Dutch State Treasury Agency
Ministry of Finance

Outlook 2023

Photo theme

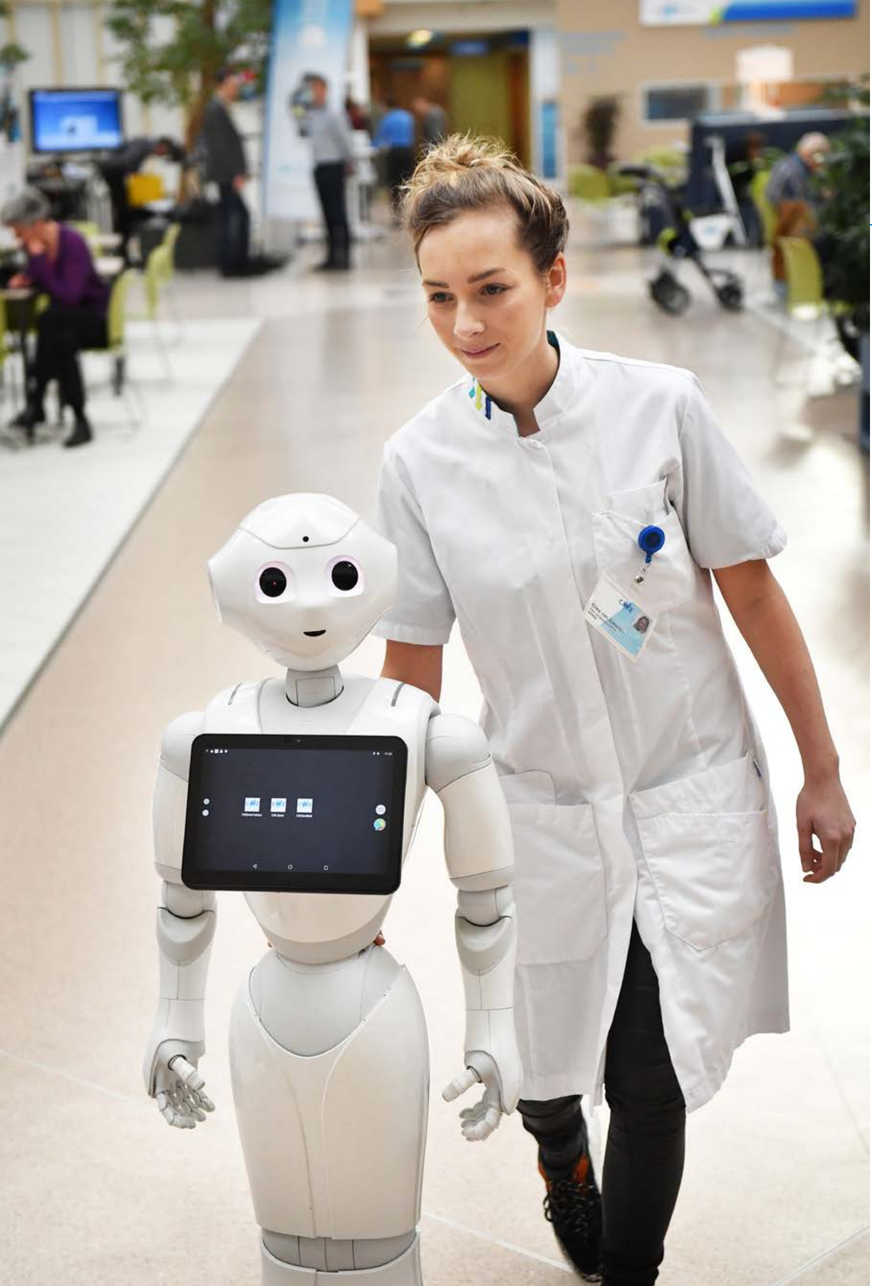
The photos featured in this Outlook portray Agility.

Agility can be defined as the ability to move quickly and easily. In the modern age, the word's meaning has expanded to project management, describing the ability to respond to change. In 2022, change was all around us. Amidst unpredictability in our funding need and global uncertainties, the Dutch State Treasury Agency (DSTA) remains committed to its mandate of financing the state debt in a transparent and consistent manner.

So, what does it mean to display agility for the DSTA and the Netherlands? As we strive to be an agile organisation, we can be inspired by examples from the world around us. This Outlook illustrates examples of everyday agility.

Dutch animals in nature like the buzzard are tremendously nimble flyers. Newcomers such as the wolf must adapt to survive their new and changed habitats. Athletes express agility at the highest levels, and Dutch innovators are constantly designing and building new technologies to help mitigate climate risk.

For a sailboat, any plan made before setting out on a journey must be adapted to the prevailing circumstances in order to arrive at the destination. As we navigate this changing world together, the DSTA will show a permanent investment in its agility, responding to change by innovating wherever possible and maintaining our close relationship with the market.



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Preface

It is my pleasure to present to you this year's Outlook publication: the first one in my new role as Agent of the DSTA. A perfect moment to look back at the year so far and look ahead to what is to come.

The war in Ukraine has shown us how vulnerable peace is. The conflict impacts our daily lives in a number of ways, such as rising prices of energy and food and a further deepening of pre-existing differences between various groups in society. As a result, for many of us, this year did not turn out as we had expected at the start. There is no doubt that next year will be as difficult to predict as this year, with both minor and significant challenges along the way.

This year's theme of the Outlook is Agility. To me, agility means the ability to adapt to changing circumstances, both at the organisational level and the individual level. DSTA's key principles such as consistency and transparency do not naturally match with such ever changing circumstances. Yet, as a player on the financial markets we do need to act more swiftly than ever to execute our mandate of financing the State debt. It is our task to keep a balance between a large government organisation and the dynamics of the financial markets in order to do what is best for society.

It is a matter of fact that things keep on changing. Therefore, it is on us to ensure that we are best prepared to deal with the unknown and then act appropriately. This requires a well-equipped and well-conditioned working environment that enables us in every possible way. Being able to adapt demands resilience. I do realise this might be challenging on a personal level.

At the beginning of this year, for example, I could not imagine being appointed as Agent of the DSTA. Having been in the office since September, I could not be more proud of the DSTA team and the results we have achieved in 2022. These accomplishments include the reopening of the Green bond in June with a renewed EU-taxonomy compliant framework. We also completed the redemption of our old State Loans, which date as far back as 1815, in order to prepare for a more digital world. Preparations were made to get us ready for the Target2-Consolidation (which has been postponed by the ECB). Finally, we have worked hard to digitalise our treasury banking system. And, all of this alongside our day-to-day operations in a market which has been persistently volatile, and a funding need which appears to be ever changing.

Of course, achieving all this would not have been possible without the cooperation with our Primary Dealergroup and our investors. We have been working together to ensure that the Netherlands is best placed to deal with changing and volatile markets.

As mentioned, agility can be challenging and demanding. I wish you all the best with the challenges you face and I look forward to working with all of you in the coming years.

Saskia van Dun
Agent

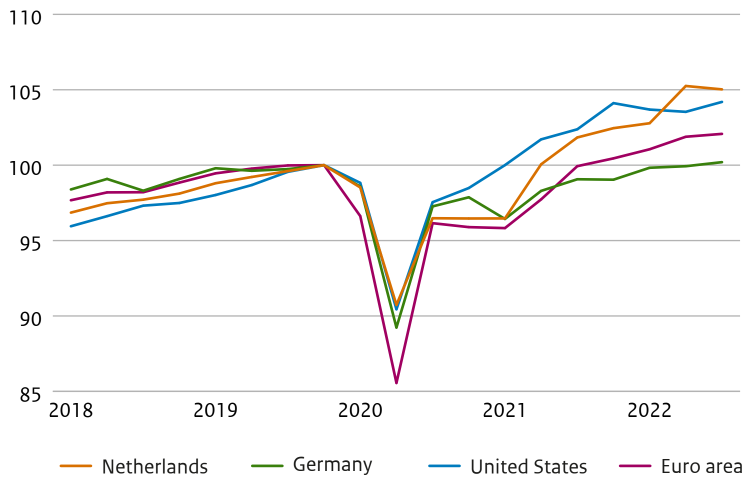
1 The economic and budgetary outlook

1.1 Economic outlook

Dutch economy records strong growth in 2022, but slows down in 2023
The Dutch economy has experienced strong growth in 2022. The high growth in the first half of the year results in an expected growth rate of 4.2% for 2022, according to the Netherlands Bureau for Economic Policy Analysis (*Centraal Planbureau*, CPB). Strong export figures (+4.6% in 2022) as well as substantial investment and private consumption growth in the first two quarters contribute to this high growth rate in particular. In the second quarter, the Dutch economy even outperformed all EU countries and the US by recording the highest quarter-on-quarter growth rate (+2.6%). However, record-high inflation, in part caused by Russia's invasion of Ukraine, has started to take its toll on the Dutch economy. In the third quarter, the economy contracted modestly (-0.2% q-o-q) according to Statistics Netherlands (*Centraal Bureau voor de Statistiek*, CBS). This can mainly be attributed to a decline in investment (-1.7% q-o-q), as companies are hampered by tighter financial conditions, labour shortages and increased uncertainty about the economic outlook. Despite price increases far exceeding wage growth, private consumption still contributed positively to growth (+0.1% q-o-q) due to pent-up demand for services accumulated during the COVID-19 pandemic. Exports also performed well and showed a growth of almost 1% compared to the second quarter. The underlying sentiment is changing, however. Worldwide, economies are hit by higher prices and interest rate hikes and global economic growth is clearly losing momentum. Compared to many of its peers, the Netherlands has still performed relatively well (figure 1).

In 2023, the slowdown in economic growth is expected to continue. Dutch economic growth is forecasted to decline substantially to 0.9% according to CPB. Although this represents a significant decline compared to 2022, growth will be higher than the EU average of 0.3%, and substantially higher than in Germany (-0.6% in 2023) according to the European Commission's Autumn 2022 Economic Forecast. Dutch economic growth will mainly be backed by public expenditure, which is expected to grow robustly in 2023. Private consumption growth also contributes positively to growth and is expected to increase compared to the second half of 2022 as an extensive package of purchasing power measures will be implemented from January 2023 onwards. Exports also still increase, although at a slower pace than in previous years due to the weak external environment. Investment is projected to contract as a result of cost increases, labour shortages and a further tightening of financial conditions.

Figure 1 - GDP volume developments (index with 2019Q4=100, based on seasonally adjusted data)



Source: OECD, November 2022

Inflation reached record-high levels in 2022, but is expected to decline in 2023

Inflation remains high, although it did not show any further increases in the last two months. According to Statistics Netherlands, HICP inflation stood at 11.3% in November. This represented a significant decline compared to the inflation level in October (16.8%). Elevated energy (particularly gas) prices mainly contribute to the high level of inflation. At the same time, with energy being a key input to many economic activities, price increases are also observed in other product categories such as food. Core inflation (inflation excluding energy, food, alcohol and tobacco) is picking up and stood at 6.2% in November.
High inflation has a strong negative effect on purchasing power, particularly for lower-income households as energy expenditures account for a relatively large part of their disposable income. According to CPB, in 2022 and 2023 purchasing power is projected to decrease by around 4% in total for the median household. The implementation of energy support measures in 2023 prevents a further decline in purchasing power. Although the development of energy prices remains highly uncertain, inflation is expected to show a significant decline next year. CPB projects an inflation rate (consumer price index) of 3.5%. The decline in inflation can mainly be explained by the implementation of an energy price cap from January 2023 onwards, which has a strong (although temporary) dampening effect on inflation.

