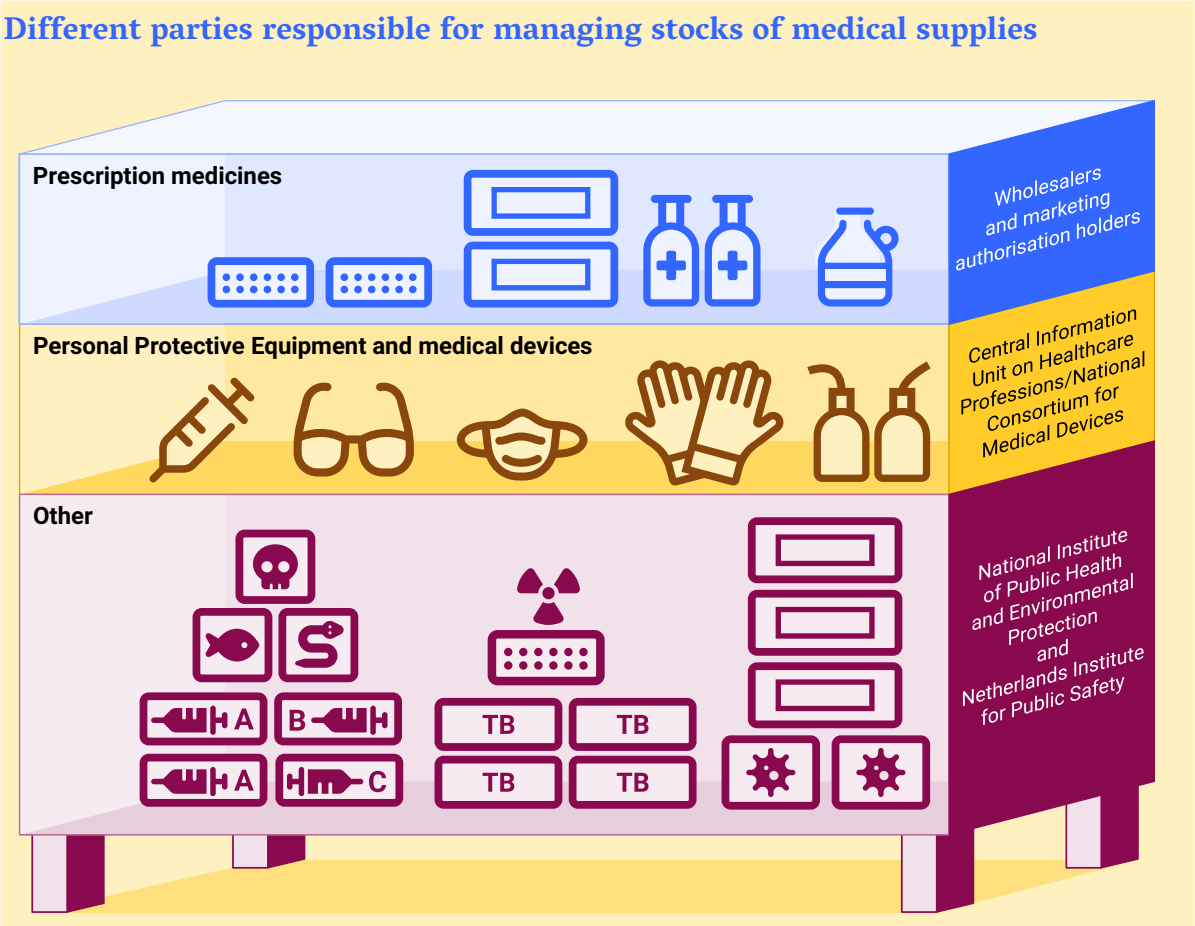
Many issues remain to be resolved

The Ministry of Agriculture, Nature and Food Quality made clear that a great deal of ground still needs to be covered before the country is fully prepared for a crisis. Ministry officials expect both the manual and the covenant to be completed and signed by the end of 2022. No crisis drills are being held for essential foodstuffs and no negotiations have taken place with the stakeholders involved in the crisis strategy set out in the draft manual. A great deal of uncertainty surrounds the issue of emergency food aid. Although the central government, the security regions, and local authorities all have their own responsibilities, information on who does what and when still has to be added to the manual.

4. Medical supplies

One of the main policy objectives of the Minister of Health, Welfare and Sport is to protect and promote public health (Ministry of Health, Welfare and Sport, 2022a). The Minister stockpiles many different types of strategic medical supplies for this purpose. Various ministry departments monitor the state of these supplies, which are held by a number of organisations, government bodies and commercial businesses. Figure 7 shows the types of strategic medical supplies that the Ministry of Health, Welfare and Sport claims to have stockpiled.

Figure 7 *Types of medical supplies*



Three types of reserves of medical supplies are held under the aegis of the Minister of Health, Welfare and Sport:

1. prescription medicines;
2. personal protective equipment and medical devices;
3. other supplies.

The latter category includes supplies of certain vaccines and medicines, the management of which the central government has delegated to the National Institute for Public Health and the Environment and the Netherlands Institute for Public Safety.

4.1 Introduction

The Netherlands imports many medicines and medical devices. It is important that regular healthcare, including the prescription of medicines, must continue during any crisis, such as a pandemic. In addition, specific types of medical equipment may be needed, perhaps in very large volumes. Stockpiling of strategic reserves could help in this respect. Strategic reserves may also come in handy even if there is no crisis in the Netherlands, but if there is in countries from which the Dutch obtain imports of medical supplies.

This chapter discusses the different types of medical supplies for which the Minister of Health, Welfare and Sport has arranged for stocks to be maintained. We do not know for certain whether our audit covers all of these, as the Ministry does not have a comprehensive list of the relevant stocks. Given the wide variety of medical supplies the format of this chapter differs from that of the other chapters in this report. The chapter describes the situation in relation to each type of medical supply.

We first discuss prescription medicines, followed by personal protective equipment and medical devices (such as face masks, gloves and syringes). These products are needed in the event of a pandemic such as the COVID-19 pandemic. Last but not least, there are those items that the Minister of Health, Welfare and Sport has instructed organisations such as the National Institute for Public Health and the Environment to stock. These include smallpox vaccines, in case of a massive outbreak of the disease, and a supply of the vaccines included in the National Immunisation Programme, to cover the eventuality of an interruption in supplies.

4.2 First category: prescription medicines

Policy and underlying arguments

Under the present Medicines Act, companies licensed to market medicines (known as ‘holders of marketing authorisations’) are obliged to retain ‘sufficient’ reserves of these medicines. The Medicines Act does not define the term ‘sufficient’ as referring to a specific stockholding time. As a result, interpretations of the necessary volume of the stocks tend to differ.

The growing shortages of medicines that have arisen during the past decade, often due to delivery problems, prompted the Ministry of Health, Welfare and Sport to investigate whether a compulsory holding time for stocks of medical equipment should be introduced. The Gupta research agency found in 2019 that around 85% of

the shortages could be eliminated by obliging holders of marketing authorisations and wholesalers to hold stocks to last for a period of five months.

After announcing his intention to oblige companies to hold five months of reserves, the Minister received a volley of criticism from various quarters, including holders of marketing authorisations and wholesalers. It was claimed that such a minimum holding time would represent too great a departure from the policies pursued in other European countries, and could lead to wastage (Ministry of Health, Welfare and Sport, 2021a). The critics contended that the costs involved in stockpiling reserves to last for five months were much greater than those needed for maintaining a lower volume of reserve stocks. The Inspectorate for Health and Youth Care argued that a compulsory five-month holding time would also lead to logistic problems, due to the expansion of warehouse capacity and the need to obtain the corresponding authorisations.

Volume of stocks

On 30 June 2022, the Minister of Health, Welfare and Sport imposed compulsory stockholding obligations for reserves of medicines, under the *Policy Rule Regarding Stocks of Medicinal Products* (Ministry of Health, Welfare and Sport, 2022). These are shorter than was initially intended. The Policy Rule sets holding times at a minimum of six weeks for holders of marketing authorisations and two weeks for wholesalers. The latter time is set to be increased to four weeks with effect from 1 July 2023. This means that, in total, around ten weeks worth of reserves must be maintained. The Policy Rule was originally due to come into effect on 1 July 2022.

The cost of a stockholding obligation is difficult to estimate

The Gupta report estimates the cost of a stockholding obligation of five months at €100 million per year (Gupta, 2019). As a result, the Minister of Health, Welfare and Sport raised the Healthcare Expenditure Ceiling by €25 million (i.e. €45 million in extra costs, less €20 million of projected savings). This makes it easier to include any additional cost increases resulting from the stockholding obligation in the existing financial framework. After it had been decided to extend the stockholding obligation to ten weeks, the original budget was retained, as there were signs that €25 million would not be enough for a five-month stockholding obligation. The Minister says that it is difficult for the government to put a figure on the precise cost of stock management. A pilot study performed in 2021 revealed a mixed picture (Ministry of Health, Welfare and Sport, 2022b): the ministry officials that we interviewed told us that the degree of variance in the level of costs reported in the pilot study was too great to enable an accurate estimate to be made.

No stockholding obligation for stocks of non-prescription medicines

The Minister of Health, Welfare and Sport believes there is no need for a stockholding obligation for stocks of non-prescription medicines. The Ministry assumes that self-care medicines are subject to different, strongly commercial market forces, and pass through a different distribution chain than medicines that are available only on prescription. The Ministry claims that supply problems in these markets are extremely rare. Despite this, non-prescription medicines are still covered by the current definition of the stockholding obligation (i.e. 'sufficient') given in the Medicines Act (Ministry of Health, Welfare and Sport (2021a).

Use in emergencies

In mid-2022, holders of marketing authorisations were still subject to a statutory obligation to maintain 'sufficient' stocks, despite the absence of a clear definition of the term 'sufficient'. The various stakeholders all define this obligation in different ways (Ministry of Health, Welfare and Sport, 2022b), so that, to date, there is no fixed, clearly defined stock for the government to call upon. After 1 January 2023, there should at least be eight weeks' worth of stocks of prescription medicines, increasing to ten weeks from 1 July 2023.

Topical issues and future challenges

The Medicine Shortages and Defects Notification Centre, that was set up by the Minister of Health, Welfare and Sport is designed to monitor possible shortages of medicines. Holders of marketing authorisations can report any shortages to the Centre. We understood from the Inspectorate for Youth and Healthcare that, if this happens at all, it is generally too late.

The Inspectorate for Youth and Healthcare is responsible for monitoring the level of reserve stocks, and believes that the new compulsory stockholding obligation will lead to enforcement problems. The Inspectorate has to date not been able to recruit in-house specialists who would be capable of supervising the system of stock management. As a further complication, some of the stocks are stored in other European countries. The Inspectorate says that this will pose challenges for supervision, as its staff capacity is limited and foreign travel takes up a great deal of time. Finally, it is unclear whether the Inspectorate will be able to establish whether reserve stocks stored outside of the Netherlands are indeed intended for use by the Netherlands.

The Inspectorate for Youth and Healthcare has already been given this supervisory task under current legislation. However, it has not issued any fines to date, partly

because of the absence of a clear definition of the term ‘sufficient’. Besides these enforcement problems, the Inspectorate also feels that there is another risk associated with the stockholding obligation. Wholesalers and marketing authorisation holders may withdraw unprofitable medicines from the market in order to circumvent the stockholding obligation. This may result in certain unprofitable medicines either not being available or only being available in small quantities in the event of an emergency.

The Minister of Health, Welfare and Sport expects that the European Commission will present concrete legislative proposals by the end of 2022, based on a wide-ranging review of EU legislation (Ministry of Health, Welfare and Sport, 2022). These may possibly result in the adoption of a pan-European system of stock monitoring and/or of a harmonised European system of stockholding obligations. This may require another modification of Dutch policy, Ministry officials informed us.

