



Dutch State Treasury Agency
Ministry of Finance

Outlook 2022



Photo theme

The photos featured in this Outlook portray Energy.

Often the word energy is connected to energy consumption. Energy is generated and transformed into electricity with which devices can be charged and buildings can be lighted. It is also used to power transportation means such as trains and cars. The society is currently amidst a transition in which fossil energies such as coal, gas and oil are being replaced by cleaner and more sustainable variants. In a few decades, it is very well possible that the world operates in an energy neutral way. Planes may fly on sustainable fuel, electric cars may be charged with solar electricity and buildings might be heated with geothermal energy. Furthermore, off-shore wind energy in combination with hydrogen can possibly ensure countries such as the Netherlands of a constant energy supply.

The word energy is also connected to the energy within people. People get energy from exercising, getting things done, having a good chat with a friend, a walk in the sun and the people around them. After a period of lockdown at the beginning of the year, people in the Netherlands felt a lot of energy when society reopened. Finally it was possible again to visit events or even dance in a club.

This Outlook illustrates multiple kinds of energies resulting in a variety of beautiful photos.



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Preface

Regularly I reflect on recent events both on a DSTA level but also on a more personal level. During those reflections I ask myself the question “did this give or actually cost me energy? And if it did cost energy, what can I learn so that next time it will give me energy?”. Our annual Outlook is such a moment. Please allow me to share my reflections.

Looking back on the year 2021, we can conclude that – again - it was not a steady year. In January our government stepped down and since the March election, the caretaker government has been in place for a prolonged period of time. Continuous COVID-related restrictions and discussions around proposed measures have given rise to continuous debate and deepened differences within society. In more recent months the rising oil and gas prices and potential inflationary trends headlined the news. These rising prices in turn have their effect on the real economy. And amidst all of this, the DSTA celebrated its 180th anniversary in March. Much has changed since the beginning of the year, let alone since the establishment of our organisation.

In the choppy water of 2021 our task to finance the state debt was not less complicated than last year. A similar amount of funding needed to be raised. Last year the increased funding need and accompanying effort of our team were new and on uncharted territory. This year it almost felt as business as usual. And of course, the hard work costs energy of all team members, certainly in these abnormal circumstances. At the same time, the resilience and adaptability shown by the DSTA team gives me energy and a sense of fulfilment.

Raising the funds needed is obviously not something we do on our own. We continue to work closely with our Primary Dealers and market participants. For each of the auctions with a Dutch State Loan (DSL) “to be determined” we have listened to the market in order to find that space where demand and supply meet each other best. So far the feedback from the market to this approach has been positive and therefore this is something we will keep on doing. I’m grateful for the relationship that we have established with our Primary Dealers and our conversations always provide me with an energy boost.



Another example of adaptability is that we have added a climate outlook to this Outlook and will continue to address the climate theme in our investor presentations. The story is one with continued challenges and may not always be as optimistic as one would hope. However, it is a transparent story, as you may expect from the DSTA. Apart from being transparent about climate related risks, the DSTA also takes its responsibility by giving the sovereign green bond market a further boost this year. More details can be found later on in this Outlook.

As eluded to above, the world in which we live and operate is changing. Important and complex matters as the housing market, climate change and the labour market need to be addressed. At the same time we need to make sure that at all times we can fulfil the task that is upon us. This requires the DSTA to be even more robust, adaptable and future oriented in order to be a professional sparring partner. I am confident that as an organisation we are taking steps to further develop in that direction. Even as a 180-year old organisation!

You may have guessed by now that this year's photo theme "Energy" is one which is close to my heart. Whether it is energy from solar or hydro power or the energy that you get from dancing or standing in front a large group of people. Let's continue to give each other the right energy to make 2022 a great year!

Elvira Eurlings

Agent of the Dutch State Treasury Agency

1 The economic and budgetary outlook



1.1 Economic outlook

A strong economic recovery in 2021 and 2022

The Dutch economy showed a strong recovery in 2021. In 2020 GDP declined by 3.8%, but in 2021 an economic growth of 3.9% of GDP is expected¹. According to Statistics Netherlands (*Centraal Bureau voor de Statistiek*, CBS), in the third quarter of 2021 the Dutch GDP even increased with 5.0% (y-o-y). Consequently, GDP is currently higher than at the end of 2019. This strong economic growth in 2021 is backed by solid export figures as well as by an increase in household and government consumption. After a historic low world trade volume in 2020, increased demand from abroad resulted in strong export figures this year. Furthermore, the relaxation of contact-restricting measures in the second quarter of 2021 boosted the level of household consumption. The contribution of government spending to the GDP growth is high mostly because of elevated health care expenditures. Overall, the economic decline due to COVID-19 was smaller in the Netherlands than in most other Eurozone countries. The performance of the Dutch economy in the fourth quarter of 2021 is also expected to be strong, but uncertainty remains due to an increased number of COVID-19 cases and new contact-restricting measures taken by the government.

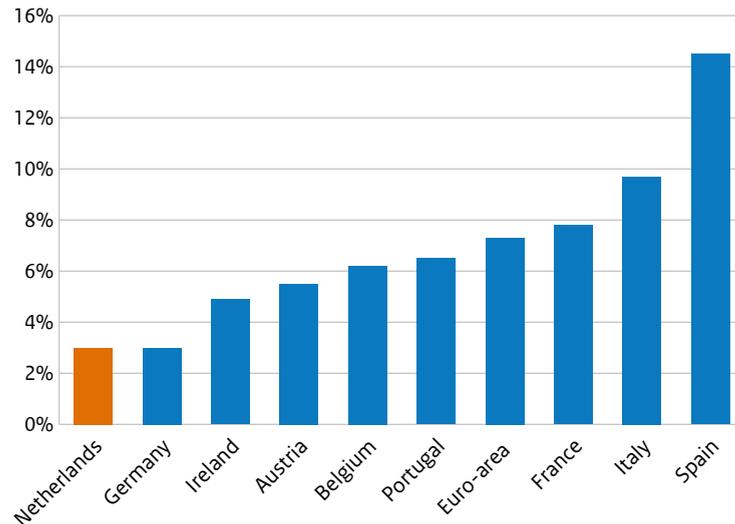
¹ The Dutch economic outlook presented in this section is largely based on the Dutch Macro Economic Outlook 2022 and the Dutch Medium-term outlook, both published by the independent Netherlands Bureau for Economic Policy Analysis (CPB) on 21 September 2021. The first publication is part of a regular cycle of economic forecasts during the year on which the government builds its economic and budgetary policies. The publication on the medium-term outlook contains trend estimates for the years covering a new government period, which is foreseen for 2022-2025. The DSTA provides updates of the economic outlook throughout the year in its [quarterly outlooks](#).

In its baseline scenario, the Netherlands Bureau for Economic Policy Analysis (*Centraal Planbureau*, CPB) expects the strong GDP growth to continue in 2022 (+3.5%). Again, this strong GDP growth is broad-based and backed by a pick up in investments, solid export figures and strong household and government consumption levels. The latter is expected to contribute to a lesser degree than in 2021 however. The expected growth in GDP for 2022 is substantially higher than the average of 1.5% over the years 2010-2019. However, the CPB expects that COVID-19 has permanently lowered GDP with 1.5%, mainly because of lower investments and lower productivity growth during the pandemic. The medium term (2022-2025) yearly GDP growth is estimated to be 1.9% (see Table 2), which is slightly above potential economic growth.

A tight labour market

The Dutch labour market showed resilience in 2021 and the CPB expects an unemployment rate by the end of the year of 3.4%. According to Statistics Netherlands, the latest recorded figure is 2.9% for October 2021. This means the unemployment level is back at the record low pre-crisis level of March 2020. Figure 1 shows that the Netherlands, together with Germany, has the lowest unemployment rate among Eurozone countries. Furthermore, the unemployment rate is significantly lower than the euro-area average of 7.3%. For 2022, the CPB expects the unemployment rate to remain roughly the same as in 2021. Due to the substantial government support measures, a large wave of layoffs has been avoided. On the contrary, the labour market is particularly tight at the moment. The number of vacancies is currently outnumbering the level of unemployed. Partly due to a mismatch between vacancies and skills of the unemployed, multiple sectors are now facing labour shortages.

Figure 1 - Unemployment rate in October 2021, seasonally adjusted data (% of labour force)



Source: Eurostat, December 2021

High inflation

According to Statistics Netherlands, the consumer price index (CPI) in November 2021 (y-o-y % change) has been 5.2%. Furthermore, the Dutch harmonized price index (HICP) for November amounted to 5.9% (y-o-y % change). These remarkably high levels of inflation are driven by (temporary) demand and supply shocks. On the supply side, examples of these shocks are bottlenecks in transportation, shortage of computer chips and higher costs of energy and raw materials. On the demand side, the shock is mainly driven by an increase in consumption due to the economic recovery. CPB is expecting the current upward pressure on inflation to be transitory and expects this to temper over the medium term.

