Council of the European Union

Brussels, 21 June 2024
(OR. en)

11086/24
ADD 1 REV 1

ECOFIN 696
UEM 166
SOC 463
EMPL 278
COMPET 662
ENV 639
EDUC 225
ENER 300
JAI 1019
GENDER 136
JEUN 147
SAN 358

COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	19 June 2024
To:	Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2024) 619 final
Subject:	COMMISSION STAFF WORKING DOCUMENT 2024 Country Report - Netherlands Accompanying the document Recommendation for a COUNCIL RECOMMENDATION on the economic, social, employment, structural and budgetary policies of the Netherlands

Delegations will find attached document SWD(2024) 619 final.

Encl.: SWD(2024) 619 final

EUROPEAN
COMMISSION

Brussels, 19.6.2024
SWD(2024) 619 final

COMMISSION STAFF WORKING DOCUMENT

2024 Country Report - Netherlands

Accompanying the document

Recommendation for a COUNCIL RECOMMENDATION

on the economic, social, employment, structural and budgetary policies of the Netherlands

{COM(2024) 619 final} - {SWD(2024) 600 final}

European Commission

Netherlands

2024 Country Report

#EURO at 25

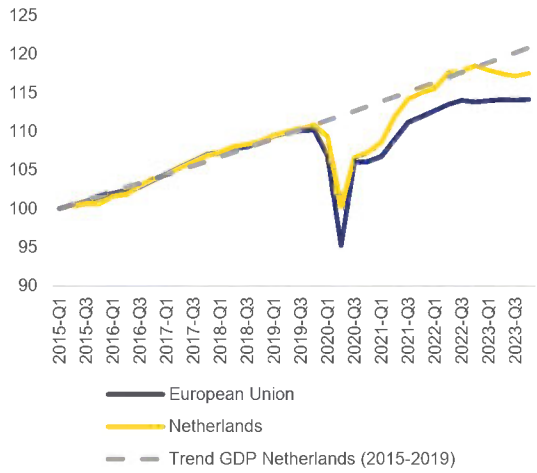
ECONOMIC AND EMPLOYMENT SNAPSHOT

The Dutch economy is adjusting to higher prices and interest rates

The Dutch economy slowed down in 2023 with real GDP growing by 0.1%. ([1]) Economic activity contracted in the first three quarters of 2023, before returning to modest growth in the final quarter. This slowdown follows a period of relative overperformance in the Dutch economy compared to the EU average (Graph 1.1). In 2023, the impact of high inflation rates on households' disposable incomes resulted in a cumulative decrease in consumer spending of more than 2% in the first three quarters of the year, before recovering in the fourth quarter. At the same time, export volumes in 2023 decreased due to a slowdown in the economic activity of the Netherlands' main trading partners. Investment proved to be volatile: while the first half of the year still showed robust levels of investment spending, businesses cut back on spending in the second half of the year.

A recovery in consumer spending is set to lead to a return to modest growth in 2024 and 2025. Wage growth has picked up considerably, while inflation rates have come down. This is expected to lead to a recovery in households' disposable income and consumer spending in 2024. Growth in 2024 is furthermore expected to be supported by increased government consumption and public investments in, for example, defence and the green transition. Private investment is set to remain weak in 2024, due to persistent labour shortages and businesses continuing to adjust to the tightening of financial conditions in 2023. Growth is projected to further pick up in 2025, on the back of a continued recovery in consumer spending and an improved outlook for trade and investment. Annual growth is forecast at 0.8% in 2024 and 1.5% in 2025.

Graph 1.1: **Gross domestic product in constant prices (100 in Q1-2015)**



Source: Eurostat

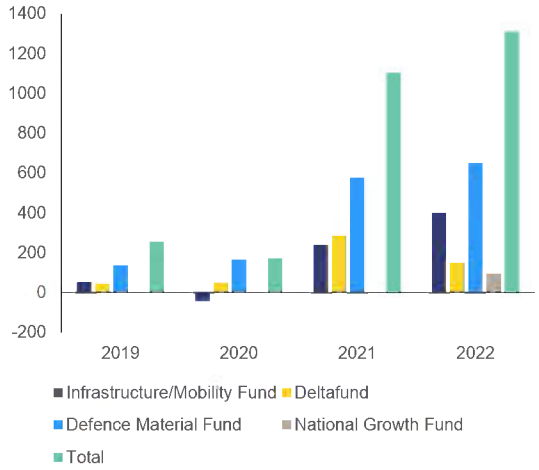
Inflation in the Netherlands came down rapidly in 2023. The price cap on gas and electricity, put in place in 2023, helped to bring down inflation, as measured by the Harmonised Index of Consumer Prices (HICP), from more than 13% in Q4-2022 to around 7.2% in Q1-2023. Decreasing energy prices resulted in a further fall in inflation rates, with Q4-2023 recording headline inflation of only 0.4% year-on-year. This was mostly due to the steep fall in energy prices in that quarter compared to the peak in energy prices the year before. At the beginning of 2024, headline inflation bounced back to 3%, due to a less favourable year-on-year comparison for energy prices. Inflation is expected to continue easing gradually throughout 2024 and 2025, as the lower energy prices are passed through to other price categories.

([1]) The cut-off date for the data used to prepare the 27 Country Reports was 15 May 2024.

The Netherlands has sound public finances, but some fiscal challenges could emerge in the medium to long term. Despite the outgoing government's plans for increased investment, the government deficit has reduced substantially since 2021, reaching 0.3% of GDP in 2023. The implementation of government investment plans has been slow due to labour shortages, among other factors, leading to a lower level of expenditure than initially planned (Graph 1.2). Additionally, revenue has been higher than expected mainly due to windfalls in taxes on corporate profits. In 2024, the deficit is expected to increase to 2.0% due to rising expenditure on social benefits, higher interest rates and higher wages in the public sector. In the medium to long term, costs linked to the ageing population are expected to lead to a significant increase in spending on health and long-term care. As a share of GDP, spending on long-term care in the Netherlands is the highest in the EU, and is expected to increase substantially again by 2070, raising potential concerns about fiscal sustainability in the long term (Annex 21).

The Dutch labour market remains strong, despite the slowdown in economic activity in 2023. The unemployment rate reached its lowest level in decades in Q2-2022, at 3.3%. It increased slightly since then, reaching 3.7% in Q1-2024, mostly as a result of employment growth slowing down. Unemployment is expected to increase marginally in 2024, due to weaker job creation and a small increase in bankruptcies, but labour shortages are expected to persist. Nominal wage growth has picked up considerably, with growth in contractual wages increasing from around 2% on average in 2021 to 6.9% in the fourth quarter of 2023.

Graph 1.2: **Underutilisation of public investment funds**



(1) Bars show total unspent funds earmarked for the respective investment funds in millions of euro
Source: Annual Financial Reports 2019-2022, Ministry of Finance

The Netherlands continues to experience vulnerabilities related to its high current account surplus and its high levels of private debt ([2]). The high current account surplus is driven by the presence of many foreign multinationals in the country, the specific features of its tax and pension systems that incentivise corporations and households to save, and by continuing obstacles to domestic investment. The surplus is expected to remain rather stable in the coming years, as the same structural drivers remain in place, but the risks associated with it appear more mitigated due to strong demand growth. Moreover, the overvalued housing market, largely fuelled by supply shortages, and tax benefits promoting debt-financed home ownership, are key drivers behind the high level of private debt. However, stricter macroprudential policies have led to a gradual fall in private debt-to-GDP levels (from 268% in 2014 to 193% in 2023). Higher interest rates coupled with inflation are expected to contribute to a continuation of this downward trend, although the level of private debt is

([2]) An in-depth review (IDR) was undertaken as part of the macroeconomic imbalance procedure (MIP) earlier this year, which found that the Dutch current account surplus is one of the highest in the EU (see SWD(2024) 82 final).

expected to remain above both prudential thresholds and the EU average.

Labour shortages and investment bottlenecks are hindering the twin transition and competitiveness

The Netherlands is a highly competitive economy, but labour shortages are holding back progress in the medium to long term. The country is an EU innovation leader (Annex 11), and home to many firms providing cutting-edge technologies to global markets. However, the economy is running into several limiting factors, potentially undermining its competitiveness in the future. These issues are also limiting the government's ability to deliver on key policy goals, including increasing the housing supply, achieving the digital transition and fighting climate change. These limiting factors include restrictions stemming from shortages of (skilled) workers, constraints in the capacity of the electricity grid capacity and excessive nitrogen emissions, which limit economic activity and investments.

Labour shortages persist across many sectors. There continues to be a shortage of workers as the number of vacancies has exceeded the number of unemployed people since Q4-2021 ([3]), driven by a strong labour demand. Moreover, challenges related to labour market segmentation and the high prevalence of part-time work, in particular by women, require further attention in terms of the Pillar of Social Rights (Annex 14). Labour shortages also hold back investments, including those related to the green and digital transitions. In the medium term, demographic trends, including migration and the ageing of the population, are likely to add further demand for workers in the health and care sectors, exacerbating existing shortages of workers (Annex 16). Finally, looking at labour supply, it should be noted that the labour participation rate in the Netherlands is already among the highest in the EU. This means that there is only limited further potential to address shortages by merely increasing labour participation.

Labour productivity growth has been low over the past two decades. The high prevalence of flexible workers, limiting incentives for firms to invest in skills training ([4]), together with a 'net-shift effect' of employment moving from high- to low-productivity sectors, partly explain the structurally low growth in labour productivity ([5]). Additionally, despite a recent increase, investment in research and innovation as a share of GDP remains below peer Member States (Annex 11). The level of net public investment is also well below the EU average (Annex 12). In the longer term, the significant deterioration in basic skills levels, as demonstrated by a steadily declining performance in the OECD's PISA survey, may further increase skills shortages and undermine labour productivity (Annex 15).

Bottlenecks related to the green transition are causing a slowdown in investments. Restrictions on access to the electricity grid, due to capacity constraints, risk slowing down the clean energy transition, in particular the roll out of renewable energy. The restrictions also constrain economic activity (for example related to the expansion of firms and the construction of new dwellings), affecting the country's productivity and, as mentioned above, creating macroeconomic imbalances. Even though major investments in the expansion of the grid capacity are being planned and implemented, the additional capacity will not keep up with the growing demand caused by the shift to renewable energy. In addition, excessive nitrogen emissions represent another bottleneck that constrains economic activity (Annex 6).

(3) CBS (2024) Spanning op de arbeidsmarkt.

(4) Ando, S. (2020), Productivity in the Netherlands, IMF Working Paper No. 2020/155.

(5) ESB (2024) Low productivity growth partly due to unfavourable economy structure - ESB.

Box 1:

The Netherlands' competitiveness in brief

The Netherlands is a top performer in terms of competitiveness, but challenges lie ahead. The strong industrial sector, which is leading among Member States in productivity metrics, contributes to the diversification and resilience of the Dutch economy. The business environment has also traditionally been a key strength, scoring among the best performers in the EU in terms of access to finance, with the exception, however of SMEs' access to loans. Since greening and digitalising the economy fast enough will be key factors in maintaining productivity, they have received a strong focus in the Dutch recovery and resilience plan and EU cohesion policy funding.

However, competitiveness challenges remain:

- **labour and skills shortages** hinder business activity, innovation, and the green and digital transitions and together with the segmentation in the labour market, limit productivity growth;
- **investment bottlenecks**, including due to congestion in the electricity grid and excessive nitrogen emissions, which slow down the roll-out of renewables, limit the expansion of business activity and the construction of new dwellings; and
- **stagnant public investment and investment in research and innovation** are holding back labour productivity, innovation, and the green and digital transitions.

Box 2:

UN Sustainable Development Goals (SDGs)

The Netherlands is making good progress and scores above the EU average in all SDGs related to competitiveness and productivity (SDGs 4, 8, 9). SDG 8on economic growth and employment is furthest ahead of the EU average, in particular thanks to the high rates of employment and low long-term unemployment. In addition, the Netherlands has a high share of households with high-speed internet and a large number of patent applications per capita (SDG 9 - Innovation, industry and infrastructure), and a high level of participation in adult learning and of post-secondary educational attainment (SDG 4 – Quality education) (Annex 1).

In addition, the Netherlands performs very well on most SDG indicators related to fairness, which include good health and well-being (SDG 3), quality education (SDG 4), gender equality (SDG 5) and decent work and economic growth (SDG 8).

Out of the 17 indicators, progress on 4 SDGs is below the EU average. These relate all to environmental sustainability (SDGs 7, 11, 13, 14).

IMPLEMENTATION OF KEY REFORMS AND INVESTMENTS USING EU INSTRUMENTS

Funding from the Recovery and Resilience Facility (RRF) and cohesion policy funding is mutually reinforcing the Netherlands' efforts to boost its competitiveness and foster sustainable growth. In addition to the EUR 5.4 billion of RRF funding described in Annex 3, cohesion policy funding provides the Netherlands with EUR 1.5 billion between 2021 and 2027. Support from these two instruments combined represents around 0.68% of the country's annual GDP in 2023, compared to the EU average of 5.38% of GDP (see Annex 4).

Under its recovery and resilience plan (RRP), the Netherlands has launched significant policy measures that aim at improving its competitiveness. In particular, the RRP envisages reforms in the areas of the energy transition, the labour market, education and healthcare. The Dutch RRP also includes substantial investments to address the housing shortage and support the development of quantum and artificial intelligence technologies.

The implementation of the Netherlands' recovery and resilience plan is significantly delayed. The Netherlands has submitted one payment request on 24 May 2024, corresponding to 30 milestones and targets in the plan (Annex 3). The Commission's assessment is ongoing.

Cohesion policy funding helps tackle the Netherlands' growth and competitiveness challenges and reduce the country's territorial and social disparities. Under the 2014-2020 cohesion programming period, support focused on research and innovation, the low-carbon economy, integrated sustainable urban development, and the labour market. For the current 2021-2027 programming period, support has been extended to include the circular economy, the diversification of industries, and network infrastructure. Furthermore, cohesion policy (as well as the RRP) is investing in life-long learning and upskilling and reskilling, including for the transition to a climate-neutral economy, as well as in actions to improve employment opportunities.

Investing in people, housing and healthcare for economic growth and social resilience

The Netherlands is taking action through the RRP and cohesion policy funding to adapt the labour market and pension system to current challenges and prepare for future ones, and to help students catch up on learning they missed due to the COVID-19 pandemic. Measures included in the plan aim to reduce the differences in tax treatment between employees and the self-employed, notably by: (i) introducing mandatory insurance for the self-employed; and (ii) tackling bogus self-employment by passing a law to amend the definition of what constitutes an employment relationship. Together with cohesion policy funding, the Dutch RRP is also improving the employability of Dutch workers via upskilling and reskilling measures. Unemployed individuals and those at risk of unemployment receive career advice, skills training and support to transition into employment. Furthermore, under the RRP, a law entered into force to reform the pension system and make it more transparent, fair, resistant to shocks, and better suited to a changing labour market. Finally, several investments are being made under the RRP to support disadvantaged groups of students by addressing gaps in their education caused

Box 3:

Combined action for more impactful EU funds

To boost economic growth and maximise the impact of EU funding, the Dutch RRP includes reforms that support investments under other EU instruments, creating important synergies and complementarities between the various funds. For example, to incentivise businesses to limit their energy consumption and switch to renewable sources of energy, a CO_2 levy for industry is being rolled out as part of the RRP. In parallel, cohesion policy funds support investments in renewable sources, such as green hydrogen, targeting SMEs, local green hydrogen infrastructure and research on sustainable energy generation.

by school closures during the COVID-19 pandemic.

The RRP is helping to speed up the construction of housing and make buildings more energy efficient. To complement investments unlocking new constructions, RRP reforms include the removal of bottlenecks in planning and permitting procedures and the agreement on construction targets for new dwellings. In addition, the Dutch RRP is investing in energy efficiency improvements in public and private buildings, which are complemented by cohesion policy initiatives on energy efficiency in deprived neighbourhoods.

Investments are being made under the Dutch RRP to make the healthcare sector more resilient and promote equal access to care. A national healthcare reserve has been set up with around 2 500 former healthcare professionals who can be deployed in times of crisis or during pandemics or other emergencies. The RRP also provides support for e-health tools, improved intensive care capacity in hospitals, on-the-job training for intensive care workers and a common infrastructure for access to the health research data of university medical centres.

Unlocking investments for the green transition

The RRF and cohesion policy funding are together supporting the green transition in the Netherlands. Under its RRP, the Netherlands is implementing significant green policy reforms such as a CO_2 levy for industry, an energy law, car taxes and an air travel tax. These reforms support efforts to decarbonise industry and roll out renewables and sustainable transport. In parallel, the RRP is investing in hydrogen in aviation, in creating preconditions for the roll-out of renewables, zero-emission vessels and railway signalling (ERTMS). The investment in the closure of pig farms helps to reduce nitrogen emissions that act as a barrier to the roll-out of renewable energy production (for example by delaying the permitting of grid expansion projects). The Just Transition Fund will invest in green technologies for the chemical industry and steel production, the production of renewable energy and hydrogen, regional networks for renewable hydrogen and local electricity networks to support the electrification of industrial processes. The Just Transition Fund will also invest in training 49 000 workers who currently work in the fossil fuels sector to equip them with new skills to work in renewable and climate-neutral industries.

Boosting digital skills and technologies for a successful digital transformation

The RRF is providing support for cutting-edge technologies, while also helping to address major skills shortages in the ICT sector, and to boost digital skills more broadly. The Dutch RRP includes investments in quantum computing and artificial

intelligence. These investments will contribute to ensuring that the Netherlands remains an attractive location for private sector investment in technology and that existing firms continue to consider the business environment in the Netherlands as suitable for future expansion. The availability of workers with digital skills is proving to be a bottleneck for Dutch businesses in the ICT sector, as well as for the digitalisation efforts of other sectors. To address this, the RRP includes the digital education impulse investment programme, which will support digital learning throughout the education system. In order to attract ICT professionals, the Netherlands also launched an ICT human capital agenda. Cohesion policy funds include support for digital skills through the broader support for upskilling and reskilling initiatives. Moreover, the European Regional Development Fund provides support for several innovation financing programmes in the Netherlands, including for start-ups and scale-ups in digital technology.

FURTHER PRIORITIES AHEAD

The Netherlands faces additional challenges related to tax policy, housing, the labour market, the public allowances system, long-term care, energy infrastructure and renewables, and excessive nitrogen emissions. Tackling these challenges will help increase the Netherlands' long-term competitiveness and ensure that its economy remains resilient. It will also help the Netherlands to make further progress in achieving the UN Sustainable Development Goals (SDGs).

The policy assessment under the macroeconomic imbalance procedure suggests that progress on the relevant policies in the Netherlands has been limited ([6]). To reduce the high current account surplus, some incentives for (multinational) corporations to retain earnings were reduced, but policy action to increase domestic investment has not been successful. On household debt, the statutory loan-to-value ceiling for new mortgages and mortgage interest deductibility remain generous and could be further reduced.