Crisis stocks of COVID medicines

Since 2020, acting on the instructions of the Minister of Health, Welfare and Sport, hospitals have maintained temporary crisis stocks of 14 COVID medicines for use in intensive care units. In consultation with the National Medicines Coordination Centre, the Ministry has identified and developed a group of medicines and a usage formula (five months + three months peak usage) that will allow hospitals to calculate the level of reserve stock that they must have available. This is dynamic stock: hospitals use medicines from the stock and replenish it accordingly, thus avoiding any wastage. The grant scheme used to finance these stocks ends after 2022. The Minister of Health, Welfare and Sport is currently examining ways and means of retaining these stocks, at least for the time being.

4.3 Second category: Personal protective equipment and medical devices

Policy and underlying arguments

The central government is not compelled by law to keep stocks of personal protective equipment and medical devices. At the outset of the COVID-19 pandemic, severe shortages arose on the medical devices market, which is why it was decided to stockpile emergency supplies of medical devices (such as face masks, gloves, disinfectants and syringes). A National Consortium for Medical Devices was set up to this end, as a partnership between the Ministry of Health, Welfare and Sport and private-sector stakeholders. The emergency supplies were stockpiled shortly after

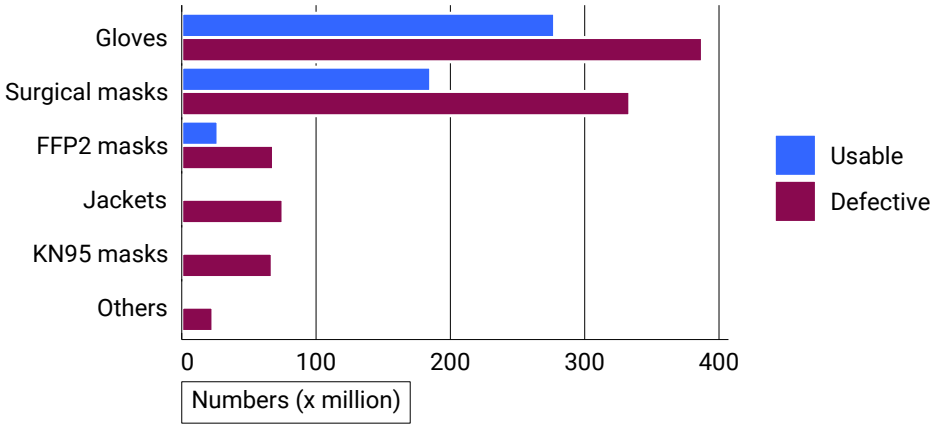
the outbreak the COVID-19 pandemic by Mediq, a purchasing cooperative. On 1 December 2021, the Central Information Unit on Healthcare Professions, an agency of the Ministry of Health, Welfare and Sport, took over responsibility for the stocks from Mediq. It was instructed to ensure that the activities previously performed by the National Consortium for Medical Devices continued in operation, and to improve these where necessary. We did not audit the purchasing policy of the Central Information Unit on Healthcare Professions (and, more specifically, the National Consortium for Medical Devices department) as part of this focus audit.

Acting on the instructions of the Ministry of Health, Welfare and Sport, the Central Information Unit on Healthcare Professions (National Consortium for Medical Devices department) will keep an emergency stock of face masks (i.e. surgical masks and FFF2 face masks) and gloves at least until the end of 2023. This reserve stock is intended for use by healthcare providers in the event of any peaks in COVID-19 infections.

In April 2021, the Minister of Medical Care presented a plan under which healthcare institutions and suppliers would be compelled to maintain strategic stocks of medical devices and protective equipment. The Minister claimed that it would be possible to have these strategic stocks ready by the second quarter of 2022 (Ministry of Health, Welfare and Sport, 2021b). The Minister also proposed that the Netherlands should have its own stand-by production capacity. The situation in mid-2022 was that this plan had not yet been implemented, however. The Minister of Health, Welfare and Sport has commissioned a study to examine whether the current law would allow for the imposition of a statutory obligation.

Figure 8 *Emergency stocks by the Central Information Unit on Healthcare Professions*

Most of the stock of PPE was found to be defective



Source data: https://www.lchulpmiddelen.nl/beschermingsmiddelen-en-medische-hulpmiddelen/actuele-voorraden-voor-de-zorg.

The ‘defective’ category in Figure 8 is labelled ‘other stock’ on the website of the Central Information Unit on Healthcare Professions. This part of the stock is not fit for use in the Netherlands, however, as it does not have any CE marking and will soon reach the end of its shelf life. These products will be destroyed or, where possible, sold or given away.

In order to calculate the volume of the reserve stocks of face masks and gloves that the Information Unit will need to keep until the end of 2023, the Ministry looked at the peak in demand during the first wave of the COVID-19 pandemic, and extrapolated this to 26 weeks. No firm figures are available on the actual aggregate volume of these products used by the Dutch healthcare sector as healthcare institutions buy products from other suppliers as well as from the Information Unit. There are no centralised records of purchases made from these other suppliers. For this reason, it is uncertain whether 26 weeks of stocks will be enough if the COVID-19 virus (or another virus) flares up again.

The National Institute for Public Health and the Environment also maintains strategic stocks of medical devices on behalf of the Ministry of Health, Welfare and Sport. These stocks include syringes, needles and solvents. They must be replenished in order to guarantee rapid availability, both now and in the future. Although preparations for stock replenishment were planned for 2022, they had not been started at the time this report went to press.

Topical issues and future challenges

Despite the plans that the Minister presented to the Dutch House of Representatives (Ministry of Health, Welfare and Sport, 2021b), the transition to a fixed-base, more preventive and compulsory stock covering the healthcare sector as a whole has to date not been completed. The Minister is, however, currently developing a policy on strategic stocks, although this has yet to be published. The EU is also contemplating stockpiling of products such as face masks.

4.4 Third category: Other

This category includes specific vaccines and medicines that organisations such as the National Institute for Public Health and the Environment hold on behalf of the Minister of Health, Welfare and Sport. Stocks of COVID-19 vaccines and tests are out of scope of this audit. These are discussed in other audits of ours (Netherlands Court of Audit, 2020, and audit of COVID-19 vaccines, currently in progress). Our 2020 audit of test capacity found that more people could probably have been tested for the new COVID-19 virus during the first few months of the crisis.

Smallpox vaccine

'The Ministry of Health, Welfare and Sport is responsible for Dutch policy on the possible (either intentional or unintentional) re-introduction of smallpox', the Minister of Medical Care wrote to the Dutch House of Representatives in 2019 (Ministry of Health, Welfare and Sport, 2019). The National Institute for Public Health and the Environment holds a strategic stock of smallpox vaccines on behalf of the Ministry of Health, Welfare and Sport. Part of this stock consists of first-generation smallpox vaccine that can be used to inoculate the entire population in the event of an outbreak of smallpox on a pandemic scale. This stock also includes a reserve of 100,000 Imvanex vaccines, purchased in 2019 (Ministry of Health, Welfare and Sport, 2019). This third-generation vaccine was used during the 2022 monkey pox vaccination campaign.

Antiviral medicines

The strategic reserve stock held by the National Institute for Public Health and the Environment on behalf of the Minister of Health, Welfare and Sport includes a feedstock for an antiviral medicine for use in a large-scale outbreak of influenza. This strategic reserve has been in place since the outbreak of the Mexican flu in 2009. It is subject to regular quality checks.

Critical products

The reserve stock of critical products held by the National Institute for Public Health and the Environment on behalf of the Minister of Health, Welfare and Sport consists of products supplied exclusively in the Netherlands by the National Institute for Public Health and the Environment. Scarce products, which may be either registered or unregistered ('authorised for marketing') may be added to this stock. At present, the stock of critical products consists of a tuberculosis test and the BCG vaccine (against tuberculosis).

National Immunisation Programme

The National Institute for Public Health and the Environment keeps a 3-6 month back-up stock of vaccines from the National Immunisation Programme – and suppliers are asked to do the same. This stock is supplementary to the stock held for normal use, and is intended to cover any disruption in supplies. Its volume is based partly on the size of the target groups and partly on projections (including the expected number of pregnancies, and estimates of the annual use of a medicine).

Individual calamities

The reserve stock held for individual calamities includes medicines against acute poisoning caused by radioactive radiation and natural and chemical toxins such as mushrooms, heavy metals and certain medicines. The National Institute for Public Health and the Environment also keeps a reserve stock of anti-rabies and antiviral medicines. In addition, the National Serum Depot holds stocks of some 30 different anti-serums against bites and stings by snakes, spiders, scorpions, and certain species of fish. The volume of the stock of products held for individual calamities ranges from the quantity required to treat a single individual to several dozens of adults.

Iodine tablets

The Minister of Health, Welfare and Sport is jointly responsible for decisions on radiation protective measures (Ministry of Infrastructure and Water Management, 2021) and is as such responsible for the distribution of iodine tablets (Ministry of Health, Welfare and Sport, 2021c). The Ministry uses a combination consisting of the preventive distribution of tablets and distribution at the time of an expected emission of radioactive iodine (i.e. emergency distribution). The Dutch Institute for Public Safety holds a centralised reserve stock of iodine tablets on behalf of the Ministry of Health, Welfare and Sport.

In 2017, the Ministry of Health, Welfare and Sport undertook a large-scale preventive distribution of iodine tablets to specific target groups living within a certain radius of nuclear plants. As part of this effort, 1.2 million households received a box of tablets. This exercise was repeated in 2021, due to the expiry of the best-before date of a number of tablets distributed within a smaller radius of nuclear plants before 2017 (Ministry of Health, Welfare and Sport, 2021c).

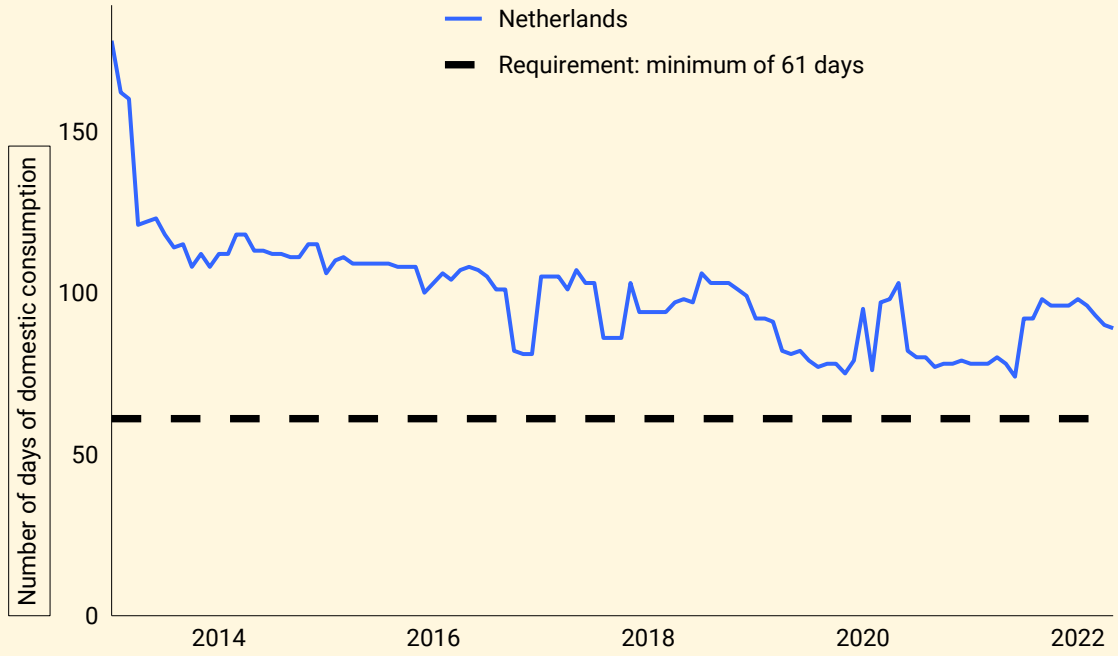
The policy of preventive distribution was reviewed in 2019. The report recommended looking at how tablets can be supplied to people who had not previously received them, and examining flaws in the information distributed about the use of iodine tablets and radiation incidents (Ministry of Health, Welfare and Sport, 2021c). The Minister of Health, Welfare and Sport and the Minister of Infrastructure and Water Management (responsible for the Nuclear Energy Act) have said that they intend to act on the recommendations in cooperation with the Security Regions (given that the Security Regions are responsible for emergency distribution).