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

% change y-o-y	2020	2021	2022
GDP	-3.8	3.9	3.5
Household consumption	-6.6	2.4	5.8
Government consumption	1.0	6.0	1.5
Investment (including inventories)	-5.4	1.7	3.6
Exports	-4.8	6.8	5.4
Imports	-5.5	6.5	6.4
Employment (in hours)	-2.7	2.3	1.8
%	2020	2021	2022
Unemployment (% labour force)	3.8	3.4	3.5

Source: CPB, September 2021

Table 2 – Key economic figures for the Netherlands (medium-term)

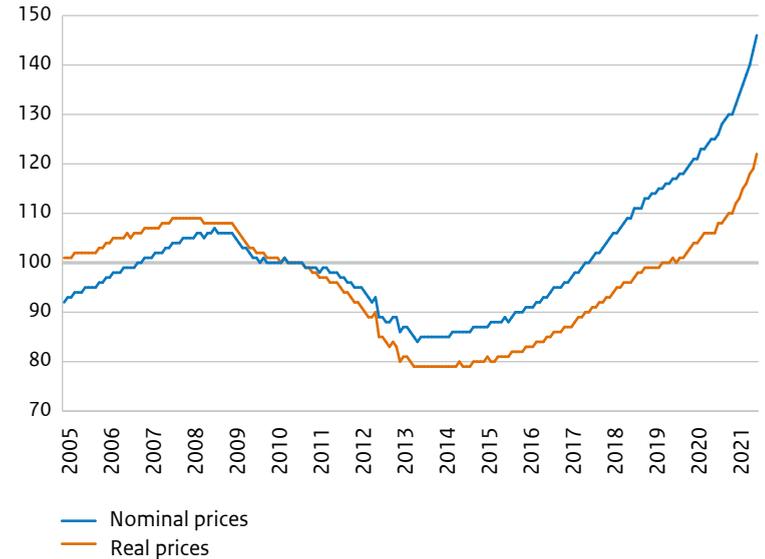
% change y-o-y	2009/2013	2014/2017	2018/2021	2022/2025
GDP	-0.4	2.1	1.1	1.9
Household consumption	-0.8	1.4	-0.4	2.8
Government consumption	0.8	0.7	2.9	1.2
Investment (including inventories)	-3.7	5.5	1.8	2.0
Exports	2.2	5.0	2.0	3.5
Imports	1.7	5.3	2.1	4.1
Employment (in hours)	-0.6	1.6	1.1	0.8
%	2009/2013	2014/2017	2018/2021	2022/2025
Unemployment (% labour force)	7.3	4.9	3.4	4.3

Source: CPB, September 2021

Overheated housing market

House prices in the Netherlands have been increasing since 2014, reaching record prices in 2021. Statistics Netherlands reports a y-o-y increase of 18.3% in October 2021. Figure 2 below shows that nominal house prices increased with nearly 45% between 2010 and 2021. Beside the supply shortage, the acceleration of the prices is due to, among other things, the low interest rate environment and the current high savings rate which made it possible to obtain a higher mortgage. This could signify potential risks to financial stability. However, the increase of mortgage debt has not kept pace with the increase in the level of house prices, as the average loan to value ratio of new mortgages decreased in the Netherlands². Also, in response to the previous crisis, the government started regulations aimed at curbing excessive borrowing, which has lowered the increase of mortgage debt. The acceleration of house prices inflation is good news for home-owners but harms the younger generation as it becomes more and more difficult to buy a house.

Figure 2: House prices, indexed with 2010=100



Source: CPB, September 2021

² Financial stability report by the Dutch Central Bank, October 2021

1.2 Budgetary outlook

Narrowing budget deficit in 2022

The COVID-19 crisis has resulted in an elevated budget deficit in the Netherlands in 2021. The general government budget is forecasted to reach a deficit of -5.1% of GDP (see table 3)³ in 2021. The economic impact of the crisis was mitigated by discretionary crisis measures as well as by the functioning of automatic stabilizers. It is expected that the budget deficit will decline swiftly in 2022 due to the rapid expected economic recovery. For 2022, a budget deficit of -2.4% of GDP is projected.

Government debt increases, but stays below 60% threshold

Though the absolute level of government debt has increased sharply in 2020 and 2021, the debt level remained and is expected to remain below the 60% of GDP threshold agreed at the European level in the Stability and Growth Pact. At current levels of expenditures, the Ministry of Finance forecasts the EMU-debt level as a percentage of GDP to be 56.4% by the end of 2021. In 2022 the EMU-debt as a percentage of GDP is expected to increase to 57.7% due to amongst others investments in safety, the housing market and climate mitigation measures. Furthermore, COVID-19 related expenditures are expected to still be substantial in 2022. Figure 3 shows that the debt-to-GDP ratio of the Netherlands is relatively low in the latest international estimates (2021 Q2).

Though Ireland shows a comparable ratio, the Dutch ratio is considerably lower than that of other Eurozone countries.

Both the forecasted EMU-balance and EMU-debt are sensitive to uncertainty. New contact limiting measures such as a lock down will worsen the economic and budgetary outlook. Furthermore, it is expected that a new government will take measures which impact this budgetary outlook. Developments in this respect might change current policies and associated collective spending.

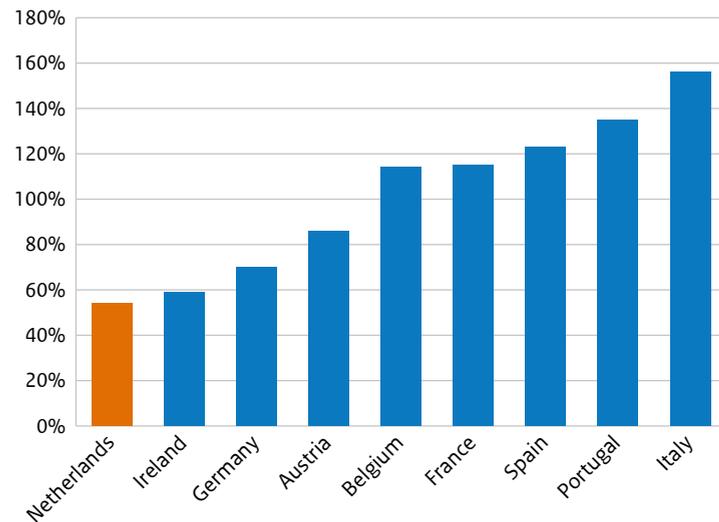
Table 3 - Key budgetary figures for the Netherlands (% GDP)

	2020	2021	2022
EMU-balance	-4.3	-5.1	-2.4
EMU-debt	54.5	56.4	57.7

Source: Ministry of Finance, November 2021

³ The Dutch budgetary outlook presented in this section is largely based on the December Budget Memorandum 2022 that was presented by the government on 29 November 2021, as well as the Dutch Macro Economic Outlook 2022, published by the Netherlands Bureau for Economic Policy Analysis (CPB) on 21 September 2021. The DSTA provides updates of the budgetary outlook throughout the year in its [quarterly outlooks](#).

Figure 3: Government gross debt to GDP ratio for Q2 2021



Source: Eurostat, November 2021

Medium term outlook

Though it is expected that the Dutch economy and its public finances will recover soon, it remains important to be aware of the risks and uncertainties for the future. The CPB forecasted the medium term outlook for the years up to and including 2025 (see Table 4). Until 2025 the EMU balance is expected to be negative though the deficit is expected to narrow further. The government is facing several challenges for the medium and long term, such as increasing health care expenditures due to an ageing population. A new government could take steps to address these issues to ensure long term sustainability of its public finances.

The government has taken various measures to boost the long-term strength of the Dutch economy. With the National Growth Fund (outlined on the next page), the government attempts to boost long term productivity growth. Furthermore, this year the government introduced the national educational programme, which helps to recover learning losses due to COVID-19 and to improve the education system in the long run.

Table 4 shows that the structural EMU-balance, which is the EMU-balance corrected for the business cycle and one-offs, is currently larger (less negative) than the EMU-balance as the Netherlands finds itself in a cyclical downturn and the output gap is hence negative. For 2022, the EMU-balance is expected to remain above the structural balance, which implies a positive output gap. This positive output gap might be caused by the faster than expected recovery and the increase in consumer spending. According to these forecasts the output gap will close in 2025.

Table 4 - Key Figure public finances for the Netherlands 2021-2025 (% GDP)

	2021	2022	2023	2024	2025
EMU-balance	-5,4	-2,3	-1,5	-0,9	-0,9
Structural EMU budget-balance	-4,3	-2,6	-1,9	-1,1	-0,9
EMU-debt	57,5	56,5	55,7	54,6	53,7

Source: CPB, September 2021⁴

⁴ These numbers are slightly different from the numbers in Table 3. Note that CPB is using a different calculating model for the EMU balance and EMU debt than the Ministry of Finance. Furthermore, these figures are calculated in September whereas the Ministry of Finance updated the figures in November.



National Growth Fund

On 7 September 2020, the Dutch government launched the National Growth Fund (*Nationaal Groeifonds*). The purpose of the fund is to ensure and support economic growth for future generations in the Netherlands. Up until 2025, a total amount of € 20 billion is made available for public investments in three main categories: knowledge development, physical infrastructure and research, innovation and development. An independent committee has been established to assess each investment proposal in order to ensure an objective allocation of means, in line with the purpose of the fund. After five years, the fund will be evaluated and could be extended. The necessary funding will be gradually borrowed on the capital markets, tapping into the “triple A” borrower status of the Netherlands and the current low interest rate environment.