The economic outlook remains highly uncertain

Uncertainty about the future development of the Dutch and global economy is high. The development of energy prices in particular remains highly uncertain. Energy prices declined recently as the weather in autumn was unusually mild and gas storages reached the EU agreed minimum 80% gas storage target. However, a cold winter or adverse international developments could lead to another surge in energy prices. A bright spot has been the successful reduction of gas consumption in the Netherlands. From June until November, gas consumption has on average been almost 30 percent lower compared to the same period in the previous three years. This relatively strong reduction in demand combined with high storages should ensure that the Netherlands and Europe more broadly survive this winter without gas supply disruptions.
The uncertainty surrounding the development of energy prices strongly affects producer confidence. The Dutch manufacturing sector is experiencing a large decline in new orders. Energy-intensive firms are affected in particular. At the same time, industries are profiting from better functioning supply chains and declining material shortages. Investment goods output is growing, which can partially be attributed to a strongly performing machine industry. Moreover, industrial employment still increased in November, clearly signalling trust. Employment also increased in other sectors, reaching a record-high level in the third quarter. In addition, vacancy rates and labour shortages have been extremely elevated during 2022. Although the labour market is showing signs of cooling, it is still extraordinarily strong. The tight labour market makes it unlikely that unemployment will rapidly increase in response to the slowdown in economic growth. In October, the unemployment rate still stood at a low level of 3.7% according to Statistics Netherlands. For 2023, CPB expects the unemployment rate to slightly increase to 4.4%, which is still below the historical average. Given the current very low number of collective labour agreements with automatic wage indexation, the tight labour market and inflationary pressures are not giving rise to a wage-price spiral. Although recent collective labour agreements do show an increase in wage growth (+3.5% y-o-y in the third quarter according to Statistics Netherlands), this increase is still substantially lower than the inflation rate.

Table 1 – Key economic figures for the Netherlands (short-term, base-scenario)

% change y-o-y	2021	2022	2023
GDP	4.9	4.2	0.9
Household consumption	3.6	5.7	1.1
Government consumption	5.2	0.8	3.5
Investment (including inventories)	2.9	2.5	-0.3
Exports	5.2	4.6	2.4
Imports	4.0	3.7	3.1
Employment (in hours)*	3.3	5.2	0.5

%	2021	2022	2023
Unemployment (% labour force)	4.2	3.6	4.4
Inflation (HICP)*	2.8	11.4	2.5
Inflation (CPI)	2.7	10.0	3.5

Source: CPB, December 2022

* These numbers have not been updated by CPB in December and are based on September projections (CPB, Macro Economic Outlook 2023, 20 September, 2022).

Comparatively high inflation partly due to method of calculating energy prices in the Netherlands

In 2022, Dutch HICP inflation has been substantially higher than the Eurozone average. This can mainly be explained by the difference in energy-inflation (see figures 2 and 3). On average, energy contributed 6.7 percentage points to the overall inflation rate in the Netherlands in 2022 (up and until November), compared to an average contribution of 3.9 percentage points in the Euro area.[1] This difference can to a large extent be explained by the method used to measure and calculate energy prices.

How does Statistics Netherlands measure energy prices?

Every month, Statistics Netherlands measures the prices of gas and electricity on the basis of all new energy contracts which can be entered into at that particular time. However, not all households obtain a new contract at a new rate at the same time. A substantial number of Dutch households still has a fixed contract. An actual distribution of the types of contracts and their rates is not available to Statistics Netherlands. This means that the price information obtained through the current observation method is in fact ahead of the average price development of energy for households in the Netherlands. At times when gas and energy prices are fairly stable, this observation method provides adequate information. However, in a volatile energy market with extreme price increases, the observation of only new contracts and corresponding prices overestimates the average price increase.

Preliminary results of new observation method

Statistics Netherlands acknowledges that the current method should be updated and has launched a study into a new observation method. As part

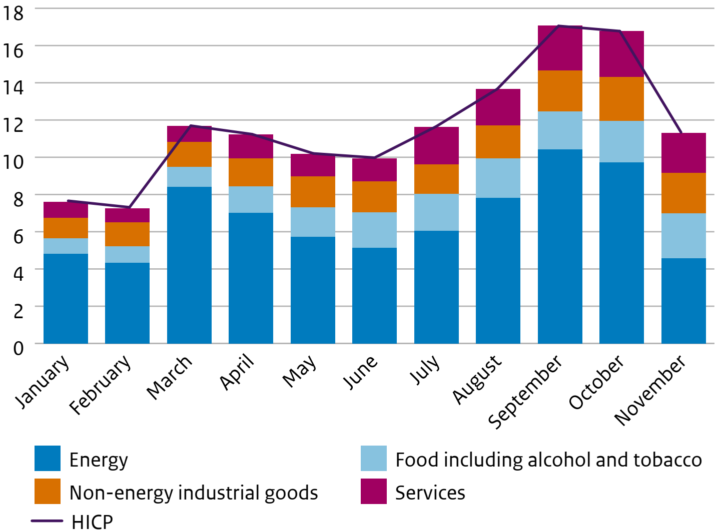
[1] In November, the contribution of energy declined substantially in the Netherlands. This can mainly be explained by the fall in gas and elektricity prices (on a monthly basis).

of this project, data from energy companies covering 75% of the market has been obtained in order to observe prices of both new and already existing fixed contracts. This data is currently subject to review and analysis. According to preliminary results of the study, using the newly obtained data results in the observation of a significantly lower increase in gas and electricity prices. In turn, inflation would also be lower than the officially published figures. For example, in August (the last month for which data is available), inflation has been overestimated by 2.4 to 4.5 percentage points. As the data received is subject to review this number is not conclusive yet.

Other energy related factors impacting inflation

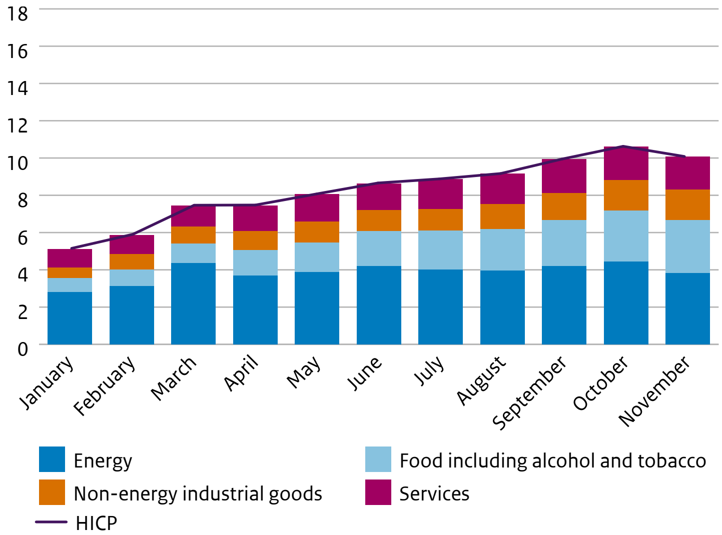
Other energy related factors also play a role. The Netherlands still uses a relatively large quantity of gas in comparison to other European countries. The rapid increase in gas prices therefore has a larger impact on Dutch inflation. Another contributing factor relates to the structure of the Dutch energy market, which is strongly liberalised. As a result, energy companies can easily and quickly on-charge price increases to Dutch households. Finally, the Dutch government was relatively late with imposing energy price caps. In many other countries, gas prices were frozen and energy caps have been put in place in the course of 2022 or even at the end of 2021, which has dampened inflation in these countries.

Figure 2 - Contribution to inflation in the Netherlands in 2022



Source: CBS, December 2022

Figure 3 - Contribution to inflation in the Euro area in 2022



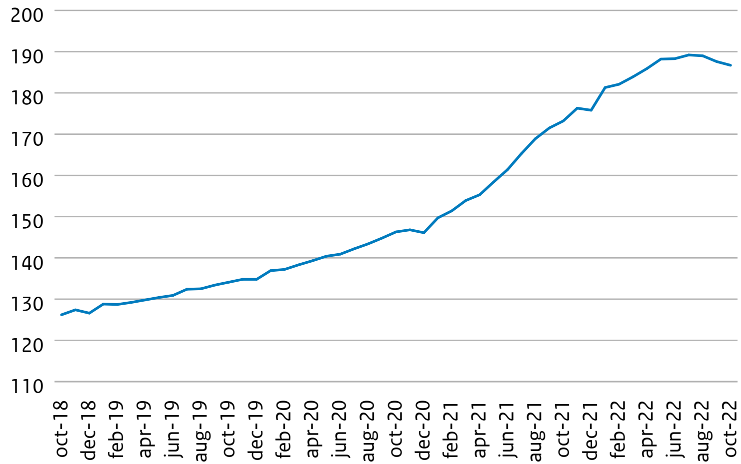
Source: Eurostat, December 2022

Overheated housing market slows down

Growth in house prices in the Netherlands decreased in October 2022, marking the sixth month of stagnating price increases. Overall, Statistics Netherlands still reports a year-on-year price increase of 7.8% in October 2022. Liquidity in the housing market for the first ten months of 2022 was 17% lower compared to the same period in 2021. In line with market developments, the average new 10-year Dutch mortgage rate rose substantially to 2.82% in September 2022. Higher mortgage rates make financing a new house more expensive. The Dutch Association of Realtors (*Nederlandse Vereniging van Makelaars,* NVM) therefore signalled a cooling of the housing market, citing less sales and lower bids amidst a changing market.

An important consequence of the higher mortgage rates and comparatively high prices is that housing inequality increases. Starters on the housing market face higher monthly mortgage expenses, and the flow from regulated rent to the non-regulated sector or to a house purchase is impeded. The national building plan (*Nationale Woon- en Bouwagenda*) aims to increase the housing supply by 900.000 units in the period up to 2030. An example of a measure included is the abolition of the landlord tax on social housing in 2023, freeing up to € 1.7 billion in capital for housing corporations to invest in housing development.

Figure 4 - House prices, indexed with 2015=100



Source: CBS, November 2022

1.2 Budgetary outlook

Budget deficit narrows in 2022, but increases in 2023
In 2022, the general government budget is forecasted to reach a deficit of 1.0% of GDP, which is substantially lower than in the previous two COVID-19 years. The deficit also turns out to be lower than projected at the beginning of the year because of increased tax income, incidental gas revenues and lower than projected expenses due to labour shortages. The deficit is expected to increase in 2023 as government expenditure will rise to support purchasing power.[2] The 2023 Budget Memorandum, presented in September, included multiple structural support measures such as an increase in the minimum wage, an increase in rental and child allowances and a decrease in taxes on labour income. Moreover, the government also presented various temporary measures which specifically provide protection against high energy costs, the most important of which is a price cap on gas and electricity. Energy-intensive small and medium-sized enterprises (SMEs) and multiple semipublic organisations (such as schools and cultural and societal organisations) will also be financially supported. These expenses will partially be covered by windfall taxes for gas and oil companies and other (inframarginal) electricity producers that are making high profits because of the elevated electricity prices. Additional coverage amounting to € 7.3 billion will be decided upon no later than June 2023. Through offsetting the expenditures with increased revenues, a strengthening of price pressures will be avoided.

[2] The latest official projection by the Dutch government which has been published in September expects a deficit of 3% of GDP in 2023. However, this number does not include some of the more recently announced energy support measures.

Public debt declines and is low in comparison to peer countries
The public debt level of the Netherlands remains robust despite the uncertain and challenging economic conditions. The November update of the Budget Memorandum 2023 forecasts EMU-debt to stand at 50.4% of GDP in 2022. This represents a decrease compared to 2021 as high inflation has reduced the debt-to-GDP ratio. Whereas in September, the Dutch government still expected public debt to decline in 2023, new energy compensation measures that have been announced since could lead to a slight increase of the debt-to-GDP ratio next year. Budgetary decision-making during 2023 will provide more clarity on this situation. The debt level is still expected to remain well below the 60% of GDP threshold agreed at in the European Stability and Growth Pact. Moreover, public debt is also significantly lower than the euro area average of 94.2% (figure 5).

Both the forecasted EMU-balance and EMU-debt are subject to uncertainty. The development of energy prices has a particularly large impact on the public finances of the Netherlands, as it will determine the government's expenditure on the price cap on gas and electricity. Moreover, the level of inflation may also impact the budgetary figures via its effect on nominal GDP (the "denominator effect").