5. Oil

The Minister for Climate Policy and Energy requires a strategic oil reserve to be maintained in the Netherlands. At around 90 days of domestic consumption, this reserve more than meets the lower limit of 61 days of domestic consumption set by the EU, as Figure 9 below shows.

Figure 9 *Dutch oil reserves*

Although Dutch oil reserves are shrinking, they still meet the 61-day requirement



Data source: https://ec.europa.eu/eurostat/web/products-datasets/-/nrg_143m

The strategic reserve can be used in the event of a relatively short-lived national or international shortage of oil or petroleum products. In the event of a significant disruption of the worldwide supply of oil, the International Energy Agency (IEA) and the EU can ask member states to place part of their strategic reserves on the open market. This happened twice in 2022 following Russia's invasion of Ukraine. Oil from the Dutch strategic reserve is sold to the highest bidder, and therefore does not necessarily end up in the Netherlands.

The sixth package of EU sanctions against Russia is will be taking effect in December 2022. These will include a ban on imports of crude oil and petroleum products from Russia, which may cause a shortage of diesel fuel in particular. The Ministry of Economic Affairs and Climate Policy has not adopted a national oil crisis plan, nor has it identified any 'protected users', as has been done for the supply of natural gas. This means that no agreement has been made about prioritising certain sectors.

5.1 Policy

The Organisation for Economic Cooperation and Development (OECD) set up the International Energy Agency (IEA) in the wake of the worldwide oil crisis in 1973-1974. All affiliated countries, including the Netherlands, have agreed to maintain emergency supplies of oil for crisis situations. The composition of the strategic oil reserve in the Netherlands is geared towards the road and air transport sectors. The reserves are explicitly not earmarked for use by the chemical and shipping industries.

The international requirements for the maintenance and use of strategic oil reserves are anchored in the Agreement on an International Energy Programme (IEP) and EU Directive 2009/119/EC. These international requirements have been transposed in the Netherlands in the Petroleum Products (Stockpiling) Act 2012. The Act states that:

- The calculation of the minimum volume of a strategic oil reserve should be based on international methods adopted by the IEA and the EU, with the highest outcome being decisive. The former is based on the difference between oil imports and oil exports (i.e. 90 days of net imports), while the latter is based on the trend in domestic consumption (i.e. 61 days of domestic consumption).
- Oil companies are required to hold reserves, which form part of the statutory national reserve. In practice, approximately 80% of the strategic reserve is under public management, while around 20% is managed by commercial parties.
- At least one third of the total reserves consists of petrol, diesel fuel/gas oil and kerosene; the remainder is made up of crude oil.
- Kerosene reserves have been set at 15 days of domestic use.

5.2 Underlying arguments

An uninterrupted supply of crude oil and petroleum products is essential to Dutch society and the Dutch economy. Any disruption of supply may cause severe economic damage and social havoc. Without fuel, for instance, HGVs can no longer supply supermarkets and the police, the fire service and the ambulance service can no longer respond to emergencies. An oil crisis may be caused by geopolitical tensions or by war and/or natural disasters.

5.3 The volume of reserves

The Ministry of Economic Affairs and Climate Policy, the Netherlands National Petroleum Stockpiling Agency and commercial parties that are subject to compulsory stockholding obligations are all involved in maintaining the strategic oil reserve. The latter category includes all oil companies (such as Shell, Zeeland Refinery and BP) that sell over 100 kilotons of oil and petroleum products on the Dutch market (Petroleum Products Stockpiling Act, 2012). The law requires the Minister of Economic Affairs and Climate Policy to set the level of the strategic oil reserve once a year. The current government has allotted this responsibility to the Minister for Climate and Energy Policy. Each year, the Minister sets the national stockholding obligation for crude oil and petroleum products, based on the preceding calendar year's figures for domestic consumption, as reported by Statistics Netherlands.

The Netherlands National Petroleum Stockpiling Agency, which is a non-profit legal entity with a statutory task, manages the oil reserve on behalf of the government and operates as an agent of the Minister for Climate and Energy Policy. The Netherlands National Petroleum Stockpiling Agency also performs analyses at the request of the Ministry of Economic Affairs and Climate Policy, and shares its knowledge of the oil market with the Ministry.

How is the compulsory stockholding obligation calculated?

The compulsory stockholding obligation for the Netherlands is based on the net import method used by the IEA and the EU, as well as on the consumption method used exclusively by the EU. Since 2019, these calculations have led to the conclusion that the Netherlands is required to maintain a strategic oil reserve that is sufficient to cover at least 61 days of domestic consumption. At around 90 days of domestic consumption, the actual strategic oil reserve is much larger than the stockholding requirement. This means that the Netherlands comfortably meets the lower limit; see Figure 9 in the box at the beginning of this chapter.

Reserves held by commercial parties

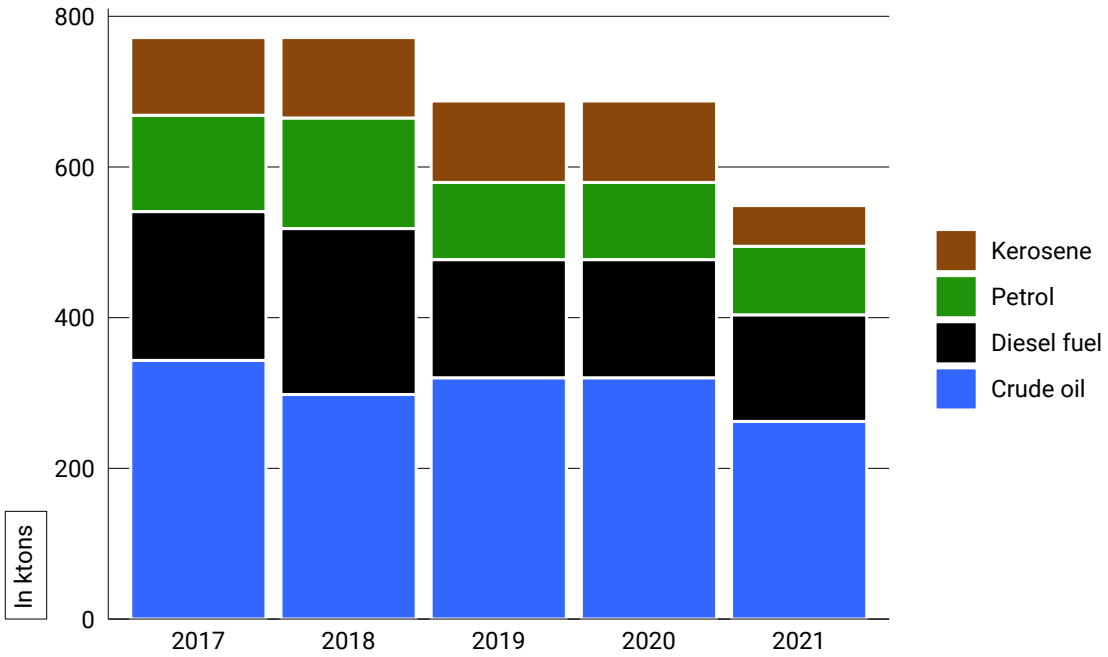
Commercial parties that are subject to a compulsory stockholding obligation are obliged by law to maintain strategic reserves at a level of 12% of their domestic sales of petroleum products above a threshold of 100 kilotons (Petroleum Products (Stockpiling) Act, 2012). In other words, the 12% stockholding obligation applies only to domestic sales above 100 kilotons. At least half of the strategic oil reserves held by commercial parties must comprise petrol, diesel fuel/gas oil and kerosene; the

remainder must consist of crude oil. Oil companies are required to report once a month to the Netherlands Enterprise Agency, stating the volume of their strategic reserves and where these are located. Given that, in most cases, these strategic reserves are the oil companies' own reserves, the cost of maintaining them is negligible (Trinomics, 2018). Oil companies do not receive any financial compensation for maintaining these strategic reserves. A commercial party may ask the Minister to release it from its obligation to maintain reserves, if this places a disproportionately high financial burden on the party in question.

The volume of the strategic oil reserves held by commercial parties has declined since 2018. This is because, insofar as individual companies are concerned, lower sales of petroleum products for domestic consumption in any one year results in a lower stockholding obligation for the following year. As domestic oil consumption has fallen in the past few years, due to measures to combat the COVID-19 pandemic, the level of reserves that commercial parties are required to hold has also fallen accordingly. Figure 10 below illustrates this trend. .

Figure 10 *Oil reserves held by oil companies*

Decline in the level of reserves that oil companies are obliged to hold



Data source: Netherlands Enterprise Agency

Reserves held by the Netherlands National Petroleum Stockpiling Agency

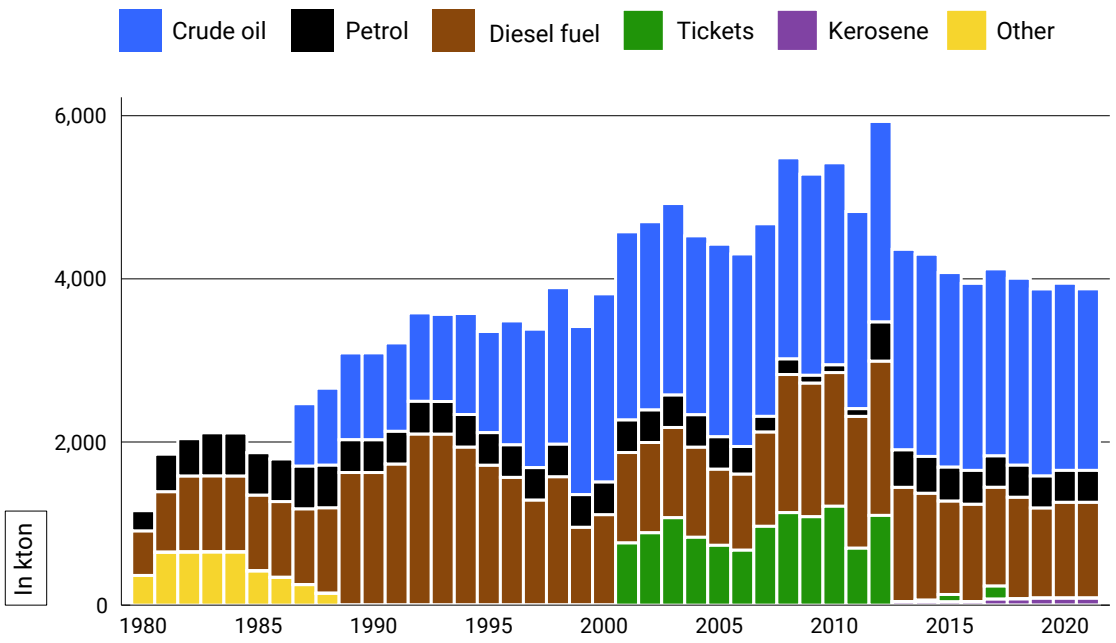
Once the volume of national strategic reserves, and the proportion held by commercial parties, have been calculated, the Netherlands National Petroleum

Agency is made responsible for meeting the remainder of the compulsory stockholding obligation. The Agency's operating costs are paid from a statutory stock levy of €8 per 1,000 litres (i.e. €0.008 per litre) on petroleum products purchased by consumers at petrol stations. The Agency's revenue was €95 million in 2021. Its fixed costs, largely consisting of rent for storage space, stood at €67 million in 2021.