In April the government has announced the first projects which will receive

money from the fund. These projects will receive a total amount of € 646 million in grants and conditional grants. Examples of projects which will receive money are projects involving quantum technology, regenerative medicine and artificial intelligence. Furthermore, € 3,5 billion is reserved for promising projects, including two large infrastructural projects. For 2022 an amount of € 7.3 billion of this fund has been reserved in the 2022 Budget Memorandum. The actual amount of allocation depends on the advice from the independent advisory committee.

Coalition Agreement

In March 2021, elections for the House of Representatives were held. The four parties that made up the previous government (VVD, D66, CDA and CU) are currently in the process of forming a new government. Until this new government is installed, the ‘old’ government remains in place as caretaker.

A landscape photograph of a forest. The foreground is filled with low-lying vegetation, including purple heather and green shrubs, with a large, weathered log lying on the ground. The middle ground shows a dense forest of tall, thin trees. The sky is a clear, pale blue. A horizontal green band with a slight gradient is overlaid across the middle of the image, containing the text '2 Climate outlook' in white. The sun is visible in the upper right, creating a lens flare effect.

2 Climate outlook



The urgent need for action concerning climate change was underlined in a plethora of ways in 2021. The recent report of the Intergovernmental Panel on Climate Change (IPCC) emphasised future scenarios in which climate change is evolving faster than expected. Furthermore, in November the UN Climate Change Conference (COP26) took place in Glasgow. During this conference, the Netherlands alongside multiple other countries committed to bring global investments in line with what is required to underpin the green energy transition. More specifically, these countries promised to stop financing coal, oil and gas projects via instruments such as export credit insurances and instead prioritise international cooperation towards sustainability. The importance of such measures cannot be understated. This past summer for example, repercussions of climate change were felt in the Netherlands and neighbouring countries through severe floods. Financial markets participants and credit rating agencies continue to pay attention to the economic and financial consequences of climate change and the risks and opportunities that this may entail.

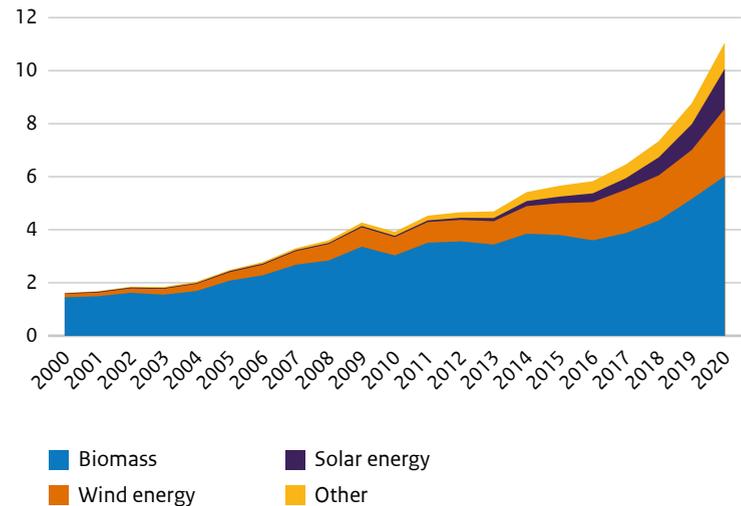
When assessing the exposure of climate change for the Netherlands and its government finances, different types of risks can be distinguished. First, the Netherlands is exposed to physical risks, since a substantial part of the Netherlands is below sea level. Risks of floods are increasing due to climate change and the rising sea level. Second, the Netherlands is exposed to transitional risks. These comprise of the risks the Netherlands faces in the period of transition to a zero-emission society, such as fluctuations in energy prices during the transition from fossil fuels to renewable energy sources and fossil intensive or dependent industries having to shift their product mix. The extent to which these two risks materialize could – when not properly addressed - have consequences for the credit worthiness of financial institutions and any sovereign and the Netherlands is no exception thereto (financial risks).

Although the potential risks of climate change are substantial, climate mitigating and adaptation measures have been taken by the Netherlands and continue to take fold. The sections below further elaborates on the current level of climate mitigation and adaptation in the Netherlands.

2.1 Climate mitigation

In the Paris Agreement, the Netherlands committed to reduce its greenhouse gas with 49% by 2030 compared to 1990. Furthermore, the Netherlands (together with other European countries) committed to additional climate goals within the context of the EU Green Deal. This Fit-for-55 package includes a reduction of greenhouse gas with 55% by 2030 compared to 1990. The Netherlands introduced a climate plan for 2021-2030 for making the country more sustainable. Coal fired plants are being phased out and the industry is paying emission taxes. The share of renewable energy is increasing (see figure 3) though it is still relatively modest. Despite the efforts, the Netherlands is not sufficiently on track to honour its commitments and additional efforts are needed. According to the Netherlands Environmental Assessment Agency's (*Planbureau voor de Leefomgeving*, PBL) forecast for 2030, the Netherlands will achieve a reduction within the bandwidth of 38%-48% greenhouse gas reduction compared to 1990. Given the ambitious (and legally binding) climate targets the Netherlands has agreed to, climate change has taken centre stage in the formation process for a government in the Netherlands. To meet the targets for 2030 and to put the Netherlands on track towards climate neutrality on 2050, more climate mitigating measures will need to be introduced during the upcoming government period.

Figure 4 - Renewable energy consumption



Source: CBS, November 2021

2.2 Climate adaptation

Climate adaptation is aimed at improving adaptive capacity, strengthening resilience and reducing vulnerability. A large part of the Netherlands is below sea level. According to PBL, roughly 60 percent of the Netherlands is vulnerable for flooding. However, the Netherlands has a long standing experience and strong institutions in place to face these challenges. In the Delta programme⁵ of the Ministry of Infrastructure and Water Management the climate adaptation plans are presented. These plans equip the Netherlands against the probability of casualties and economic damage resulting from the rising sea level and extreme weather. The Delta Programme is focused on three tasks to make the Netherlands climate-proof before 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. Major efforts are being undertaken to strengthen dykes and engineering structures and to guarantee water safety in the Netherlands in the future.

⁵ The Delta Programme 2022, Ministry of Infrastructure and Water Management. More information about the programme can be retrieved from this [link](#).





Green bond issuances by the DSTA

The ESG-bond market has shown significant growth over the past few years. Issuance volume in the total market was € 400 billion in 2021, of which € 85 billion was issued by sovereign issuers. These numbers are an approximate twofold increase from the volumes in 2020, when the total market was € 240 billion and sovereign issuance was € 35 billion. Green bonds account for about 80% of the total ESG market. In the meanwhile, the European Union is developing a European Green Bond Standard, based on the EU taxonomy.

The DSTA has the ambition to further develop its presence in the green bond market. The DSTA launched its inaugural green bond in 2019. On 23 February 2021, the envisaged target size for this green bond was reached. The total outstanding amount is now € 10.7 billion. Subsequently, the DSTA commissioned a feasibility study on possible further steps of DSTA in the green bond market. In this study, conducted by ABN AMRO and Bank of America, green expenditures in the Dutch budget have been identified and

mapped to the EU taxonomy. The feasibility study finds that – due to buy and hold investors – the green DSL seems to be scarce compared to regular DSL equivalents. The DSTA has therefore decided to increase the outstanding amount of the Green DSL 15 January 2040 in 2022 with around € 5 billion to assure liquidity of the green DSL, all being based on an updated green bond framework. Depending on the new green expenditures of the next government, the DSTA aims to expand its presence within the Green bond space with a possible new Green bond issuance in later years.

While the DSTA recognises that it will take some time before the Green Bond Standard can be fully met by DSTA, the DSTA fully supports the transparency and ambition these standards introduce. The Green Bond Framework of the DSTA will therefore be updated to indicate to investors to what extent the expenditures of the DSTA are aligned with the European Green Bond Standards. In addition, some new categories of expenses will be introduced. Finally, the DSTA will aim to introduce indicators for Just Transition in its revised Green Bond Framework.

3 Funding and issuance



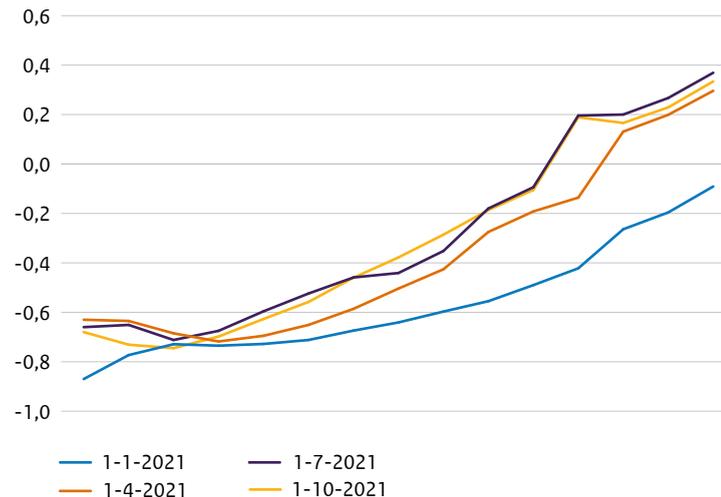
3.1 Looking back on funding in 2021

In the Outlook 2021 published in December 2020 the DSTA estimated its preliminary borrowing requirement for 2021 to amount to € 95.6 billion. This estimate was surrounded by uncertainties concerning the development of the COVID-19 crisis. It was announced that the capital market issuance would be € 50 billion. Mainly due to the budgetary impact of the support measures to mitigate the ongoing economic effects of the COVID-19 pandemic, the estimate of the funding need for the Dutch State in 2021 increased during the year. In order to fulfil this estimated funding need, the expected call on the capital market in 2021 eventually increased to around € 60 billion.