It is important that the challenges identified are addressed both at the national and regional level to reduce regional disparities and improve the administrative and investment capacity in a balanced way across the country.

Reducing distortions in the tax system

The Netherlands would benefit from taxing income from various forms of wealth at more similar rates. Returns from primary residence properties, pension wealth, and capital income from closely held companies are taxed at favourable rates compared to income from investments in shares and bonds. Furthermore, these investments are not taxed on the basis of their actual return but at an assumed rate, and, until 2023, an assumption was made on the composition of the portfolio (which is a unique practice in the EU). This leads to unfairness as it does not consider inequality between wealth incomes. Taking steps to address these shortcomings could provide the fiscal space to lighten other distortionary taxes, such as taxation on labour, and ensure that the allocation of capital is not motivated by tax considerations. This could help improve the business environment for companies willing to expand their operations in the Netherlands and thus boost the competitiveness of the Dutch economy.

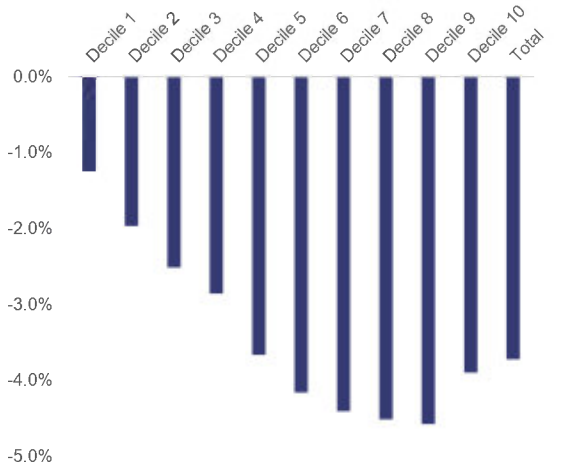
The country's tax system incentivises the accumulation of illiquid forms of wealth. A person's primary residence as well as pension savings benefit from substantial tax subsidies compared to other forms of wealth. The primary residence is subject to a relatively low imputed rent tax (Graph 3.1), which, coupled with generous mortgage interest deductibility, leads to a net tax subsidy on housing wealth and thereby stimulates housing demand. In addition, homeowners with no or little mortgage debt are largely exempt from the imputed rent tax ([7]). Total property tax revenue in the Netherlands was also comparatively lower than the EU average in 2022 (1.7% vs 2.1% of GDP) (Annex 19). Pension contributions benefit from a comparably high annual income threshold up to which they are deductible from taxable income. In addition, returns from

([6]) COM(2024). Institutional Paper 274.

([7]) The tax exemption is being gradually phased out until 2048.

accumulated pension savings are tax-exempt, even when accumulated through contributions above the income threshold ([8]). Reducing these tax benefits that incentivise the accumulation of illiquid forms of wealth would make households less vulnerable to income shocks ([9]) and help to lower both the overvaluation of the housing market and the high levels of household debt.

Graph 3.1: **Impact of taxing imputed rent at the same level as returns from investments (Box 3) on disposable income**



Source: Joint Research Centre, based on the EUROMOD model, I6.0+
Explanation: Imputed rent, currently assessed on average at 0.35% of the value of a house, is simulated to increase to 6.17%, resulting in the same assumed rate of return of investments taxed under 'Box 3'. Observations are ranked into decile groups using household income in 2023, equivalised using the modified OECD equivalence scale. The result shows the progressivity of the measure.

To reduce tax arbitrage, a loophole that wealthy individuals use to postpone and reduce tax payments on capital income through closely held companies could be closed. Almost 20% of all closely held companies registered in the Netherlands have the sole purpose of harbouring investments or pension wealth ([10]). Their number has increased significantly in the last decade. The benefit of accumulating wealth in such companies is twofold. First, dividend income from these companies is taxed at lower rates than capital income, and secondly, company owners can choose to postpone tax payments by retaining the earnings from their investments in the corporation. Nonetheless, in order to have these means at their personal disposal, company owners can, in a tax-exempt manner, extend loans to themselves on behalf of the company ([11]). This practice has been limited by recent legislation but remains possible in many cases ([12]). Besides leading to tax-avoidance, this practice might also hamper productive investments by companies.

Following a ruling by the Dutch Supreme Court in 2021 ([13]), the Netherlands is facing its biggest tax reform in two decades. The court rejected the taxation of capital income at an assumed rate of return and an assumed portfolio of savings and investments. In response to the ruling, the actual portfolio composition will be used from 2024 onwards to collect capital gains tax. Another reform proposal to tax actual returns could enter into force in 2027. These reforms are expected to contribute to a more stable economy by allowing capital income taxation to function as an automatic stabiliser ([14]). However, the other existing distortions and loopholes outlined above (notably related to housing, pensions and closely held companies) are not being addressed.

([8]) Pension income later in life is then taxed at the same rates as income from work.

([9]) Ciurila, N. et al. Are the savings of Dutch households optimal? CPB Notitie (2020).

([10]) Deinum et. al. (2022). De economische activiteit van besloten vennootschappen.

([11]) Jacobs, B. (2019). Fundamentele hervorming van belastingen op kapitaalinkomen. S. Cnossen en B. Jacobs (red.), Ontwerp voor een beter belastingstelsel.

([12]) Recent legislation has limited tax-exempt loans from the own company to below EUR 500 000 or loans for the purchase of a home. Loans of more than EUR 500 000 receive the tax treatment of dividends.

([13]) ECLI:NL:HR:2021:1963.

([14]) Gerritsen, A., & Zoutman, F. (2019). Naar een heffing op werkelijk rendement. S. Cnossen en B. Jacobs (red.), Ontwerp voor een beter belastingstelsel.

Ensuring the availability and affordability of housing

House prices fell for the first time in more than a decade, following interest rate rises. The overvaluation of the housing market has been driven by several factors, including, in addition to the tax incentives discussed in the previous section, low mortgage interest rates and an insufficient housing supply. The recent fall in house prices (down 3.8% between Q3-2022 and Q3-2023) has made housing more affordable. However, despite rising wages, this could not offset the increase in mortgage interest rates, resulting in the reduced borrowing capacity of households. The house-price-to-income ratio in 2023 remained around 31% higher than the long-term average. By the end of 2023, house prices started picking up again and are projected to show an increase in 2024.

Housing shortages are expected to persist amid a relatively poor supply of housing. Factors such as the lack of available and affordable locations, the high cost of building materials, shortages of workers, environmental requirements related to nitrogen, and constraints on the capacity of the energy grid are driving up the cost and leading to delays in the completion of new dwellings.

The Dutch private rental sector is relatively small and expensive. Despite increasing in size by 30.5% since 2013, the private rental sector still made up only around 14.4% of the total housing market in 2023, which is around half the size of the social housing sector. Subsidies for both the owner-occupied and social rental sectors make the private rental sector relatively unattractive for households. Recent policy measures such as buy-to-let bans and the expansion of rent controls risk additional negative effects on supply in the rental sector. The lack of a well-developed private rental market can make it difficult for people to move for work and for companies to attract foreign talent, as available and affordable rental housing is an important factor in a household's decision to relocate ([15]).

Improving productivity by addressing persistent shortages in a segmented labour market

Labour shortages persist on the Dutch labour market and are among the highest in the EU, despite a high participation rate (83.5% in Q3-2023). Job vacancies at 4.4% in Q4-2023 (vs the EU average of 2.5%) remain high, after peaking in Q2 2022 (5%) ([16])Public support during the COVID-19 pandemic and the low-interest rate environment have increased labour hoarding, sometimes in firms with low productivity that might otherwise have gone bankrupt ([17]). However, shortages were already reported before the pandemic in sectors such as information and communication technology, health, education, and technical fields, indicating that structural factors such as a segmented labour market, may be at work. In addition, in 2023 just over half of all workers were employed full time, with almost 70% of women working part-time ([18]). At the same time, the employment rate for people born outside the EU is over 20 percentage points (pps) lower than the overall participation rate (Annex 14). Tapping into the labour market potential of people from these groups can help to alleviate shortages, which may otherwise hold back investment projects, including those related to the green and digital transitions (Annex 8).

Skills shortages pose a risk to labour productivity and competitiveness. Firms

([15]) The 2024 In-Depth Review on the Netherlands contains a more detailed analysis of the affordability and availability of housing (COM(2024) Institutional Paper 274).

([16]) CBS (2024) Tension in the labour market.

([17]) CPB (2024) Krappe arbeidsmarkt vraagt om keuzes.

([18]) CBS (2024) More women and men in large part-time jobs | CBS.

in different sectors are reporting the lack of skilled workers as their main barrier to production, despite adult participation in life-long learning and participation in vocational education and training being significantly higher than the EU average. Furthermore, despite the still relatively high, although decreasing, proportion of top-performing students, the 2022 results of the Programme for International Student Assessment (PISA) show a sharp increase (including compared to other Member States) in the number of underachievers in mathematics, science and reading skills (Annex 15). This decline is one of the biggest in the EU and undermines education and labour market outcomes, as well as long-term productivity. The results also show the importance of addressing segregation in education, and tailoring support measures to the needs of disadvantaged schools. The increasing shortage of teachers can exacerbate challenges in the development of skills and quality of education.

The high degree of segmentation in the Dutch labour market holds back further improvements in skills development and productivity Changes to the institutional set-up and enforcement of the existing rules are needed to reduce the incentives for employers to overuse flexible and temporary contracts. A total of 23% of Dutch employees (down from 28% in 2022) are working on flexible or temporary contracts (vs 12.1% in EU ([19])) and 12.3% are self-employed workers who have no other employees (vs 9.4% in EU) (Annex 14). Despite some benefits of a certain degree of labour market flexibility, the excessive use of flexible types of employment can have negative effects. Participation in learning is a challenge for those in flexible work, which also seems to be correlated with weaker trends in productivity ([20]). The Netherlands is facing low labour productivity growth (0.4% per year in 2010-2019) driven by, for example, strong employment growth in low-productivity sectors and sectors with a high prevalence of flexible work schemes ([21]).

To tackle shortages of workers and skills, it will be necessary to take into account sector-specific needs and barriers. Given the existing shortages in different sectors, policy measures tackling this issue could focus on promoting high value-added sectors, as well as sectors such as education and healthcare, which affect other priorities of the Dutch economy ([22]). The Netherlands could improve upskilling and reskilling opportunities to increase mobility between sectors, particularly to sectors with higher productivity. In response to the labour shortages, the Dutch labour market could also benefit from an increase in investments in R&D and to improve productivity to strengthen Dutch competitiveness, including in low-productivity sectors (Annex 11). Lastly, the Netherlands could incentivise people to increase the hours they work to help reduce labour and skills shortages ([23]).

Reforming an overly complex public allowance system to improve the public administration

The Netherlands has an extensive system of allowances supporting households to cover costs related to housing, healthcare and childcare. In 2022, more than two-thirds of Dutch households received allowances, worth EUR 15.7 billion (1.6% of GDP in 2022).

([19]) Statistics Netherlands (2024), Dashboard arbeidsmarkt. Flexwerk.

([20]) Ando, S. (2020), Productivity in the Netherlands, IMF Working Paper No. 2020/155.

([21]) ESB (2024) Low productivity growth partly due to unfavourable economy structure - ESB.

([22]) CPB (2024) Krappe arbeidsmarkt vraagt om keuzes

([23]) Some specific households (for example low-income single parents) with a strong dependency on allowances can face very high marginal tax rates, which could affect decisions by people in these groups about the hours they work. In addition, the Netherlands has relatively high non-tax compulsory payments (OECD 2023), such as second-pillar pension premiums, which may affect labour market decisions.

The system allows for a very targeted approach in providing extra support to disadvantaged households, but this comes at the cost of a high degree of complexity for both the bodies implementing the system and the people receiving allowances.

A lack of transparency in determining entitlements creates income uncertainty and hampers the take-up of benefits. Almost a quarter of low- and middle-income households do not know whether they are entitled to any of the allowances ([24]). Only 48% of the households received the correct amount in allowances, with almost a quarter of households in 2022 facing a recovery for overpayment. Fear of such recoveries may lead people to apply for allowances only retroactively or not at all, which defeats their original purpose of topping up the current income ([25]). The rate of people with flexible work and of self-employed people, whose income is harder to estimate, who did not take up allowances reached 34% ([26]). The lack of take-up and the possibility of recovery of allowances may exacerbate financial distress and contribute to poverty traps.

The complexity of the system also hinders its implementation. The need for reform has become more evident after more than 20 000 families were wrongly accused of fraud after they requested childcare benefits (Annex 13). In February 2024, the caretaker government sent a letter ([27]) and full report on the future of the allowance system to the Senate and House of Representatives, presenting alternatives to the current set-up.

([24]) National Institute for Budget Information (2023) Nibud: Kwart van huishoudens weet niet of ze recht hebben op toeslagen - Nibud.

([25]) Ministry of Finance (2024) Appendix 1 Description and problem analysis of the benefits system | Report | Rijksoverheid.nl.

([26]) Ministry of Finance (2024) Eindrapport toekomst toeslagenstelsel.

([27]) Government of the Netherlands (2024) Letter to the House of Representatives on the Final Report on the Future of the Benefits System.

Simplifying the allowance system could improve the take-up rate and minimise recoveries. A reform of the allowance system to reduce its complexity for both the implementing bodies and recipients could reduce income uncertainty, especially for people with flexible contracts and the self-employed. To tackle the complexity of the allowance system, it will be necessary to ensure consistency with choices in taxation, social security and municipal schemes.

Addressing challenges in the long-term care system

Expenditure on long-term care in the Netherlands is the highest in the EU and costs are expected to increase substantially. In 2022, total long-term care expenditure in the Netherlands stood at 3.8% of GDP, the highest value in the EU by a wide margin. The Commission's 2024 Ageing Report ([28]) projects that this figure will increase by 1.0 pps by 2040 and 1.9 pps by 2070 (Annex 21). Only two Member States are projected to face bigger increases in expenditure. Under the risk scenario, long-term care expenditure increases by 1.5 pps by 2040 and 3.8 pps by 2070. High public expenditure on long-term care can be partially explained by the near-universal coverage of the Dutch system, which reduces the need for informal care ([29]).

Comparatively high unit costs for institutional care ([30]) suggest that there is scope for improving the efficiency of the long-term care system. Despite a reform of the system in 2015, significant incentives remain in place for municipalities, which provide less expensive home care, to shift responsibility

([28]) European Commission (2024). 2024 Ageing Report.

([29]) Bakx, P., et al. (2023). Long-term care in the Netherlands. National Bureau of Economic Research.

([30]) Unit costs for institutional care are measured as total expenditure on institutional care per patient.

for patients to the more expensive institutional care. This seems to be particularly prevalent in municipalities that are experiencing financial distress ([31]). In addition, insufficient coordination between different care providers at local and national levels is driving up costs ([32]). As a result, unit costs for the provision of institutional care in the Netherlands are among the highest in the EU, even when measured as a share of GDP per capita. Addressing the aforementioned inefficiencies could help limit the increasing costs of long-term care that the Netherlands is facing due to demographic changes.

Making agriculture more sustainable to advance the green transition

Agriculture is the main source of nitrogen pollution in the Netherlands, putting significant constraints on construction activity and the deployment of renewable-energy infrastructure. The nitrogen surplus is four times higher than the EU average, affecting biodiversity and water quality, including because of high nitrate levels. 50% of the nitrogen deposits in the Netherlands result from agriculture, in particular livestock and non-organic agriculture. As a result, construction activity is constrained by the permitting system to avoid an increase in nitrogen emissions.

Despite some measures to reduce nitrogen deposits in agriculture (see Section 2), more efforts are needed to make agriculture sustainable while preserving its competitiveness. The Netherlands has earmarked EUR 24.3 billion to finance a package of measures to reduce nitrogen at the source, but the Senate has not yet voted on its release. This package includes different schemes that promote the voluntary closure of livestock production capacity. The Environmental Planning Agency indicates that further efforts will be needed ([33]). The Netherlands would benefit from reducing livestock numbers, accelerating the transition to circular and organic agriculture, and cutting the use of chemical pesticides and inorganic fertilisers. Furthermore, the position of farmers in the value chain could be improved, for example, through the further development of EU quality signs, greater recognition of producer organisations, further digitalisation and innovation in agriculture, and the increased availability of organic products for consumers.

Agriculture is also an important source of water pollution. Diffuse pollution from agriculture puts the most significant pressure on surface water. There remains an opportunity to increase funding for pollution prevention and control (there is a gap of EUR 2.3 billion per year) and sustainable water management (EUR 1.2 billion) (Annex 6).

Tackling energy grid capacity constraints and accelerating renewables

The Netherlands has made major efforts to accelerate the deployment of renewables. The generation capacity of renewable power is growing fast, following an increase of 21% in 2022, with solar power capacity growing even faster, by 32%. Consequently, the Netherlands now has the highest installed solar capacity per capita of all Member States (more than 1 000 watt per inhabitant in 2022). Wind remains the largest renewable energy

([31]) Alders, P., & Schut, F. T. (2022). Strategic cost-shifting in long-term care. Evidence from the Netherlands. Health Policy, 126(1), 43-48; Portrait, F et al. (2023). Passing on the hot potato. Health Policy, 137, 104914.

([32]) Alders, P., & Schut, F. T. (2019). The 2015 long-term care reform in the Netherlands: Getting the financial incentives right?. Health Policy, 123(3), 312-316.

([33]) Planbureau voor de Leefomgeving (2023). Geraamde ontwikkelingen in nationale emissies van luchtverontreinigende stoffen 2022.

source in the Netherlands, mainly from offshore wind farms, making up around 16% of the country's electricity production. Despite this strong progress, the share of renewables in final energy consumption was 15.0% in 2022, still significantly below the EU average of 23.0%, which shows the potential for a further transition to renewables.

Increasing the capacity and flexibility of the grid is key to ensuring the security of electricity supply and the clean energy transition. Capacity constraints in the electricity grid are worsening and reach the whole territory of the country. In past years, congestion was especially prevalent in rural, sparsely populated areas, where energy demand has traditionally been low. However, congestion is now also impacting the main urban areas (the 'Randstad') with a high concentration of population and economic activity. Congestion in the grid is thereby becoming a significant bottleneck for the roll-out of renewable energy installations and for economic activity. The Dutch electricity grid can no longer accommodate the rapidly growing demand for transmission and distribution capacity. On the transmission side, this can be seen in the regular refusal by network operators to allow new producers of electricity to connect to the grid. Congestion is also preventing the deployment of renewable energy installations, including solar panels by households, as these rely heavily on the transmission capacity of the electricity grid during peaks of wind and solar power generation. In addition, congestion in the grid is impacting the uptake of electric transport and slowing down connections to premises, thereby limiting the expansion of business activity and the construction of new dwellings.