The bulk of the strategic oil reserves for which the Agency is responsible consists of crude oil and diesel fuel. Between 2001 and 2018, the Agency used 'tickets' to hedge fluctuations in reserves. Rather than physically storing the reserves, the Agency uses tickets as a means of buying a pledge from commercial parties to deliver the oil in question. As tickets are less dependable than physical reserves, the Agency uses them with prudence. It has not bought any tickets since 2018. Figure 11 shows the size and composition of the Agency's reserves since 1980.

Figure 11 *Oil reserves held by the Netherlands Petroleum stockpiling Agency*

Size of the Agency's reserves since 1980

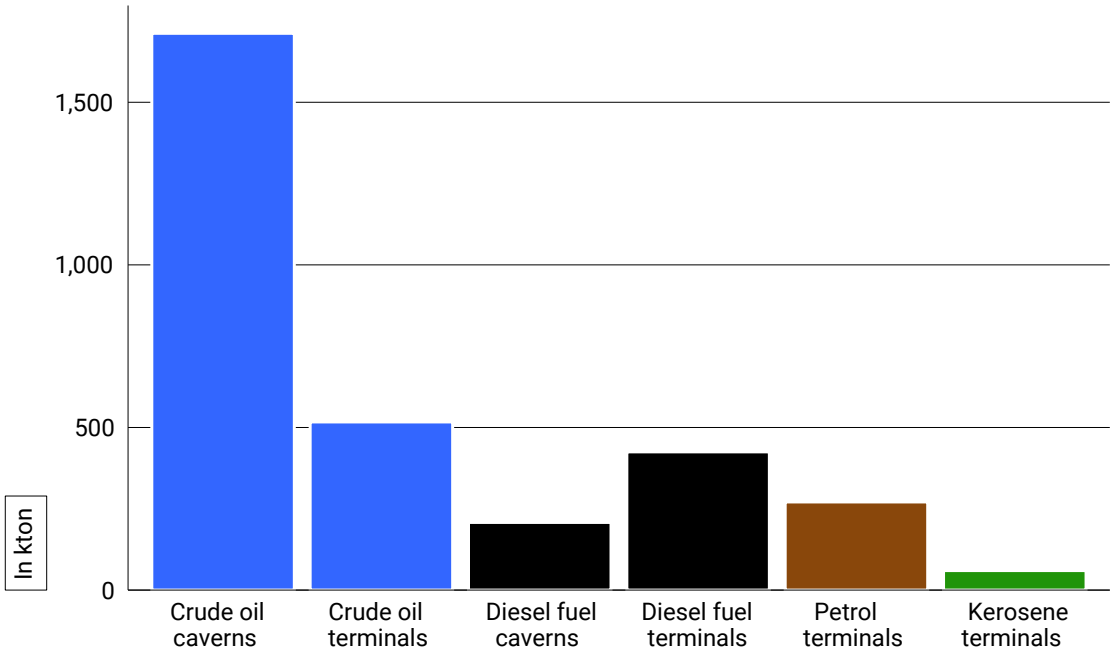


Data source: Netherlands Petroleum Stockpiling Agency

Most of the oil reserves are in long-term storage. They do not form part of commercial oil reserves, but are kept as market reserves. The Agency keeps around two thirds of its oil reserves in salt caverns (underground cavities) in the east of the Netherlands and Germany. The remainder is stored in rented above-ground storage spaces distributed across the Netherlands and Belgium. The Agency stores oil in or close to the Netherlands so that it is close at hand in the event of a crisis.

Figure 12 *Composition of the Netherlands Petroleum Stockpiling Agency's oil reserves*

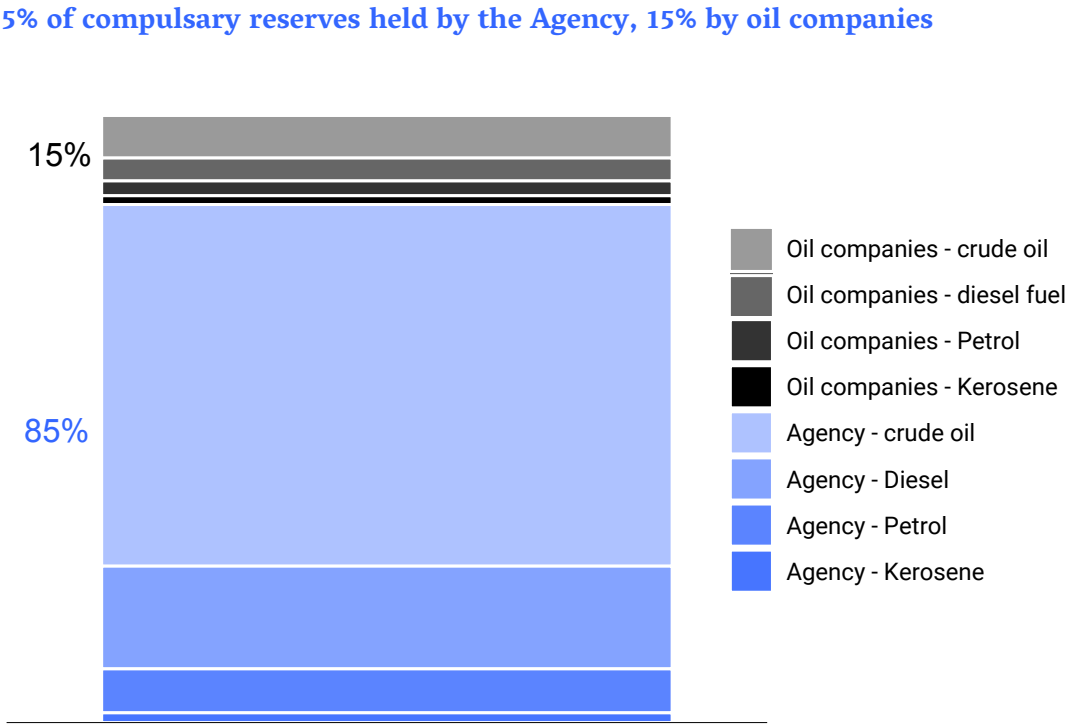
Agency oil reserves in May 2022



Data source: Netherlands Petroleum Stockpiling Agency

The volume of the oil reserves held by the Agency has not changed since 2019. It has been set at 3,500 kilotons of crude oil equivalent (COE),[1] in order to offset the low level of reserves that the Agency is obliged by law to maintain. The level of reserves that the Agency is obliged to maintain was calculated in 2022 at 2,020 kilotons of COE. As an additional factor, consumption of petroleum products declined during the COVID-19 pandemic. The Minister of Economic Affairs and Climate Policy wanted to prevent a situation in which the Agency would have to sell off part of its strategic reserves due to fluctuating domestic demand, and then have to replenish them if demand rose again after the pandemic, as this would mean both a loss in value and extra costs. The level of reserves commercial parties are obliged to hold has, however, declined in recent years. As a result, the situation in 2022 is that the Agency holds 85% of the strategic reserve, as compared with 15% held by commercial parties.

Figure 13 *Proportion of compulsory oil reserves held by the Netherlands Petroleum Stockpiling Agency and oil companies in 2021-2022*



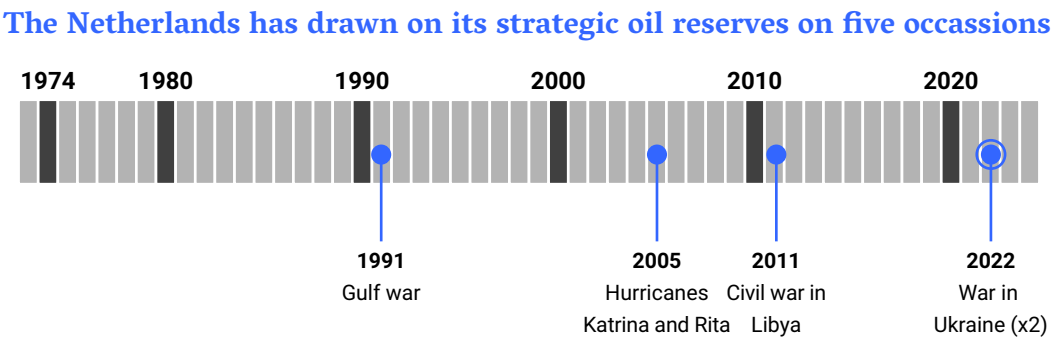
Data source: Netherlands Petroleum Stockpiling Agency and Netherlands Enterprise Agency

5.4 Usage of reserves in a crisis situation

The IEA and/or the EU may ask member states to join a coordinated effort to sell strategic reserves on the open market. Such action is conditional on the worldwide oil supply having been severely disrupted. The IEA's crisis mechanism automatically springs into action if over 7% of the worldwide oil supply is disrupted, in which case members may decide to sell oil from their strategic reserves. Crisis measures may also be taken if the shortage of oil does not reach this specific level. For example, the members may decide to limit the domestic demand for oil. The European Commission advises the EU member states about the nature of the action that is required.

It is up to the member states themselves to decide whether or not they want to take part in a form of international action. Member states may also decide on their own initiative to make use of their strategic reserves in response to an impending national shortage of petroleum products (under the Distribution Act, for example). To date, the Netherlands has only taken part in coordinated action initiated by the IEA. The Dutch strategic oil reserve has been used five times since the 1970s. Two of these occasions were in the spring of 2022, prompted by unrest in the oil market following Russia's invasion of Ukraine.

Figure 14 *Timeline for drawing on oil reserves*



Coordinated action in March 2022

In March 2022, the members of the IEA and the EU member states decided to take coordinated action in response to Russia's invasion of Ukraine. Commercial parties in the Netherlands were released from 20% of their stockholding obligation, and this immediately boosted the supply of petroleum products available on the market. The objective of the temporary increase in supply was to alleviate market tensions and to project a sense of solidarity. It had no effect on prices, however, as they continued to rise. The oil companies were compelled to replenish their reserves on 1 July 2022.

Coordinated action in April 2022

In April 2022, the members of the IEA and the EU member states again took coordinated action. The IEA expected a significant disruption of Russian supplies to Europe, particularly of diesel fuel. This could have led to worldwide shortages of diesel fuel in the second quarter of 2022. Two Dutch oil refineries in the Netherlands were closed for maintenance during this period. A physical shortage of diesel fuel in the Netherlands led to high prices and problems affecting national and international inland waterway transport. Skippers were sometimes forced to wait for weeks to fill their fuel tanks.

After a majority of IEA members agreed on the second coordinated action, the Dutch Minister instructed the Netherlands Petroleum Stockpiling Agency to sell 1.6 million barrels (i.e. 215,000 tonnes) of diesel fuel from the strategic reserves. This boils down to 25% of the Agency's reserves of diesel fuel.

The Minister for Climate and Energy Policy instructed the Agency to sell as much as possible of the diesel fuel on the Dutch market. For this reason, the Agency sold the diesel fuel by organising three public tenders, one of which was divided into smaller batches to prevent a single party from buying up all of the diesel fuel in one go and then exporting it. The Agency succeeded to some extent in this. Large, international

players bought some of the diesel fuel sold in April 2022. This is because the oil market is an international market, the highest bidder gets hold of the oil and petroleum products. As the highest price is the sole criterion applying to these sales and there are no legal means of controlling the destination of the oil, there are no guarantees that the Dutch strategic reserves will end up being sold on the Dutch market.