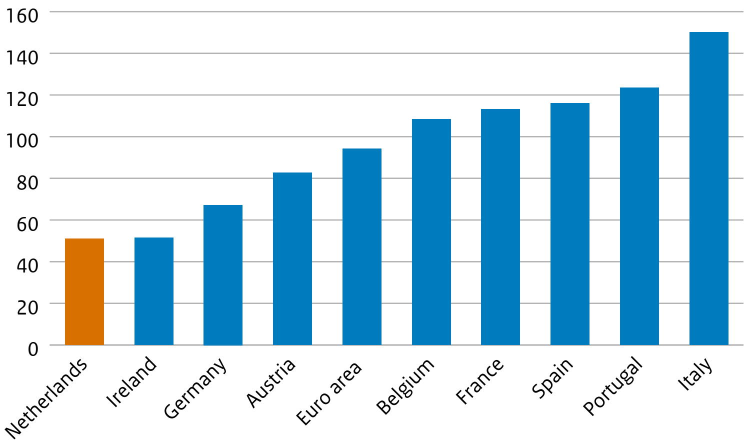
Table 2 – Key budgetary figures for the Netherlands (% GDP)

	2021	2022	2023*
EMU-balance	-2.5	-1.0	-3.0
EMU-debt	52.1	50.4	49.5

Source: Ministry of Finance, November update of Budget Memorandum, 21 November 2022

* Forecast for 2023 is based on Ministry of Finance, Budget Memorandum – 20 September 2022. However, these numbers do not include some of the more recently announced energy support measures.

Figure 5 - Government gross debt-to-GDP ratio (in %) for Q2 2022



Source: Eurostat, November 2022

Medium-term outlook

In addition to tackling current challenges such as the energy crisis, it is also important to remain aware of the risks and uncertainties for future generations. Climate change, ageing of the population and (international) security are seen as priorities by the Dutch government and various measures are currently being taken to tackle these issues. These include, among other things, the establishment of a climate fund, the conclusion of an Integrated Healthcare Agreement and the strengthening and modernisation of the Dutch armed forces. As a result of these comprehensive investments, the EMU-balance will temporarily worsen. Increasing interest rates also represent a budgetary challenge in the medium term. The government will present structural coverage for these expenses in Spring with its new update of the Budget Memorandum. In this way, increased interest rates expenses will not run into public debt and burdens are not passed on to future generations. The EMU-debt level is projected to stay below the 60% of GDP threshold in the coming years, clearly showing the sustainability of Dutch public finances.

2 Climate outlook

2.1 Climate mitigation

The Dutch government is committed to reducing the greenhouse gas (GHG) emissions in the Netherlands by 55% in 2030 compared with 1990 levels (aiming for 60% to have some leeway) and to be carbon neutral by 2050. To monitor the progress and assess the policy mix, the independent Netherlands Environmental Assessment Agency (*Planbureau voor de Leefomgeving*, PBL) is tasked with annually taking stock of the path of GHG reduction. Its most recent report, the *Klimaat- en Energie Verkenning* (climate and energy outlook), was published on 1 November. The report shows that the current policy mix will lead to a reduction of 39-50% of GHG in 2030.

The current policy mix is estimated to reduce GHG emissions by 43-58 megatons over the 2021-2030 period. To achieve the 55% reduction as required per the coalition agreement, a further reduction of 12-36 megaton GHG is needed. Recently announced measures such as the adjustments to energy taxes, making social real estate more sustainable, and tailored agreements with large emitters are not yet included in this figure. These measures are expected to add an estimated reduction of around 5-6 megaton GHG, to bring the overall reduction to 41-52%.

Falling short of the stated ambition means the government will need to take additional steps to further reduce GHG emissions, for example by further detailing plans already announced or by announcing new measures. The government will analyse what available options could help achieve the 55% reduction. After publication of this analysis, around Spring 2023, the government will propose additional measures as part of the regular budgetary cycle in the first half of next year. EU-driven plans such as REPowerEU and Fit for 55 may also create additional reduction in due course.

2.2 Climate adaptation

Climate adaptation is aimed at improving adaptive capacity, strengthening resilience and reducing vulnerability. Roughly 60 percent of the Netherlands is prone to flooding, either from rivers or the sea. Hence, flood risk management is absolutely crucial to our existence, as it has been for centuries. The Netherlands has a long-standing experience with water management and strong institutions in place to face these challenges. The flood risk management system is continuously improved and honed taking into account the results of long-term climate scenarios modelled by the Royal Netherlands Meteorological Institute (*Koninklijk Nederlands Meteorologisch Instituut*, KNMI) and updated in seven-year intervals with the next update scheduled for 2023.

Apart from flood risks, the Netherlands is also experiencing the effects of climate change. The increasing number of heat waves in Europe, torrential rain and droughts provide new challenges, which are effectively addressed through the Delta Plan on Spatial Adaptation and the government-wide National Adaptation Strategy since 2016 and 2018 respectively. The Delta Programme focusses on three tasks to make the Netherlands climate-proof and water robust by 2050: flood risk management, fresh water supply and spatial adaptation. The programme consists of concrete investment and maintenance targets to consistently work towards this goal. In the past few years, significant steps have been taken through the Delta Programme to accelerate and intensify the approach to climate change adaptation and flood risk management. An average of € 1.25 billion a year has been earmarked for the Delta Fund up to 2032.

As the effects of climate change become more prominent all over the world, the Delta commissioner reiterated in his latest annual report (Delta Programme 2023) the importance of acting swiftly and that the time for freedom of action is over. In its response, the government endorsed the work done by the Delta commissioner, and stated it is working on additional policies and concrete measures to make sure the Netherlands will be climate-proof and water robust by 2050 (and beyond). That way the Netherlands remains the safest delta in the world – as it has been for many decades.

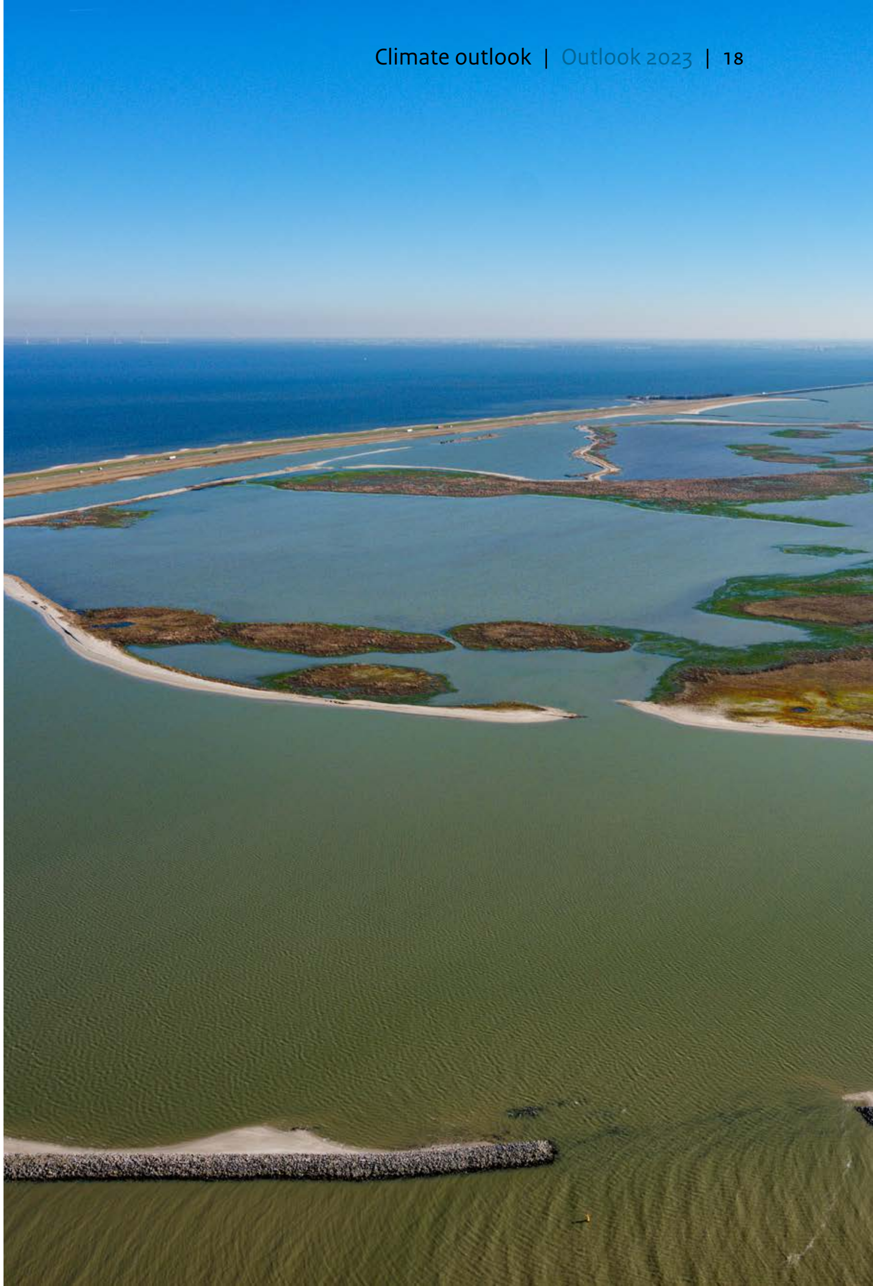
DSTA looking to issue a new Green bond in 2023

In the 2022 Outlook, the DSTA announced the reopening of the existing Green DSL 0.50% 15 January 2040. The reopening was done through the Dutch Direct Auction (DDA)-format on 14 June 2022. An amount of € 4.98 billion was raised during the auction, bringing the total outstanding amount to € 15.7 billion. This larger outstanding amount will help the liquidity of a bond favoured by buy-and-hold investors.

Accompanying this reopening, the initial 2019 Green Bond Framework was updated to take into account the various developments in the green bond market, most noticeably the publication of the first two delegated acts of the EU Taxonomy. The updated Green Bond Framework is the first framework of a sovereign issuer that so closely aligns with the EU Taxonomy. The independent second-party opinion provider Sustainalytics has concluded that the updated Green Bond Framework is credible and meaningful. The investment expenditure categories included in this Green Bond Framework are in line with the core elements of the Green Bond Principles from the International Capital Market Association (ICMA). In addition, the Green bond has been certified by the Climate Bonds Initiative.

For 2023, the DSTA is looking to launch a new Green 20-year DSL by means of a DDA. The Framework updated in 2022 will form the basis of this bond. The exact timing and size will be decided at a later stage in consultation with the DDA-advisors appointed for this DSL and our Primary Dealers.

In the near term, the DSTA would like to remain active within the green bond space and will therefore look into possibilities to further expand its green bond issuances. In addition, the DSTA will always be looking into exploring other types of issuances to be used in the future. The importance of the role of public issuers in developing new products does not need to be under-estimated, and the DSTA feels obliged to explore its role in this process.



Coordinated European response to energy challenges

In the aftermath of the Russian invasion of Ukraine on 24 February 2022, the European Union provided a number of coordinated actions to deal with energy-related challenges. Not only do these actions aim to reduce the dependency on Russian fossil fuels, but they also aim to support climate change mitigation. A broad set of measures has been implemented, ranging from safeguarding access to energy in winter, avoiding external influence on storage infrastructure, behavioral measures, digitalisation of the energy system and financial measures.

In September 2022, the Russian share of pipeline gas imports to the EU was 9% which is a strong decrease from 40% in April 2021. The Russian share of total gas imports shows a similar decrease from 45% in April 2021 to 15% in September 2022.

Responses in more in detail

- The REPowerEU-plan presented by the Commission on 8 March with further detailed plans announced on 18 May: aims to reduce the dependency on Russian fossil fuels as soon as possible by accelerating the transition to clean energy and bundling forces to reach a more resilient energy system, including the establishment of an EU Energy Platform. Given the desired transition to clean energy, the plan also amends the existing Fit for 55-package setting by e.g. increasing the headline 2030 target for renewables from 40% to 45%.
- Gas storage regulation proposal, presented on 23 March 2022 and adopted on 27 June 2022: raises the minimum storage level to at least 80% before the winter 2022/2023 and to 90% before the following winter periods; regulates access to gas storage reserves for member states who do not have storage facilities and imposes more strict supervision on storage operators.
- Gas demand reduction regulation proposal and plan (Safe Gas for a Safe Winter), adopted on 5 August 2022: sets a target of 15% voluntary reduction of gas use by member states between 1 August 2022 and 31 March 2023.
- Emergency measure on high electricity prices, political agreement reached on 30 September 2022: comprises a mandatory reduction of electricity consumption at peak hours; imposes a solidarity contribution on fossil fuel companies and sets a cap on market revenues for inframarginal generators.