The national energy system plan ([34]), adopted in December 2023, calls for investments of EUR 8 billion per year from 2025 in additional grid and storage capacity. To facilitate the necessary investments in the expansion of electricity infrastructure, faster permitting procedures for electricity transmission and distribution networks are crucial (multi-year permits, centralised decision-making involving all stakeholders, regulatory incentives - some of these are included in the Dutch RRP). This would also speed up the implementation of onshore and offshore renewable energy projects (Annex 6). Finally, according to the Dutch energy regulator ACM ([35]), there is room to tackle congestion through technical measures and regulation (e.g. tariff incentives, time-of-use).

([34]) Ministry of economic affairs and climate (2023) Nationaal plan energiesysteem (NPE).

([35]) ACM (2024). Pakket aan maatregelen tegen netcongestie.

Box 4:

The mid-term review of cohesion policy funds for the Netherlands

The mid-term review of cohesion policy funds is an opportunity to assess cohesion policy programmes and tackle emerging needs and challenges in Member States and their regions. Member States are reviewing each programme taking into account among other things the challenges identified in the European Semester, including in the 2024 country-specific recommendations. This review forms the basis for a proposal by the Member State for the definitive allocation of 15% of EU funding included in each programme.

The Netherlands has made progress in implementing cohesion policy programmes and the European Pillar of Social Rights, but challenges remain as outlined in this report, including Annexes 14 and 17. In particular, while regional differences in GDP per capita remained stable and all regions ranked well above the EU average in terms of competitiveness, the transition to a carbon-neutral economy affects regions with clusters of emission-intensive industries differently. Against this background, it remains important to continue to implement the planned priorities, paying particular attention to: (i) innovation to assist the green and digital transition in all regions within the framework of regional smart specialisation strategies; (ii) economic diversification, network infrastructure, upskilling and reskilling of workers and potential workers for the green economy in the regions most affected by the climate transition; (iii) support for societal transitions in deprived urban areas in large cities; (iv) increasing investments in life-long learning, upskilling and reskilling, and in other measures to improve employment opportunities, in particular for those at the margins of the labour market and for inactive people to find a job, and by encouraging people to look for work or training; (v) addressing social and labour market inequalities by investing in equal opportunities and by combating discrimination.

The potential for testing and piloting solutions to reduce congestion in the power grid deserves specific consideration in the preparation for the mid-term review. The Netherlands could benefit from the opportunities provided by the Strategic Technologies for Europe Platform (STEP) initiative ([36]) to support the transformation of industry and facilitate investments in net-zero technology manufacturing, including in upskilling and reskilling.

([36]) Regulation (EU) 2024/795.

KEY FINDINGS

The Netherlands' recovery and resilience plan (RRP) includes measures to address a series of structural challenges, in synergy with other EU funds, including cohesion policy funds, by:

- **Promoting the green transition** through the deployment of renewable energy sources and connection to the grid, investing in hydrogen infrastructure, shifting to sustainable agriculture, boosting energy efficiency in public and private buildings, and reforms incentivising renewable energy production and sustainable transport;
- **Accelerating the digital transformation** by developing quantum technology, digital skills, and digital solutions to improve safe, smart and sustainable transport;
- **Developing a skilled workforce** by helping students to catch up on gaps in their education caused by the COVID-19 pandemic, and offering continuous learning opportunities and career advice;
- **Reforming of the second pillar of the pension system** to improve its fairness, transparency, and shock resilience;
- **Ensuring the resilience of the healthcare sector** in times of crisis;
- **Improving the housing market** by reforming planning and permitting procedures, setting regional construction targets, and providing funds to unlock private construction projects;
- **Ensuring a level playing field** between employees and the self-employed by introducing mandatory disability insurance for the self-employed and by taking measures to tackle bogus self-employment;

The implementation of the Netherlands' recovery and resilience plan is facing delays which require decisive actions to ensure a successful implementation of all the measures of the Dutch recovery and resilience plan by August 2026.

Beyond the reforms and investments in the RRP and cohesion policy programmes, the Netherlands would benefit from:

- **Aligning the taxation** of different types of incomes from wealth, and thereby reducing the accumulation of illiquid forms of wealth and tax arbitrage;
- **Further improving social resilience** and inclusive growth by (i) addressing labour market segmentation; (ii) improving students' basic skills; and (iii) tackling structural labour and skills shortages, including by tapping into the potential of people at the margins of the labour market and by encouraging mobility from low to high productivity sectors and to sectors related to societal challenges;
- **Removing obstacles** to the construction of new dwellings and ensuring the affordability and availability of housing on the private rental market;
- **Reducing the complexity** of the public allowance system;
- **Ensuring the budgetary sustainability** of the long-term care system;
- **Reducing capacity constraints** in the electricity grid through further investments and reforms to accelerate the deployment of renewable energy;
- **Making agriculture more sustainable**, thereby reducing nitrogen emissions and improving water quality.

ANNEXES

LIST OF ANNEXES

LIST OF TABLES

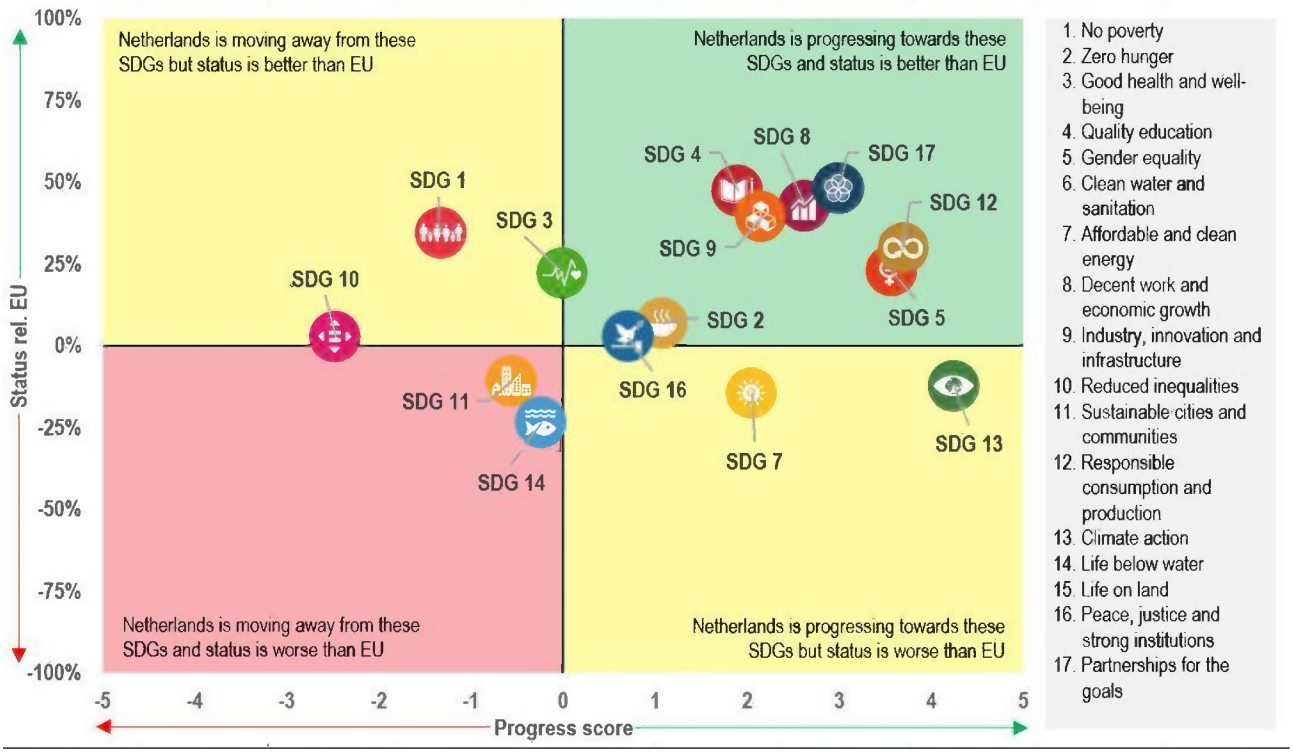
LIST OF GRAPHS

LIST OF MAPS

This Annex assesses the Netherlands' progress on the Sustainable Development Goals (SDGs) along the four dimensions of competitive sustainability. The 17 SDGs and their related indicators provide a policy framework under the UN's 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty, fight inequalities and tackle climate change and the environmental crisis, while ensuring that no one is left behind. The EU and its Member States are committed to this historic global framework agreement and to playing an active role in maximising progress on the SDGs. The graph below is based on the EU SDG indicator set developed to monitor progress on the SDGs in an EU context.

The Netherlands performs well on several SDG indicators related to *environmental sustainability* (SDGs 2, 6, 9, 12, 15). However, it still needs to catch up with the EU average on SDGs 7 and 13, and is moving away from the targets for SDGs 11 and 14. On SDG 13 (Climate action), net greenhouse gas emissions have decreased over time (from 12.2 tonnes per capita in 2017 to 9.5 tonnes per capita in 2022) but are still above the EU average (7.3 tonnes per capita in 2022). As regards SDG 7 (Affordable and clean energy), the Netherlands has made considerable progress on increasing the share of renewable energy in total energy consumption (from 6.5% in 2017 to 15.0% in 2022) but remains below the EU average (23.0% in 2022). The Netherlands also improved on indicators such as primary energy consumption (3.2 tonnes of oil equivalent per capita in 2022) and final energy consumption (2.5 tonnes in 2022), but consumption still remains above the EU average (2.8 and 2.1 tonnes, respectively, in 2022). Energy import dependency increased further (from 49.5% in 2017 to 80.2% in 2022) and is thus considerably above the EU average (62.5% in 2022). However, under SDG 12 (Responsible consumption and production), it

Graph A1.1: **Progress towards the SDGs in the Netherlands**



For detailed datasets on the various SDGs, see the annual Eurostat report '[Sustainable development in the European Union]'; for details on extensive country-specific data on the short-term progress of Member States: [Key findings – Sustainable development indicators - Eurostat (europa.eu)]. A high status does not mean that a country is close to reaching a specific SDG, but signals that it is doing better than the EU on average. The progress score is an absolute measure based on the indicator trends over the past 5 years. The calculation does not take into account any target values as most EU policy targets are only valid for the aggregate EU level. Depending on data availability for each goal, not all 17 SDGs are shown for each country.

Source: Eurostat, latest update of 25 April 2024. Data refer mainly to the period 2017-2022 or 2018-2023. Data on SDGs may vary across the report and its annexes due to different cut-off dates.

is notable that the Netherlands has the second lowest material footprint per inhabitant in the EU, and this continues to decrease (from 7.3 tonnes in 2017 to 6.8 tonnes in 2022). Even though the Netherlands scores well on SDG 2 (Zero hunger), when it comes to the environmental impacts of agricultural production, ammonia emissions from agriculture (57.8 kg in 2021) are still very high compared to the EU average (18.8 kg in 2021). The Dutch recovery and resilience plan (RRP) includes investments to boost the deployment of renewable energy and support the transition to sustainable agriculture.

The Netherlands performs very well on most SDG indicators related to *fairness* (SDGs 3, 4, 5, 8), but is moving away from the targets for SDGs 1 and 10, and needs to catch up with the EU average on SDG 7. The Netherlands outperforms the EU average in most indicators related to health, education, gender equality, and decent work and growth (SDGs 3, 4, 5 8). Historically, the Netherlands performs very well on decent work and economic growth (SDG 8). The employment rate increased further between 2018 and 2023 (from 80.0% to 83.5%), which makes the Netherlands one of the best performers in the EU (EU average: 75.3% in 2023). In addition, the long-term unemployment rate decreased (from 1.2% in 2018 to 0.5% in 2023) and is well below the EU average (2.1% in 2023). Some indicators for SDG 1 (No poverty) worsened in recent years. The housing cost overburden rate impacts 10.0% of the population (in contrast to 9.4% in 2017), and the number of people at risk of monetary poverty after social transfers increased between 2017 and 2022 (from 13.2% to 14.5% of the population). On migration and social inclusion (SDG 10), the gap between non-EU citizens and EU nationals in terms of people at risk of monetary poverty after social transfers increased substantially between 2017 and 2022 (from 19.7% to 28.9%) and is now above the EU average of 22.7%. At the same time, the gap between those two categories in terms of employment rates slightly decreased (from 23.6% in 2018 to 22.2% in 2023), remaining above the EU average (13.2% in 2023). The Dutch RRP includes reforms and investments aimed at fair education and a resilient health system.

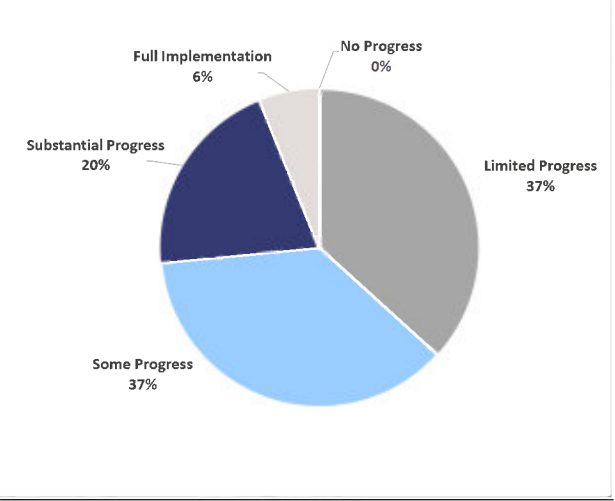
The Netherlands performs very well on SDG indicators related to *productivity* (SDGs 4, 8, 9). When it comes to quality education (SDG 4), the Netherlands has the highest share of people with at least basic digital skills (82.7% in 2023; EU average: 55.6%), and one of the highest shares of adult participation in learning (24.4% in 2023; EU average: 12.7%). In addition, participation in tertiary education increased further (from 47.6% in 2018 to 54.5% in 2023) and is substantially above the EU average of 43.1%. On SDG 9 (Industry, innovation and infrastructure), the Netherlands outperforms the EU average. The share of households with high-speed internet in 2022 (97.8%) was well above the EU average (73.4%), representing significant progress on this indicator since 2017 (31.9%). The Netherlands also increased R&D investments as a share of GDP (from 2.2% in 2017 to 2.3% in 2022), and is thus just above the EU average (2.2% in 2022). The share of R&D personnel among the active population rose from 1.7% in 2017 to 2.0% in 2022 (EU average: 1.5% in 2022). The Dutch RRP includes several measures to further improve digital skills and upskill and reskill the workforce.

The Netherlands performs very well on SDG indicators related to *macroeconomic stability* (SDGs 8, 16 and 17). On SDG 16 (Peace, justice and strong institutions), the perceived independence of the justice system saw however a notable drop from 79% in 2018 to 70% in 2023 (still above the EU average of 53% in 2023). Similarly, the corruption perceptions index decreased from 82% in 2018 to 79% in 2023 (also still above the EU average of 64% in 2023). The Netherlands performs better than the EU average on indicators related to partnerships for the goals (SDG 17) and decent work and economic growth (SDG 8). The Dutch RRP includes reforms to improve transparency of the public administration and several measures to tackle money laundering.

As the SDGs form an overarching framework, any links to relevant SDGs are either explained or depicted with icons in the other annexes.

The Commission has assessed the 2019-2023 country-specific recommendations (CSRs) ([37]) addressed to the Netherlands as part of the European Semester. These recommendations concern a wide range of policy areas that are related to 13 of the 17 Sustainable Development Goals (SDGs) (see Annexes 1 and 3). The assessment considers the policy action taken by the Netherlands to date ([38]) and the commitments in its recovery and resilience plan (RRP) ([39]). At this stage, 63% of the CSRs focusing on structural issues from 2019-2023 have recorded at least 'some progress', while 37% recorded 'limited progress' (see Graph A2.1). As the RRP is implemented, considerable progress in addressing structural CSRs is expected in the coming years.

Graph A2.1: **The Netherland's progress on the 2019-2023 CSRs (2024 European Semester)**



Source: European Commission.

([37]) 2023 CSRs: EUR-Lex - 32023H0901(19) - EN - EUR-Lex (europa.eu).

2022 CSRs: EUR-Lex - 32022H0901(19) - EN - EUR-Lex (europa.eu)

2021 CSRs: EUR-Lex - 32021H0729(19) - EN - EUR-Lex (europa.eu)
2020 CSRs: EUR-Lex - 32020H0826(19) - EN - EUR-Lex (europa.eu)
2019 CSRs: EUR-Lex - 32019H0905(19) - EN - EUR-Lex (europa.eu)

([38]) Including policy action reported in the national reform programme and in Recovery and Resilience Facility (RRF) reporting (published twice a year, reporting on progress in implementing milestones and targets on the basis of the payment requests assessment).

([39]) Member States were asked to effectively address in their RRPs all or a significant subset of the relevant country-specific recommendations issued by the Council. The CSR assessment presented here considers the degree of implementation of the measures included in the RRP and of those carried out outside of the RRP at the time of assessment. Measures laid down in the Annex of the adopted Council Implementing Decision on approving the assessment of the RRP, which have not yet been adopted or implemented but considered credibly announced, in line with the CSR assessment methodology, warrant 'limited progress'. Once implemented, these measures can lead to 'some/substantial progress or full implementation', depending on their relevance.