5.5 Import ban on Russian oil

On 3 June 2022, the EU adopted the sixth package of sanctions against Russia. The sanctions are designed to prevent imports of crude oil and petroleum products from Russia, among other things. The ban on the purchase, import and sale of crude oil will take effect on 5 December 2022. The sanctions directed at petroleum products from Russia will take effect on 5 February 2023. The IEA, the Netherlands Petroleum Stockpiling Agency and the Dutch Ministry of Economic Affairs and Climate Policy expect shortages to arise on the oil market, of diesel fuel in particular.

It is not entirely clear at this point what impact the sanctions could potentially have on EU member states. The Ministry of Economic Affairs and Climate Policy has asked the European Commission to undertake an impact analysis, but this has not been done. The Ministry made clear that an analysis of this kind is a good way of gaining a clear picture of the possible effect that the sanctions may have on the Netherlands, and of preparing any necessary action.

Russian oil is important for the Dutch oil industry

In 2021, 34% of crude oil processed in Dutch refineries came from Russia. This percentage fell in the first half of 2022. Dutch refineries are designed to process heavy crude oil from Russia, which plays a key role in the production of diesel fuel. Replacing Russian crude oil with oil from other oil-producing countries may adversely affect diesel fuel production capacity, and will take time and money. The implementation of the sixth package of EU sanctions against Russia will increase the pressure on the Dutch oil industry and force up demand for Dutch petroleum products such as diesel fuel. According to the Netherlands Petroleum Stockpiling Agency and the Ministry of Economic Affairs and Climate Policy, there are serious doubts as to whether the Dutch refineries will be able to obtain sufficient heavy crude oil to satisfy the European and domestic demand for diesel fuel. Moreover, studies performed by the Netherlands Petroleum Stockpiling Agency on behalf of the Ministry of Economic Affairs and Climate Policy suggest that companies based in the Dutch ports may no longer be able to supply sufficient fuel (i.e. fuel oil) to foreign ships.

Higher diesel fuel prices

All the various scenarios used by the Ministry of Economic Affairs and Climate Policy assume that energy prices, diesel fuel prices in particular, will rise. Reduced production in the Netherlands in what is already a tight diesel fuel market will have the effect of further curtailing supplies, thus sparking sharp price rises. Any decision to draw once again on strategic oil reserves will have only a short-term impact. Moreover, the Ministry believes it would be unwise to rapidly deplete the strategic reserves as they will not be easy to replenish in times of scarcity.

Boosting strategic reserves

With a view to a looming oil crisis, the Minister for Climate and Energy may decide to increase the level of reserves held by the Netherlands Petroleum Stockpiling Agency. The Ministry is exploring the possibility of adding extra diesel fuel reserves to the Agency's reserves after the summer of 2022, on condition that this does not distort the diesel fuel market.

No crisis plan in place for oil

Crucial segments of the Dutch economy consume diesel fuel. These range from delivery vans and HGVs supplying supermarkets to passenger coaches and vehicles used by farmers and builders. In the event of physical shortages caused by an oil crisis, no specific sectors have been designated as high-priority sectors. This is because the Minister for Climate and Energy Policy has not to date identified any 'protected users', as has been done for natural gas supplies. The Netherlands Petroleum Stockpiling Agency does, however, keep 20,000 tonnes of diesel fuel in storage sites where it is available for immediate use in the event of a national emergency, for example in order to operate emergency power generators during a protracted blackout.

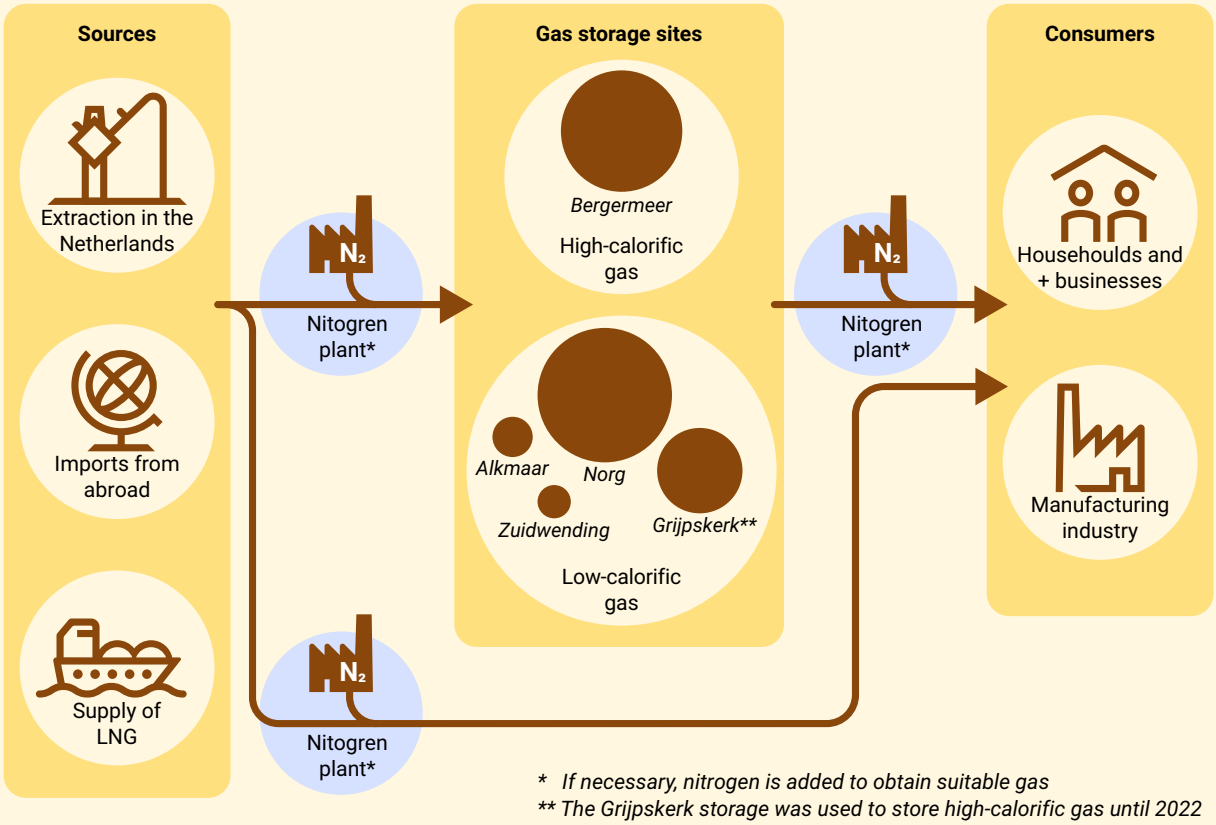
The Ministry of Economic Affairs and Climate Policy has prepared national crisis plans for an electricity or natural gas crisis, but has not as yet drawn up a similar plan for an oil crisis. It is planning to do so after the summer of 2022, to be completed by early 2023 at the latest. The Ministry does have an 'oil crisis management manual' dating from 2016. This is for internal use only and has not been shared with Parliament.

6. Gas

The Dutch Natural Gas Act describes the responsibilities of the Ministry of Economic Affairs and Climate Policy for the supply and transport of natural gas. These include collecting information on natural gas reserves and taking any action that may be needed. The Minister for Climate and Energy Policy is reluctant to stockpile natural gas on account of the cost involved (among other factors) (Ministry of Economic Affairs and Climate Policy, 2021a). However, there are five 'operational' underground gas reserves in the Netherlands, the aim of which is to cushion fluctuations in the demand for natural gas between summer and winter. The bulk of this gas is owned by commercial parties and sold on the European market.

Figure 15 *The storage of natural gas in the Netherlands*

Five storage sites supply natural gas to households and businesses in the Netherlands and abroad



* *If necessary, nitrogen is added to obtain suitable gas*
** *The Grijpskerk storage was used to store high-calorific gas until 2022*

The five natural gas storage sites in the Netherlands are non-strategic, i.e. the gas is not 'kept in reserve'. In mid-2022, the Minister launched a grant scheme to ensure that the storage sites remain full, as commercial parties are no longer prepared to keep them full, on account of the great financial risks involved. The Ministry of Economic Affairs and Climate Policy and the Dutch Gas Board (Gasunie) expect that the government will need to take lasting measures in the future to ensure that the storage sites remain sufficiently full. As the Minister for Climate and Energy Policy has not yet drawn up any detailed plans to this end, it remains unclear how a natural gas crisis can be prevented in the future.

6.1 Policy

Natural gas makes up over 35% of the Netherlands' energy supply, one of the highest proportions in the EU. The relatively high Dutch dependence on this energy source is due to the presence of a massive natural gas field in the province of Groningen, in the northeast of the country. From the 1960s onwards, all households were connected to the natural gas grid, and many industrial firms also transferred to natural gas. This was never any problem as both the Groningen gas field and the smaller Dutch fields produced sufficient natural gas to satisfy demand for decades to come, even though some of the gas was exported. For a long time, therefore, there was no obvious need to maintain strategic reserves of natural gas.

The need for buffer capacity first arose in the 1990s. This was prompted mainly by a drop in pressure in the Groningen field resulting from the lower volume of reserves. This made it more difficult to produce gas on a flexible basis in accordance with demand (Ministry of Economic Affairs and Climate Policy, 2021b). In order nonetheless to respond to fluctuations in demand, gas storage facilities were created in Norg and Grijpskerk in the province of Groningen in 1997. Another three gas storage sites were later added in the provinces of Groningen and Noord-Holland (Zuidwending, Alkmaar and Bergermeer). Especially in winter, these facilities cater for the bulk of the demand for natural gas in the Netherlands and other European countries. In 2022, the five natural gas storage sites had a maximum storage capacity of 14 billion cubic metres, representing some 35% of total annual natural gas consumption in the Netherlands (AGSI, 2022).

The Netherlands does not keep a strategic natural gas reserve

The Dutch Natural Gas Act sets out the responsibilities of the Minister of Economic Affairs and Climate Policy for the supply and transport of natural gas. These include collecting information on natural gas reserves and taking any necessary action. The current Dutch government has designated the Minister for Climate and Energy Policy as being responsible for these tasks.

The government does not keep a strategic natural gas reserve. A number of other European countries, including Italy, Hungary, Portugal and Sweden, do maintain such reserves (ACER, 2022). In mid-2022, Austria also decided to start maintaining a strategic natural gas reserve. Under EU law, member states can maintain strategic reserves of natural gas as a preventive measure in order to safeguard gas supplies (Directive (EU) 2017/1938). According to the Minister for Climate and Energy Policy, the Groningen natural gas field cannot be used as a strategic reserve, in part

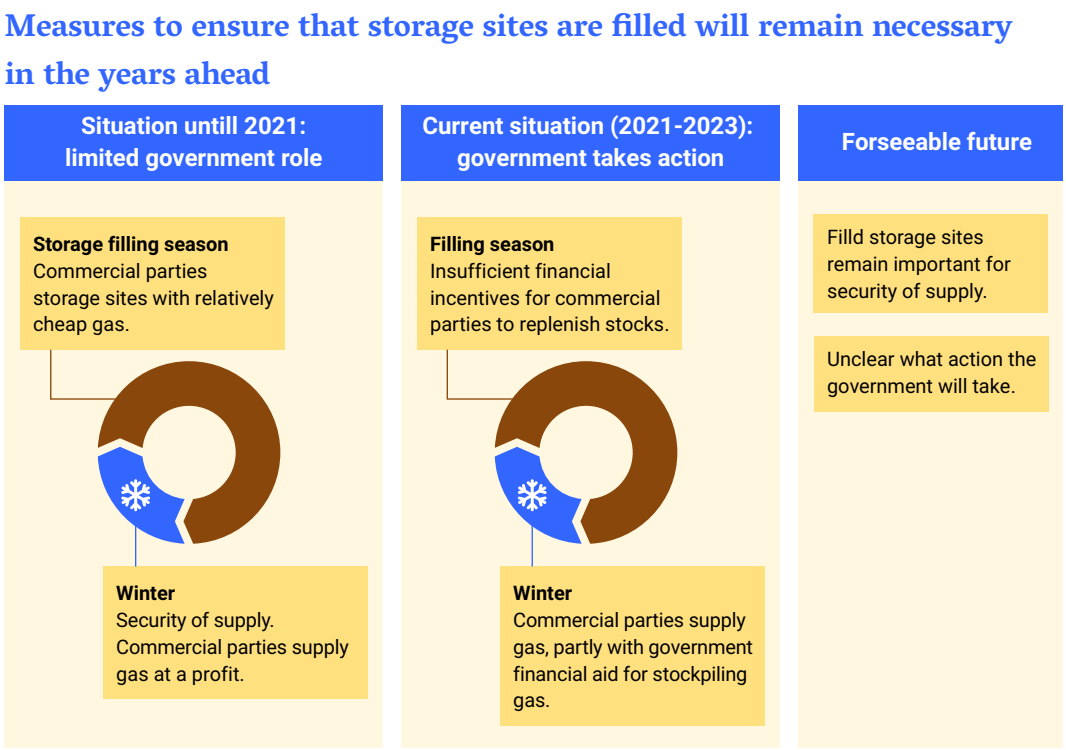
because it is not possible to inject gas. The field will remain available as a temporary reserve, however, in exceptional situations (Ministry of Economic Affairs and Climate Policy, 2020). Contrary to the situation with regard to oil, there are no international stockholding obligations for natural gas.