3 Funding and issuance

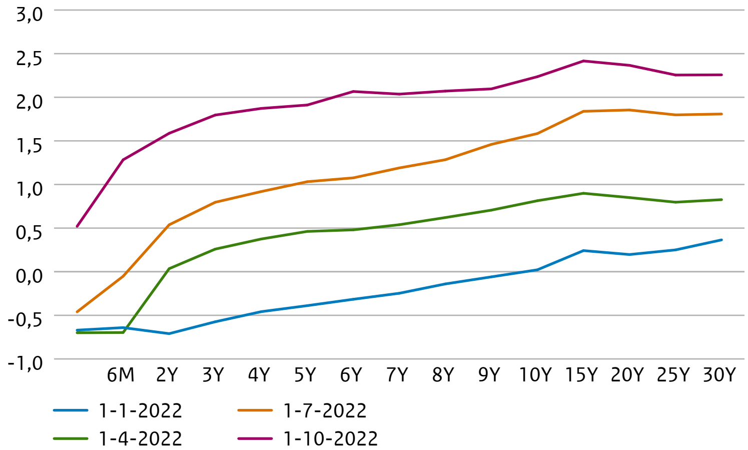
3.1 Looking back on funding in 2022

In December 2021 the DSTA estimated its preliminary funding need for 2022 to be an amount of € 74.5 billion. This estimate was surrounded by a high degree of uncertainty due to the development of the COVID-19 crisis and the economic recovery. Furthermore, the plans of the then new government were unknown at that time. It was announced that the capital market issuance would be approximately € 45 billion. Due to the stronger than expected economic recovery from the COVID-19 pandemic and higher tax revenues, the estimate of the funding need for the Dutch State decreased during the year to an amount of € 62.7 billion. Consequently, the call on the capital markets was revised slightly downwards to between € 40 and € 45 billion.

The DSTA continued to ensure liquidity across the curve by creating a balance between the call on the capital market and the money market in 2022. Issuances in 2022 have contributed to the DSTA's goal to lengthen the average maturity of the debt, swap and cash portfolio towards a minimum of eight years in 2025.

The interest rate environment for Dutch debt on both the capital and the money market changed rapidly in the course of 2022. Figure 6 shows the Dutch curve throughout the year with the yield curve rising from negative to positive in the first quarter and continuing to rise in the second and third quarter. While interest rates moved significantly during the year following market developments and monetary operations, the DSTA was able to obtain competitive auction results. The DSTA remained committed to its core values: transparency, consistency and liquidity in executing its funding plan while being flexible when needed.

Figure 6 - Dutch curve at the start of every quarter in 2022 (yield in %)



Source: Bloomberg, October 2022

Capital market issuance

The DSTA started off the year in January with the launch of the new DSL 0.00% 15 January 2026 through an MTS-auction. Including the non-comp option that was exercised in its entirety, an amount of € 5.41 billion[3] was raised at an average yield of -0.33%. Also in January the DSL 0.00% 15 January 2052 was reopened which raised € 1.98 billion. On 15 February the new 10-year benchmark bond, the DSL 0.50% 15 July 2032, was launched by way of a DDA. In this DDA an amount of € 5.95 billion was issued at a yield of 0.57%. At closing of the DDA, the bids in the book had reached € 19.8 billion, resulting in a bid-to-cover ratio of 3.34. Of the total amount allocated 77% went to real money accounts and 23% went to 'other' or so called fast money accounts. Furthermore, in March the DSTA reopened the DSL 0.00% 15 January 2029 and after consultation with its Primary Dealers the DSL 0.75% 15 July 2028 which raised a total amount of € 4.59 billion.

The DSTA announced in its Q2 Quarterly Outlook that several developments could have a substantial impact on the funding need, including higher energy prices and the Dutch coalition agreement. The exact impact of these developments on the Dutch economy and the budget was however still uncertain. Therefore no revision of the funding need for 2022 was presented in the Q2 Outlook. On 12 April the DSTA reopened the DSL 0.00% 15 July 2032 after the initial issuance earlier in the year, bringing the total outstanding amount to € 8.47 billion. Furthermore, in May the DSTA reopened both the DSL 0.00% 15 January 2026 and the DSL 0.00% 15 January 2052 which raised in total € 4.42 billion. In June the DSTA also had a grand reopening of the DSL Green 0.50% 15 January 2040. Because of the larger than usual auction size, this reopening took place by means of a DDA. An amount of € 4.98 billion at a

[3] Where in this paragraph the amount raised is mentioned, this includes the non-comp facility that can be exercised by the Primary Dealers. This facility is capped at 15% of the amount issued at the auction and when exercised increases the final volume of the capital issuance until 3 business days after the auction.

yield of 2.15% was raised in the DDA bringing the total outstanding amount of this Green DSL to € 15.69 billion. The final book consisted of bids amounting to € 13.87 billion, resulting in a bid-to-cover ratio of 2.78. Of the total allocated size 21% went to 'green real money' accounts, 48% to 'real money' accounts and 31% to 'other' accounts.

In the Q3 Quarterly Outlook the DSTA announced that the call on the capital markets was revised downwards to € 40 to € 45 billion. The main reason for this development was the decreased cash deficit due to the stronger than expected economic recovery from the COVID-19 pandemic and higher tax revenues due to increased levels of inflation. In the third quarter, the DSTA reopened the DSL 0.50% 15 July 2032 for the second time which raised € 2.3 billion bringing the total outstanding amount to € 10.75 billion. On 27 September a new 30-year DSL, the DSL 2.00% 15 January 2054, was launched by means of a DDA. This new bond raised € 4.95 billion at a yield of 2.33%. The final book consisted of bids amounting to € 16.69 billion, resulting in a bid-to-cover ratio of 3.37. Of the total amount allocated 73% went to real money accounts and 27% went to 'other' or so called fast money accounts.

The DSTA announced in its Q4 Quarterly Outlook that the expected funding need for 2022 was further decreased to € 62.7 billion. The main reasons for the lower funding need were higher than expected tax revenues and windfalls in expenditures for COVID-19. The call on the capital markets in 2022 remained at an amount of € 40 to € 45 billion. In October the DSTA reopened the DSL 0.00% 15 January 2029 which raised € 2.41 billion. Furthermore, in November the DSTA reopened the DSL 0.50% 15 July 2032 again, bringing the total outstanding amount to € 13.61 billion. Also, the DSTA reopened in November the DSL 0.00% 15 July 2031 which raised € 1.70 billion. In the end, the total capital market issuance in nominal terms in 2022 (up to and including November) was € 44.09 billion. The weighted average yield of the issuances in 2022 was 1.20%. This is a significant increase in comparison with the previous years as can been seen in figure 8. The actual cash inflow from these issuances however was around € 3 billion lower than the nominal amount, due to below par issuances.

Figure 7 - Cumulative capital market issuance in 2022 (€ billion)

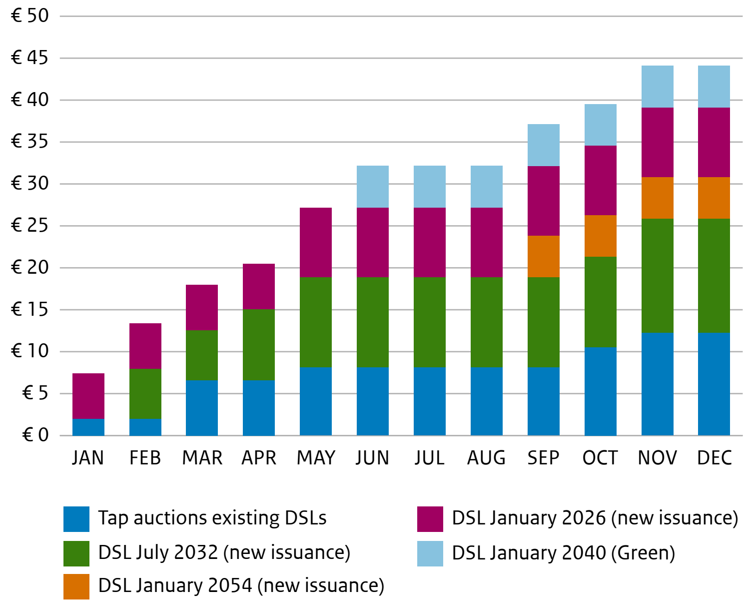
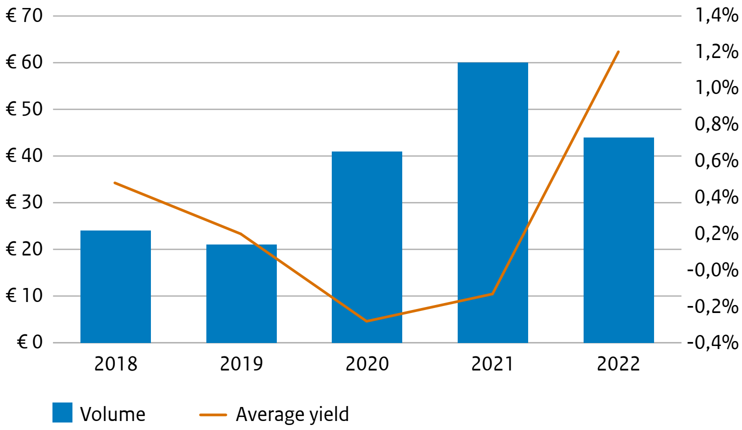


Figure 8 - Yearly average yield of capital market issuances 2018 – 2022 (€ billion)



Money market

The DSTA uses various funding instruments in the money market. Cornerstone of these instruments are the Dutch Treasury Certificates (DTC). The money market historically serves as a buffer when it comes to accommodating changes in the funding need throughout the year. The DSTA had regular money market issuances through its DTC programmes where auction dates typically contain both a shorter-dated programme and a longer-dated programme. DTC programmes were issued at negative yields until mid-2022 when interest rates became positive. Throughout 2022 the European Central Bank (ECB) has repeatedly increased the interest rates in order to dampen demand and guard against the risk of a persistent upward shift in inflation expectations. These increases have raised interest rates of the money market including those of the DTC.