Despite the uncertainties about the funding need, the DSTA announced to continue to ensure liquidity across the curve by creating a balance between the call on the capital market and the money market in 2021. The DSTA has gradually shifted funding from the money market to the capital market. This has contributed to the DSTA's goal to lengthen the average maturity of the debt and swap portfolio towards 8 years in the coming years.

The interest rate environment for Dutch debt on both the capital and the money market remained in negative territory for the most part. Figure 5 shows the Dutch curve throughout the year with the yield curve being entirely negative at the beginning of the first quarter. While interest rates moved significantly during the year following market developments and monetary operations, the DSTA was able to obtain very favourable auction yields. The DSTA remained committed to its core values: transparency, consistency and liquidity in executing its funding plan while being flexible when needed.

Figure 5 - Dutch curve at the start of every quarter in 2021 (yield in %)



Source: Bloomberg, October 2021

Capital market issuance

The DSTA started off the year in January with the reopening of the DSL 0.00% 15 January 2052 in which it raised € 2.2 billion⁶ and the DSL 0.25% 15 July 2025 in which it raised € 2.7 billion. On 9 February the new 10-year benchmark bond, the DSL 0.00% 15 July 2031, was launched by way of a Dutch Direct Auction (DDA). In this DDA an amount of € 5.99 billion was issued at a yield of -0.32%. At closing of the DDA, the bids in the book had

⁶ Where in this paragraph the amount raised is mentioned, this includes the non-comp facility that can be extended to the Primary Dealers. This facility is usually capped at 15% and will increase the final volume of the capital issuance within 3 days after the auction.

reached € 26.4 billion, resulting in a bid-to-cover ratio of 4.4. Of the total amount allocated 73% went to real money accounts and 27% went to 'other' or so called fast money accounts. Furthermore in February the DSTA reopened the DSL 0.50% 15 January 2040 (the Green bond) which raised € 1.7 billion. In March the DSTA reopened the DSL 0.00% 15 January 2027 and the DSL 2.50% 15 January 2033 which raised a total of € 4.6 billion.

The DSTA announced in its Q2 Quarterly Outlook that the borrowing requirement for 2021 had increased to € 110.6 billion. The main reason for this development was the increased cash deficit due to the budgetary impact of the new and prolonged support programs that helped to mitigate the persisting COVID-19 pandemic. Due to the higher funding need, the DSTA decided to raise its expected call on the capital market in 2021 to at least € 55 billion from € 50 billion. The DSTA launched a new bond, the DSL 0.00% 15 January 2038, on 13 April by way of a DDA which raised € 5.88 billion at a yield of 1.88%. The final book consisted of bids amounting to € 18.0 billion, resulting in a bid-to-cover ratio of 3.1. Of the total amount allocated 67% went to real money accounts and 33% went to 'other' or so called fast money accounts. Furthermore the DSL 0.00% 15 July 2031 was reopened twice in the second quarter after the initial issuance earlier in the year for a total of €4.88 billion. After market consultation with our Primary Dealers, in the second quarter the DSTA also issued € 2.35 billion in the DSL 0.50% 15 July 2026, € 1.96 billion in the DSL 2.75% 15 January 2047 and € 2.3 billion in the DSL 4.00% 15 January 2037.

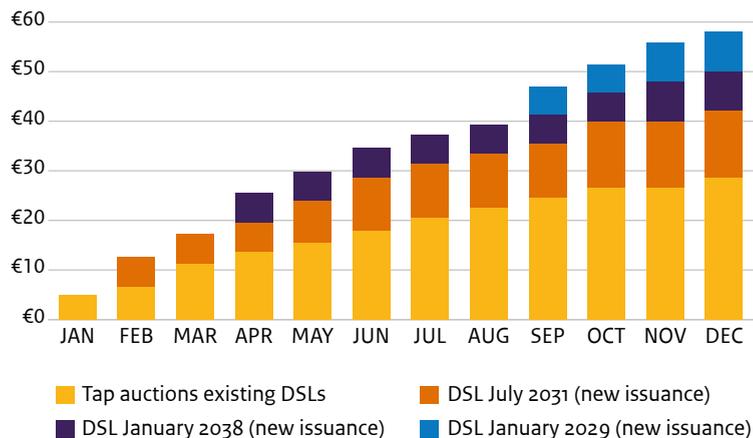
In May 2021 the Dutch government decided to prolong the support measures again in order to mitigate the ongoing economic effects of the COVID-19 pandemic and to promote a rapid economy recovery. Due to the higher expected cash deficit, the total expected funding need was increased to € 114.8 billion. In order to fulfil this estimated funding need, the DSTA announced in its Q3 Quarterly Outlook that the expected call on the capital



market in 2021 would increase to around € 60 billion. The DSTA reopened in the third quarter the 3.75% 15 January 2042, the DSL 0.25% 15 July 2025 and the DSL 0.00% 15 January 2052 which raised a total € 6.8 billion. On 28 September a new DSL 0.00% 15 January 2029 was launched through a MTS-auction. Including the non-comp option that was exercised in its entirety, € 5.65 billion was raised at an average yield of -0.25%.

The DSTA announced in its Q4 Quarterly Outlook that the expected funding need for 2021 was decreased to € 112.1 billion. Despite its slightly lower funding need, the expected call on the capital markets in 2021 remained around € 60 billion which was in line with previous communications. In October the DSTA reopened the DSL 2.75% 15 January 2047 which raised € 2.0 billion. Furthermore the DSL 0.00% 15 July 2031 was reopened again bringing the total outstanding amount to € 13.36 billion. In November also the DSL 0.00% 15 January 2029 was reopened bringing the total outstanding amount to € 8.1 billion as well as the DSL 0.00% 15 January 2038 bringing the total outstanding amount of this bond to € 7.99 billion. In December the DSL 2.00% 15 July 2024 was reopened which raised € 2.1 billion. In the end, the total capital market issuance in nominal terms in 2021 was € 58.1 billion and the additional cash flow from DSLs not issued at par amounted to € 7 billion.

Figure 6 – Cumulative capital market issuance in 2021 (€ billion)

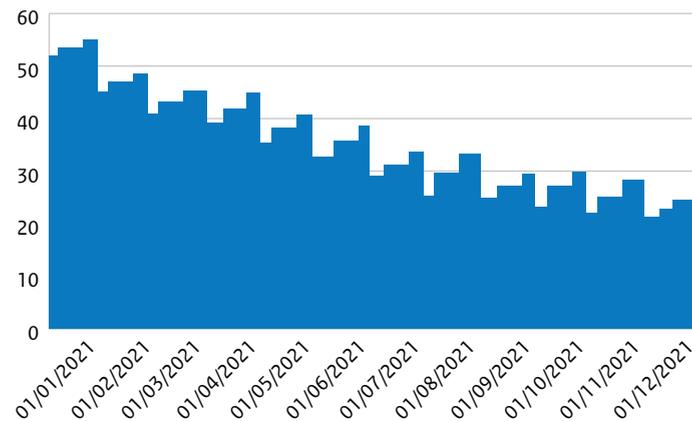


Money market

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 throughout 2021. The weighted average yield of all DTC auctions in 2021 was -0.67%. As can be seen in Figure 7 the outstanding amount of DTCs decreased gradually in 2021 as the DSTA shifted its issuance more towards the capital market in order to reach its goal of extending the average maturity of its debt portfolio towards 8 years.



Figure 7 - Amounts outstanding in Dutch Treasury Certificates in 2021 (€ 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 2021 the DSTA issued around € 39 billion in ECP and USCP, compared to € 63 billion in 2020, € 108 billion in 2019, € 180 billion in 2018 and € 97 billion in 2017. The majority of this year's issuance was in US dollars (88% 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 2022

Funding need

The preliminary funding need for the DSTA in 2022 is estimated to amount to € 74.5 billion. However, this estimate is surrounded by a high degree of uncertainty due to the development of the COVID-19 crisis and the economic recovery. Next to this, the plans of the new government will also impact the funding need to a certain extent.

As usual the borrowing requirement for the DSTA consists of three components. Firstly, it is determined by the redemptions of long-term debt instruments. In 2022, there are two maturing DSLs which need to be refinanced for an amount of € 30.7 billion. Secondly, short-term debt instruments outstanding at the end of 2021 will roll over to 2022 and also need to be refinanced. The net money market ultimo 2021 (outstanding short-term debt instruments minus cash deposits held at the central bank and in the market) is estimated to amount to € 20.5 billion. Thirdly, the expected cash deficit for 2022 as estimated in the 2022 Budget Memorandum stands at € 23.3 billion. Combined these amounts result in a preliminary borrowing requirement for 2022 of € 74.5 billion, as illustrated in Table 5.