The current, operational natural gas reserve is now essential, however, for guaranteeing supplies in the winter of 2022-2023. Now that the bulk of Russian gas supplies is no longer available, the EU member states are more dependent on well-stocked storage sites. Even before the war, in 2021, Gazprom decided not to exercise its right to fill 40% of the Bergermeer storage site. The high-calorific natural gas stored in this site is intended primarily for industry. In order to ensure that storage sites are filled to a sufficient level to guarantee gas supplies, the EU decided in mid-2022 to compel member states to ensure that their natural gas reserves were at least 80% full in 2022. This figure will rise to 90% in 2023 and later years.

Natural gas sales are based on supply and demand in the European market
Sales of natural gas on the European market are based on the principle of supply and demand. EU Directive (2009/73/EC) states that any safeguard measures must cause the least possible disturbance in the functioning of the internal market. Despite this, the Minister for Climate and Energy Policy nevertheless intervened in 2022 (inter alia by adopting a grant scheme) in order to ensure that natural gas storage sites were sufficiently filled and to comply with the EU filling requirement (Ministry of Economic Affairs and Climate Policy, 2022). Commercial parties regarded the financial risks as being too high. Ministry officials informed us that, in the longer term, once there has been a sharp fall in the demand for natural gas, the Ministry will no longer impose a filling obligation on commercial parties.

Figure 16 below illustrates the necessity, expected to continue for the foreseeable future, for the government to fill the storage sites.

Figure 16 *Central government action in the event of natural gas shortages*



Closely connected European natural gas markets

As we have said, the Netherlands does not keep a strategic natural gas reserve. If the Dutch government were to maintain such a reserve, any natural gas sold would have to be accessible to all EU member states. EU law forbids the Netherlands from maintaining a strategic natural gas reserve solely for its own use. EU Directive 2009/73/EC states that natural gas should be allowed to flow freely across the European continent if physically possible (i.e. through a network of pipelines). In the event of a serious disruption of the natural gas supply, the flow of natural gas on the EU's internal market may not be limited to domestic buyers. In practice, this means that the natural gas stored in Dutch sites is sold to the highest bidder at home or abroad (either under long-term contracts or on a virtual gas market). This also applies to natural gas held in a strategic reserve.

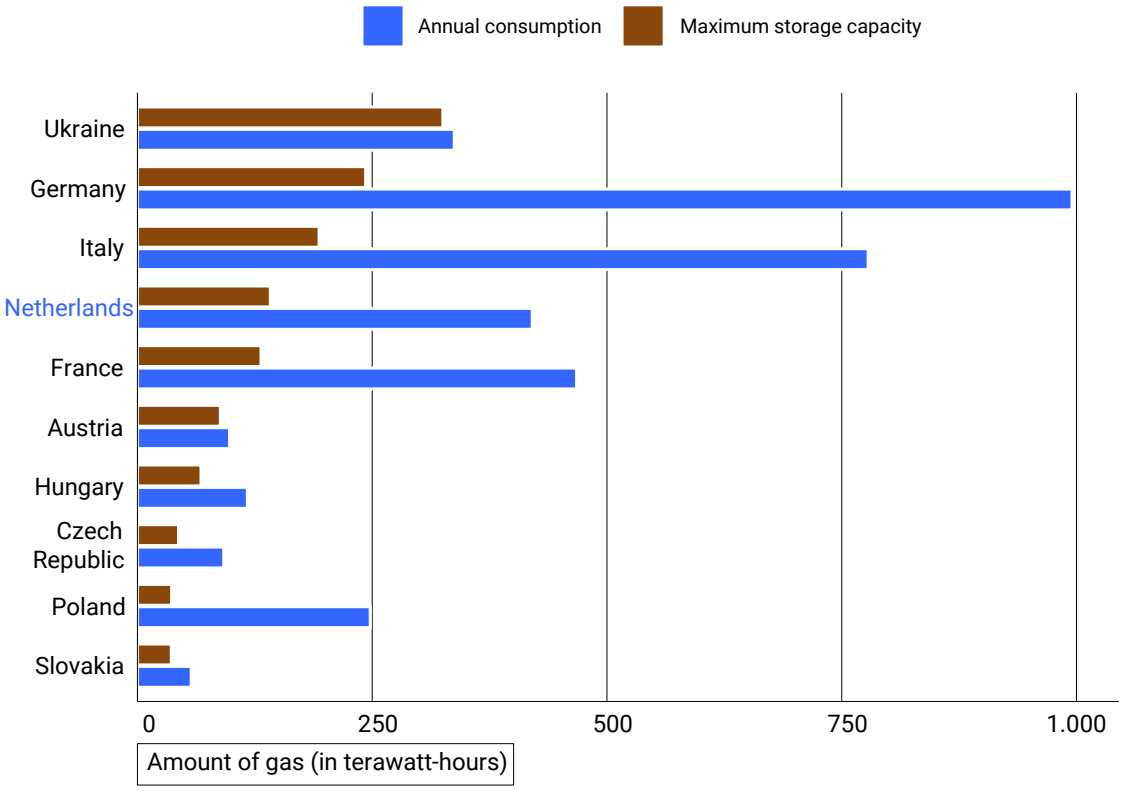
EU member states that keep a strategic natural gas reserve are allowed to sell gas from their reserves in an emergency, provided that they act in accordance with the rules on competition. Contrary to the regulations on strategic oil reserves, there is no strict definition of what an 'emergency' actually means.

Figure 17 below shows that the Netherlands has a relatively large storage capacity compared with other European countries. The government has incurred certain costs to ensure that the storage sites remain filled, for example by awarding grants to storage companies.

These costs are not shared evenly across the European member states, as member states with small storage capacities do not need to invest as much money in order to meet the 80% target.

Figure 17 *Volume of natural gas consumption and storage capacity by country*

The Netherlands is a relatively big natural gas consumer, and has a relatively large storage capacity



Data source: https://agsi.gie.eu/

6.2 Underlying arguments

The Minister for Climate and Energy Policy has no plans for creating a strategic natural gas reserve. He claims that the downside of doing this would be the high level of cost involved, plus the fact that a national strategic natural gas reserve would distort the market (Ministry of Economic Affairs and Climate Policy, 2021a). Moreover, unlike oil, natural gas is difficult to store for a long period of time.

The cost of creating a strategic natural gas reserve

The Ministry of Economic Affairs and Climate Policy has never performed a cost-benefit analysis for a strategic natural gas reserve. The Ministry has, however, made a rough assessment, based on its experience with the Bergermeer storage site, of the size of the investment that would be needed to form a strategic reserve of five billion cubic metres. Such a reserve would require technical installations and cushion

gas (to guarantee adequate pressure in the reserve) as well as working gas. The expected completion time would be five years, and in September 2021 the Minister estimated the total investment required at between €3 and €5 billion (Ministry of Economic Affairs and Climate Policy, 2021a).
The above estimates are based on a natural gas price of 20 eurocents per cubic metre. Natural gas prices per cubic metre had risen significantly by mid-2022, and this would mean a substantially higher level of investment in the creation of a strategic natural gas reserve. On the other hand, the value of the reserve would increase in tandem with rising prices.

The Minister's calculations are based on the creation of a new, high-volume strategic storage site, comparable with the Bergermeer facility. Another option, however, would be to designate all or part of an existing storage site as a strategic reserve. This would require a government organisation to have storage capacity available for use, which could be bought or rented from its current owner. Energie Beheer Nederland (EBN), a state shareholding, informed us that, although the relatively large (seasonal) storage sites are not suitable for use as strategic reserves, smaller ones, such as the one in Alkmaar, would be. The latter has a storage capacity of around 500 million cubic metres, which could be expanded to approximately 800 million cubic metres. This would be sufficient to accommodate an acute shortage for between two and four weeks.

Opposing views
In the spring of 2022, the Mining Advisory Council advised the government to develop a range of scenarios for guaranteeing the security of energy supplies. The Council said that it would be in the government's interest to try and create more storage capacity, which could also be used as a strategic natural gas reserve. As early as 2014, the Advisory Council on International Affairs advised the government to take greater account of geopolitical developments in decisions on the storage of natural gas and to consider the formation of a strategic natural gas reserve.

6.3 Using reserves in a crisis situation

Until 2022, the central government did not itself own any natural gas. In mid-2022, the Minister for Climate and Energy Policy instructed EBN to purchase natural gas to fill part of the Bergermeer storage site. Natural gas held in storage sites, including gas held by EBN, is usually sold to the highest bidder on the European market, depending on the network of pipelines and the maximum feasible transportation capacity. A shortage, or looming shortage, in Germany may therefore mean that natural gas will flow from the Netherlands to Germany.

What can the government do in the event of a crisis?

There are a number of measures that the government can take in the event of imminent natural gas shortages. The Ministry of Economic Affairs and Climate Policy described in its Gas Protection and Recovery Plan the measures that would need to be taken in order to guarantee the supply of natural gas in a crisis. A National Gas Crisis Plan has also been prepared, describing the crisis approach at central government level. Most of the measures included in the Gas Protection and Recovery Plan do not relate to natural gas reserves. Rather, they describe the opportunities for saving or reducing gas and energy consumption, either voluntarily or on a compulsory basis. In exceptional circumstances, the Minister for Climate and Energy Policy is empowered under the 1939 Distribution Action to intervene in the distribution of gas.