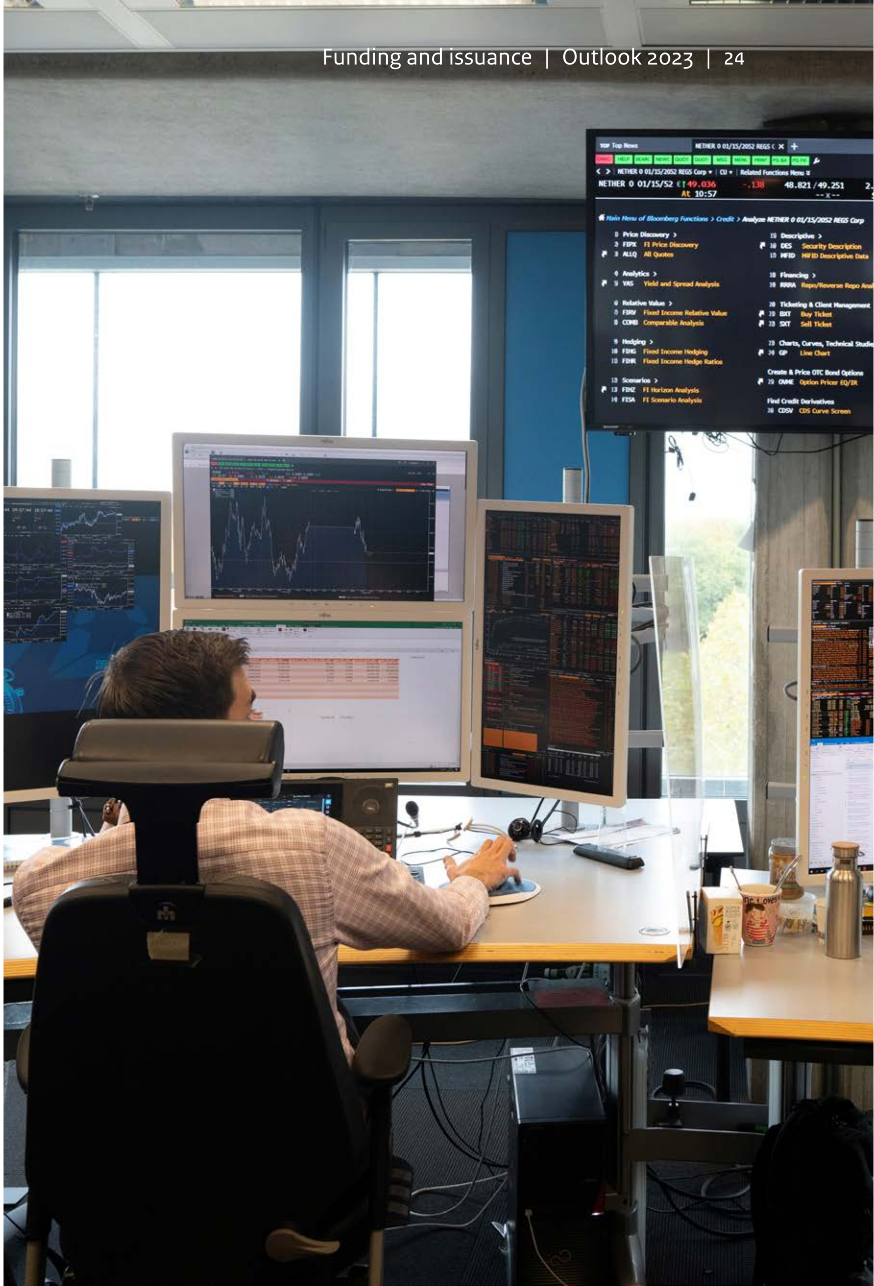


Figure 9 shows a slight decrease of the outstanding amount of DTCs over the course of 2022. Until 12 December 2022, the weighted average yield in the auctions was 0.19%. Compared with previous years this is a significant increase as can been seen in figure 10.

Figure 9 - Amounts outstanding in Dutch Treasury Certificates in 2022 (€ billion)

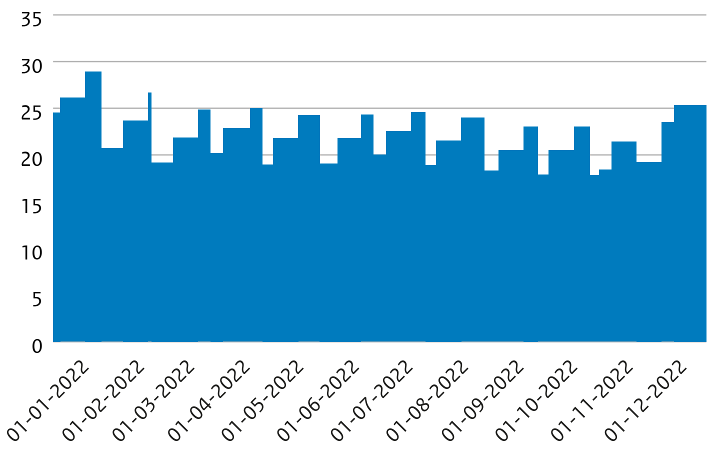
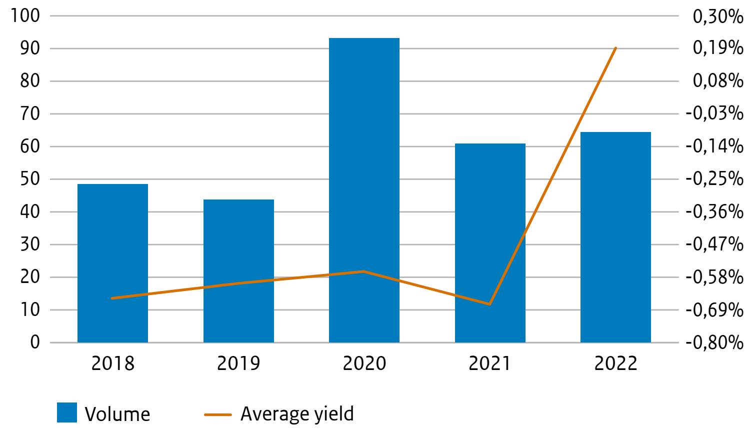


Figure 10 - Yearly average yield of money market issuances 2018 – 2022 (€ billion)



In addition to DTCs, the Global Commercial Paper programme continues to be an important instrument for the DSTA. The programme adds flexibility since maturity, currency of denomination and timing of the issuance can be tailored to specifically suit both the investors and the DSTA. Global Commercial Paper is issued as:

- Euro Commercial Paper (ECP), available for non-US investors and issued in euros, US dollars, British pounds, Swiss francs and Norwegian kroner;
- US Commercial Paper (USCP), available for US investors and issued in US dollars.

In 2022 (up to the end of November) the DSTA issued around € 41 billion in ECP and USCP, compared to € 39 billion in 2021, € 63 billion in 2020, € 108 billion in 2019 and € 180 billion in 2018. The majority of this year's issuance was in US dollars (45% of the total amount). The Global Commercial Paper programme, with different kinds of investors and appetite for different maturities, has proven to be of value to the DSTA and its investors.

3.2 Funding plan 2023

Funding need

The preliminary funding need for the DSTA in 2023 is estimated to amount to approximately € 100 billion. However, this estimate is surrounded by a high degree of uncertainty due to several factors that impact government finances, such as the cap on energy prices, projected inflation and a slowdown in economic growth.

The borrowing requirement for the DSTA consists of three main components. Firstly, it is determined by the redemptions of long-term debt instruments. In 2023, there are two maturing DSLs which need to be refinanced for an amount of € 31.6 billion. Secondly, short-term debt instruments outstanding at the end of 2022 will roll over to 2023 and thus need to be refinanced. The net money market ultimo 2022 (being the outstanding short-term debt instruments minus cash deposits held at the central bank and in the market) is estimated to amount to € 36.3 billion. The expected cash deficit for 2023 being an amount of € 33.6 billion makes up the third main component of the borrowing requirement. Given the current uncertainty regarding one specific aspect of the budget, a further breakdown is provided for the cash deficit. In the 2023 Budget Memorandum the deficit was estimated at € 26.3 billion. In addition, an indicative amount of € 7.3 billion is taken into account as the budgetary impact in 2023 of the energy price measures including an additional price adjustment for the (semi)collective sector because of inflation. The energy price measures, including a temporary price cap, were announced after the publication of the Budget Memorandum in September 2022. This increases the aggregate cash deficit for 2023 to € 33.6 billion. Combined, these amounts result in a preliminary borrowing requirement for 2023 of approximately € 100 billion, as illustrated in Table 3. The budgetary impact of the energy price measures is dependent on the development of the energy prices and the actual energy need in this period and therefore is extremely uncertain. By no later than June 2023, the government will decide to what extent the energy price cap and the inflation adjustment are covered under the existing budget in 2023.

Table 3 - Estimated borrowing requirement for 2023

Estimated borrowing requirement		Amount (€ billion)
Capital market redemptions 2023		31.6
Net money market ultimo 2022 (excluding cash collateral)		36.3
Aggregate cash deficit 2023*		33.6
Consisting of:		
Deficit based on 2023 Budget Memorandum	26.3	
Indicative impact energy price measures and price adjustment for (semi)collective sector	7.3	
Total borrowing requirement 2023		**101.5**

* A cash deficit is shown as a positive number as it increases the total borrowing requirement

At the beginning of January 2023 we will communicate a first update of the borrowing requirement to reflect the net money market ultimo 2022.

Distribution between capital and money market issuances

The DSTA continues to ensure liquidity across the curve by creating a balance between the call on the capital and the money markets in 2023. Issuances in 2023 will continue to contribute to the DSTA's goal to lengthen the average maturity of the debt, swap and cash portfolio towards a minimum of eight years in 2025. The DSTA intends to have the average maturity of the portfolio at the end of 2023 at a minimum level of 7.9 years. Given the estimated borrowing requirement of approximately € 100 billion,

the DSTA foresees issuances of DSLs on the capital market for an approximate (nominal) amount of around € 50 billion. If the funding need turns out to be higher or lower than currently estimated, the DSTA could increase or reduce the call on both the money and capital markets.

Capital market issuance in 2023

The aforementioned call on the capital market of around € 50 billion (in nominal amount) will consist of the following issuances (Table 4):

1. A new 10-year benchmark bond, the DSL 15 July 2033, will be launched by means of a DDA in February 2023. The DSTA is committed to bring the outstanding volume of this bond to a minimum of around € 12 billion by the end of the year. If there is sufficient market appetite, the size of this new benchmark bond may also further increase. The exact timing of the launch will be decided upon in consultation with the DDA-advisors appointed for this DSL and the Primary Dealers.
2. The DSTA will launch a new Green 20-year DSL by means of a DDA. The in 2022 updated Green Bond Framework will form the basis for the allocation of proceeds of this bond. The exact timing and size will be decided at a later stage in consultation with the DDA-advisors appointed for this DSL and the Primary Dealers.
3. A new 7-year benchmark bond will be launched through the MTS platform (which is also used for tap auctions). The DSTA is committed to

increase the outstanding volume of this bond to around € 12 billion within 18 months after the initial issuance. This means the DSTA intends to use a slightly longer period to fulfil this commitment compared to the regular 12 months for bonds with a maturity of less than 10 years.

4. The DSTA will reopen the DSL 15 January 2026 in the first half year of 2023. On 11 January 2022, the DSTA launched the DSL 15 January 2026. The outstanding amount in this bond currently stands at € 8.3 billion. The DSTA is committed to increase the outstanding volume of this bond to a size of around € 12 billion within 18 months after the initial issuance.
5. In order to be able to accommodate market demand and in line with the DSTA's goal to ensure and promote liquidity across the curve, the DSTA opts to leave an amount of € 21 billion of the call on the capital market undetermined for now. The DSTA has the option to reopen DSLs in all maturity buckets, irrespective of the already existing outstanding volumes. Moreover, the DSTA could also decide to issue more than the indicated volumes in the benchmark DSLs that are to be launched in 2023 and in the DSL 15 January 2026. The DSTA will consult the Primary Dealers on the choices regarding these issuances.

Due to the possible introduction of new so-called collective action clauses (CACs), the DSTA may update the terms for DSLs which are newly issued in 2023. The exact introduction date of the new CACs is currently not clear as it depends on the full ratification of the European Stability Mechanism Treaty Amendments in all Eurozone Member States. The introduction was expected to take place in 2022, however the full ratification process has not been completed in all Member States as of the publishing date of this Outlook. As and when a new DSL is launched to which the new clauses apply, the DSTA will indicate in the accompanying conditions which CACs apply to that DSL. See our website English.dsta.nl/subject/cacs for further information on the clauses.

Table 4 – DSL issuance in 2023

DSL issuance	Indicative amounts (€ billion)
New 10-year DSL 2033	12
New Green 20-year DSL	5
New 7-year DSL	8
Reopening DSL Jan 2026	4
DSL - To be determined	21
Total DSL funding	**50**

Traditionally, DSL auctions are scheduled on the second and fourth Tuesday of the month. In the first quarter of 2023 all six auction dates will be used. The DSTA will start the year with a tap auction of the DSL 15 January 2026 on 10 January 2023 with a targeted volume of € 2.5 to € 3.5 billion. Moreover, the DSTA will launch the new 10-year DSL (the DSL 15 July 2033) by means of a DDA in February. The exact date of the auction will be announced at a later stage.

All other possible issuance dates in this period will be used to reopen existing DSLs. Due to the increased market volatility the exact details of the DSLs to be reopened will be decided in consultation with our Primary Dealers. The details will be announced on the Wednesday prior to the issue dates. Issuance calendars for the remainder of the year will be published shortly before the start of a new quarter.

Table 5 – DSL calendar for the first quarter of 2023

Auction date	Details	Target volume (€ billion)
10 January 2023	Tap of the DSL 15 January 2026	2.5 - 3.5
24 January 2023	Tap of an existing DSL	To be announced*
2 auctions in February 2023	*The following bonds are scheduled to be launched in February 2023*	
	New 10-year bond: DSL 15 July 2033	4 - 6
	Tap of an existing DSL	To be announced*
14 March 2023	Tap of an existing DSL	To be announced*
28 March 2023	Tap of an existing DSL	To be announced*

* Target volume and other details will be announced at a later stage, but no later than the Wednesday prior to the auction date (t-6).