Table 5 - Estimated borrowing requirement for 2022

Estimated borrowing requirement	Amount (€ billion)
Capital market redemptions 2022	30.7
Net money market ultimo 2021 (excluding cash collateral)	20.5
Cash deficit 2022*	23.3
Total borrowing requirement 2022	74.5

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

We will communicate a first update of the borrowing requirement in the beginning of January 2022 to reflect the cash realisations of 2021 as this will affect the net money market ultimo 2021.

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 market and the money market in 2022. Issuances in 2022 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 2022 at a minimum level of 7.9 years.

Given the current borrowing requirement of € 74.5 billion, the DSTA foresees issuances of DSLs on the capital market for an approximate amount of € 45 billion (nominal amount). Fluctuations in the funding need will primarily be absorbed by the call on the money market. However, the DSTA also commits to maintain liquidity in the money market. Therefore in case of a significantly lower funding need, the call on the capital market could also be reduced. If the funding need turns out higher than currently estimated, the DSTA could increase the call on both the money- and capital market.

Capital market issuance in 2022

The aforementioned call on the capital market of around € 45 billion (nominal amount) will consist of the following issuances:

1. The DSTA will significantly increase the outstanding amount of the Green DSL 15 January 2040. Currently this stands at € 10.7 billion. The DSTA intends to raise around € 5 billion possibly in one re-opening. The exact auction method and timing will be decided at a later stage in consultation with our Green issuance advisors and the other Primary Dealers.

2. A new 10-year benchmark bond, the DSL 15 July 2032, will be launched by means of a [DDA](#) in February or March 2022. 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 can also increase further. The exact timing of the launch will be decided upon in consultation with the DDA-advisors appointed for this DDA and the Primary Dealers.
3. A new 30-year benchmark bond will be launched by means of a DDA. The DSTA is committed to increase the outstanding volume of this bond to around € 10 billion within a few years after the initial issuance. The exact timing of the launch and the maturity of the DSL will be decided upon in consultation with the DDA-advisors appointed for this DDA and the Primary Dealers.
4. A new DSL 15 January 2026 will be launched through the MTS platform (which is also used for tap auctions) on 11 January 2022. 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.
5. On 28 September 2021, the DSTA launched the DSL 15 January 2029. After a reopening in November 2021, the outstanding amount in this bond currently stands at € 8.1 billion. The DSTA is committed to increase the outstanding volume of this bond to a size of around € 12 billion within 12 months after the initial issuance. Therefore, the DSTA will hold two more tap auctions in this DSL in 2022 to fulfil its commitment.
6. In order to be able to respond to 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 € 11 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 2022 and in the DSL 2029. The DSTA will consult its Primary Dealers on the choices regarding these issuances.

Due to the introduction of new so-called collective action clauses, the DSTA will update the terms for DSLs which are newly issued in 2022. The exact introduction date of the new collective action clauses is currently not clear as it depends on the full ratification of the ESM Treaty Amendments in all Eurozone member states. As and when a new DSL is launched, the DSTA will indicate in the accompanying loan conditions and press release which collective action clause is applicable to that DSL. Please also see the box at the end of this section for further information.

Table 6 – DSL issuance in 2022

DSL issuance	Indicative amounts (€ billion)
Green DSL Jan 2040	5
New 10-year DSL 2032	12
New 30-year DSL	5
New DSL Jan 2026	8
Reopening DSL Jan 2029	4
To be determined	11
Total DSL funding	45

Traditionally, DSL auctions are scheduled on the second and fourth Tuesday of the month. In the first quarter of 2022 all of these possible auction dates will be used. The DSTA will start the year with the launch of the new DSL 15 January 2026 through the MTS platform on 11 January 2022 with a targeted volume of € 3 to € 5 billion. On 25 January a tap auction for an existing DSL

is planned. The exact details of the DSL to be tapped will be decided in consultation with our Primary Dealers and will be announced on the Wednesday prior to issue date.

The new 10-year DSL (DSL 15 July 2032) will be launched by means of a DDA in February or March. The exact timing will be decided upon in consultation with the relevant DDA-advisors and the Primary Dealers. The DSTA will also reopen the DSL 15 January 2029 and two other existing DSLs. More details on the timing of these auctions are expected to be communicated after determining the launch date of the new 10-year DSL. Issuance calendars for the remainder of the year will be published shortly before the start of a new quarter.

Table 7 – DSL calendar Q1 2022

Auction date	Details	Target volume (€ billion)
11 January	New DSL 15 January 2026	3 - 5
25 January	Tap of an existing DSL	To be announced*
4 auctions in February and March**	<i>The following bonds are scheduled to be auctioned in February / March 2022</i>	
	New 10-year bond: DSL 15 July 2032	4 - 6
	Tap of an existing DSL	To be announced*
	Reopening DSL 15 January 2029	1.5 – 2.5
	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).

** Depending on the timing of the launch of the new DSL July 2032.

Money market issuance in 2022

The DSTA will regularly issue DTCs on the money market. The schedule for 2022 follows a similar pattern as in previous years, where auction dates typically contain both a shorter-dated programme and a longer-dated programme. Auctions are held on the first and third Monday of the month. Similar to previous years, there will be no DTC-line maturing in December 2022 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 on the second to last business day. This means for example that the June 2022 DTC programme will mature on 29 instead of 30 June.

Table 8 – DTC calendar Q1 2022

Auction date	Settlement date	Shorter-dated programme	Longer-dated programme
3 January	5 January	28 April 2022	29 June 2022
17 January	19 January	30 May 2022	28 July 2022
7 February	9 February	28 April 2022	29 June 2022
21 February	23 February	30 May 2022	30 August 2022
7 March	9 March	29 June 2022	29 September 2022
21 March	23 March	30 May 2022	28 July 2022

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

New collective action clauses in DSLs

During the course of 2022, there will be a change to the terms and conditions of DSLs. This key change is the introduction of the so-called single limb Collective Action Clause (CAC). This change only applies to new DSLs issued. This means that re-openings of existing DSLs are not affected or any new DSLs issued prior to the date on which the new CAC is mandatory. The exact date as of which these new terms will apply depends on the full ratification of the ESM Treaty Amendments in all Eurozone member states. Once there is more clarity on the date of introduction, the DSTA will announce this by way of a press release.

Collective Action Clauses

The introduction of the single limb CAC follows from an announcement by the euro area finance ministers in December 2018. This announcement has been formalised further in the amendment to the ESM Treaty which was signed in February 2021. It was agreed that all new government debt to be issued with a maturity of more than one year needs to include the new language for all bonds issued on or after 1 January 2022. However the ESM amendment agreement is currently not fully ratified by all member states. To ensure a coordinated and harmonised introduction of the new single limb CAC, the member states agreed to introduce the new single limb CAC two months after the date on which the ESM amendment agreement is ratified by all relevant member states. A transition table has been agreed among the Eurozone member states to ensure a smooth phasing-in. In 2023 approximately 45% of all new capital markets issuances should include the new CAC language.

What is a collective action clause?

Collective action clauses provide for a decision making process in case amendments are proposed to a loan. Especially in case of debt restructuring, where e.g. the maturity of a bond is proposed to be extended, CACs are expected to assist a more smooth restructuring. These new clauses built on the clauses which applied as of 2013. The key change compared to the existing clauses is that under the new clauses the majority of all bondholders who received a similar proposal have to determine whether or not the proposal is accepted. Under the current CAC the majority of bondholders in both the affected series and a percentage of all bondholders need to agree to the proposal. In case a bondholder that holds a limited number of bonds would vote against the proposal, this could currently obstruct the overall restructuring even if there is a very clear majority of bondholders who agrees to the proposal. The new CAC seek to address this. For further details and the full text of the CACs, please refer to the DSTA's website under the heading CACs.

The Next Generation EU initiative

In July 2020, EU leaders agreed to a recovery instrument (Next generation EU - NGEU) of € 750 billion to combat the adverse effects of the COVID-19 crisis. Its main element is the Recovery and Resilience Facility comprising of € 672.5 billion of funds to support public investment and structural reform: € 312.5 billion of which in grants and € 360 billion in loans. The remainder is used to top up existing EU programs, such as ReactEU, the Just Transition fund and the Agricultural fund for Rural Development. To finance the NGEU, the European Commission is empowered to borrow up to € 750 billion on the capital markets between 2021-2026. The European Commission is using a diversified funding strategy with multiple durations. In 2021, the European Commission successfully started funding the first part of the facility. A total amount of € 71 billion has been raised on the capital markets in 2021.

The recovery plans of most member state countries have been approved in 2021. The Netherlands is entitled to a maximum of € 6 billion in grants from the recovery fund. Furthermore, it can receive additional funding from the specific programs. So far, the Netherlands has not yet submitted a recovery plan. It is expected that once a new government is formed, the recovery plan will be submitted before the end of 2022.



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 was announced to be evaluated in its entirety in 2026 and to be internally reviewed every other year, allowing for adjustments if necessary. The first internal review was carried out in 2021. When the 2020-2025 framework was introduced, the DSTA communicated the intention to allow for more flexibility to deal with changing circumstances, whilst adhering to its current principles of consistency, transparency and liquidity.