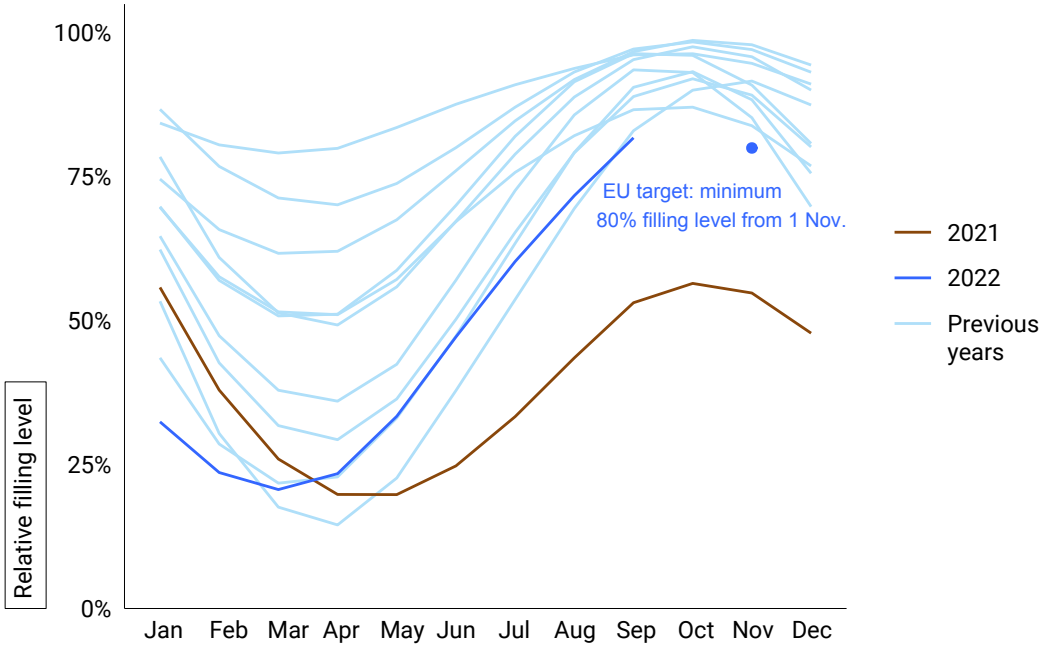
One of the measures in the Gas Protection and Recovery Plan involves invoking 'energy solidarity' among EU member states. This is an agreement made by EU member states to supply natural gas to each other in an emergency, provided that their grids are connected either directly or through a third country. This is a legal obligation, as was confirmed by a 2021 decision of the European Court of Justice, in which the Court ruled that solidarity must be factored into decisions on natural gas. There is a condition, however: only member states that do not have sufficient natural gas to meet the demand from designated high-priority consumers (households in particular) are entitled to invoke the principle of energy solidarity. Other users, such as gas-intensive manufacturing firms, must already have been disconnected from the grid. In terms of energy solidarity, the Netherlands is connected with Belgium, Germany and Ireland, but has not entered into any solidarity agreements with these countries. For this reason, it remains unclear how the principle of energy solidarity will be translated into practical action.

6.4 Storage levels for the winter of 2022/2023 and thereafter

Just before the winter of 2021-2022, it became clear that the gas storage sites were only 60% full, way below the long-term average. In order to prevent this situation from recurring in the winter of 2022-2023, the Minister for Climate and Energy Policy adopted a policy in mid-2022 aimed at ensuring that the storage sites are filled. In 2022, the Netherlands attained an average storage level of at least 80%, in line with the EU gas storage filling target and the wish expressed by the Dutch House of Representatives to ensure that gas storage sites are filled to the maximum.

Figure 18 *Gas reserves by month and year*

Gas storage sites in the Netherlands more than 80% full in 2022



Data source: https://agsi.gie.eu/

For the years from 2023 onwards, the EU has set the natural gas storage filling target at 90%. As the EU wants to reduce its dependence on Russian gas, new suppliers and supply routes must be found. This creates uncertainty in the natural gas markets. Ministry officials and Dutch Gas Board staff informed us that they expect that the government would need to take long-term action in the future in order to ensure that natural gas storage sites are adequately filled. The Ministry has yet to formulate detailed plans to this end.

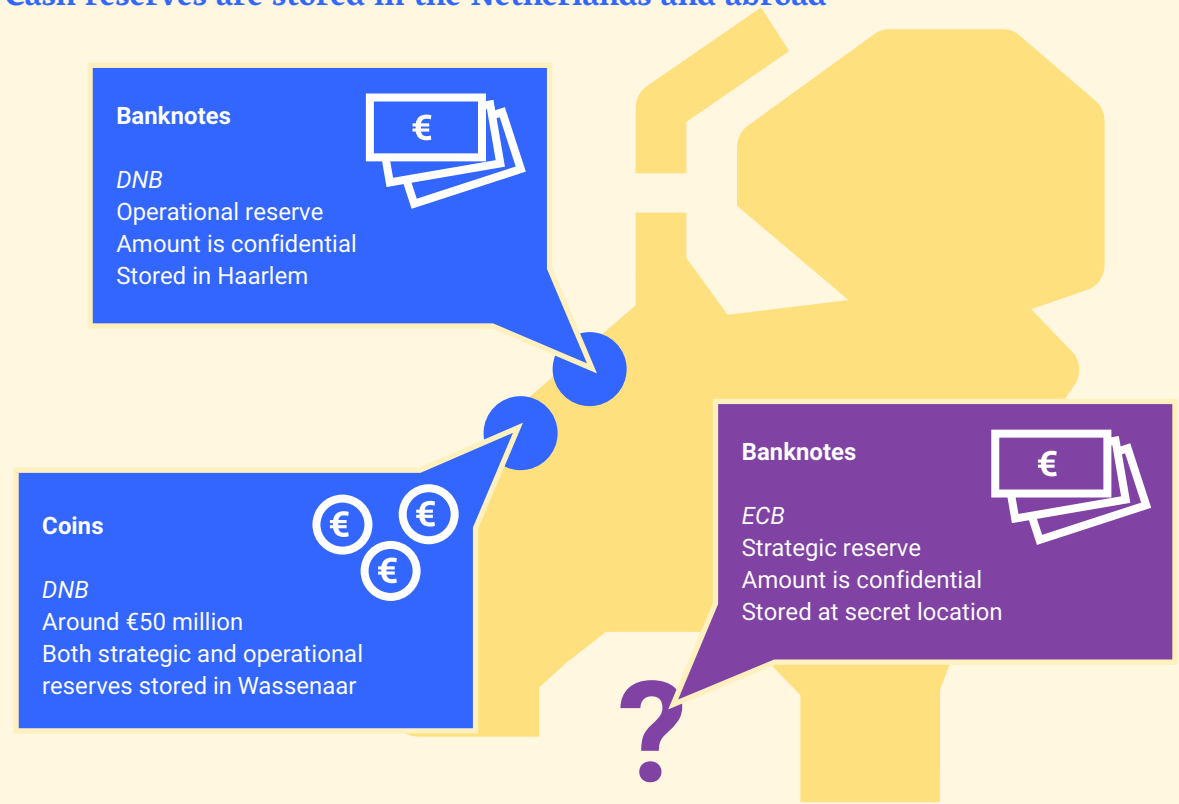
Natural gas storage in the medium term

The central government does not have detailed plans in place regarding the use of strategic reserves and non-strategic storage capacity. For the time being, managing the current crisis is the main priority of the Ministry of Economic Affairs and Climate Policy. Demand for natural gas is declining, and the government's climate policy is designed to achieve further reductions. Nevertheless, storage capacity will be needed for many years to come, in order to cushion fluctuations in energy demand in the Netherlands. The prospect of a lower demand for natural gas means that it is less attractive for gas companies to invest in storage capacity.

7. Cash

The Dutch central bank (De Nederlandsche Bank - DNB) holds a cash reserve in the form of coins. The target value of this reserve is €50 million. It consists of two parts: an operational reserve and a strategic reserve. DNB also keeps an operational banknote reserve.[2] In addition, the European Central Bank (ECB) maintains a strategic banknote reserve. This is stored at a number of secret locations and no figures are published about its value. Figure 19 shows both the locations and the characteristic features of the operational and strategic cash reserves in the Netherlands.

Figure 19 *Locations and characteristics features of cash reserves*



The operational cash reserve is intended to meet the demand for cash in normal circumstances. The strategic reserve is earmarked for use in exceptional circumstances, for instance if a crisis (such as a power outage) makes it impossible for people to make card payments. Cash may then be a fall-back option. It is unclear, however, whether there is sufficient cash available in the Netherlands if card payments are disrupted. DNB and the Minister of Finance are looking at alternative digital options for making payments in an emergency.

7.1 Policy

Although the Minister of Finance is responsible for issuing coins, DNB is largely responsible for the operational side of coin issuance. This is laid down in the Banking Act of 1998, and a decree entitled *Transfer of Public Tasks Concerning Coins (Bulletin of Acts and Decrees 2016, 508)*. The production and issuance of banknotes is an activity for which the national central banks and the ECB are jointly responsible.

7.2 Volume of reserves

Coins
DNB keeps both an operational and a strategic reserve of coins. The target value for the reserves is currently around €50 million. It is not possible to put a precise figure on the volume of the strategic coin reserve at any given point, as DNB does not make a clear-cut distinction between the operational and the strategic reserve. The coin reserve is stored in the town of Wassenaar in the west of the Netherlands.

Banknotes
DNB does not keep a strategic banknote reserve. The ECB does keep a strategic reserve, the volume and storage locations of which are kept secret. DNB has an operational banknote reserve that is designed to cover a period of between three and four months.

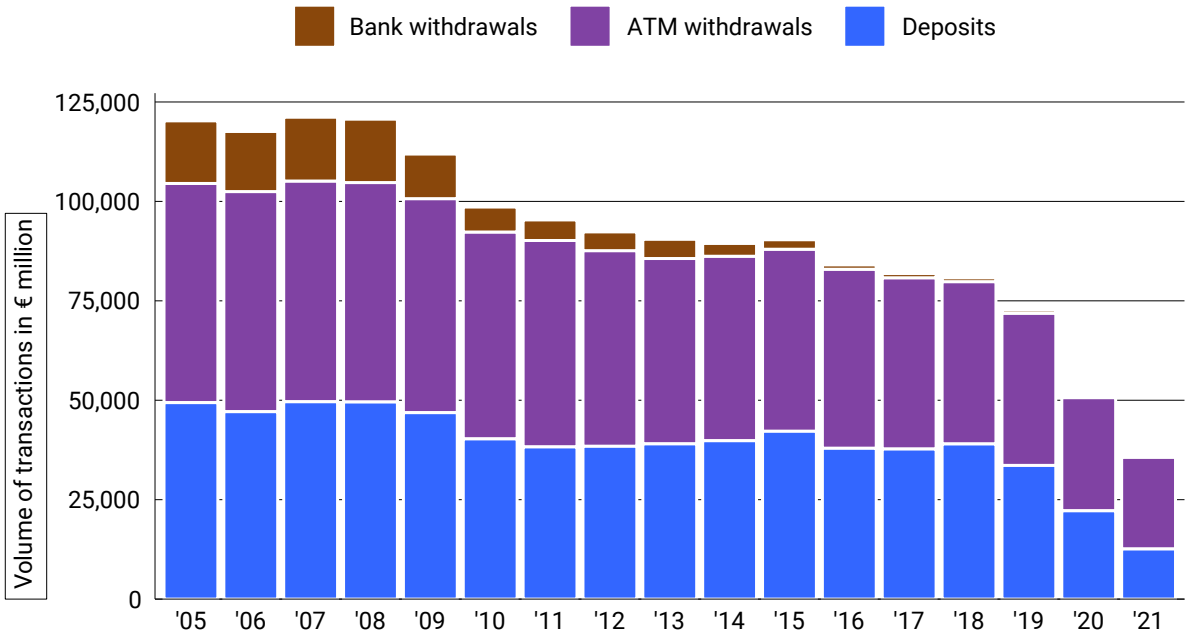
The supply of banknotes is demand-driven, based on the central bank's monitoring of money in circulation. The monitoring system reports any looming shortages of banknotes (and the denominations in question). If reserves at one national central bank run low, they are replenished from the reserves held by other national central banks, or from the ECB's strategic reserve. Due to the EU's open borders, it is impossible to work out how much cash each individual country holds.

7.3 Underlying arguments

In an emergency – whether this is a nationwide ATM malfunction or the outbreak of war – private consumers must be able to access cash in order to pay for their basic necessities. This is why reserves of cash are held (be they operational or strategic, national or European, banknotes or coins).
That said, it is clear that cash is playing a less and less prominent role in payments in the Netherlands; see Figure 20.