Money market issuance in 2023

The DSTA will regularly issue DTCs on the money market. The schedule for 2023 follows a similar pattern as in previous years, where auction dates typically contain both a shorter-dated programme and a longer-dated programme. The DSTA holds the right to make any adjustments to the calendar warranted by market developments. These will be announced in a timely manner by the DSTA.

Auctions are held on the first and third Monday of the month. The only exception is the first auction in January, which has been postponed by one week due to its proximity to New Year's Eve.

Similar to previous years, there will be no DTC-programme maturing in December 2023 as this appears to be a less attractive programme for many market participants. Moreover, to better meet investor demand at month end, DTC programmes do not mature on the last business day of the month, but the second-to-last business day. This means for example that the June 2023 DTC programme will mature on 29 instead of 30 June.

Table 6 – DTC calendar for the first quarter of 2023

Auction date	Settlement date	Shorter-dated programme	Longer-dated programme
9 January 2023	11 January	30 March	30 May
16 January 2023	18 January	27 April	29 June
6 February 2023	8 February	30 May	28 July
20 February 2023	22 February	27 April	28 July
6 March 2023	8 March	29 June	30 August
20 March 2023	22 March	30 May	30 August

Note: announcement of all auction details is on the Wednesday prior to the auction date (t-5).

Resilience and Recovery Facility

On 8 September 2022 the Dutch recovery and resilience plan (RRP) received a positive assessment from the European Commission, after which the plan was adopted during the ECOFIN Council on 4 October 2022. The Dutch RRP is a national program of reforms and investments that contributes to a more resilient, sustainable and innovative Dutch economy. The plan comprises 21 reforms and 28 investment measures aimed at the government's priority themes, such as housing and the labour market. RRP funds will also be invested in digital transformation, education and healthcare.

The Recovery and Resilience Facility (RRF) was instituted by the European Commission to help the EU emerge stronger and more resilient from the COVID-19 pandemic. Under the RRF, Member States could apply for loans and grants. The Netherlands formally submitted its RRP for a grant on 8 July 2022. Based on its change in real GDP in 2020 and 2020-2021, an amount of € 4.7 billion has been reserved for the Netherlands. The Netherlands aims to submit a first payment request of € 1.4 billion during the third quarter of 2023.

Nearly half of the investments contribute to the green transition and 44% of the investments contribute to the REPowerEU objectives pursuant to which the European economy becomes more sustainable and less dependent on Russian fossil fuels. Of the investments, 26% will support the digital transition. Additionally, the Dutch RRP substantially addresses the European Commission's country specific recommendations the Netherlands received in 2019, 2020 and 2022. All reforms and investments have to be implemented by August 2026. The measures in the Dutch RRP are divided over six categories that reflect political priorities for the Netherlands. See below for an exemplary measure per priority.

Overview of priorities and example projects

1. Promote the green transition: Green power of hydrogen (investment, € 68.5 million) aims to accelerate the application of hydrogen in amongst others the chemical industry, transport and heavy industry.
2. Accelerate the digital transformation: European Rail Traffic Management System (investment, € 149 million) aims to replace the current train management safety system by the new, digital European standard. The instalment of ERTMS enables more cross-border railway investments.
3. Improve the housing market and make the built environment more sustainable: Housing construction impulse (investment, € 538 million) aims to accelerate the construction of affordable houses in the Netherlands.
4. Strengthen the labour market, pensions and future-proof education: Disability insurance for self-employed (reform) aims to make disability insurance obligatory for the self-employed.
5. Strengthen the public health sector and pandemic readiness: Extension intensive care (investment, € 91 million) aims to extend the intensive care capacity in 67 hospitals by educating nursing personnel and making architectural adaptations.
6. Address aggressive tax-planning and money laundering: Anti-money laundering policy (reform) aims to combat money laundering by i) raising barriers for criminals to launder money, ii) increasing the effectiveness of oversight, iii) strenghtening investigation and prosecution.

3.3 Policy framework debt management 2020-2025

The purpose of the DSTA's policy framework on debt management is to finance debt at the lowest possible cost at an acceptable risk to the budget. The 2020-2025 framework will be evaluated in its entirety in 2026 and will be internally reviewed every other year, allowing for adjustments if necessary. The first internal review was carried out in 2021 and the second internal review will be conducted in 2023. With the 2020-2025 framework, the DSTA has allowed for more flexibility in order to respond to changing circumstances, whilst adhering to its core principles of consistency, transparency and liquidity.

Interest rate risk indicators

The policy framework contains two interest rate risk indicators:

- The average maturity of the debt portfolio, which is defined as the average time to refixing interest rates of debt, swaps and cash. This average maturity will be extended to a minimum of 8 years by the end of 2025.
- The 12-month refixing amount, which is defined as the nominal amount of debt, swaps and cash on which interest rates need to be refixed within the next twelve months. The annual average of this amount cannot exceed 25% of the State debt.

The average maturity of the debt portfolio limits the cumulative interest rate risk over all future years, contributing to multi-annual stability of interest rate costs. Additionally, the cap on the 12-month refixing amount prevents too much concentration of interest rate risk in single years.

Table 7 – Targets and realisations of the DSTA's risk indicators in the 2020-2025 framework

	Realisation 2022 (forecast)	Target 2023
Average maturity (end of year)	8.1	A minimum of 7.9 years
12-month refixing amount (% State debt)	16.0%	At most 25%

Since the introduction of the 2020-2025 framework in 2019, the funding need as well as the level of debt have significantly increased due to COVID-19. Despite these challenges, the DSTA has been able to finance all the necessary amounts while operating within the interest risk limits. Over 2022, the average maturity of DSTA's portfolio lengthened by about 0.2 years from 7.9 years ultimo 2021 to an expected 8.1 years ultimo 2022.

The DSTA annually defines its yearly maturity target based on market circumstances, the development of the funding need and the debt composition. The average maturity should be a minimum of 8 years by 2025. The DSTA aims to reach a minimum average maturity of 7.9 years by the end of 2023 because of the uncertainty regarding the development of the funding need.

In 2020 and 2021, the DSTA has been unwinding receiver swaps in order to decrease the 12-month refixing amount. The DSTA also prematurely terminated a limited amount of residual receiver swaps in 2022 to phase out its legacy receiver swap portfolio. The DSTA expects to continue unwinding receiver swaps in 2023.

4 Primary dealers and secondary markets

4.1 Primary dealers and commercial paper dealers in 2022 and 2023

Since 1999, the DSTA uses Primary Dealers (PDs) for the promotion and distribution of DSLs and DTCs in both the primary and secondary market of Dutch government debt. PDs are selected for a period of one year and are bound by the PD conditions. First and foremost, PDs have the exclusive right to participate in all auctions of the DSTA, including DDAs, tap auctions and DTC tenders. In addition, access to the DSTA's repo facility for DSLs and DTCs is reserved to PDs. At the same time, PDs are obliged to provide continuous bid and offer prices for Dutch government securities and must report periodically on their secondary market activities. In case of severe misconduct by a PD, the DSTA is entitled to suspend the rights of this PD. Residual short-term funding needs are met through the issuance of Commercial Paper (CP). For these issuances, the DSTA uses Commercial Paper Dealers (CPDs). CPDs are divided into Euro Commercial Paper and US Commercial Paper Dealers.

Developments and ranking in 2022

PDs and CPDs are selected based on their performance in the relevant markets for Dutch State securities in previous years. In addition, the DSTA analyses the business plans and ambitions submitted by the (prospective) dealers. The DSTA ranks its PDs based on a duration weighted system for primary issuance. Weighting factors are assigned in relation to the DSL maturities. The DSTA believes that a weighted issuance ranking provides the right incentives for PDs to achieve a balanced demand for DSLs across different maturities. Furthermore, the weighted issuance method optimally reflects the performance and commitment of a PD vis-à-vis the DSTA, given that bonds with a higher duration entail more risk for a financial institution and face more challenging market circumstances than shorter-dated bonds.

In contrast, DTC rankings are based on unweighted primary market volumes in euro equivalents. Table 8 shows this year's top performers in DSLs and DTCs. In the ECP and USCP markets Rabobank performed best in 2022.

Table 8 – Top Performers in the DSL and DTC market in 2022

Top 5 PDs for DSLs in 2022	
1	ABN AMRO Bank
2	Barclays
3	Citigroup
4	Jefferies
5	Rabobank
Top 5 PDs for DTCs in 2022	
1	Rabobank
2	ABN AMRO Bank
3	Goldman Sachs
4	Barclays
5	Bank of America

Dealer selection and ranking 2023

In 2023 the composition of our counterparties will remain largely consistent with previous years. The most important change is that JP Morgan will join both the DSTA's network of Primary Dealers and Commercial Paper Dealers (ECP and USCP) in 2023. As a result, the DSTA presents the following financial institutions as Primary Dealer and Commercial Paper Dealer for 2023.

Table 9 – List of the DSTA's dealers in 2023, in alphabetical order

Name Bank	PD	ECP	USCP
ABN AMRO Bank	X	X	
Bank of America	X		
Barclays	X	X	X
Bred Banque		X	
Citigroup	X	X	X
Goldman Sachs	X		
HSBC Continental Europe	X		
ING Bank		X	
Jefferies	X		
JP Morgan	X	X	X
NATIXIS	X		
NatWest Markets	X	X	
Nomura	X		
Nordea	X		
Rabobank	X	X	X

The DSTA will continue to use a duration weighted system for primary issuance to rank its PDs in 2023. Next year's weighting factors for the different maturity buckets are shown below.

Table 10 – DSL weighting factors for 2023 (per maturity bucket)

DSL maturing in ...	Weighting factor
2024 - 2026	3
2027 - 2029	5
2030 - 2032	7
2033 - 2033	10
2034 - 2040	12
2041 - 2047	17
2048 and beyond	20

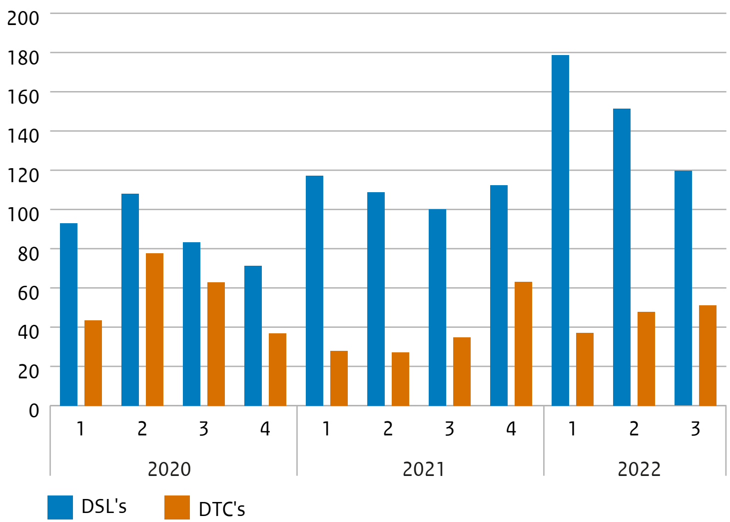
4.2 Liquidity and secondary markets

Secondary market transactions

The DSTA requires Primary Dealers to provide monthly data on their secondary market activity in Dutch securities. This transaction data contains information on turnover, maturity, type of counterparty, region and trading platform. Although the data over 2022 only covers trades by the DSTA's Primary Dealers for the first 9 months, the data gives a general overview of trends in the secondary market. Secondary market trade data is also made available on the DSTA's website.

The DSL and DTC turnover volume shows an increase of 37.9% and 51.3% respectively. In 2022 the turnover volumes in the secondary markets were € 449.8 billion on an aggregate level for DSL and € 136 billion for DTC in the first three quarters of the year as can be seen in figure 11. In comparison, in the same period last year, the DSL turnover volume was € 326.2 billion and DTC volume was € 89.9 billion.