Interest rate risk indicators

The policy framework contains two interest rate risk indicators, the goals of which have been sharpened in the bi-annual review that was carried out in 2021:

- The average maturity of the debt portfolio, which is defined as the average time to refixing interest rates of debt, swaps and cash. The average maturity would gradually be extended from 6.6 years at the start of the new policy framework towards 8 years, whilst allowing for fluctuations within a range of 6 to 8 years. As a result of the higher debt levels stemming from the COVID-19 crisis and because term premiums are still relatively low, the DSTA has decided it will continue to extend the average maturity to a *minimum* of 8 years.
- 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 could previously not exceed 30% of the State debt. With a higher debt level

than foreseen when the framework was set up in 2019, the DSTA has decided to tighten the limit to 25%, which brings it more in line with the levels of other Eurozone member states.

The average maturity of the debt portfolio deals with 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 9 – Targets and realisations of the DSTA's risk indicators in the 2020-2025 framework

	Original target 2020-2025	Realisation 2020	Realisation 2021 (forecast)	Updated target 2022-2025
Average maturity (end of year)	Extending towards 8 years within a range of 6-8 years	6.9 years	7.9 years	Extending to a minimum of 8 years
Refixing amount (% of State debt)	At most 30%	12-month average 18.8% (December 23.6%)	12-month average 22.7% (December 21.1%)	At most 25%

Source: DSTA, positions as of 30 November 2021.

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 the challenges, the DSTA has been able to finance all the necessary amounts while operating within the interest risk limits. Over 2021, the average maturity of DSTA's portfolio lengthened by about a year from 6.9 years ultimo 2020 to an expected 7.9 years ultimo 2021.



Under the current circumstances, the DSTA has decided to continue to extend the average maturity towards 8 years and has sharpened its goal as working towards a minimum average maturity of 8 years. The DSTA aims to reach a minimum average maturity of 7.9 year by the end of 2022. After reaching an average maturity of 8 years, the DSTA will continue to define yearly average maturity targets based on market circumstances and the development of the funding need and the debt composition.

The DSTA has decided to tighten the refixing amount from a maximum of 30% to 25%, which is more in line with other European State Treasury Agencies and more appropriate for the current debt levels.

Despite the more ambitious targets, the minimum average maturity target of 8 years and the 25% 12-month refixing limit are expected to provide sufficient flexibility to:

- Maintain a minimum level of liquidity in the money market, an important buffer to deal with fluctuations in the funding need;

- Maintain a minimum level of liquidity in individual DSLs, with minimum issuance levels of € 12 billion for DSLs with maturities up to 10 years and € 10 billion for DSLs with a maturity above 10 years;
- Allow for sufficient possibilities to reopen existing DSLs across the curve.

In the Outlook for 2020 it was already announced that an increase in the 12-month refixing amount was expected from 2020 onwards, as a result of the composition of the remaining swap portfolio. With many payer swaps expiring first, the payer swaps would gradually be outnumbered by the longer term receiver swaps. In 2020, the initial higher call on the money market due to COVID-19 increased the 12-month refixing amount even further, which is not desirable from an interest risk point of view. Consequently, the DSTA has been unwinding receiver swaps during 2020. In 2021 the DSTA continued to do so. Although the annual average of the refixing amount does not show it yet (18.8% to 22.7%), the end of year levels already reflect the chosen path to bring the refixing amount down (23.6% to 21.1%).

4 Primary dealers and secondary markets



4.1 Primary dealers and commercial paper dealers in 2021 and 2022

Ever 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. From 2022 onwards, these conditions include the possibility for the DSTA to suspend the rights of the PD in case of a severe misconduct by such PD. PDs have certain rights and obligations. 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. Residual short-term funding needs are met through the issuance of Commercial Paper (CP). For these issuances, the DSTA uses Commercial Paper Dealers (CPDs). CPD's are divided into Euro Commercial Paper and US Commercial Paper Dealers.

Developments and ranking in 2021

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 10 shows this year's top performers in DSL and DTC.

Table 10 – Top Performers in the DSL and DTC market in 2021

Top 5 PDs for DSLs in 2021

1	ABN AMRO Bank
2	Nomura
3	Nordea
4	Citigroup
5	Jefferies

Top 5 PDs for DTCs in 2021

1	ABN AMRO Bank
2	Nordea
3	Goldman Sachs
4	HSBC Continental Europe
5	Rabobank

In the past year, the European Commission announced that seven banks, including four of our PDs (Nomura, Bank of America, Natixis and NatWest), have been involved in a trading cartel in the Eurozone government bond market in the period 2007 up to 2011. Fines were imposed on three of the involved banks (of our PDs only Nomura). Given the seriousness of these allegations, the DSTA made additional enquiries with the relevant PDs. The DSTA has received sufficient confirmation that those PDs have taken appropriate action that such misconduct should not take place again.

Dealer selection and ranking 2022

In 2022 the composition of our counterparties will largely remain consistent with previous years. The most important change being that Societe Generale no longer forms part of the Primary Dealer group⁷. As a result, the DSTA presents the following financial institutions a Primary Dealer and Commercial Paper Dealer for 2022.

Table 11 – List of the DSTA's dealers in 2022, 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		
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 2022. Next year's weighting factors for the different maturity buckets are shown below.

Table 12 – DSL weighting factors for 2022 (per maturity bucket)

DSL maturing in ...	Weighting factor
2023 - 2025	4
2026 - 2028	6
2029 - 2032	10
2033 - 2037	12
2038 - 2047	18
2052 and beyond	30

⁷ For more information, please refer to our [website](#)



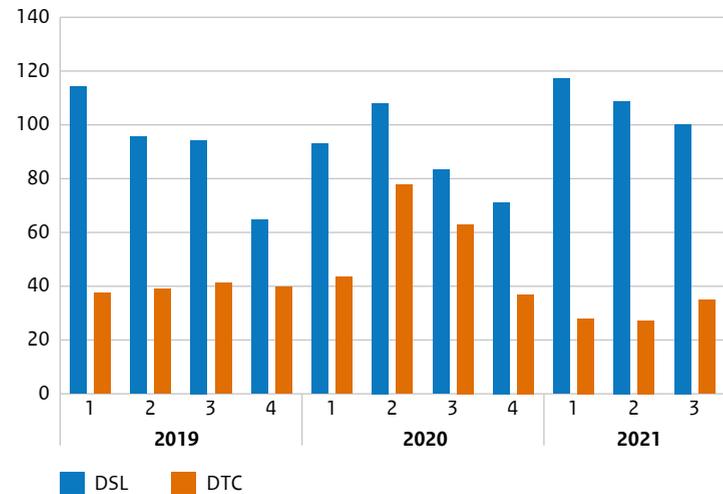
4.2 Liquidity and secondary markets

Secondary market transactions

The DSTA requires Primary Dealers to provide monthly data on their secondary market activity in Dutch securities. This transaction data contain information on turnover, maturity, type of counterparty, region and trading platform. Although the data over 2021 only cover trades by the DSTA’s Primary Dealers, the acquired data gives a general overview of trends in the secondary market. Secondary market trade data is also made available on the [DSTA’s website](#).

Figure 8 shows that turnover volumes in the secondary market in 2021 have been € 326.2 billion on an aggregate level for DSL and € 89.9 billion for DTC in the first three quarters of the year. Compared to the same period last year, with DSL volumes at € 284.2 billion and DTC volumes at € 184.2 billion, there is an increase in DSL turnover volume (+ 27.4%) and a decrease in DTC turnover volume (-51.2%).

Figure 8 - Quarterly turnover for DTC and DSL (€ billion)

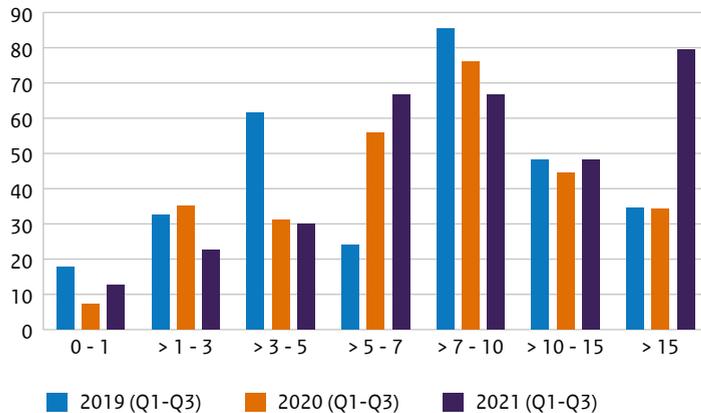


Source: DSTA Secondary Market Trade Reports, October 2021

In 2020 the DSTA had to attract a large amount of additional funding for financing the expenditures related to COVID-19. A large part of this financing was done by issuance under the DTC programme. In 2020 a total of 66 DTC auctions took place where 17 unique DTCs were issued. The entire refinancing of these 17 DTC issuances was either not necessary, or partly replaced by DSL issuances. This explains both the decrease in DTC turnover and increase in DSL turnover when comparing 2021 with 2020.