Table A2.1: **Summary table on 2019-2023 CSRs**

Netherlands	Assessment in May 2024*	RRP coverage of CSRs until 2026**	Relevant SDGs
2019 CSR 1	**Some progress**		
Reduce the debt bias for households and the distortions in the housing market, including by supporting the development of the private rental sector.	Limited progress	Relevant RRP measures planned as of 2022, 2023 and 2024	SDG 8
Ensure that the second pillar of the pension system is more transparent, inter-generationally fairer and more resilient to shocks.	Substantial progress	Relevant RRP measures planned as of 2023	SDG 8
Implement policies to increase household disposable income, including by strengthening the conditions that support wage growth, while respecting the role of social partners.	Substantial progress		SDG 8
Address features of the tax system that may facilitate aggressive tax planning, in particular by means of outbound payments, notably by implementing the announced measures.	Substantial progress	Relevant RRP measures planned as of 2021, 2022 and 2024	SDG 8, 16
2019 CSR 2	**Limited progress**		
Reduce the incentives for the self-employed without employees, while promoting adequate social protection for the self-employed,	Limited progress	Relevant RRP measures planned as of 2023 and 2025	SDG 1, 2, 8, 10
and tackle bogus self-employment.	Limited progress	Relevant RRP measures planned as of 2022 and 2025	SDG 8
Strengthen comprehensive life-long learning and upgrade skills notably of those at the margins of the labour market and the inactive.	Some progress	Relevant RRP measures planned as of 2020 and 2021	SDG 4
2019 CSR 3	**Some progress**		
While respecting the medium-term budgetary objective, use fiscal and structural policies to support an upward trend in investment.	Not relevant anymore		SDG 8, 16
Focus investment-related economic policy on research and development in particular in the private sector,	Some progress	Relevant RRP measures planned as of 2021, 2023, 2024 and 2025	SDG 9
on renewable energy, energy efficiency and greenhouse gas emissions reduction strategies	Some progress	Relevant RRP measures planned as of 2021, 2022, 2023, 2024, 2025 and 2026	SDG 7, 9, 13
and on addressing transport bottlenecks.	Some progress	Relevant measures planned as of 2022, 2023, 2024 and 2025	SDG 11
2020 CSR 1	**Some progress**		
In line with the general escape clause, take all necessary measures to effectively address the pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.	Not relevant anymore		SDG 8, 16
Strengthen the resilience of the health system, including by tackling the existing shortages of health workers and stepping up the deployment of relevant e-Health tools.	Some progress	Relevant RRP measures planned as of 2021,2022 and 2023	SDG 3
2020 CSR 2	**Some progress**		
Mitigate the employment and social impact of the crisis and	Substantial progress	Relevant RRP measures planned as of 2020,2021 and 2023	SDG 1, 2, 8, 10
promote adequate social protection for the self-employed.	Limited progress	Relevant RRP measures planned as of 2023 and 2025	SDG 1,2,10
2020 CSR 3	**Some progress**		
Front-load mature public investment projects (to foster the economic recovery)	Limited progress	Relevant RRP measures planned as of 2023 and 2024	SDG 8, 16
and promote private investment to foster the economic recovery.	Limited progress	Relevant RRP measures planned as of 2021,2023,2024 and 2026	SDG 8, 9
Focus investment on the green and digital transition, in particular on digital skills development,	Some progress	Relevant RRP measures planned as of 2021,2024 and 2025	SDG 4
sustainable infrastructure and clean and efficient production and use of energy	Some progress	Relevant RRP measures planned as of 2021,2022, 2023, 2024, 2025 and 2026	SDG 7, 9, 13
as well as mission-oriented research and innovation.	Substantial progress	Relevant RRP measures planned as of 2021,2023,2024 and 2025	SDG 9
2020 CSR 4	**Substantial progress**		
Take steps to fully address features of the tax system that facilitate aggressive tax planning in particular on outbound payments, notably by implementing the adopted measures and ensuring its effectiveness.	Substantial progress	Relevant RRP measures planned as of 2021,2022 and 2024	SDG 8, 16
Ensure effective supervision and enforcement of the anti-money laundering framework.	Substantial progress	Relevant RRP measures planned as of 2024	SDG 8, 16
2021 CSR 1	**Not relevant anymore**		
In 2022, pursue a supportive fiscal stance, including the impulse provided by the Recovery and Resilience Facility, and preserve nationally financed investment.	Not relevant anymore	Not applicable	SDG 8, 16
When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.	Not relevant anymore	Not applicable	SDG 8, 16
At the same time, enhance investment to boost growth potential. Pay particular attention to the composition of public finances, on both the revenue and expenditure sides of the budget, and to the quality of budgetary measures in order to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, in particular investment supporting the green and digital transition.	Not relevant anymore	Not applicable	SDG 8, 16
Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including, where relevant, by strengthening the coverage, adequacy and sustainability of health and social protection systems for all.	Not relevant anymore	Not applicable	SDG 8, 16
2022 CSR 1	**Some progress**		
In 2023, ensure that the growth of nationally financed primary current expenditure is in line with an overall neutral policy stance, taking into account continued temporary and targeted support to households and firms most vulnerable to energy price hikes and to people fleeing Ukraine. Stand ready to adjust current spending to the evolving situation.	Substantial progress	Not applicable	SDG 8, 16
Expand public investment for the green and digital transitions, and for energy security taking into account the REPowerEU initiative, including by making use of the Recovery and Resilience Facility and other Union funds.	Limited progress	Not applicable	SDG 8, 16
For the period beyond 2023, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions.	Full implementation	Not applicable	SDG 8, 16
Reduce the debt bias for households and the distortions in the housing market, including by supporting the development of the private rental sector and taking measures to increase housing supply.	Limited progress	Relevant RRP measures planned as of 2022, 2023 and 2024	SDG 8
Enact and implement the reform of the pension system agreed in 2019 and 2020.	Substantial progress	Relevant RRP measures planned as of 2023	SDG 8
2022 CSR 2			
Swiftly finalise the negotiations with the Commission of the 2021-2027 cohesion policy programming documents with a view to starting their implementation.	Progress on the cohesion policy programming documents is monitored under the EU cohesion policy.		
2022 CSR 3	**Limited progress**		
Promote adequate social protection for the self-employed without employees,	Limited progress	Relevant RRP measures planned as of 2023 and 2025	SDG 1, 2, 10
tackle bogus self-employment	Limited progress	Relevant RRP measures planned as of 2022 and 2025	SDG 8
and reduce the incentives to use flexible or temporary contracts.	Limited progress		SDG 8
Address labour and skills shortages, in particular in healthcare, education, digital and technical jobs and construction, including by tapping underutilised labour potential originating from the high share of part-time employment and the lower employment rate of people with a migrant background.	Some progress	Relevant RRP measures planned as of 2021,2023,2024 and 2025	SDG 8
Strengthen up- and reskilling opportunities, in particular for those at the margins of the labour market and the inactive.	Some progress	Relevant RRP measures planned as of 2020, 2022, 2023, 2024 and 2026	SDG 4

(Continued on the next page)

Table (continued)

2022 CSR 4	**Some progress**		
Reduce overall reliance on fossil fuels	Limited progress	Relevant RRP measures planned as of 2021, 2022, 2023, 2024, 2025, and 2026	SDG 7, 13
by accelerating the deployment of renewables, in particular by boosting complementary investments in network infrastructure and further streamlining permitting procedures,	Some progress	Relevant RRP measures planned as of 2021, 2023, 2024, 2025, 2026	SDG 7, 9, 16
improving energy efficiency, in particular in buildings,	Some progress	Relevant RRP measures planned as of 2022, 2025, 2026	SDG 7
and accelerating investments in sustainable transport	Some progress	Relevant RRP measures planned as of 2022, 2023, 2024, 2025, 2026	SDG 11
and sustainable agriculture.	Limited progress	Relevant RRP measures planned as of 2023	SDG 11, 12, 13, 15
2023 CSR 1	**Some progress**		
Wind down the emergency energy support measures in force, using the related savings to reduce the government deficit, as soon as possible in 2023 and 2024. Should renewed energy price increases necessitate new or continued support measures, ensure that these are targeted at protecting vulnerable households and firms, fiscally affordable, and preserve incentives for energy savings.	Substantial progress	Not applicable	SDG 1, 7, 8, 10, 12
Ensure prudent fiscal policy, in particular by limiting the nominal increase in nationally financed net primary expenditure in 2024 to not more than 3.5%.	Some progress	Not applicable	SDG 8
Preserve nationally financed public investment and ensure the effective absorption of RRF grants and other EU funds, in particular to foster the green and digital transitions.	Full implementation	Not applicable	SDG 8, 9, 13
For the period beyond 2024, continue to pursue a medium-term fiscal strategy of gradual and sustainable consolidation, combined with investments and reforms conducive to higher sustainable growth, to achieve a prudent medium-term fiscal position.	Full implementation	Not applicable	SDG 8
Reduce the household debt bias and distortions in the housing market. Support the availability and affordability of housing on the private rental market.	Limited progress	Relevant RRP measures planned as of 2022, 2023 and 2024	SDG 8
Remove obstacles holding back investments, including in residential construction.	Limited progress	Relevant RRP measures planned as of 2022 and 2024	
2023 CSR 2			
Proceed with the steady implementation of its recovery and resilience plan and swiftly finalise the REPowerEU chapter with a view to rapidly starting its implementation. Proceed with the speedy implementation of cohesion policy programmes, in close complementarity and synergy with the recovery and resilience plan.	RRP implementation is monitored through the assessment of RRP payment requests and analysis of the bi-annual reporting on the achievement of the milestones and targets, to be reflected in the country reports. Progress with the cohesion policy is monitored in the context of the Cohesion Policy of the European Union.		
2023 CSR 3	**Limited progress**		
Reduce incentives to use flexible or temporary contracts.	Limited progress		SDG 8
Taking into account sector-specific needs, address structural labour and skills shortages, including by tapping into underutilised labour potential	Some progress	Relevant RRP measures planned as of 2021, 2023, 2024 and 2025	SDG 8
and strengthening up- and reskilling opportunities, in particular for those at the margins of the labour market and the inactive.	Some progress	Relevant RRP measures planned as of 2020, 2022, 2023, 2024 and 2026	SDG 4, 8, 10
2023 CSR 4	**Some progress**		
Reduce reliance on fossil fuels	Limited progress	Relevant RRP measures planned as of 2021, 2022, 2023, 2024, 2025, and 2026	SDG 7, 13
by accelerating the deployment of renewables, improving framework conditions to boost investment in the expansion of electricity transmission and distribution grids,	Some progress	Relevant RRP measures planned as of 2021, 2023, 2024, 2025 and 2026	SDG 7, 9, 13
extending and accelerating energy efficiency measures to reduce energy consumption, in particular in the built environment.	Some progress	Relevant RRP measures planned as of 2022, 2025 and 2026	SDG 12
Support the transition towards sustainable agriculture.	Limited progress	Relevant RRP measures planned as of 2023	SDG 11, 12, 13, 15
Step up policy efforts aimed at the provision and acquisition of skills and competences needed for the green transition.	Some progress	Relevant RRP measures planned as of 2023	SDG 4, 13

Note:.
* See footnote ([39]).
** RRP measures included in this table contribute to the implementation of CSRs. Nevertheless, additional measures outside the RRP are necessary to fully implement CSRs and address their underlying challenges. Measures indicated as "being implemented" are only those included in the RRF payment requests submitted and positively assessed by the European Commission.
Source: European Commission.

This Annex provides a snapshot of the Netherlands' implementation of its recovery and resilience plan (RRP), past the mid-way point of the Recovery and Resilience Facility's (RRF) lifetime. The RRF has proven central to the EU's recovery from the COVID-19 pandemic, helping speed up the twin green and digital transition, while adapting to geopolitical and economic developments, and strengthening resilience against future shocks. The RRF is also helping implement the UN Sustainable Development Goals and address the country-specific recommendations (see Annex 2).

The RRP paves the way for disbursing up to EUR 5.4 billion in grants under the RRF over the 2021-2026 period, representing 0.5% of the Netherlands' GDP ([40]). As of 15 May, the Netherlands still had its full RRF allocation available, which will be disbursed after the assessment of the future fulfilment of the 132 milestones and targets ([41]) included in the Council Implementing Decision ([42]) (CID), ahead of the 2026 deadline established for the RRF.

The Netherlands' progress in implementing its plan is recorded in the Recovery and Resilience Scoreboard ([43]). The scoreboard gives an overview of the progress made in implementing the RRF as a whole. Graph A3.1 shows the current state of play as reflected in the scoreboard.

The Dutch RRP includes a REPowerEU chapter to phase out its dependency on Russian fossil fuels, diversify its energy supplies, and produce more clean energy in the coming years. The Netherlands still has pre-financing available to kick-start the chapter's implementation, which includes a scaled-up investment for sustainable energy and energy savings in housing and a relevant reform that will contribute to ensuring the supply of affordable, secure, and sustainable energy, by tackling grid congestion and accelerating the deployment of renewable energy.

Table A3.1: **Key facts of the Dutch RRP**

Initial plan CID adoption date	4 October 2021
Scope	Revised plan with REPowerEU chapter
Last major revision	17 October 2023
Total allocation	EUR 5.441 billion in grants (0.5% of 2023 GDP)
Investments and reforms	28 investments and 22 reforms
Total number of milestones and targets	132
Fulfilled milestones and targets	0 (0% of total)

Source: RRF Scoreboard

The plan has a strong focus on the green transition, dedicating 54.9% of the available funds to measures that support climate objectives and 25.6% of its total allocation to support the digital transition. It also retains a strong social dimension with measures related to affordable housing, protection of the self-employed, and support for re-employment.

Graph A3.1: **Total grants disbursed under the RRF**

Note: This graph displays the amount of grants, including pre-financing, disbursed so far under the RRF. Grants are non-repayable financial contributions. The total amount of grants given to each Member State is determined by an allocation key and the total estimated cost of the respective RRP.
Source: RRF Scoreboard

([40]) GDP information is based on 2023 data. Source: https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/index.html?lang=en

([41]) A milestone or target is satisfactorily fulfilled once a Member State has provided evidence to the Commission that it has reached the milestone or target and the Commission has assessed it positively in an implementing decision.

([42]) https://data.consilium.europa.eu/doc/document/ST-12275-2022-ADD-1/en/pdf

([43]) https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

With a significantly delayed implementation of its RRP, the Netherlands submitted its first payment request on 24 May 2024, which the Commission is now assessing. Table A3.2 highlights some relevant measures that will be implemented before 2026 to keep making the Dutch economy greener, more digital, inclusive, and resilient.

Table A3.2: **Measures in the Netherlands' RRP**

Upcoming reforms and investments
• Investment on increase capacity of wind power generation in the North Sea • Research and development of quantum technologies • Increase in the intensive care capacity of the healthcare system

Source: FENIX

EU funding instruments provide considerable resources for recovery and growth to the EU Member States. In addition to the EUR 5.4 billion of Recovery and Resilience Facility (RRF) funding described in Annex 3, EU cohesion policy funds ([44]) provide EUR 1.5 billion to the Netherlands for the 2021-2027 period ([45]). Support from these two instruments combined represents around 0.68% of the country's 2023 GDP, compared to the EU average of 5.38% of GDP ([46]). Cohesion policy supports regional development, economic, social and territorial convergence and competitiveness through long-term investment in line with EU priorities and with national and regional strategies.

During the 2014-2020 programming period, cohesion policy funds boosted the Netherlands' competitiveness, with tangible achievements notably in research and innovation, and social inclusion. By the end of the eligibility period in December 2023, 2014-2020 cohesion policy funds ([47]) had made EUR 1.6 billion available to the Netherlands ([48]), of which EUR 816.2 million has been disbursed since March 2020, when the COVID-19 pandemic began ([49]). The achievements of cohesion policy funds over the programming period have centred around research and innovation with 5 700 businesses receiving support so far, leveraging EUR 303 million of private-sector investment. Of these businesses, 514 worked together with research institutions. During the same period, over 600 000 participants received support under active inclusion and anti-poverty measures, supported by the European Social Fund (ESF) in the Netherlands. These measures supported the most vulnerable groups with almost one out of two people having low-level qualifications and 37% having a migrant background.

In the current programming period (2021-2027), cohesion policy will provide a further boost to the Netherlands' competitiveness, to the green transition and to social cohesion, improving the living and working conditions of the Netherlands' people. In 2021-2027, the European Regional Development Fund is supporting innovation in SMEs and helping them cooperate with research organisations in line with regional smart specialisation strategies. Over 6 000 businesses will be supported, of which 900 will cooperate with research organisations, leveraging an estimated EUR 390 million of private investment. Innovative renewable energy projects will create an additional production capacity of 116 MW. The Just Transition Fund supports six regions with emission-intensive industries. The fund will support 1 500 businesses of which 380 will cooperate with research organisations. An estimated EUR 312 million of private investment will be used. About 49 000 people will benefit from upskilling and reskilling. Almost 12 000 staff members from SMEs will complete training for skills for smart specialisation and industrial transition. The European Social Fund Plus will provide EUR 366 million to help develop human capital in the Netherlands. This will help 317 000 people in total, and involve providing unemployed people with access to training, supporting career transitions and promoting life-long learning. With this work, cohesion policy substantially contributes to achieving the Sustainable Development Goals (SDGs) in the Netherlands, in particular SDG 8 (Decent work and economic growth), SDG 9 (Industry, innovation, infrastructure) and SDG 7 (Affordable and clean energy).

([44]) In 2021-2027, cohesion policy funds include the European Regional Development Fund, the European Social Fund Plus and the Just Transition Fund.

([45]) European territorial cooperation (ETC) programmes are excluded from the figure. In 2021-2027, the total investment, including national financing, amounts to EUR 3.5 billion.

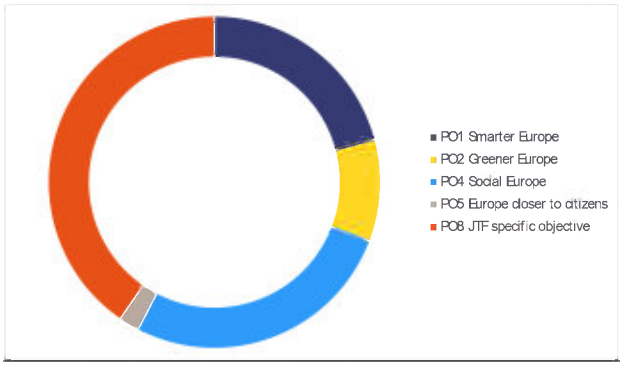
([46]) RRF funding includes both grants and loans, where applicable. The EU average is calculated for cohesion policy funds excluding ETC programmes. GDP figures are based on Eurostat data for 2022.

([47]) In 2014-2020, cohesion policy funds included the European Regional Development Fund and the European Social Fund. REACT-EU allocations are included but ETC programmes are excluded.

([48]) In 2014-2020, the total investment, including national financing, amounted to EUR 3.1 billion.

([49]) Cut-off date: 14 May 2024.

Graph A4.1: **Distribution of cohesion policy funding across policy objectives in the Netherlands**

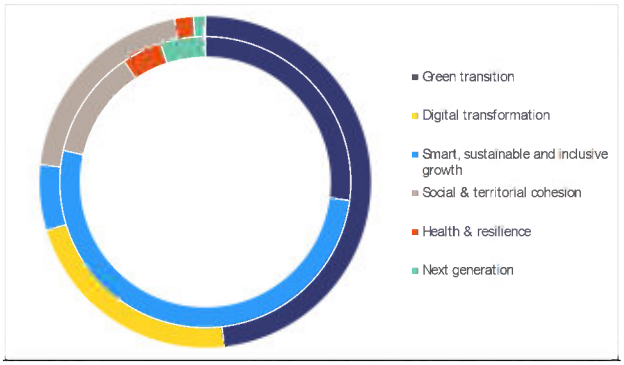


Source: European Commission

Through combined action, cohesion policy and the recovery and resilience plan (RRP) have a mutually reinforcing impact in the Netherlands. For instance, the RRP invests in research and development of green hydrogen. Cohesion policy funds complement this by supporting innovative green hydrogen projects in SMEs, including start-ups and scale-ups, and boosting investment in upskilling and reskilling of workers to support the transition to a climate-neutral economy. The RRP is also expected to boost the development of renewable energy by investing in offshore wind energy and reforms that enable renewable energy to be connected to the electricity grid. Cohesion policy funds are being invested in research and innovation projects that bring new or improved renewable energy technologies closer to the market. The contribution of cohesion policy and RRP funding by policy objective is illustrated by Graphs A4.1 and A4.2.