Figure 20 *Volume of cash payments*

The Dutch are using less and less cash



Data source: https://www.dnb.nl/statistieken

The decline in cash payments has been especially marked in the past few years. This has been due in part to the COVID-19 pandemic, which prompted a rise in online payments and a decline in physical payments in shops.

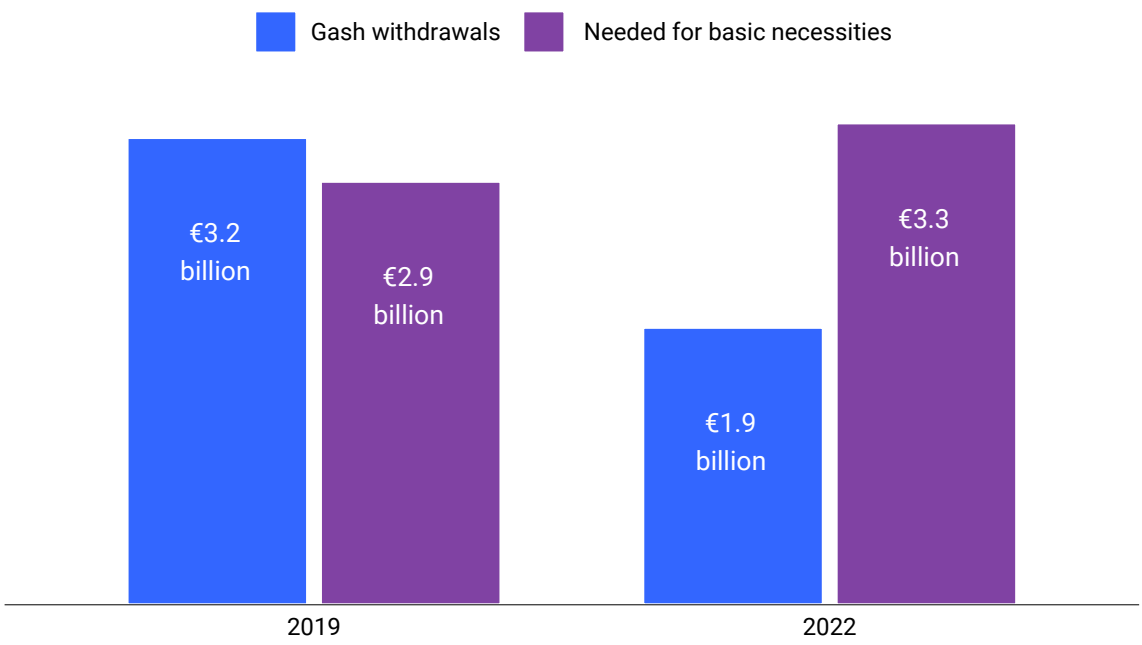
7.4 Using reserves in a crisis situation

In a crisis situation, cash must be readily available to all consumers. This is why not just the volume of the reserves, but also the means of distribution are important considerations. In tandem with the progressive decline in the number of day-to-day cash payments, the distribution capacity has also been reduced in recent years. In 2010, for example, there were 8,500 ATMs in the Netherlands. This number had fallen to 5,000 by 2020 (McKinsey, 2021). It is also clear from the McKinsey report that it will be difficult to distribute cash to the public quickly enough in an emergency situation.

The reduction in the number of ATMs is due to the decline in cash withdrawals. Figure 21 compares the trend in the volume of cash withdrawals with the amount of money required to pay for the basic necessities of life.

Figure 21 *Monthly amounts of money needed to pay for the basic necessities, in 2019 and 2022*

Less cash in circulation, more money needed for basic necessities



Data source: Own calculations based on https://factsheet.betaalvereniging.nl/, https://www.nibud.nl/onderwerpen/uitgaven/huishoudelijke-uitgaven/ and https://www.cbs.nl/nl-nl/visualisaties/dashboard-bevolking

Monthly cash withdrawals amounted to €3.2 billion in 2019. The Dutch population in that year was 17.3 million. According to figures published by Nibud, the National Institute for Family Finance Information, each individual needed around €5.64 per day to pay for their basic necessities, i.e. a monthly sum of €2.9 billion. More cash was withdrawn than was needed to pay for the basic necessities. This meant that the nationwide distribution capacity was sufficient to enable everyone to buy their basic necessities, even if there were no other means of payment.

The picture for 2022 is different. Both the cost of living and the size of the population have risen slightly (i.e. the basic necessities now require a daily spend of €6.29 by 17.7 million people, thus representing a total of €3.3 billion). At the same time, monthly cash withdrawals have fallen to €1.9 billion, creating a gap of €1.4 billion. The size of the cash distribution system has been adapted to the normal demand for cash. Little used ATMs are no longer profitable and are being removed. This may mean that there will not be sufficient distribution capacity in an emergency. This ties in with the conclusion drawn in the McKinsey report that the arrangements made for issuing and distributing cash are no longer capable of meeting the need for cash in the event of an emergency (McKinsey, 2021).

7.5 Alternative means of payment

For the future, the DNB and the Minister of Finance believe that the best prospects lie in improving alternative forms of digital payments, such as payments made on the basis of payment requests by mobile applications and QR codes, and using the digital euro (De Nederlandsche Bank, 2021, and Ministry of Finance, 2022b). For the time being, though, the infrastructure for cash payments must be kept up to standard, partly on the insistence of the Dutch House of Representatives (as has been made clear in numerous debates and motions over the past years). One of the products of this pressure has been the presentation of a 'Cash Covenant' by the Minister of Finance to the Dutch House of Representatives in April 2022 (Ministry of Finance, 2022a). The covenant brings together 23 commercial parties – including four large banks (ABN AMRO, ING, SNS and Rabobank) – who have made arrangements to keep plenty of cash readily available and usable for the purpose of day-to-day payments. Agreements were also made for fall-back options in the event that card payments are not possible.

An offline payment alternative: the digital euro

On 5 July 2022, the Minister of Finance set out her views on the introduction of a digital euro, the idea of which is that it should work offline. The Minister believes that a digital euro could act as an alternative for cash payments. The digital euro could be used to make payments without an internet or electronic connection (Ministry of Finance, 2022b). In terms of technology, the digital euro is similar to the electronic wallet that was introduced in the Netherlands in 1996 and discontinued in 2013. It involves transferring a balance from a bank account to a payment card (or other device). The difference with other digital means of payment is that, once the balance has been transferred, there is no need for any further data transmission to take place between the bank and the payment machine at the time of payment. This makes this form of digital payment more versatile than the current debit card, for instance.

8. In conclusion

The above chapters describe the nature of strategic and other stocks that are being maintained. This report is the first step towards a study at central government level, as our audit revealed that there is no comprehensive inventory of the strategic stocks held at central government level. Nor is there any definition of the term 'strategic stock'. In our opinion, a comprehensive study should be accompanied by a clear definition.

A recurrent theme in this audit is that, although different departments at the relevant ministries are examining the need for maintaining strategic stocks, no detailed plans have been completed for the use of these stocks in the event of an emergency.

8.1 No comprehensive inventory of strategic stocks

Our audit has shown that there is no comprehensive inventory of the strategic stocks that the central government maintains and would like to maintain. In the absence of such an overview, we cannot be certain that we have documented all of them. We ran into the same problem in our 2021 audit of central government assets entitled *Zicht op rijksbezit* (Netherlands Court of Audit 2021c), in which we concluded that the central government has no comprehensive inventory of its assets.

8.2 Strategic stocks in the context of crisis preparedness

Strategic stocks are maintained with a view to potential crises. Stocks and reserves often feature in crisis plans, which set out a whole raft of activities, powers and measures. In order to be able to actually use these stocks in the event of a crisis, it is important to decide who should do what, and how. As an illustration, the Netherlands has strategic reserves of drinking water at several levels. The question is, though, whether robust arrangements have been put in place to ensure that all households are provided with a few litres of drinking water within an acceptable time frame. Although this should be the case in theory, it is also true that the distribution of drinking water depends heavily on electricity and diesel fuel, for which emergency crisis plans are still being developed. Reserve stocks of medicines may also need energy, for example to store perishable medicines at a specific temperature.

There are a number of conceivable emergency scenarios in which multiple strategic stocks will have to be used and logistic processes followed at the same time. Drinking water companies, for instance, use tankers that run on diesel fuel to transport emergency supplies of drinking water. In the event of an extended power failure, diesel generators will have to be used, and diesel fuel may run short. Such a cascade effect occurred after a power failure in Amsterdam in 2017 (reconstruction in NRC newspaper, 2017). The National Coordinator for Counterterrorism and Security and the Minister of Economic Affairs and Climate Policy are currently preparing a plan for emergency power generators and diesel fuel supply in the event of a power failure.

Even in areas in which a conscious decision has been taken not to maintain any strategic stocks (such as the food supply), crisis planning is not a standard procedure. True as it is that the Netherlands produces more than enough food, food will still have to be distributed in the event of an emergency (such as large-scale flooding). The Minister of Agriculture, Nature, and Food Quality has yet to finalise plans to this end.

8.3 Growing interest in strategic stocks

The government is taking a growing interest in crisis preparedness and strategic stocks. Staff working for the National Coordinator for Counterterrorism and Security told us that they have also seen a change in 'crisis thinking' in government during the past five years, including with regard to the role played by strategic stocks. The COVID-19 pandemic and the war in Ukraine have catalysed this renewed interest.

The European Council has also asked the European Commission to review and reduce strategic dependencies (European Council, 2020). Maintaining strategic stocks may help to guarantee supplies for a given period of time. In the longer term, dependencies could be reduced, for instance, by replacing a product with an alternative, or by looking for other or more suppliers (i.e. diversification). In response to the European Council's request, the Dutch government has voiced its ambition to review the Netherlands' strategic dependencies in various policy areas: '*To this end, the government is developing a monitoring mechanism for systematically analysing geopolitical vulnerabilities and economic dependencies based on uniform guidelines. The Ministry of Economic Affairs and Climate Policy is taking the lead in this initiative.*' (Ministry of Justice and Security, 2021). The Ministry of Economic Affairs and the Ministry of Foreign Affairs are currently working on this monitoring mechanism and expect to publish it at the end of 2022.[3]

Response

We submitted our draft report to the Minister of Agriculture, Nature and Food Quality, the Minister of Infrastructure and Water Management, the Minister of Finance, the Minister of Justice and Security, the Minister of Health, Welfare and Sport, and the Minister for Climate and Energy Policy.

The Minister of Agriculture, Nature and Food Quality, the Minister of Infrastructure and Water Management, the Minister of Justice and Security, and the Minister for Climate and Energy Policy responded to our draft report. In view of their responses, we see no reason for an afterword.

Their letters have published (in Dutch) on our website (www.rekenkamer.nl).

Appendices

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Appendix 2 Potential strategic stocks

Category	Reserves
Energy	Oil (including petrol, diesel fuel, kerosene)
	Natural gas
	Uranium
	Metals
Foodstuffs	Foodl
	Water
Industry	Paper/Wood
	Iron/steel
	Plastics
	Building materials (glass, cement etc.)
Medical	Medical supplies
	Medicines
	Vaccines
	Blood
Agriculture	Seeds
	Fertiliser/phosphor
	Pesticides
War, natural disasters, climate	Defence materiel
	Road salt
	Sand
Financial	Gold
	Cash

Appendix 3 Endnotes

1. The compulsory stockholding obligation is expressed in kilotons of crude oil equivalent (kton COE).
2. The DNB and the Ministry of Finance asked us to remove the figures on the size of the banknote reserve from this report as there are good reasons for keeping this information confidential.
3. This sentence was adjusted following ministerial clearance.

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