Figure 9 shows data on DSL turnover in the secondary market by residual maturity. To be able to compare the activity in consecutive years, the turnover total for each year is based on the first three quarters of the year. Most notable is the steep increase in the >15 year bucket, which is explained by DSTA activity in this segment. Over the course of 2021 for example a new 15-year DSL was issued and both the 2040 and 2052 DSL were tapped.

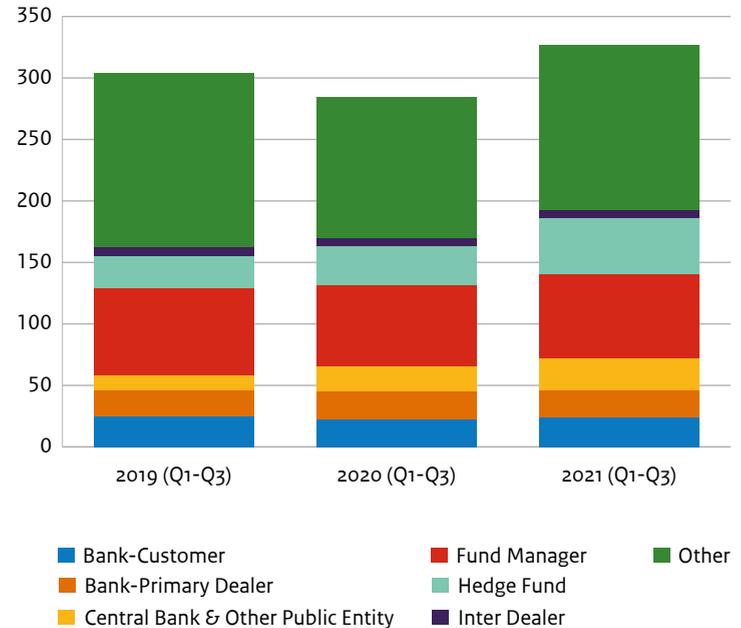
Figure 9 - Secondary market DSL turnover by residual maturity (€ billion).



Source: DSTA Secondary Market Trade Reports, October 2021

Figure 10 presents the reported DSL turnover by investor type. Although the total turnover in 2021 shows an absolute increase of nearly 15% compared to last year (over Q1-Q3), there are no substantial changes in relative shares within the categories themselves. The most noticeable shift is a 3% point growth of the relative share of hedge funds in the total weight. This category grew from 11% to 14% in 2021. The figure shows that secondary trading follows a fairly consistent course over the last couple of years.

Figure 10 - Data on DSL turnover by investor type (€ billion)



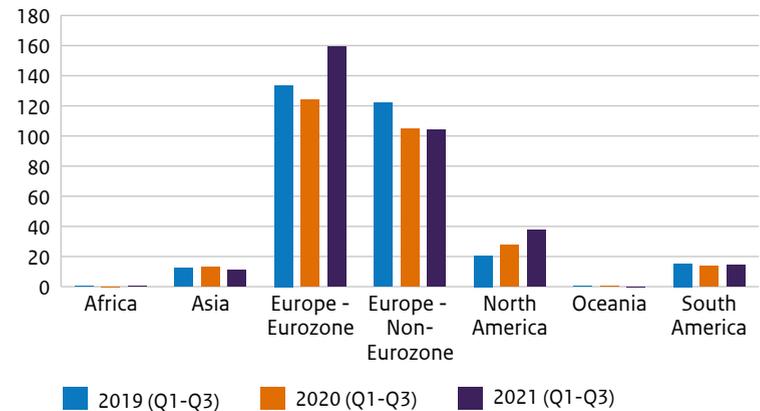
Source: DSTA Secondary Market Trade Reports, October 2021



A geographical breakdown of secondary market turnover volumes, including inter-dealer transactions, is shown below in figure 11. In 2021, the Eurozone made up most of the secondary market activity, followed by the non-Eurozone European countries. The latter category mainly consists of Primary Dealers based in the United Kingdom. The ratio of non-Eurozone turnover to Eurozone turnover has decreased for the third consecutive year. From the figure it can be observed that the main driver for this was increased volumes coming from Eurozone turnover. Although the DSTA cannot measure the exact effects of Brexit on these data, the fact that some financial institutions decided to relocate from the UK to within the euro area is felt to have played a significant role here.

Also for the third consecutive year a steady increase in turnover volumes in North America is visible. With an amount of € 37.8 billion this region accounts for 12% of the total turnover volume in the first three quarters of 2021.

Figure 11 - Geographical breakdown of secondary market turnover (€ billion)



Holdings of Dutch government securities by investor type

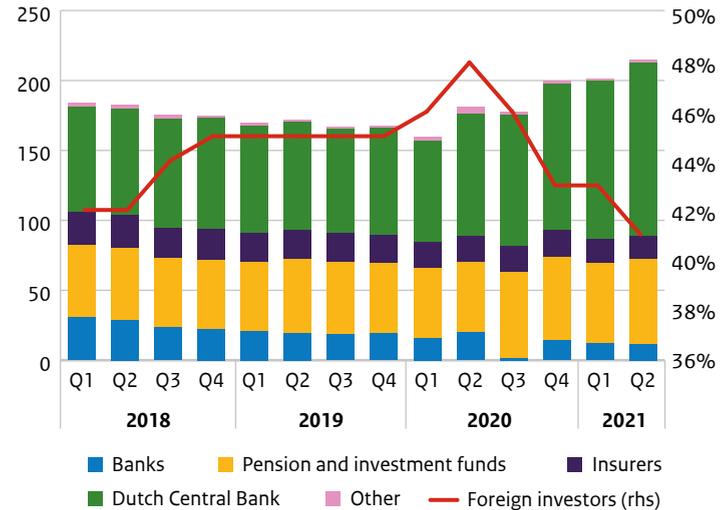
The Dutch Central Bank (DNB) publishes quarterly data on Dutch government securities holdings. The data contains information on total investor holdings and holdings per residual maturity.

Figure 12 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.

During last year a rise in the holdings of foreign investors was clearly visible. The level, nearing 50% of total debt outstanding, peaked at the end of the second quarter of 2020. This was above the 44% average level of 2018 and 2019. This increase meant that foreign investors took up most of the additional borrowing requirement, a little over 60% of the rise in total debt, created by the economic impact of COVID-19 measures. With the borrowing requirement decreasing in 2021, we can observe a decline in the holdings by foreign investors. At the end of the second quarter it has reduced to 41% and therefore also dropped below the 2018-2019 observed average.

Within the domestic holdings, there seems to be a trend 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 last 4 quarters, to reach 34,3% in the second quarter of 2021. This is to a large extent the consequence of the PSPP and PEPP buying program of the ECB. Market liquidity remains an important topic for DSTA and close contact with its Primary Dealers will therefore be maintained to monitor a sufficient level of liquidity in the market.

Figure 12 – Holdings by domestic (lhs, € billion) and foreign investors (rhs) of Dutch government securities



Source: DNB, Dutch government securities holdings data, November 2021

Statistical appendix



The information presented below reflects the situation at 30 November 2021. Please see our website for the latest [statistics](#).

1 Changes in long-term debt in 2021

In thousands of euros

Position as at 31 December 2020		300,859,195
New issues in 2021		
Public bonds	55,970,857	
Private placements	0	
Redemptions in 2021		
Regular redemptions		
Public bonds	16,075,985	
Private placements	13,649	
Early redemptions		
Public bonds	420,009	
Private placements	3,389	
Position as at 30 November 2021		340,317,020

2 Interest rate swaps

Positions as of 30 November 2021, in millions of euros

Bucket	Net nominal	Pay or receive
(year of maturity)	amount	(net)
2021	1,762	Pay
2022	9,696	Pay
2023	9,197	Receive
2024	6,764	Receive
2026	63	Receive
2027	1,000	Receive
2028	1,070	Receive
2033	500	Receive
2035	1,448	Receive
2036	400	Receive
2037	1,135	Receive
Net total	10,119	Receive

3 Key figures on individual bonds in 2021

In thousands of euros

	Total	Issues	Redemptions	Total	ISIN code
	31-12-2020			30-11-2021	
3,25 pct DSL 2011 due 15 July 2021	16,493,985		16,493,985	0	NL0009712470
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	8,241,489		1,361	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			17,607,963	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	15,315,132			15,315,132	NL0010733424
0,25 pct DSL 2015 due 15 July 2025	15,220,159	4,705,000		19,925,159	NL0011220108
0,50 pct DSL 2016 due 15 July 2026	16,614,051	2,350,000		18,964,051	NL0011819040
0,00 pct DSL 2020 due 15 January 2027	13,084,000	2,678,000		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			13,028,814	NL0000102317
0,75 pct DSL 2018 due 15 July 2028	14,626,941			14,626,941	NL0012818504
0,00 pct DSL 2021 due 15 January 2029	0	8,071,000		8,071,000	NL0015000L58
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	0	13,359,805		13,359,805	NL00150006U0
2,50 pct DSL 2012 due 15 January 2033	13,555,900	1,952,000		15,507,900	NL0010071189
4,00 pct DSL 2005 due 15 January 2037	15,723,427	2,254,000		17,977,427	NL0000102234