Figure 11 - Quarterly turnover for DTC and DSL (€ billion)

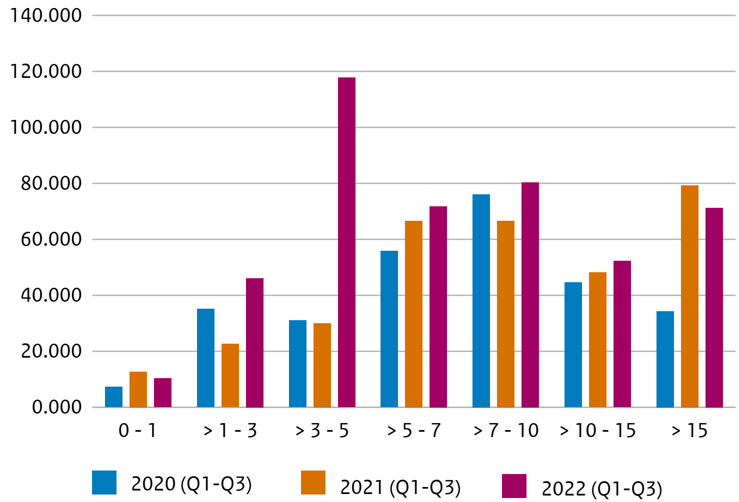


Source: DSTA Secondary Market Trade Reports

In 2021 the secondary market turnover in DSLs was higher compared to 2020, which was caused by the large increase in DSL issuances in 2021. For 2022, the DSL issuances on the capital market were in accordance with DSTA's goal to lengthen the average maturity of the debt portfolio to a minimum of eight years by 2025. When using these turnover figures as an indicator for the trading liquidity, there is a significant increase observable compared to last year.

Figure 12 shows data on DSL turnover in the secondary market by residual maturity. In order to compare the activity in consecutive years, the turnover total for each year is based on the first three quarters of the year. The steep increase in DSL turnover in 2022 is partially due to the high secondary market activity in the >3-5 year maturity bucket. The increase in this bucket can be explained by the new issuance of the DSL 15 January 2026.

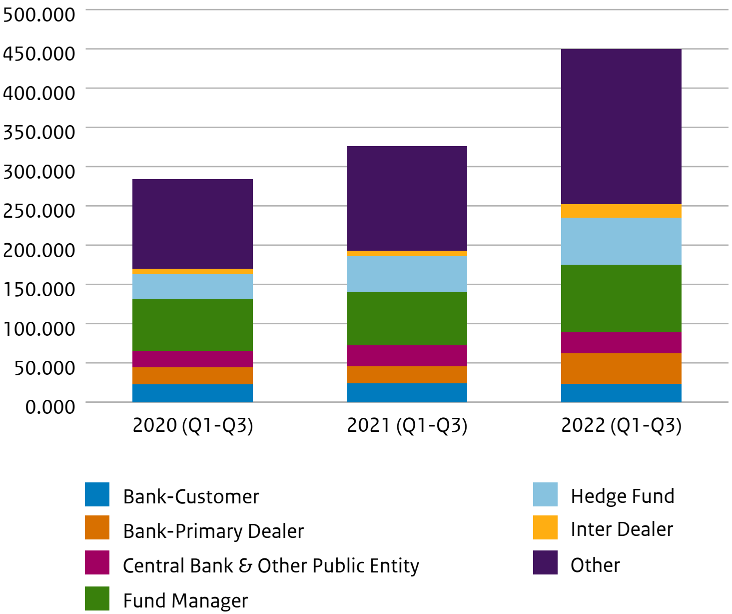
Figure 12 - Secondary market DSL turnover by residual maturity (€ billion)



Source: DSTA Secondary Market Trade Reports

Figure 13 presents the reported DSL turnover by investor type. There are no major differences in the turnover distribution among the investor categories compared to last year, despite the increase of 37.9% in DSL turnover in 2022 compared to 2021. In 2022 the category "Other"[4] represents 44% of all DSL turnover, whereas in 2021 this was 40%. In 2022, investor type "Inter Dealer Broker" makes up 39% of category "Other", which is an increase of 50% compared to 2021.

Figure 13 - Data on DSL turnover by investor type

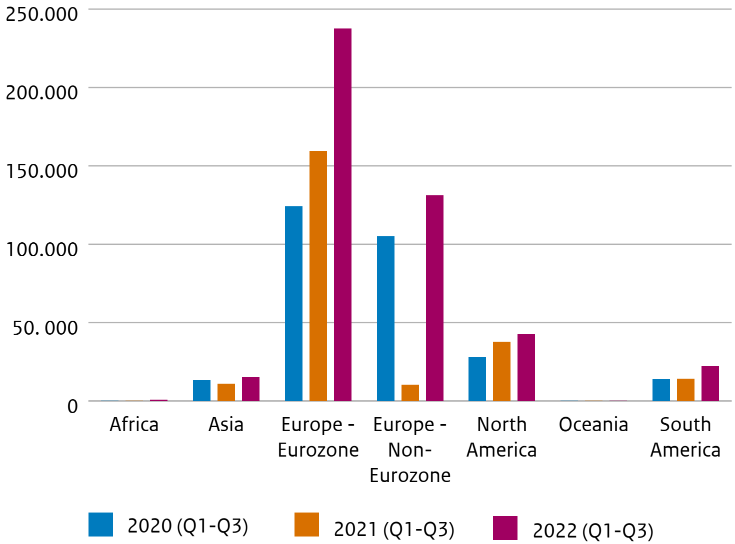


Source: DSTA Secondary Market Trade Reports

A geographical breakdown of secondary market turnover volumes, including inter-dealer transactions, is shown in figure 14. Like previous years the Eurozone made up most of the secondary market activity, followed by the non-Eurozone European countries. The latter category mainly consists of trading between Primary Dealers and Fund Managers, Hedge Funds and Inter Dealer Brokers situated in the United Kingdom.

The increase in secondary market turnover can mostly be attributed to activity in the Eurozone. Last year there was a slight decrease in turnover for non-Eurozone European countries, however, due to the increase in total turnover in 2022 this category also saw an increase of 26.4% in turnover compared to last year.

Figure 14 - Geographical breakdown of secondary market turnover (€ billion)



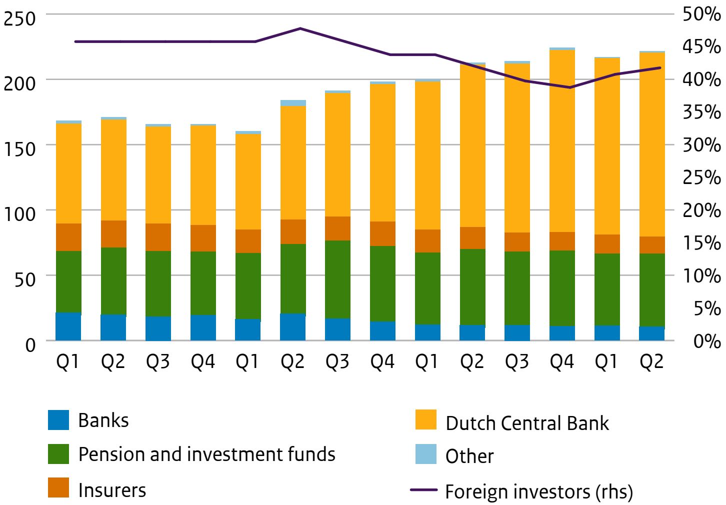
Source: DSTA Secondary Market Trade Reports

[4] The category "Other" contains the following investor types: Corporate, Debt Management Office, Insurance Company, Inter Dealer Broker, Pension Fund, Retail and Bank Connected Entity.

Holdings of Dutch government securities by investor type

The Dutch Central Bank (*De Nederlandsche Bank*, DNB) publishes quarterly data on Dutch government securities holdings. The data contains information on total investor holdings and holdings per residual maturity. Figure 15 shows holdings of Dutch government securities split between domestic investors (stacked bars) and foreign investors (dark blue line). Domestic investors are further divided into various categories. Eligible securities include DSLs, DTCs and ECP.

Figure 15 - Holdings by domestic (lhs, € billion) and foreign investors (rhs) of Dutch government securities



Source: DNB, Dutch government securities holdings data, November 2022

In relation to the domestic investors, there is a trend observable of increased holdings by DNB. Up until the second quarter of 2020 these figures were around 25% on a quarterly basis. This steadily increased over the year 2021, to reach 37.5% in the second quarter of 2022. This is to a large extent the consequence of the PSPP and PEPP buying program of the ECB. Due to a policy change for PSPP in July 2022, the ECB decided to stop net purchases and only reinvest the redemptions. For PEPP this decision was already taken in December 2021 with effect from March 2022. Therefore it is expected that the percentage of holdings by DNB will no longer increase in the coming periods.

Market liquidity is and remains an important topic for the DSTA. The DSTA continues to stay in close contact with its Primary Dealers to monitor if ECB/DNB buying is negatively influencing the liquidity in the market. Where appropriate and possible the DSTA will take measures to promote market liquidity of its securities.

Pension funds liquidity and bond market stress

This September, UK gilts markets came under significant stress due to large sales of long-dated gilts by UK pension funds. UK pension funds have extensive derivative positions to hedge the interest rate exposure of their defined benefit plans. These positions decreased in value after the announcement of the 'mini-budget' triggered a rise of UK gilt yields. The rate increase led to margin calls on the derivative position of pension funds and they had to sell their longer dated gilts (regular and inflation-linked) to obtain liquidity and meet these calls. This in turn led to further declines of bonds prices causing a negative cycle of higher rates, volatility and lower liquidity.

The Netherlands also has a large pension fund sector with defined benefit schemes and total assets under management of around € 1.4 trillion, comparable to the UK. However the Dutch pension sector is more resilient to a UK style sell off of Dutch bonds due to a number of factors.

First of all, Dutch pension funds do not use interest rate derivatives to the same extent as their UK counterparts. On average Dutch pension funds cover only 30% to 70% of the interest rate risk, compared to 85% in the UK. Secondly, Dutch pension funds have large liquidity buffers. Dutch regulation requires pension funds to have enough buffers to absorb an interest rate shock of 50 basis points over 48 hours and many pension funds maintain more prudent liquidity buffers than these minimum requirements. No comparable liquidity requirement exists for UK pension funds. Thirdly, Dutch pension funds have a more diversified portfolio. Unlike the UK where the bond holdings of pension funds are concentrated in gilts, Dutch pension funds hold different kind of euro area sovereign bonds in their portfolio. Therefore in case of a sudden liquidity need a sell off will be spread out across the larger euro area bond market (sized at around € 10 trillion) and will not be concentrated to Dutch bonds. This mitigates the negative price effect of bond sales.

Statistical appendix

The information presented below reflects the situation at 30 November 2022, unless otherwise indicated. Please see our website for the latest statistics.