The Technical Support Instrument (TSI) helps the Netherlands invest in its public administration and create a better enabling environment for EU and national investment. The TSI has funded projects in the Netherlands to design and implement growth-enhancing reforms since 2019. The support provided in 2023 included projects to help the authorities supervise artificial intelligence, improve the permitting process for renewable energy projects and improve policies for attracting and retaining highly skilled talent. In addition, the TSI helps the Netherlands strengthen its capacity to implement the RRP and monitor its performance, as well as work on specific reforms and investments, such as those linked with the development of the renewable hydrogen sector.

Graph A4.2: **Distribution of RRF funding by pillar in the Netherlands**



(1) Each RRP measure helps achieve the aims of two of the six policy pillars of the RRF. The primary contribution is shown in the outer circle while the secondary contribution is shown in the inner circle. Each contribution represents 100% of the RRF funds. Therefore, the total contribution to all pillars displayed on this chart amounts to 200% of the RRF funds allocated to the Netherlands.
Source: European Commission

The Netherlands also receives funding under several other EU instruments including those listed ones presented in Table A4.1.

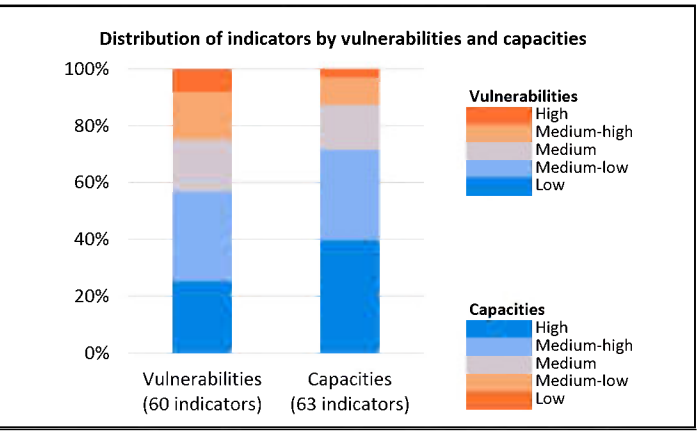
Table A4.1: **Support from EU instruments in the Netherlands**

EU grants		
	Amount 2014-2020 (EUR million)	Amount 2021-2027 (EUR million)
Cohesion policy	1 582.1	1 543.1
RRF grants (1)	-	5 441.4
Public sector loan facility (grant component) (2)	-	47.3
Common agricultural policy (3)	7 500.0	4 494.0
EMFF/EMFAF (4)	101.5	97.9
Connecting Europe Facility (5)	697.5	233.2
Horizon 2020 / Horizon Europe (6)	5 370.2	2 905.2
LIFE programme (7)	131.2	113.4
EU guarantees		
	EU Guarantee (EUR million)	Volume of operations (EUR million)
European Fund for Strategic Investment 2015-2020 (8)	1 062.6	3 005.0
InvestEU 2021-2027 (9)	183.0	500.8

(1) RRF implementation period is 2021-2026.
(2) The public sector loan facility's programming period is 2021-2025 and the amount reflects the national share in its grant component reserved until the end of the period.
(3) Common agricultural policy programming periods are 2014-2022 and 2023-2027.
(4) EMFF – European Maritime and Fisheries Fund, EMFAF – European Maritime, Fisheries and Aquaculture Fund.
(5) Data on the Connecting Europe Facility covers transport and energy and has a cut-off date of 15 May 2024.
(6) Data on Horizon Europe (2021-2027) has a cut-off date of 13 May 2024.
(7) 2021-2027 data on the LIFE programme has a cut-off date of 15 May 2024.
(8) The amount of the EU guarantee signed under the EFSI Infrastructure and Innovation Window was derived based on the signed amount of the operations and the average internal multiplier, as reported by the EIB (cut-off date is 31 December 2023).
(9) The amount of the EU guarantee and of the volume of operations signed under InvestEU includes the EU compartment as well as the Member State compartments (cut-off date is 31 December 2023).
Source: European Commission

Table A5.1: **Resilience indices across dimensions for the Netherlands and the EU-27**

Dimension		NL 2023 RDB	NL 2024 RDB	EU-27 2024 RDB
Overall resilience	Vulnerabilities			
	Capacities			
Social and economic	Vulnerabilities			
	Capacities			
Green	Vulnerabilities			
	Capacities			
Digital	Vulnerabilities			
	Capacities			
Geopolitical	Vulnerabilities			
	Capacities			



(1) The synthetic indices aggregate the relative resilience situation of countries across all considered indicators. For an indicator, each country's relative situation in the latest available year is compared with the collection of values of that indicator for all Member States and all years in the reference period.
Source: Resilience Dashboards - version spring 2024, data up to 2022

This Annex uses the Commission's resilience dashboards (RDB) ([50]) to show the Netherlands' relative resilience capacities and vulnerabilities ([51]) that may be of relevance for societal, economic, digital and green transformations, and for dealing with future shocks and geopolitical challenges. ([52])

According to the RDB's set of resilience indicators, the Netherlands has maintained its medium-low overall vulnerabilities and high overall capacities with respect to the 2023 RDB. This is reflected in the distribution of indicators across different resilience categories: almost 60% of vulnerability indicators fall into the low or medium-low category, while almost 70% of capacity indicators fall into the high or medium-high category.

The Netherlands has low vulnerabilities and medium-high capacities in the social and economic dimension. The country has low vulnerabilities and high capacities particularly in relation to social inequalities, healthcare, education and work. It also has the highest employment rate in the EU, a high level of active labour market policies per person, the lowest level of skills mismatch rate, and the lowest rate of young people neither in employment nor in education and training. The gender employment gap also continues to narrow. The Netherlands still has some of high vulnerabilities and low economic and financial sustainability capacities. The non-financial corporation debt to GDP is decreasing but still above the EU average, while on the capacity side, government investments have continued to decrease in relation to GDP, putting them below the EU average.

In the green dimension, the Netherlands has medium-high capacities, but has not improved its overall vulnerabilities that remain medium. It has high or medium-high vulnerabilities, particularly in indicators related to ecosystems and biodiversity, and the sustainable use of resources, and is among the poorest-performing EU countries in terms of waste generation, the soil sealing index ([53]),

([50]) Https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight/2020-strategic-foresight-report/resilience-dashboards_en. Resilience is defined as the ability not only to withstand and cope with challenges but also to undergo transitions, in a sustainable, fair, and democratic manner. 2020 Strategic Foresight Report: *Charting the course towards a more resilient Europe* (COM(2020) 493).

([51]) Vulnerabilities describe features that can exacerbate the negative impact of crises and transitions, or obstacles that may hinder the achievement of long-term strategic goals, while capacities refer to enablers or abilities to cope with crises and structural changes and to manage transitions.

([52]) This Annex is linked to Annex 1 on SDGs, Annex 6 on the green deal, Annex 8 on the fair transition to climate neutrality, Annex 9 on resource productivity, efficiency and circularity, Annex 10 on the digital transition and Annex 14 on the European pillar of social rights.

([53]) This indicator estimates the percentage of sealed soil surfaces with impervious materials due to urban

and the farmland bird index. In terms of capacities, the Netherlands has a high electric vehicle penetration, circular material use rate and resource productivity. However, it could improve its resilience by increasing CO_2 absorption by forests and organic farming, thereby reducing vulnerabilities related to healthy ecosystems.

In the digital dimension, Dutch (medium-low) vulnerabilities and (high) capacities remain stable with respect to the 2023 RDB. The Netherlands does not have significant vulnerabilities besides a high number if ICT security incidents in enterprises, and overall vulnerabilities are medium-low. It also has high digital capacities. The country performs among the best in relation to the digital skills of both adults and young people, the use of online courses, and cybersecurity awareness. It also has the highest proportion of employees who telework, making it more resilient to shocks like the COVID-19 pandemic.

With respect to the 2023 RDB, the Netherlands has medium geopolitical vulnerabilities and high geopolitical capacities. It has low vulnerabilities, thanks in particular to its strong position in financial globalisation. Vulnerabilities related to security and demographics remain quite high, in particular disinformation from abroad and the employment gap between EU and non-EU nationals, where the Netherlands has reduced its vulnerability, but remains above the EU average. Its strong trade position gives it high geopolitical capacities. The main areas it should focus on in terms of increasing capacities are the related to armed forces personnel and its per capita metal footprint.

development. Soil sealing is a major cause of biodiversity and habitat losses.

The Netherlands has made progress in the green transition, with more action needed on developing and implementing ambitious green measures, including to meet its 2030 climate target, on biodiversity and ecosystem protection, and other areas. This Annex provides a snapshot of climate, energy, and environmental aspects of the transition in the Netherlands ([54]).

In its draft updated national energy and climate plan (NECP), information on the Netherlands' investment needs and funding sources to achieve its 2030 climate and energy targets is incomplete. The plan lacks information both on total investment needs and on public and private investment needs. It provides only limited qualitative information on the additional public financing needed to close the investment gap ([55]). The plan mentions the Climate Fund as the main source of funding for measures aimed at contributing to the new target of a 55-60% reduction in the emission of greenhouse gases compared to 1990 levels. Other sources include the Heat Fund, the National Growth Fund, and national subsidy schemes ([56]).

Without updated projections in the Dutch final updated NECP, it remains unclear how current and planned policies will deliver on its 2030 effort sharing target ([57]). In 2022, the Netherlands' greenhouse gas emissions from its effort sharing sectors are expected to be 33.3% below 2005 levels. Current policies are projected to reduce its effort sharing emissions by 38% from 2005 levels by 2030. The additional policies included in the Netherlands' draft updated NECP are projected to add 0.7 percentage points, thus reducing these emissions by 38.7% from 2005 levels ([58]). This leaves a gap of 9.3 percentage points below the Netherlands' effort sharing target to achieve a 48% reduction. Official national projections released in September 2023 suggest that measures included in the Netherlands' 2022 climate policy programme and 2023 spring decision-making exercise may be enough to get the country on track to achieve this 48% reduction, provided that they are implemented rigorously. However, these projections appear highly ambitious and uncertain.

The gaps in the Netherlands' climate policy framework indicate scope for improvement. In 2023, the Netherlands enshrined the objective to reach climate neutrality by 2050 into national law. Its draft updated NECP sets an economy-wide target to reduce greenhouse gas emissions by at least 55% compared to 1990 levels by 2030. Unlike other sectors, key measures to reduce agricultural sector emissions are not yet concrete, putting the achievement of climate targets at risk. As recommended by the Dutch Council of State ([59]), the Netherlands could benefit from developing a methodology for defining and classifying all climate taxes and expenditures.

([54]) This Annex is complemented by Annex 7 on energy transition and competitiveness, Annex 8 on the fair transition to climate neutrality, Annex 9 on resource efficiency, circularity, and productivity, and relevant topics in other annexes to this country report.

([55]) For example, an increase in the CO_2 charging rate as of 2025, a ban on the use of fossil fuels for heating processes during expansion, new construction and replacement of industrial production installations, and adjustments to the energy taxes to make sustainable alternatives more attractive.

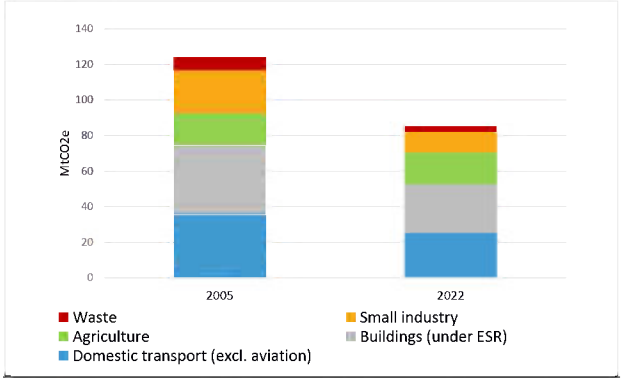
([56]) See the Commission's (2023) assessment of the draft national energy and climate plan of the Netherlands..

([57]) The national greenhouse gas emission reduction target is laid down in Regulation (EU) 2023/857 (the Effort Sharing Regulation). The aim is to align action in the sectors concerned with the objective to reach the EU-level economy wide target of greenhouse gas reductions of at least 55% compared to 1990 levels. The target also applies to the sectors outside the current EU Emissions Trading System, notably buildings (heating and cooling), road transport, agriculture, waste, and small industry (known as the effort sharing sectors).

([58]) The effort sharing emissions for 2022 are based on approximated inventory data. The final data will be established in 2027 after a comprehensive review. Projections on the impact of current policies ('with existing measures', WEM) and additional policies ('with additional measures', WAM) as per the Netherlands' draft updated NECP.

([59]) See Onzeker of klimaatdoelstellingen van kabinet op tijd worden gehaald - Raad van State.

Graph A6.1: **Greenhouse gas emissions from the effort sharing sectors in Mt CO2eq, 2005-2022**



Source: European Environmental Agency

There is scope for increasing The Netherlands target for renewable energy in its final updated NECP ([60]). The Netherlands' renewable energy contribution set in its draft updated NECP, 27% by 2030, is below the required contribution of 38.8%. Its energy efficiency contributions of 46.21 Mtoe in primary energy consumption and 38.41 Mtoe in final energy consumption for 2030 set in the draft updated NECP match those required by the Energy Efficiency Directive. See Annex 7 for more information on the country's energy transition.

The Netherlands is an EU frontrunner in sustainable transport, but still has room to improve ([61]). Standing at 5% in 2023, the Netherlands has one of the EU's highest shares of battery electric vehicles in its passenger car fleet. In 2023, its 144 100 publicly accessible charging points provided a charging point for every four e-vehicles, above the EU average of 1:10. Car trips account for 87% of distances travelled. For freight, road transport plays a lesser role, accounting for 49% of tonnes transported, while 40% of freight is carried on inland waterways, far higher that the EU average. Railways account for 8% of passenger transport, slightly above the EU average (6%), as well as 6% of freight transport. 74% of the rail network is electrified (EU average: 56%). The Dutch railway network is the most heavily used network in Europe. The European Railway Traffic Management System is being rolled out on the Dutch railway network to support the increase in rail traffic.

The Netherlands still has scope to increase its efforts to remove carbon from the atmosphere through land use, land use change and forestry (LULUCF). The country increased its net greenhouse gas emissions from land use in 2021, reversing the earlier trend of declining emissions. The main source of these emissions is agricultural land. To reach its 2030 LULUCF target, additional carbon removals of 435 kt CO_2eq are needed ([62]). According to the latest projections, the Netherlands is expected to reach this figure ([63]).

The Netherlands is vulnerable to the impacts of climate change, in particular sea level rise and a higher intensity and frequency of rainfall, heatwaves and prolonged droughts. Economic damage caused by weather and climate-related extreme events stood at almost EUR 10 billion in 1980-2020 ([64]). The Netherlands has a high climate protection gap ([65]) for coastal floods and a medium-high gap for floods. Its climate adaptation framework ([66]) provides a good basis for climate resilience, but it could be strengthened

([60]) The EU target set out in the revised Renewable Energy Directive is to have 42.5% of gross final energy consumption coming from renewable energy sources by 2030, with the aspiration to reach 45%. The formula in Annex I to Directive (EU) 2023/1791 sets the indicative national contribution for Netherlands at 46.2 Mtoe for primary energy consumption and 38.4 Mtoe for final energy consumption. See the Commission Recommendation of 18.12.2023 to the Netherlands.

([61]) Unless otherwise indicated, data in this section refer to 2021. See European Commission, 2023, EU transport in figures, transport.ec.europa.eu.

([62]) National LULUCF targets of the Member States in line with Regulation (EU) 2023/839.

([63]) See: Klimaat- en Energieverkenning 2023 (pbl.nl)

([64]) See European Environment Agency, Economic losses from climate-related extremes in Europe, February 2022. For estimates on the effects of climate change on the Netherlands, see Klimaatschadeschatter.

([65]) On the climate protection gap, see the annotations to Table A6.1.

([66]) The framework includes a national adaptation strategy (2016) and the 'Delta' programme (2010) aimed at making the country climate resilient by 2050 by protecting against coastal, fluvial and pluvial flooding, ensuring freshwater supply, and enhancing urban and rural areas' resilience to flood, prolonged drought and heat impacts. The government announced in late 2022 that it would consider the impacts on the soil and the water system in spatial planning. The Netherlands has also set up a knowledge programme, 'Sea level rise', with an interim report published in November 2023.

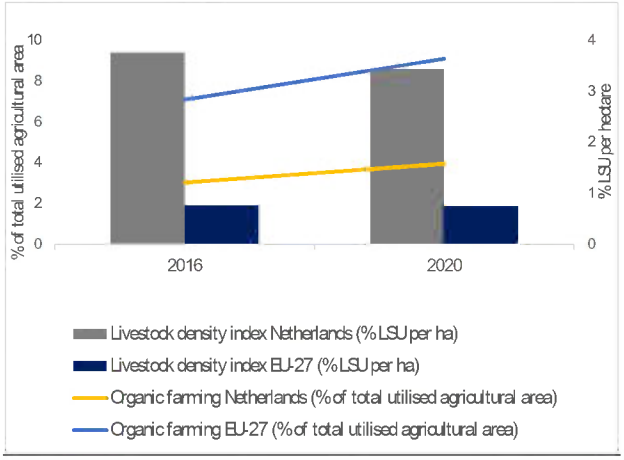
by a legal basis for adaptation and new programmes for specific climate threats such as changes in wind regimes, lightning, wildfires and the spread of invasive species and tropical diseases. There is also scope to further mainstream adaptation across governmental policies and long-term plans ([67]).

The management of water resources remains unsustainable. The water exploitation index plus (WEI+) stood at 4.8% in 2019, with the worst seasonal value being 6.3% in Q3-2019. While 3% of the country's area was impacted by droughts in 2000-2020, in 2022 it was already 14.8%. Croplands are generally the most impacted ecosystem. The Dutch economy is lagging behind the EU average on water productivity, with EUR 98 generated per cubic metre of water abstracted. All surface water bodies have failed to reach a good ecological status, and 52% have failed to reach a good chemical status. Marine waters are not yet in a good environmental status, as tracked by the descriptors used in the Marine Strategy Framework Directive.

Biodiversity and nature protection and restoration are a key challenge for the Netherlands. At the end of 2021, the Netherlands was protecting 26.6% of its land and 26.1% of its marine area. According to the latest reporting data, in 2013-2018 only 11.5% of protected habitats and 26.3% of species reached good conservation status. The intensive nature of agriculture in the Netherlands negatively affects biodiversity. The common farmland bird index fell between 2011 and 2018, before slightly increasing in 2019.