	Total	Issues	Redemptions	Total	ISIN code
	31-12-2020			30-11-2021	
0,00 pct DSL 2021 due 15 January 2038	0	7,992,052		7,992,052	NL0015000B11
0,50 pct DSL 2019 due 15 January 2040	8,993,004	1,715,000		10,708,004	NL0013552060
3,75 pct DSL 2010 due 15 January 2042	16,063,910	2,776,000		18,839,910	NL0009446418
2,75 pct DSL 2014 due 15 January 2047	16,540,187	3,970,000		20,510,187	NL0010721999
0,00 pct DSL 2020 due 15 January 2052	5,960,724	4,148,000		10,108,724	NL0015614579
2 1/2 pct Grootboek	8,649		327	8,322	NL0000006286
3 pct Grootboek	2,687		313	2,374	NL0000004802
3 1/2 pct Grootboek	100		9	91	NL0000002707
	300,554,632	55,970,857	16,495,994	340,029,495	

4 Short-term debt and €STR swaps in 2021

In millions of euros

Key figures of T-bills	Total	Issues	Expirations	Total	ISIN code
	31-12-2020			30-11-2021	
DTC 2021-01-28	10,070		10,070		NL0014832073
DTC 2021-02-25	7,560		7,560		NL0014926388
DTC 2021-03-30	6,080		6,080		NL0015063736
DTC 2021-04-29	7,860	1,670	9,530		NL0014858250
DTC 2021-05-28	6,420	1,700	8,120		NL0015031527
DTC 2021-06-29	5,840	3,610	9,450		NL0015285826
DTC 2021-07-29	4,280	4,290	8,570		NL0015476839
DTC 2021-08-30	3,810	4,510	8,320		NL0015524117
DTC 2021-09-29		6,130	6,130		NL0015000AJ0
DTC 2021-10-28		7,520	7,520		NL0015000D01
DTC 2021-11-29		6,920	6,920		NL0015000FH3
DTC 2022-01-28		7,250		7,250	NL0015000JL7
DTC 2022-02-25		7,480		7,480	NL0015000KU6
DTC 2022-03-30		3,450		3,450	NL0015000M00
DTC 2022-04-28		3,170		3,170	NL0015000N82
	51,920	57,700	88,270	21,350	

Commercial Paper	Total	Issues	Expirations	Total
	31-12-2020			30-11-2021
CP EUR	0	4,850	4,850	0
CP USD	0	34,110	34,110	0
CP GBP	0	0	0	0
CP CHF	0	0	0	0
CP NOK	0	0	0	0
	0	38,960	38,960	0

Other short-term debt	Total	Issues	Expirations	Total
	31-12-2020			30-11-2021
Deposit borrow	0	87,703	87,703	0
Deposit lend	0	-44,570	-44,570	0
Deposit borrow USD	0	3,491	3,491	0
Eurex repo	0	-4,560	-4,560	0
Buy Sell Back	0	0	0	0
Sell Buy Back	0	8,662	8,324	338

€STR swaps (position as of 30 November 2021)

Bucket (year of maturity)	Net nominal amount	Pay or receive (net)
2021	0	
2022	21,350	Receive

Photo captions



1

Since 2017, all public transport trains (Nederlandse Spoorwegen, NS) are powered by renewable energy, namely from wind power. The NS became the first railway company with emission free trains. (p. 12)



4

A common portrait in the Netherlands: electrical cargo bikes. The electrical rechargeable battery in these bikes enable to riders to expand their horizons. Especially in city centres these bikes replace delivery vans. (p.14)



6

Five tidal turbines in the storm surge barrier Oosterschelde. This tidal power project generates power for about thousand Dutch households. (p.22)



8

The Hoorneboegse heather, a nature reserve located in Hilversum. Being outdoors gives us energy. (p.13)



2

130.000 solar panels are installed to the roof of Rotterdam Central Station. This renewable energy will be used for the escalators, lighting and the lifts at the station. (p.37)



5

NXT Energy Hubs in Alkmaar. This gas station offers more sustainable variants of fuels such as LNG, Hydrotreated Vegetable Oils and hydrogen. (p.6)



9

Previously used emergency telephones along the highways are now transformed into a charger for electric vehicles of Rijkswaterstaat. (p.30)



3

Windmills in Noord Holland which can provide green energy for surrounding villages. (p.1)



7

The moon above Rotterdam with the spotlighted 'Hefbrug'. The ocean tides on earth are caused by the moon's gravity. (p.16)



10

In Amsterdam's water, a floating battery powered by local renewable energy sources is available for renting. The battery can be used as temporary energy source for a project, event or activity. (p.29)



11

A lighthouse in IJmuiden amidst the forces released by the sea. The picture portrays the potential energy of water. (p.46)



15

During multiple 'Fieldlab' events, the government investigated how large groups of people can come together in times of the COVID-19 pandemic. The bustling crowd provided a lot of energy. (p.18)



16

Max Verstappen winning the Formule 1 race at the Zandvoort race circuit in 2021. The crowd in the picture release a large amount of energy from celebrating the victory. (p.33)



12

Thunderstorms are a way for the atmosphere to release energy. (p.27)



13

Floating solar panels in Oosterwolde can provide sufficient energy for approximately five hundred households. (p. 3)



17

The picture captures ice skaters at Ice Stadium Thialf in Heerenveen. Although playing a sport requires a lot of time and energy, it stimulates the release of endorphins that may give you even more energy and focus. (p.40)



14

The provincial road between Delft and Zoetermeer is the first road with a closed energy system. The solar panels on the noise barriers provide sufficient energy for the lighting along the road. (p. 17)



18

The sunlight which provides energy to the earth in the form of warmth and light. (p.35)



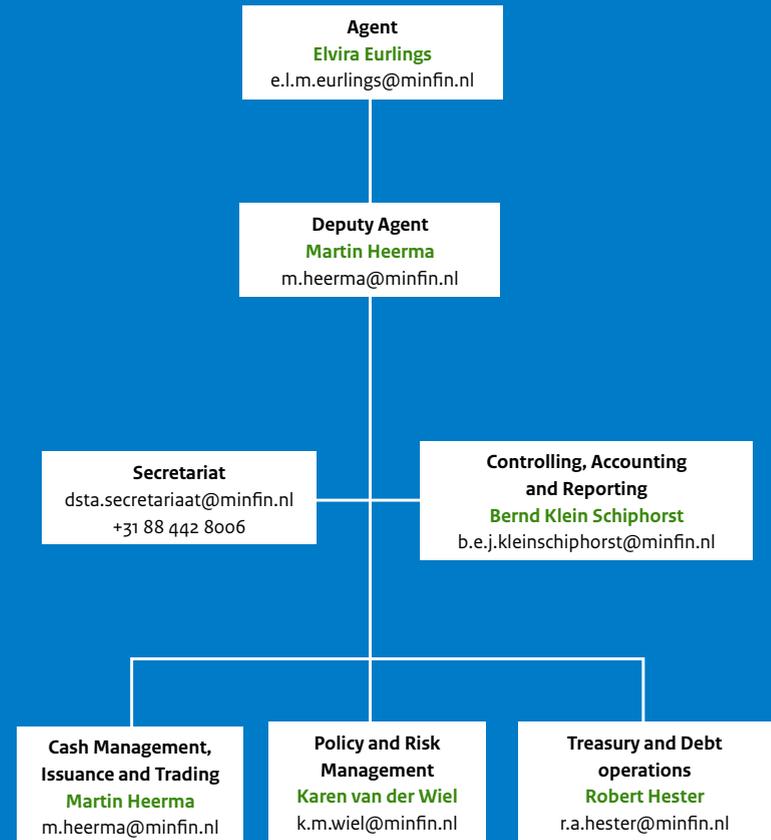
19

The Energy Academy Europe in Groningen is the most sustainable educational building in the Netherlands. In this building businesses, education and science work cooperate in research and innovation in the field of energy. It focuses on the transition to a reliable, sustainable and affordable energy future. (p.20)

Highlight of the DSTA Outlook 2022

- Estimated funding need of € 74.5 billion in 2022
- Estimated capital market funding in 2022: € 45 billion
 - The DSTA will significantly increase the outstanding amount of the Green DSL 15 January 2040 in possibly one auction for around € 5 billion;
 - Launch of a new 10-year benchmark bond, the DSL 15 July 2032, via DDA in February or March 2022. Minimum issuance volume of approximately € 12 billion in 2022;
 - Launch of a new 30-year benchmark bond, via DDA. Minimum issuance volume of approximately € 10 billion within a few years after the initial issuance;
 - Launch of a new DSL 15 January 2026, via the MTS platform. Minimum issuance volume of approximately € 12 billion within 18 months after the initial issuance;
 - Two more tap auctions in the DSL 15 January 2029. Total target volume of € 4 billion;
 - DSL issuances of € 11 billion ‘to be determined’ in order to respond to market demand and promote liquidity across the curve.
- DSL auction window traditionally on the second and fourth Tuesday of the month.
- Fluctuations in funding need will be primarily absorbed via the money market. Only if the funding need turns out significantly lower, the call on the capital market could be reduced.
- Regular DTC auctions on every first and third Monday of the month.
- Regular updates of borrowing requirements, funding plan and developments in the Dutch economy and budget through Quarterly Outlooks and press releases.

Contacts



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The cut-off date for data in the Outlook 2022 is
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Colophon

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