1 Changes in long-term debt in 2022

In thousands of euros

Position as at 31 December 2021		342,399,720
New issues in 2022		
Public bonds	44,085,935*	
Private placements	0	

* Including non-comp exercised in relation to the DSL 2031 reopened on 29 November,

Redemptions in 2022		
Regular redemptions		
Public bonds	30,571,259	
Private placements	30,989	
Early redemptions		
Public bonds	172,174	
Private placements	12,174	
Position as at 30 November 2022		**355,699,059**

2 Interest rate swaps

Position as of 30 November 2022, in millions of euros

Bucket (year of maturity)	Net nominal amount	Pay or receive (net)
2022	285	Pay
2023	6,107	Receive
2024	4,072	Receive
2026	116	Receive
2027	750	Receive
2028	680	Receive
2033	500	Receive
2035	1,000	Receive
2036	150	Receive
2037	635	Receive
Net total	**13,725**	**Receive**

3 Key figures on individual bonds in 2022

In thousands of euros

	Total	Issues	Redemptions	Total	ISIN code
	31 December 2021			30 November 2022	
0.00 pct DSL 2016 due 15 January 2022	15,380,112		15,380,112		NL0011896857
2.25 pct DSL 2012 due 15 July 2022	15,252,147		15,252,147		NL0010060257
3.75 pct DSL 2006 due 15 January 2023	4,263,000			4,263,000	NL0000102275
7.50 pct DSL 1993 due 15 January 2023	8,240,127			8,240,127	NL0000102077
Principal 15 January 2023	1,565,000			1,565,000	NL0000103000
1.75 pct DSL 2013 due 15 July 2023	17,607,963		100,000	17,507,963	NL0010418810
0.00 pct DSL 2017 due 15 January 2024	15,378,277			15,378,277	NL0012650469
2.00 pct DSL 2014 due 15 July 2024	17,415,132			17,415,132	NL0010733424
0.25 pct DSL 2015 due 15 July 2025	19,925,159			19,925,159	NL0011220108
0.00 pct DSL 2022 due 15 January 2026		8,303,000		8,303,000	NL0015000QL2
0.50 pct DSL 2016 due 15 July 2026	18,964,051			18,964,051	NL0011819040
0.00 pct DSL 2020 due 15 January 2027	15,762,000			15,762,000	NL0015031501
0.75 pct DSL 2017 due 15 July 2027	15,380,926			15,380,926	NL0012171458
5.50 pct DSL 1998 due 15 January 2028	13,028,814		401	13,028,413	NL0000102317
0.75 pct DSL 2018 due 15 July 2028	14,626,941	2,500,000		17,126,941	NL0012818504
0.00 pct DSL 2021 due 15 January 2029	8,071,000	4,511,000		12,582,000	NL0015000LS8
0.25 pct DSL 2019 due 15 July 2029	12,215,587			12,215,587	NL0013332430
0.00 pct DSL 2020 due 15 July 2030	14,038,462			14,038,462	NL0014555419
0.00 pct DSL 2021 due 15 July 2031*	13,359,805	1,705,000		15,064,805	NL00150006U0
0.50 pct DSL 2022 due 15 July 2032		13,615,815		13,615,815	NL0015000RP1
2.50 pct DSL 2012 due 15 January 2033	15,507,900			15,507,900	NL0010071189

	Total	Issues	Redemptions	Total	ISIN code
	31 December 2021			**30 November 2022**	
4.00 pct DSL 2005 due 15 January 2037	17,977,427			17,977,427	NL0000102234
0.00 pct DSL 2021 due 15 January 2038	7,992,052			7,992,052	NL0015000B11
0.50 pct DSL 2019 due 15 January 2040	10,708,004	4,982,366		15,690,370	NL0013552060
3.75 pct DSL 2010 due 15 January 2042	18,839,910			18,839,910	NL0009446418
2.75 pct DSL 2014 due 15 January 2047	20,510,187			20,510,187	NL0010721999
0.00 pct DSL 2020 due 15 January 2052	10,108,724	3,515,000		13,623,724	NL0015614579
2.00 pct DSL 2022 due 15 January 2054		4,953,754		4,953,754	NL00150012X2
2 1/2 pct Grootboek	8,321		8,321		NL0000006286
3 pct Grootboek	2,367		2,367		NL0000004802
3 1/2 pct Grootboek	85		85		NL0000002707
	342,129,481	**44,085,935**	**30,743,433**	**355,471,983**	

* Including the non-comp facility which has been exercised until 2 December 2022.

4 Short-term debt and €STR swaps in 2022

In millions of euros

Key figures of T-bills	Total	Issues	Expirations	Total	ISIN code
	31 December 2021			30 November 2022	
DTC 2022-01-28	8,230		8,230		NL0015000JL7
DTC 2022-02-25	7,480		7,480		NL0015000KU6
DTC 2022-03-30	4,620		4,620		NL0015000M00
DTC 2022-04-28	3,170	2,850	6,020		NL0015000N82
DTC 2022-05-30	1,050	4,110	5,160		NL0015000OS2
DTC 2022-06-29		4,260	4,260		NL0015000QE7
DTC 2022-07-28		5,650	5,650		NL0015000QQ1
DTC 2022-08-30		5,680	5,680		NL0015000SD5
DTC 2022-09-29		5,180	5,180		NL0015000SI4
DTC 2022-10-28		5,210	5,210		NL0015000U91
DTC 2022-11-23		6,150	6,150		NL0015000VR9
DTC 2023-01-30		6,890		6,890	NL0015000YB7
DTC 2023-02-27		5,450		5,450	NL00150010N7
DTC 2023-03-30		4,460		4,460	NL00150012C6
DTC 2023-04-27		1,180		1,180	NL00150015I6
DTC 2023-05-30		1,270		1,270	NL00150017E1
	24,550	**58,340**	**63,640**	**19,250**	

Commercial Paper	Total	Issues	Expirations	Total
	31 December 2021			**30 November 2022**
CP EUR	0	17,436	15,578	1,858
CP USD	1,587	16,599	8,873	9,313
CP GBP	0	7,459	2,064	5,395
CP CHF	0	0	0	0
CP NOK	0	0	0	0
	1,587	**41,494**	**26,515**	**16,566**

Other short-term debt	Total	Issues	Expirations	Total
	31 December 2021			**30 November 2022**
Deposit borrow	0	107,908	106,818	1,090
Deposit lend	0	-73,445	-73,445	0
Deposit borrow USD	0	386	143	243
Eurex repo	0	-4,342	-4,342	0
Buy Sell Back	0	-1,627	-1,627	0
Sell Buy Back	12	58,706	58,392	326

€STR swaps position as of 30 November 2022		
Bucket (year of maturity)	**Net nominal amount**	**Pay or receive (net)**
2022	0	
2023	0	

Photo captions

1

By continuously monitoring conditions and adjusting course accordingly, a sailboat can even sail against the wind. Any plan made beforehand must be adapted to the prevailing circumstances in order to arrive at the destination. (p. 1)

2

As the pressure on healthcare mounts in the future, providers can innovate in this new world by investing in smart technologies. This photo pictures Pepper, a friendly robot at the Canisius Wilhelmina hospital, that has been designed for social interaction. (p. 3)

3

Pole vaulters are a literal depiction of agility and elasticity; these athletes require exceptional dexterity to succeed in their sport. Dutch pole vaulting has its origins in the countryside, where the need arose to jump easily over ditches between pastures. (p. 5)

4

As our world markets becomes more connected and interdependent, nobody can know for certain what the future holds. The Dutch State Treasury Agency will stay alert to worldwide changes in order to be able to identify and adapt to future challenges. (p. 6)

5

The Ballona Creek Trash Interceptor is a solar powered collector developed by the Dutch start-up The Ocean Cleanup. In this pilot program, run in Los Angeles, the craft prevents floating ocean plastic from drifting into Marina Del Rey. Tackling climate challenges requires novel solutions and constant innovation. (p. 9)

6

The RetroFuture exhibition at the Evoluon in Eindhoven encourages visitors to develop a more agile mindset, by inviting them into the experiences of future thinkers, dreamers and artists through the fields of design, art, science and film. (p. 10)

7

The Juliana street in the city of Leiden is an example of a greening neighbourhood that has been organised to be resistant to climate change. Biodiverse foliage has been planted as well as absorbent paving in order to prevent desiccation and subsidence of the land. (p. 14)

8

The world's first floating farm has been realized in Rotterdam. With its focus on circularity, sustainability, innovation and animal welfare, this farm rises to the challenges faced by the agricultural sector. (p. 15)

9

Since 2015, the return of the wolf has signalled a new chapter in the Netherlands' natural history, one wherein a formerly extinct animal resurfaces in an unfamiliar environment. In order to adapt to this new world, the wolf must contend with various environmental stressors, including human interference. (p. 16)

10

The Houtribdijk functions as a storm buffer between the Ijsselmeer and the Markermeer, and creates a wetland nature reserve 370 hectares in size. The construction of Dutch Delta Fund infrastructure such as this dike was partially financed through Green Bonds. Climate change adaption is a key category of our Green Bond expenditure. (p. 18)

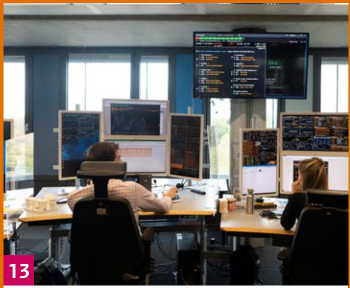
11

The Rotterdam Rooftop Days gave over 200,000 visitors the chance to learn how rooftop areas in cities can be made more sustainable in the future. The city features one of the largest rooftop farms in Europe, cultivating vegetables and flowers in a sustainable manner. (p. 20)

12

The buzzard, a bird of prey that is native to the Netherlands, is an agile and lightweight hunter with excellent vision, diving at speeds up to 50 kilometres per hour. (p. 22)

Photo captions



13

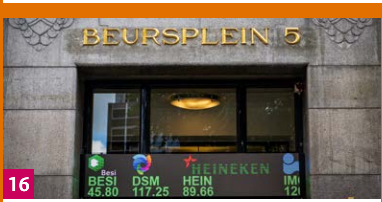
In the Dealing Room of the DSTA, agility is key to meeting market demand. By innovating in auction methods with our new Bloomberg auction system, we continue to adapt and honour our commitment to the market.(p. 24)

14

At the Wageningen University Campus, buildings are being connected to the hot and cold storage (ATES) system. This sustainable energy system will allow the university to reduce approximately 75% of its natural gas use by 2025 compared to 2019. Flexibility in building as well as making existing buildings sustainable are key to meeting the climate goals. (p. 27)

15

This nimble RHIB lifeboat, belonging to the Royal Netherlands Sea Rescue Institution, braves the waves off the coast of the island of Terschelling. The KNRM is a volunteer organisation which prides itself on rescuing swimmers and sailors since 1824, regardless of weather conditions. (p. 30)



16

As a period of overliquidity comes to an end and interest rates rise, financial markets have changed rapidly. The DSTA will continue to consult with markets and adapt its strategy wherever necessary to ensure transparent and consistent financing of the state debt. (p. 33)

17

In the event of forest fires, the Dutch military may be called upon to deploy a Chinook helicopter. The deployment of these helicopters allows for a rapid response to natural disasters. (p. 34)

18

At the team sprint event of the European skating championships, these agile athletes need to communicate, coordinate and maintain momentum as a team while hitting speeds of up to 42 kilometres per hour. Letitia de Jong, Femke Kok and Ireen Wüst are pictured winning silver for the Netherlands. (p. 36)

19

At the Zuiderzee Beach in Amsterdam, this artificial fish has been placed as a collector for sea and land waste. Art and functionality come together in this metal sculpture, designed to increase environmental awareness into the future. (p. 37)

20

The IJssel river faced dry conditions this summer. In times of drought, river banks recede and nature must adapt itself to deal with new circumstances. Government initiatives such as the Delta Program help the Netherlands to endure the changing water levels. As our climate changes, so do our financial markets. (p. 41)

21

In the 'waterloop' forest in the Dutch province of Flevoland, waterworks such as our Deltaworks were trialled at a smaller scale. It used to be future-facing innovation in the past, but has now become an open-air museum and national monument. (p. 42)

22

The Lightyear 0, a Dutch-designed solar car, undergoes wind testing at the Delft University of Technology. In order to use its energy efficiently, this electric vehicle must be as light and aerodynamic as possible to travel forward with least resistance. (p. 45)

23

In summer time, sailors off the coast of Monnickendam can navigate open water. In the winter, however, ice sailing is a necessity on the frozen waters. Even in unexpected circumstances, these boats are able to adjust their hulls and proceed forward. (p. 51)

Highlights of the DSTA Outlook 2023

- Estimated funding need of approximately € 100 billion in 2023.
- Estimated capital market funding in 2023: € 50 billion.
  - Launch of a new Green 20-year DSL. Issuance volume of approximately € 5 billion in 2023;
  - Launch of a new 10-year benchmark bond, the DSL 15 July 2033, in February 2023. Minimum issuance volume of approximately € 12 billion in 2023;
  - Launch of a new 7-year benchmark bond. Minimum issuance volume of approximately € 12 billion within 18 months after the initial issuance;
  - Reopening of the DSL 15 January 2026;
  - DSL issuances of € 21 billion ‘to be determined’ in order to respond to market demand and promote liquidity across the curve.
- If the funding need turns out to be higher or lower than currently estimated, the DSTA could increase or reduce the call on both the money and capital markets.
- Regular updates of borrowing requirements, funding plan and developments in the Dutch economy and budget through Quarterly Outlooks and press releases.

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