Intensive agriculture has a major adverse effect on air quality. The Netherlands is among the slowest to adopt organic farming practices. The share of the country's total utilised agricultural area (UAA) under organic farming reached 4.2% in 2021 against the EU average of 9.1% and the EU goal of at least 25% by 2030. The Netherlands' livestock density index (3.45%) remains the highest in the EU. The total number of livestock units increased in three regions: Groningen, Flevoland and Zeeland. Intensive rearing of poultry and pigs is the country's the main source of ammonia emissions into the air. The agricultural sector was responsible for generating 85.8% of all ammonia emissions, against the EU-27 average of 90.7% in 2021. In the Netherlands, 11.2% of the UAA is composed of irrigated land and the water abstracted for agricultural purposes accounts for 2.9% of total abstraction in 2019.

Graph A6.2: **Changes in livestock density and organic farming**



Livestock unit (LSU)/ha of UAA: it measures the stock of animals (cattle, sheep, goats, equidae, pigs, poultry and rabbits) converted in LSUs per hectare of UAA.
Source: Eurostat

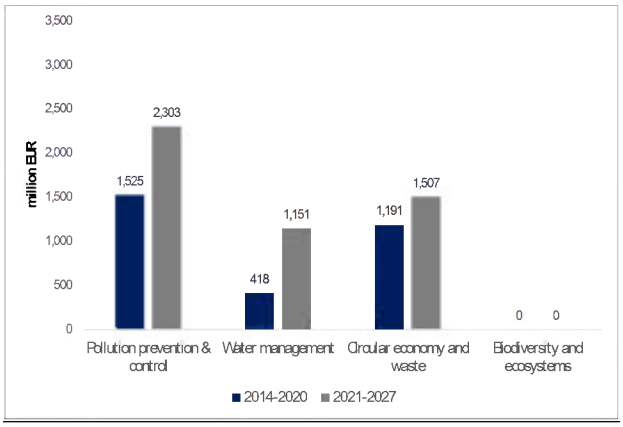
The Netherlands would benefit from adopting farming practices aimed at cutting nutrient and pesticide pollution and improving soil health. The latest figures for the gross nitrogen balance on agricultural land in the Netherlands show a consistent nitrogen surplus, with an average of 168.8 kg of nitrogen per hectare per year in 2019. 14% of groundwater monitoring stations showed levels above the maximum 50 mg nitrate/l. Furthermore, the phosphorous surplus stood at 4 kg/ha in 2019. The Netherlands is one of the EU countries most affected by pesticide pollution in its surface water bodies. In 2021, 21.4% of monitoring sites were reported to have pesticide levels exceeding the thresholds set by the Water Framework Directive. Based on the impact assessment for the Soil Monitoring Law ([68]), 83% of the Netherlands'

([67]) See the Commission's 2023 assessment and recommendation on the Netherlands' progress on climate adaptation.

([68]) SWD 417 final of 5.7.2023 - impact assessment for the Directive of the European Parliament and of the Council on Soil Monitoring and Resilience (Soil Monitoring Law), (cfr. pg. 10, pg. 189-190, pg. 835-845).

soil could be considered as unhealthy ([69]), mainly due to nutrients surplus. Nitrogen excess affects 87% of agricultural land, while phosphorous excess affects 90%. The total estimated organic carbon content in arable land is equal to 129 megatons, with an average of 33%, above the EU average of 24%. However, conservation tillage practices, which increase soil organic carbon, covered 15% of the Netherlands' tillable area in 2016. Drained peatlands accounted for 15% of agricultural land in 2019. Extensive farming practices would help reduce the number of animals and inputs per hectare, decreasing pollution and improving soil health.

Graph A6.3: **Environmental investment gap, annual average**



The numbers are computed by the European Commission based on the latest internal reports, Eurostat, EIB and national data sources.
Source: European Commission

The Netherlands would benefit from investing more in pollution prevention and control, circular economy and waste as well as sustainable water management. Over the 2014-2020 period, the environmental investment gap was estimated at EUR 2.3 billion per year, equivalent to 0.3% of GDP, below the EU average of 0.8%. The gap is estimated to be increasing over the 2021-2027 period at close to EUR 5 billion per year. There remains an opportunity to increase funding, in particular for pollution prevention and control (a gap of EUR 2.3 billion per year), circular economy and waste (EUR 1.5 billion) and sustainable water management (EUR 1.2 billion) where the gap has increased.

([69]) However, not all soil degradation processes could be quantified for all land uses. This number simply indicates an order of magnitude.

Table A6.1: **Indicators tracking progress on the European Green Deal from a macroeconomic perspective**

							Target	Distance	
		2005	2019	2020	2021	2022	2030	WEM	WAM
Progress to climate and energy policy targets									
Greenhouse gas emission reductions in effort sharing sectors [1]	Mt CO_{2eq}, % pp	128,112.2	-24%	-29%	-27%	-33%	-48%	-10	-9
Net greenhouse gas removals from LULUCF [2]	Kt CO2eq	5 524	4 694	4 326	4 387	5 060	4,523	n/a	n/a
Share of energy from renewable sources (1) [3]	%	2%	9%	14%	13%	15%	39%	-	-
Energy efficiency: primary energy consumption [3]	Mtoe	70.1	63.8	58.5	60.7	56.1	46.2		
Energy efficiency: final energy consumption [3]	Mtoe	54.1	49.5	45.1	46.8	43.4	38.4		

							EU-27		Projected
		2018	2019	2020	2021	2022	2021	2022	2030
Green transition: mobility									
Greenhouse gas emissions: road transport	Mt CO2e	-	-	-	25.5	25.2	769.0	786.6	24.4
Share of zero-emission vehicles in new registrations [4]	%	5.4	13.9	20.4	19.9	23.3	9	12.1	n/a
Number of publicly accessible AC/DC charging points		-	-	64587	84298	113713	299178	446956	n/a
Share of electrified railways	%	73.2%	73.2%	73.2%	74.4%	-	56.1%	-	n/a
Green transition: buildings									
Greenhouse gas emissions: buildings	Mt CO2e	-	-	-	34.6	27.3	537.0	486.7	25.1
Final energy consumption in buildings	2015=100	100.8%	98.4%	94.9%	102.2%	90.7%	104.0%	97.2%	
Climate adaptation									
Climate protection gap [5]	score 1-4	-	-	1.9	2.0	2.1	1.5	1.5	n/a

		2018	2019	2020	2021	2022	2020	2021	2022
State of the environment									
Water | Water exploitation index (WEI+) (1) [6]	% of renewable freshwater	4.8	4.8	-	-	-	3.6	-	-
Circular economy | Material footprint [7]	tonnes per person	8.6	8.6	8.2	7.7	6.8	14.2	14.8	14.9
Pollution | Years of life lost due to air pollution by PM2.5 [8]	per 100,000 inhabitants	468	381	286	338	-	545	584	-
Biodiversity | Habitats in good conservation status [9]	%	11.5					14.7		
Common farmland bird index [10]	2000=100	59	61	-	-	-	78	-	-
Green transition: agri-food sector									
Organic farming	% of total utilised agricultural area	3.5	3.75	3.95	4.22	-	9.1	-	-
Nitrates in groundwater	mg NO_3/litre	53.38	59.43	59.21	-	-	20.42	-	-
Food waste per capita	Kg per capita			161	148	-	130	131	-
Share of soil in poor health [11]	%					83			41
Soil organic matter in agricultural land [12]	Mt per ha	129	-	-	-	-	7,904	-	-

Sources: (1) Member States' emission data for 2019 and 2020 are in global warming potential (GWP) values from the 4th Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC). Member States' 2005 base year emissions under Regulation (EU) 2018/842, emissions data for 2021 and 2022, and 2030 projections are in GWP values from the 5th Assessment Report (AR5) of the IPCC. 2021 data are based on the final inventory reports, 2022 data are based on approximated inventory reports and European Environmental Agency's calculation of effort sharing emissions. The final data for 2021 and 2022 will be established after a comprehensive review in 2027. The 2030 target is in percentage change of the 2005 base year emissions. Distance to target is the gap between the 2030 target and projected effort sharing emissions with existing measures (WEM) and with additional measures (WAM), in percentage change from the 2005 base year emissions. The measures included for the 2030 emission projections reflect the state of play as reported in Member States' draft updated national energy and climate plans or, if unavailable, as reported by 15 March 2023 as per Regulation 2018/1999. (2) Net removals are expressed in negative figures, net emissions in positive figures. Reported data are from the 2024 greenhouse gas inventory submission. 2030 value of net greenhouse gas removals as in Regulation (EU) 2023/839 – Annex IIa. (3) The 2030 national objectives for renewable energy and energy efficiency are indicative national contributions, in line with Regulation (EU) 2018/1999 (the Governance Regulation), the EU-level 2030 renewable energy target set out in Directive EU/2018/2001 amended by Directive EU/2023/2413 (the revised Renewable Energy Directive) – 42.5% of gross final energy consumption with the aspiration to reach 45% –, and the formula in Annex I to Directive (EU) 2023/1791 (the Energy Efficiency Directive). (4) Passenger battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV). (5) The climate protection gap refers to the share of non-insured economic losses caused by climate-related disasters, based on modelling of the risk from floods, wildfires, windstorms, and the insurance penetration rate. Scale: 0 (no protection gap) –4 (very high gap) (European Insurance and Occupational Pensions Authority, 2022). (6) Total water consumption in renewable freshwater resources available for a territory and period. (7) Material extractions for consumption and investment. (8) Years of potential life lost through premature death due to exposure to particulate matter with a diameter of less than 2.5 micrometres. (9) Share of habitats in good conservation status according to the records submitted under Art. 17 of the Habitats Directive (Directive 92/43/EEC) for 2013-2018. (10) Multi-species index measuring changes in population abundances of farmland bird species. (11) Source: annex 12 of the Commission's proposal for a soil monitoring law, SWD (2023) 417 final. (12) Estimates of organic carbon content in arable land.

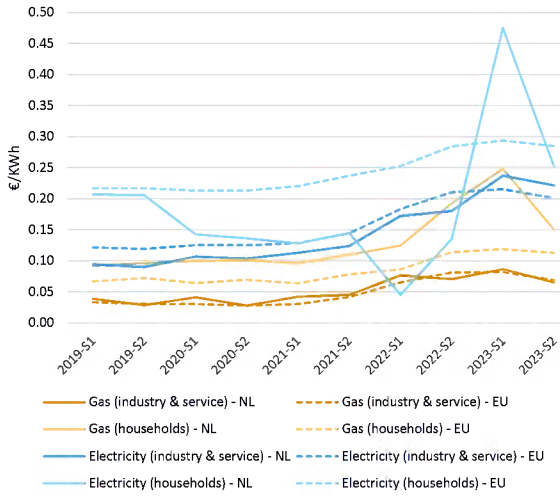
This Annex ([70]) sets out Netherlands's progress and challenges in accelerating the net-zero energy transition while bolstering the EU's competitiveness in the clean energy sector ([71]). It considers measures and targets put forward in the draft updated National Energy and Climate Plans (NECP) for 2030 ([72]).

The Netherlands has made significant progress in renewables deployment, in particular for offshore wind. It continues to implement a broad array of energy efficiency measures. However, energy dependency, in particular fossil fuels, and grid congestion remain an issue.

Retail energy prices in the Netherlands rose significantly in 2023. Average household prices for gas and electricity decreased by 40% and 47% in the second half of 2023 compared to peak of the first half of 2023, remaining more than 50% higher than pre-crisis average.

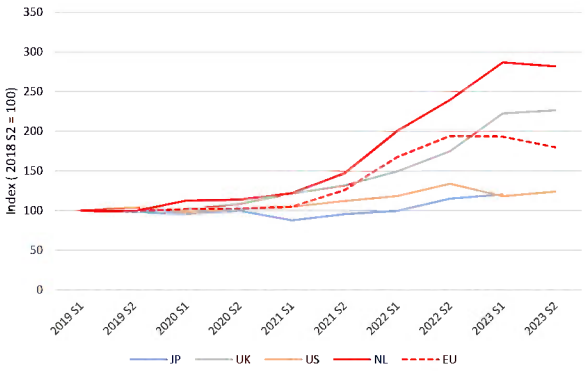
For the industrial and services sector, both gas and electricity average prices slightly decreased in the second half (S2) of 2023. According to the latest data, the gas/industry service average price declined by 25% compared the first half of 2022. The industry service/electricity average price decreased by 7%. Both gas/industry service average prices remained higher than the pre-crisis level.

Graph A7.1: **Netherland´s energy retail prices for households and industry & service**



(1) For industry, consumption bands are I3 for gas and IC for electricity, which refer to medium-sized consumers and provide an insight into affordability
(2) For households, the consumption bands are D2 for gas and DC for electricity
(3) Industry prices are shown without VAT and other recoverable taxes/levies/fees as non-household consumers are usually able to recover VAT and some other taxes
Source: Eurostat

Graph A7.2: **Trends in electricity prices for non-household consumers (EU and foreign partners)**



(1) For Eurostat data (EU and NL), the band consumption is ID referring to large-sized consumers with an annual consumption of between 2 000 MWh and 20 000 MWh, such as in electricity intensive manufacturing sectors, and gives an insight into international competitiveness
(2) JP = Japan
Source: Eurostat, IEA

In relative terms, electricity prices for non-household consumers have increased significantly compared to the US, Japan, and to a lesser extent, the UK, thus potentially affecting the international competitiveness of energy-intensive industries in the Netherlands.

The Netherlands has put in place several support measures targeted at vulnerable

([70]) It is complemented by Annex 6 as the European Green Deal focuses on the clean energy transition and by Annex 8 on the action taken to mitigate energy poverty and to protect the most vulnerable groups, complementing ongoing efforts under the European Green Deal, REPowerEU and European Green Deal Industrial Plan.

([71]) In line with the Green Deal Industrial Plan and the Net-Zero Industry Act

([72]) The Netherlands submitted its draft updated NECP in June 2023. The Commission issued an assessment and country-specific recommendations on 18 December 2023. Commission Recommendation, Assessment (SWD) and Factsheet of the draft updated National Energy and Climate Plan of Netherlands - European Commission (europa.eu)

households including: (i) the support given to low-income households through municipalities; (ii) a 21% cut in excise duties on petrol fuel and diesel; (iii) the transfer of an energy allowance of EUR 1 300 to households earning up to 120% of the statutory minimum wage; and (iv) a scheme to help pay for some of the energy costs faced by energy-intensive SMEs.

In addition, the Netherlands introduced a price cap on electricity and gas that applied from January to December 2023 to the first consumed 2 900 kWh of electricity and 1 200 m3 gas. Also, households making use of district heating will pay a capped price of EUR 47.38/GJ for the first 37 GJ they consume. All energy consumption above these respective volume limits will be charged at the market price.

In 2024 most of these measures will expire (except the cut in excise duties on petrol and fuel). Other measures have been introduced to cope with the sustained higher prices: (i) a temporary emergency fund to which consumers can apply for support with their energy bills for a period of 6 months; (ii) more subsidies to renovate buildings and (iii) an increased discount on energy tax.

Energy dependency is still an issue in the Netherlands. The country is very reliant on fossil fuels, which in 2022 were still accounting for 88% of gross available energy ([73]). Energy import dependency has been on an upward trend in the past decades, increasing from 24% in 2013 to 80% in 2022, with non-EU countries' share in energy imports increasing in parallel, from 52% to 61%,

As they are one of the main EU gas-producing countries, the role of natural gas is still very important in the Dutch energy system, and in 2022 it still accounted for 30% of gross available energy and for 39% of gross electricity production ([74]) (but in steep decline compared to 2021, respectively from 40% and 48%).

Because of the collapse of indigenous production, import dependency on non-EU countries for natural gas went up from 21% in 2013 to 62% in 2022, with Russian gas comprising 35% of gas imports. The Groningen gas field has ceased to operate since 1 October 2023 (except in some exceptional circumstances). To compensate, a total of 35 bcm is forecast to be extracted from small onshore fields until 2047. The Netherlands has the third largest storage capacity in the EU in absolute numbers after Germany and Italy, with almost 15.5 bcm, representing 46% of its annual gas consumption in 2022. Netherlands fulfilled its gas storage obligations last winter, reaching 99.6% by 1 November 2023, and ended the winter season with a storage filled at 52.88% by 1 April 2024. The Netherlands also benefits from two LNG terminals (in Eemshaven and Rotterdam) and six underground gas storage facilities (with a combined capacity of 14.2 bcm).

The Netherlands managed to reduce their gas demand between August 2022 and December 2023 by 28% in comparison with the average of the previous five years. Annual consumption amounted to 33 bcm in 2022 (against 42.3 bcm in 2021).

As for the security of electricity supply, there were no adequacy issues recorded during the first half of 2023 according to ENTSO-E analysis ([75]), nor are any expected for winter 2023/24. To ensure the security of its electricity supply, the Netherlands needs to increase the flexibility of its grid, as the share of weather-dependent electricity production is increasing.

The Netherlands does not have separate targets for increasing flexibility; however, the organisation of the electricity market in line with European legislation is laid down in its Energy Act. Also, with the increase in installed wind and solar power, a growing share of electricity production comes from domestic energy sources.

([73]) Eurostat

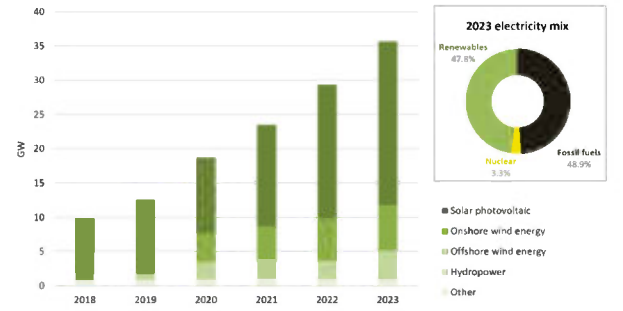
([74]) Ibid.

([75]) ENTSO-E has developed Costs-Benefits Analysis Guidelines for the European Commission that describe how best to assess these impacts for each project, taking into account social, economic and environmental considerations.

The Netherlands has made major efforts to accelerate the deployment of renewables. Renewable power generation capacity is growing, with 35 627 MW of installed capacity in 2023, a yearly increase of 21%. The total solar PV capacity was 19 600 MW in 2022, up from 14 823 MW in 2021. Estimates suggest that an additional 4 100 MW of solar PV panels were installed in 2023.

Onshore wind capacity was 6 185 MW in 2022, up from 5 214 MW in 2021. Offshore wind capacity stood at 2 570 MW in 2022. In 2023, the Netherlands built the 1.5 GW "Hollandse Kust Zuid", the largest offshore wind farm in the world so far. It currently has 4 700 MW of offshore wind, (around 16% of the country's electricity production).

Graph A7.3: **Netherland's installed renewable capacity (left) and electricity generation mix (right)**



(1) "Other" includes solid solid biofuels, renewable municipal waste, biogas and geothermal energy
Source: IRENA, Ember

The Netherlands reached 14.97% of renewable energy in the final energy consumption in 2022 (4).

Biomass accounts for 40% of renewables consumption and heat pumps 7%. And geothermal accounted for 2% of final energy consumption in 2022. The Dutch heat pump market expanded by 36% in 2023, and accounts for 30% of all heating systems sold in the Netherlands. In existing buildings, heat pump sales more than doubled from more than 50 000 in 2022 to almost 110 000 in 2023. The Dutch government will introduce heat pumps as the standard solution in 2026.

The Dutch government conducted a study to accelerate the granting of permits for renewable energy projects and associated infrastructure. The acceleration of the permitting process is implemented through two processes: the Multiannual Programme for Infrastructure Energy & Climate (MIEK) and the Federal Coordination Procedure (RCR/ProjectProcedure). The Netherlands should, as other Member States, implement the Renewable Acceleration Areas defined in the revised Directive on Renewable Energy (RED III).

For offshore wind, the Netherlands will organise a new tender for offshore wind equivalent to 4 GW in 2024. The wind parks need become operational in 2029 and 2030. At the end of 2031, the Netherlands wants to install 21 GW of offshore wind. It has also established a schedule for offshore wind tenders, which will be revised in 2025 to meet the increased ambitions.

The country shows high ambitions for hydrogen as a replacement for fossil gas. Work on preparing the existing gas pipeline network to transport hydrogen has been ongoing since 2022 and the feasibility of large-scale hydrogen storage in salt caverns in Groningen as well as in empty gas fields is being explored. The Dutch government has made an additional EUR 1 billion available in 2024 for scaling up renewable hydrogen production, as well as EUR 3.9 billion for the period up to 2030.

Capacity constraints in the electricity grid remain a significant bottleneck for the rollout of renewable energy installations and, increasingly, for meeting electricity demand. The Dutch electricity grid can no longer accommodate the rapidly growing demand for transmission capacity. This can be seen in the regular refusal by network operators to allow new producers of electricity to connect to the grid.

Additional investment in the expansion of electricity infrastructure, both at transmission and distribution levels, is therefore necessary to ensure increased penetration of renewable electricity, but also to meet electricity demand and the further electrification of the economy. A substantial investment plan from 2023 to 2030 of around EUR 60 billion has been agreed.

Consumer empowerment in the electricity and gas sector is high in the Netherlands; however, the lack of legal framework for energy communities does not support their

uptake. The role out of smart meters in the Netherlands is at a high level, being at 88.7%. Furthermore, the number of fixed price contracts in both electricity and gas are at 33%. Switching rates seem to have dropped slightly last year and are at a 17% for both sectors.

Lastly, the number of energy communities registered in the Energy Communities Repository is only ten. A possible explanation could be found in the lack of a legal framework, as the Netherlands is currently working on the new Energy Act, which contains rules on energy communities.

The Netherlands demonstrated significant progress in reaching the 2030 EU targets for energy efficiency. In 2022, the Netherlands decreased its primary energy consumption to 56.1 Mtoe, a 7.7% decrease compared to 2021 and 16.0% compared to 2012. It had a final energy consumption of 43.4 Mtoe, a 7.1% decrease compared to 2021 and 16.6% compared to 2012. Last year, the best results came from the residential sector which decreased its final energy consumption by 16.0% and the worst from the transport sector which increased its final energy consumption by 6.1%.

The Netherlands continues to implement a broad range of energy efficiency policies and measures. The RRP supports the attainment of this target through the subsidy scheme for sustainable public-sector buildings (EUR 225 million), which promotes renovation, and the investment subsidy for sustainable energy and energy savings (EUR 624 million), which awards grants for investment in small-scale heat pumps, solar boilers, insulation and heat connections, to improve energy efficiency. About EUR 22 million of cohesion policy ERDF and JTF funds allocated to the Netherlands for the period 2021-2027 cover energy efficiency investments, of which EUR 15 million for housing stock renovation.

The Netherlands has a wide range of financial support instruments for energy efficiency including subsidy schemes for homeowners, tax rebates for companies and energy performance fees for landlords. However, greater effort will be needed to leverage more private investment in energy efficiency measures in support of the 2030 target.

In relation to buildings, Netherlands should keep up the positive contribution of the residential sector to its 2030 buildings' targets. Between 2020 and 2022 residential final energy consumption declined by around 6% while in the draft updated NECP, a new and more ambitious 2030 decarbonisation target for the building sector was set.

Heating and cooling represent almost 82% of the country's residential final energy consumption, of which 8% comes from renewables. Approximately 125 000 heat pumps were sold in 2022, an increase of 42% compared to the previous year, reaching a total stock of 424 000 installed heat pumps in the residential sector.

With regard to R&D spending expressed as a share of gross domestic product, it stands at 2.3% of GDP in 2022 (not energy specific), slightly higher than the EU average of 2.23%. Making use of European coordination mechanisms and tools, such as the Strategic Energy Technologies Platform, the Mission Innovation, and others will help further streamlining the national with European wide R&I policies. With regard to skills in the green and digital transition, making use of the Net Zero Academies can help further strengthening national competences in strategic technologies.

Netherlands remains highly dependent on non-EU countries for clean energy technologies, particularly for components of wind turbines, but exhibits positive developments in solar module manufacturing and a growing foothold in battery manufacturing. In early 2024, the Netherlands launched the SolarNL initiative, a national research, innovation and industrial investment program to stimulate PV manufacturing in the Netherlands and Europe. This initiative builds on a dynamic ecosystem of small and innovative PV module manufacturers, based in e.g. Westknollendam and The Hague. Overall manufacturing capacity for PV ought to increase.

Despite a substantial deployment of on and offshore wind energy, there is no manufacturing capacity for wind turbine components in the Netherlands. Regarding battery facilities, the opening of the first lithium-ion battery factory in Helmond last year paved the way forward. This capacity is likely to

increase in future if the gigafactory project carried by an Anglo-Korean company materialises. When it comes to hydrogen, backed by the investments carried out in the framework of the state aid supported Important Project of Common European Interest Hy2Tech program, the Fuel Cell Giga Factory (FCGF) project in Arnhem is set to pioneer the initial industrial deployment of large-scale fuel cell manufacturing, set to come online in 2026.

Table A7.1: **Key Energy Indicators**

		Netherlands				EU			
		2019	2020	2021	2022	2019	2020	2021	2022
ENERGY DEPENDNCE	**Import Dependency [%]**	**64.4%**	**68.1%**	**58.4%**	**80.2%**	**60.5%**	**57.5%**	**55.5%**	**62.5%**
	of Solid fossil fuels	102.1%	91.9%	99.6%	102.1%	43.3%	35.8%	37.3%	45.8%
	of Oil and petroleum products	101.0%	100.4%	85.7%	107.3%	96.7%	96.8%	91.7%	97.7%
	of Natural Gas	26.2%	45.0%	33.7%	64.7%	89.7%	83.6%	83.6%	97.6%
	Dependency from Russian Fossil Fuels [%]								
	of Natural Gas	44.1%	41.6%	34.6%	16.3%	39.7%	41.3%	41.1%	21.0%
	of Crude Oil	32.8%	24.1%	31.1%	23.1%	28.8%	26.7%	26.4%	19.5%
	of Hard Coal	41.1%	53.6%	38.2%	10.4%	43.5%	49.1%	47.4%	21.5%

		2016	2017	2018	2019	2020	2021	2022
DIVERSIFICATION OF GAS SUPPLIES	**Gas Consumption (in bcm)**	**42.3**	**43.7**	**42.8**	**44.8**	**43.6**	**42.1**	**33.4**
	Gas Consumption year-on-year change [%]	4.1%	3.2%	-2.0%	4.5%	-2.7%	-3.4%	-20.6%
	Gas Imports - by type (in bcm)	**45.9**	**24.2**	**31.3**	**35.9**	**36.5**	**31.0**	**39.0**
	Gas imports - pipeline	44.2	23.2	28.0	26.5	27.8	22.1	19.8
	Gas imports - LNG	1.7	1.0	3.3	9.4	8.6	8.9	19.2
	Gas Imports - by main source supplier (in bcm) (1)							
	United States	-	0.0	0.3	2.1	2.6	3.7	8.6
	Russia	12.6	8.5	14.7	15.8	15.2	10.7	6.4
	Norway	19.9	9.3	12.6	11.5	10.6	10.8	9.3
	United Kingdom	5.8	2.8	2.1	1.6	2.7	1.0	4.7
	Angola	-	-	0.1	0.2	0.2	0.2	2.7

		2019	2020	2021	2022	2023
	LNG Terminals - storage capacity m3 LNG					
	Number of LNG Terminals	1	1	1	2	2
	LNG Storage capacity (m3 LNG)	540,000	540,000	540,000	720,000	720,000
	Underground Storage					
	Number of storage facilities	6	6	6	6	7
	Technical Capacity (bcm)	11.8	12.7	13.0	13.0	12.9

		2016	2017	2018	2019	2020	2021	2022	2023
ELECTRICITY/ENERGY	**Gross Electricity Production (GWh) (2)**	**115,158**	**117,168**	**114,380**	**121,411**	**123,278**	**122,093**	**121,810**	-
	Combustible Fuels	100,032	99,395	95,965	99,973	94,787	88,305	78,513	-
	Nuclear	3,960	3,402	3,515	3,910	4,087	3,828	4,156	-
	Hydro	100	61	72	74	46	88	50	-
	Wind	8,170	10,569	10,549	11,508	15,278	18,046	21,401	-
	Solar	1,602	2,204	3,708	5,399	8,567	11,304	17,079	-
	Geothermal	0	0	0	0	0	0	0	-
	Other Sources	1,293	1,536	571	547	512	522	611	-
	Gross Electricity Production [%]								
	Combustible Fuels	86.9%	84.8%	83.9%	82.3%	76.9%	72.3%	64.5%	-
	Nuclear	3.4%	2.9%	3.1%	3.2%	3.3%	3.1%	3.4%	-
	Hydro	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	-
	Wind	7.1%	9.0%	9.2%	9.5%	12.4%	14.8%	17.6%	-
	Solar	1.4%	1.9%	3.2%	4.4%	6.9%	9.3%	14.0%	-
	Geothermal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-
	Other Sources	1.1%	1.3%	0.5%	0.5%	0.4%	0.4%	0.5%	-
	Net Imports of Electricity (GWh)	**4,914**	**3,506**	**7,970**	**855**	**- 2,660**	**253**	**- 4,266**	-
	As a % of electricity available for final consumption	4.4%	3.1%	7.0%	0.8%	-2.4%	0.2%	-3.9%	-
	Electricity Interconnection [%]	-	**18.1%**	**18.6%**	**22.9%**	**25.9%**	**16.3%**	**13.7%**	**12.0%**
	Share of renewable energy consumption - by sector [%]								
	Electricity	12.6%	13.8%	15.2%	18.2%	26.4%	33.3%	39.9%	-
	Heating/cooling	5.2%	5.8%	6.2%	7.2%	8.1%	7.8%	8.6%	-
	Transport	4.8%	5.8%	9.5%	12.3%	12.6%	9.0%	10.8%	-
	Overall	5.8%	6.5%	7.4%	8.9%	14.0%	13.0%	15.0%	-

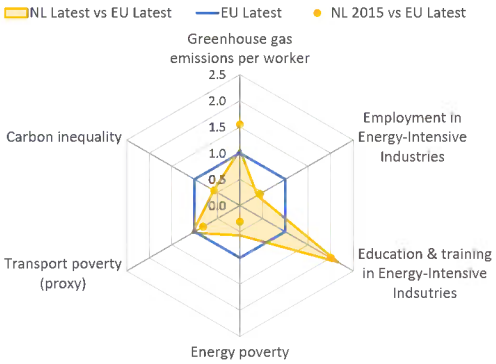
		2019	2020	2021	2022	2023
CLEAN ENERGY	**VC investments in climate tech start-ups and scale-ups (EUR Mln)**	**65.97**	**94.78**	**337.59**	**354.16**	**185.97**
	as a % of total VC investment (3) in Netherlands start-ups and scale-ups	4.9%	5.2%	5.4%	10.1%	7.0%
	Research & Innovation spending in Energy Union R&i priorites					
	Public R&I (EUR mln)	275.8	259.2	420.7	-	-
	Public R&I (% GDP)	0.03%	0.03%	0.05%	-	-
	Private R&I (EUR mln)	799.3	627.2	-	-	-
	Private R&I (% GDP)	0.10%	0.08%	-	-	-

(1) The ranking of the main suppliers is based on the latest available figures (for 2022)
(2) Venture Capital investment includes Venture Capital deals (all stages), Small M&A deals and Private Equity (PE) growth deals (for companies that have previously been part of the portfolio of a VC investment firm or have received Angel or Seed funding).
Source: Eurostat, Gas Infrastructure Europe, JRC elaboration based on PitchBook data (03/2024), JRC SETIS (2024)

The Annex monitors the Netherlands' progress in ensuring a fair transition towards climate neutrality and environmental sustainability, particularly for workers and households in vulnerable situations. The number of jobs in the Dutch green economy has risen quickly. Between 2015 and 2021, total jobs in the environmental goods and services sector grew by 39.4% (to around 188 000) (EU: 18.2%), reaching 2% of total employment (EU: 2.7%). Also, between 2015 and 2022, the greenhouse gas emission intensity of Netherlands's workforce (see Graph A8.1 and Table A8.1) declined from 22.1 to 15.3 tonnes per worker, indicating a positive trend in the green transition, even though it is still above the EU average (14.3 tonnes per worker in 2022) ([76]). In line with objectives of the Council Recommendation of 2022 on ensuring a fair transition towards climate neutrality ([77]), the Netherlands is investing in the skills needed for a fair green transition and for implementing the REPowerEU plan, mostly through the Just Transition Fund (JTF) as well as with actions supported by the European Social Fund Plus (ESF+).

The transition is occurring in the context of a tight labour market. In 2023, employment in Netherlands' energy-intensive industries ([78]) comprised 1.3% of total employment (3.5% in the EU). In line with the Dutch climate agreement, a large proportion of the jobs with a high share of CO_2 emissions are expected to be phased out in the coming years. On the other hand, employment in mining and quarrying has risen by 11.2% since 2015 to around 14 900 workers in 2023, which is less than a year before, as major onshore gas extraction ended in October 2023. The job vacancy rate in construction (see Graph A8.2), a key sector for the green transition, is considerably higher than the EU average (6.8% vs 3.6% in 2023), in line with the perception of small and medium-sized enterprises (SMEs) in the sector, where 67% reported that skills shortages are holding them back in general business activities ([79]). According to the European Labour Authority (ELA) ([80]), labour shortages were reported in 2023 for a number of occupations that required specific skills or knowledge for the green transition ([81]), including insulation workers, electrical engineering technicians and building and related electricians.

Graph A8.1: **Fair transition challenges in the Netherlands**



Source: Eurostat, EU Labour Force Survey, EMPL-JRC GD-AMEDI/AMEDI+ and DISCO(H) projects (see Table A8.1).

Shortages in labour and skills remain a challenge in the Netherlands. Tightness across sectors prevails (see Annex 14), while the overall skills mismatch in the Netherlands is very low (see Annex 5). Skills are key for smooth labour market transitions and preserving jobs in transforming sectors. In the Netherlands, 48% of SMEs reported that the skills required for greening business activities are becoming more important (EU: 42%) ([79]). If the Netherlands matches its projected contribution to the EU's 2030 renewable energy target, between 3 400 and 11 400 additional skilled workers will be needed for the

([76]) Workforce-related calculations are based on the EU Labour Force Survey. Note, in the 2023 country report for the Netherlands, such indicators were calculated based on employment statistics in the national accounts. This may result in limited comparability across the two reports.

([77]) Council Recommendation of 16 June 2022 on ensuring a fair transition towards climate neutrality (2022/C 243/04) covers employment, skills, tax-benefit and social protection systems, essential services and housing.

([78]) Mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24) and automotive (C29)

([79]) Eurobarometer on skills shortages, recruitment, and retention strategies in small and medium-sized enterprises.

([80]) Based on the European Labour Authority 2024 EURES Report on labour shortages and surpluses 2023, i.e. data submitted by the EURES National Coordination Offices.

([81]) Skills and knowledge requirements are based on the European Skills Competences and Occupations (ESCO) taxonomy on skills for the green transition.

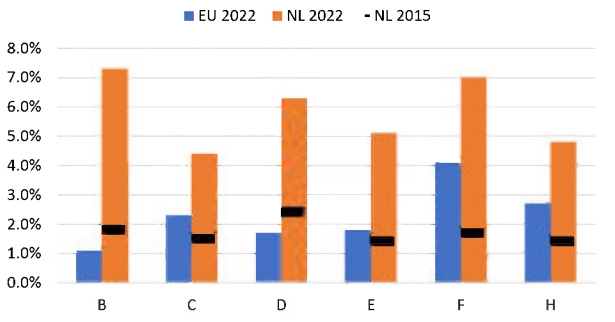
Table A8.1: **Key indicators for a fair transition in the Netherlands**

Indicator	Description	NL 2015	NL	EU
GHG per worker	Greenhouse gas emissions per worker – CO_2 equivalent tonnes	22.1	15.3 (2022)	14.3 (2022)
Employment EII	Employment share in energy-intensive industries, including mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24) and automotive (C29)	1.6%	1.3% (2023)	3.5% (2023)
Education & training EII	Adult participation in education and training (last 4 weeks) in energy-intensive industries	21.8%	23.6% (2023)	10.9% (2023)
Energy poverty	Share of the total population living in a household unable to keep its home adequately warm	2.9%	5.3% (2022)	9.3% (2022)
Transport poverty (proxy)	Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport	30.2%	38.9% (2023)	37.1% (2023)
Carbon inequality	Ratio between the consumption footprint of the top 20% vs bottom 20% of the income distribution	1.6	1.6 (2021)	2.7 (2021)

Source: Eurostat (env_ac_ainah_r2, lfsa_egan2d, ilc_mdes01), EU Labour Force Survey (break in time series in 2021), EMPL-JRC GD-AMEDI/AMEDI+ and DISCO(H) projects.

deployment of wind and solar energy, which may require an investment in skills of EUR 121.3-151.7 million ([82]). The Dutch recovery and resilience plan envisages, among other things a human capital agenda with actions to increase the supply of skills in green hydrogen and to facilitate exchanges between businesses and education or research institutions.

Graph A8.2: **Job vacancy rate in transforming sectors and mining and quarrying**



B - Mining and quarrying
C - Manufacturing
D - Electricity, gas, steam and air conditioning supply
E - Water supply; sewerage, waste management and remediation activities
F - Construction
H - Transportation and storage
Source: Eurostat jvs_a_rate_r2.

Higher energy prices increased the number of households living in energy poverty in 2022. The share of the population unable to keep their homes adequately warm increased from 2.9% in 2015 to 5.3% in 2022, below the EU average (9.3%) ([83]). The indicator increased by 2.9 percentage points between 2021 and 2022 on the back of energy price increases due to supply constraints caused by the COVID-19 pandemic and Russia's war of aggression against Ukraine, despite the emergency measures implemented in the Netherlands. In particular, 14.9% of the population at risk of poverty (AROP) (EU: 20.1%) and 4.9% of lower middle-income households (in deciles 4-5) (EU: 11.6%) were unable to keep their homes adequately warm in 2022. The Netherlands tackles energy poverty primarily through general social policy. In this context there is scope for increasing focus on facilitating access to energy efficiency and renewable energy as per the Commission Recommendation on energy poverty (2023/2407). On the other hand, in January 2023, 38.9% of population at risk of poverty spent a considerable proportion of their budget (more than 6%) on private transport fuels (EU: 37.1%) ([84]).

Environmental inequalities remain an issue in the Netherlands, despite being below the EU average. The consumption footprint for 20% of the population with the highest income was 1.6 times higher than the footprint of the poorest 20% in 2021 ([85]) (EU: 1.8). For the richest households, the footprint is highest for food and mobility while for the poorest

([82]) EMPL-JRC AMEDI+ project.

([83]) Energy poverty is a multi-dimensional concept. The indicator used focuses on an outcome of energy poverty. Further indicators are available at the Energy Poverty Advisory Hub. The Netherlands uses a different definition for energy poverty. For their research and the policy advice that flows from it, the Netherlands Organisation for applied scientific research – the TNO – defines households as energy poor when facing a low household income combined with either high expenditure on energy, or housing with poor quality insulation.

([84]) Affordability of private transport fuels is one key dimension of transport poverty. The indicator has been developed in the context of the EMPL-JRC GD-AMEDI/AMEDI+ projects. Methodology explained in Economic and distributional effects of higher energy prices on households in the EU.

([85]) Developed in the context of the EMPL-JRC DISCO(H) project. Methodology explained in Joint Research Centre, 2024. Carbon and environmental footprint inequality of household consumption in the EU. JRC137520. The EU average refers to EU27 without Italy (household income data not available for IT in the HBS)

households it is for food and housing. The average levels of air pollution in 2021 stood below the EU average (9.7 vs 11.4 µg/m^3 PM2.5), with 50% of the population living in regions exposed to critical levels of air pollution ([86]). This led to a significant impact on health, affecting vulnerable groups in particular, and around 5 700 premature deaths annually ([87]). Meanwhile, in the past 3 years, twice as much solar power was generated than in all previous years ([88]), and the Netherlands has more installed solar energy per capita than any other Member State ([89]).

The Netherlands is setting up a wide range of policy instruments to promote a fair green transition. Measures have been envisaged under the JTF to upskill potential employees in green jobs and sectors, as well as mitigate potential risks for the most vulnerable, which can arise during the transition process. The Netherlands is making efforts to seize the opportunity provided by the green transition to increase the labour market participation of underrepresented or vulnerable groups. Only 30% of all green positions in 2021 were held by women ([90]). Furthermore, the country has introduced systematic and in-depth analytical and assessment tools for monitoring the socio-economic and distributional impacts of the green transition. The action plan for Green and Digital Jobs addresses various labour market challenges – particularly shortages in relevant sectors. However, fine-tuning these actions towards the people most affected by the transition would be welcome ([91]).

([86]) Two times higher than the recommendations in the WHO Air Quality Guidelines (annual exposure of 5µg/m^3).

([87]) EEA - Air Quality Health Risk Assessment

([88]) https://www.cbs.nl/nl-nl/longread/rapportages/2023/hernieuwbare-energie-in-nederland-2022/5-zonne-energie

([89]) https://www.statista.com/statistics/612412/installed-solar-photovoltaics-capacity-eu/

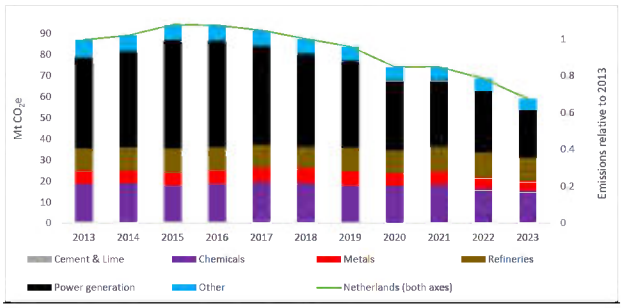
([90]) OECD (2023), Job Creation and Local Economic Development: Bridging the Great Green Divide

([91]) Based on the monitoring review of the Council Recommendation on ensuring a fair transition towards climate neutrality, which took place in October 2023.

The green transition of industry and the built environment, in particular decarbonisation, resource efficiency and circularity, is essential to boost the Netherlands' competitiveness ([92]). In this regard, the priority for the Netherlands is the use of circular materials in industry and construction.

The Netherlands' circular economy transition is on track to achieve the EU Circular Economy Action Plan goals thanks to a highly efficient economy and waste management. In 2022, the Netherlands ranked second in the EU for lowest material footprint. The material footprint decreased from 7.9 to 6.8 tonnes per capita between 2016 and 2022, versus an EU average of 14.8 tonnes per capita. The Netherlands has reduced its waste production per capita, reaching 7.2 tonnes per capita in 2020, almost twice the EU average. There is still room to make better use of the potential of the circular economy transition to drive the decarbonisation of the Netherlands' industry. The Dutch national energy and climate plan includes very good references to circular economy in the national objectives and targets.

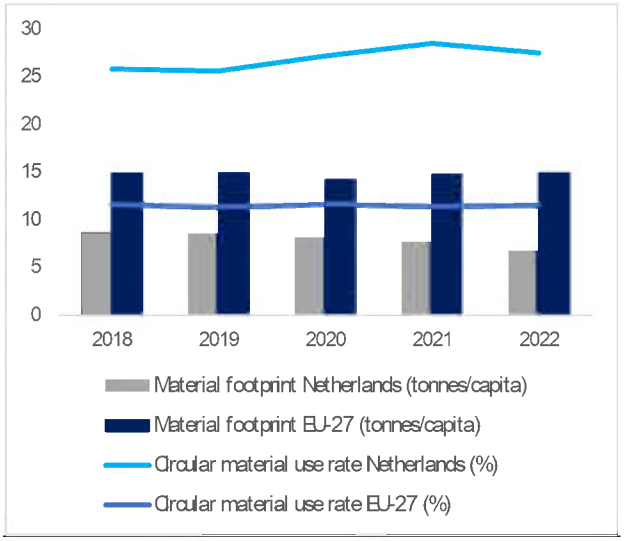
Graph A9.1: **ETS emissions by sector since 2013**



Source: European Commission

In 2023, greenhouse gas emissions covered by the EU's emissions trading system (ETS) in the Netherlands ([93]) have declined by 30% since 2018. In 2023, about 39% of greenhouse gases emitted by ETS installations in the Netherlands came from power generation (EU average: 57%). Refineries accounted for about 20%, chemicals for 24%, the metals industry for 8%, while 9% came from other industries ([94]). Between 2019 and 2023, overall ETS emissions declined by about 30%. Greenhouse gas emissions from refineries slightly rose, by 4%. All other ETS sectors saw their emissions decline, by between 18% and 44%. In the Netherlands, the EU ETS is supplemented by a CO_2 levy.

Graph A9.2: **Trends in material use**



Source: Eurostat

The Netherlands is one of the EU's leaders in resource efficiency, but it is still highly reliant on imports. The circular material use rate and resource productivity are the highest among the EU countries and reached 27.5% and 4.63 purchasing power standards per kilogram, respectively, in 2022. Resource productivity expresses how efficiently the economy uses material resources to produce wealth. Improving resource productivity can help minimise negative impacts on the environment and reduce dependence on volatile raw material markets. The Netherlands was dependent on imports for 82.9% of materials used in 2022, compared with an EU average of 22.4%, making it one of the countries that are most vulnerable to supply chain disruptions. Water abstraction for manufacturing purposes accounted for 26.2%

([92]) See also Annexes 6, 7 and 12.

([93]) This analysis excludes air travel. For more details and the data sources, see Weitzel, M; van der Vorst, C. (2024), Uneven progress in reducing emissions in the EU ETS, JRC Science for policy brief, JRC138215, Joint Research Centre.

([94]) In 2019, almost half of the greenhouse gas emissions classified as coming from 'other industries' apparently came from the manufacture of chemicals.

Table A9.1: **Circularity indicators**

	2018	2019	2020	2021	2022	2023	EU-27	Latest year
Industry								
Resource productivity (purchasing power standard (PPS) per kilogram)	3.5	3.7	4.0	4.5	4.6	-	2.5	2022
Circular material use rate (%)	25.8	25.6	27.2	28.5	27.5	-	11.5	2022
Eco-innovation index (2013=100)	109.7	112.3	118.2	116.0	118.8	-	121.5	2022
Recycling of plastic packaging (%)	52.0	57.2	49.2	48.9	-	-	40.7	2021
Cost of air emissions from industry (EUR bn)	18.3	17.5	16.2	16.3	-	-	352.7	2021
Built environment								
Recovery rate from construction and demolition waste (%)	100.0	-	100.0	94.0	-	-	89.0	2020
Soil sealing index (base year = 2006)	103.9	-	-	-	-	-	103.4	2018
Non-residential floor area (m^2 per capita)	16.7	16.8	16.9	-	-	-	18.0	2020
Waste backfilled (%)	-	-	-	-	0.0	-	9.9	2020

Source: Eurostat, European Environment Agency

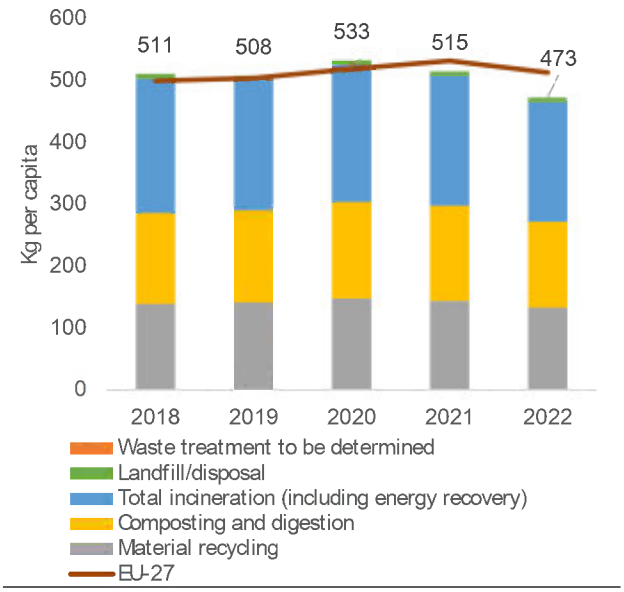
of total water abstracted in 2019, making manufacturing the sector with the second-highest impact on water resources after electricity production.

The Netherlands is a front runner in circular economy; maintaining its ambitious action would help it retain its first-mover advantage. The Netherlands is an eco-innovation leader according to the 2022 Eco-Innovation Scoreboard, where the country ranked 9th with a score of 118.8. As of September 2023, the Netherlands totalled 89 awarded EU Ecolabel licences and 1 744 products with the EU Ecolabel, showing a growing and good take-up of products and licences.

The Netherlands is among the top performers regarding waste management. The Netherlands is increasing its municipal waste recycling, which reached a rate of 57.8% in 2021. The country is on track to meet the 2025 recycling targets for municipal and packaging waste and the landfilling target for 2035. The recycling rate of plastic packaging is above the EU average, measuring 48.9%. However, the Netherlands recycled only 71.1% of its e-waste in 2021, 10 percentage points less than the EU average. Furthermore, the country registered 13 new patents on waste recycling in 2020, showing a decline compared to previous years.

Existing buildings could be used more efficiently. In 2023, the Netherlands' building permits index, based on useful floor area, stood at 101.1 ([95]), showing relatively stable construction activities since 2015. The residential floor area per capita stood above the EU average in 2020, 47.79 versus 52.33m^2 per capita, but increased at a slower pace than the EU average. A similar trend can be observed for the non-residential floor area.

Graph A9.3: **Treatment of municipal waste**



Source: Eurostat

These is still scope for improving construction and demolition waste management. The Netherlands' recovery rate stayed at 100% in 2020, achieving the Waste Framework Directive's target for 2020. The whole population is connected to at least secondary wastewater treatments. Large businesses in the Dutch construction sector are advanced in reporting circular business models covering waste materials but also energy and water. Still, the amount of waste generated from construction and demolition activities per capita is one of the highest in the EU and has remained relatively stable over the last few years.

([95]) With 2015 as base (2015=100).

Digital transformation is key to ensuring a resilient and competitive economy. In line with the Digital Decade Policy Programme, and in particular with the targets in that Programme for digital transformation by 2030, this Annex describes the Netherlands' performance on digital skills, digital infrastructure/connectivity and the digitalisation of businesses and public services. Where relevant, it makes reference to progress on implementing the Recovery and Resilience Plan (RRP). The Netherlands allocates 26% of its total RRP budget to digital (EUR 1.2 billion) ([96]). Under Cohesion Policy, an additional EUR 0.2 billion (11% of the country's total Cohesion Policy funding) is allocated to the country's digital transformation ([97]).

The Digital Decade Policy Programme sets out a pathway for EU's successful digital transformation by 2030. The Netherlands' national roadmap outlines the actions it intends to take to reach the objectives and targets at national level. The first Report on the State of the Digital Decade highlighted the need to accelerate and deepen the collective efforts to reach the EU-wide targets and objectives ([98]). Among others, a digitally skilled population increases the development and adoption of digital technologies and leads to productivity gains and new business models. It also leads to higher inclusion and participation in an environment increasingly shaped by the digital transformation ([99]). Digital technologies, infrastructure and tools all play a role in addressing the current structural challenges, including strategic dependencies, cybersecurity and climate change.

The Netherlands generally performs very well when it comes to basic digital skills, but the ICT labour market still suffers from important shortages of technically skilled staff. The country has the highest share of individuals with at least basic digital skills in the EU (83% versus an EU average of 56%). Moreover, according to the last available data (2023), 6.9% of individuals in employment in the Netherlands are ICT specialists, compared to 4.8% in the EU on average. However, ICT labour shortages remain and are reported to be a major factor limiting progress in the Dutch digital transition. The Dutch RRP includes measures to further promote digital skills, at both secondary and higher education level. A new action plan was also introduced to address the issue of ICT shortages in the labour market.

The Netherlands performs well on digital infrastructure and connectivity, with a high level of overall 5G and very high capacity network (VHCN) coverage. The country continues to score well above the EU average, with 100% of populated areas having overall 5G coverage and 98% of households having VHCN already since 2022. Despite the high 5G coverage, there is still significant room for improvement when it comes to the quality, reliability and capacity of the Dutch 5G network. The expansion of spectrum options beyond the current system of dynamic spectrum sharing – in particular with the launch of the 3.6 GHz band this year – is crucial in this regard.

Dutch businesses are successfully integrating new digital technologies, scoring above average on all key metrics. However, more investments and funding are needed to reach the highest levels of performance in the EU for all advanced technologies. The share of enterprises using cloud computing (57%) is well above the EU average (39%) according to the latest data available (2023), although it appears to have decreased from the 60% reported in 2021. The share of SMEs with at least a basic level of digital intensity (79% versus an EU average of 58%), and the use of artificial intelligence (AI), cloud or data analytics (71% versus an EU average of 55%) are also above the EU

([96]) The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation.

([97]) This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

([98]) European Commission (2023): Report on the state of the Digital Decade 2023, 2023 Report on the state of the Digital Decade | Shaping Europe's digital future (europa.eu).

([99]) See for example OECD (2019): OECD Economic Outlook, Digitalisation and productivity: A story of complementarities, OECD Economic Outlook, Volume 2019 Issue 1 | OECD iLibrary (oecd-ilibrary.org) and OECD (2019): Going Digital: Shaping Policies, Improving Lives – Summary, https://www.oecd.org/digital/going-digital-synthesis-summary.pdf.

average. However, the share of enterprises using AI (13.4%)is lagging behind the use of cloud services (57.4%) and data analytics (48.6%). To address the risk of falling behind in the use of AI, the Dutch RRP includes investments in the more wide-spread use of AI systems in both business and academia, to improve competitiveness and productivity. In 2022, 6.9% of enterprises in the Netherlands reported ICT service outage due to cyberattacks (e.g. ransomware attacks, denial of service attacks). Over the same year, 34.3% of enterprises developed or reviewed their ICT security policy within the previous 12 months.

The Netherlands performs well in providing digital public services. The country scores above the EU average for delivering digital public services to both citizens and businesses. Citizens and companies have access to electronic identification (eID) solutions – *DigiD* for individuals and *eHerkenning* for companies – that have been notified under the eIDAS scheme. On access to e-health records, the Netherlands scored 69 in 2022, slightly below the EU average of 72. The Dutch RRP includes measures to support the further digitalisation of public administration by facilitating digital access to documents. It also envisages further investments in the digitalisation of the justice system and in upgrading the IT systems of the central government. The RRP also includes measures to enable remote healthcare by improving e-services and to strengthen data exchange between health institutions, as well as to improve research in the sector.

Table A10.1:**Key Digital Decade targets monitored by the Digital Economy and Society Index indicators**

	Netherlands			EU	Digital Decade target by 2030 (EU)
	2022	2023	2024	2024	
Digital skills					
At least basic digital skills	**79%**	**79%**	**83%**	**56%**	**80%**
% individuals	2021	2021	2023	2023	2030
ICT specialists ([1])	**6.7%**	**7.2%**	**6.9%**	**4.8%**	**20 million**
% individuals in employment aged 15-74	2021	2022	2023	2023	2030
Digital infrastructure/connectivity					
Fixed very high capacity network (VHCN) coverage	**91%**	**98%**	**98%**	**79%**	**100%**
% households	2021	2022	2023	2023	2030
Fibre to the premises (FTTP) coverage ([2])	**52%**	**63%**	**78%**	**64%**	**-**
% households	2021	2022	2023	2023	
Overall 5G coverage	**97%**	**100%**	**100%**	**89%**	**100%**
% populated areas	2021	2022	2023	2023	2030
Digitalisation of businesses					
SMEs with at least a basic level of digital intensity	**75%**	**NA**	**79%**	**58%**	**90%**
% SMEs	2021		2023	2023	2030
Data analytics	**NA**	**NA**	**49%**	**33%**	**-**
% enterprises			2023	2023	
Cloud	**60%**	**60%**	**57%**	**39%**	**-**
% enterprises	2021	2021	2023	2023	
Artificial intelligence	**13%**	**13%**	**13%**	**8%**	**-**
% enterprises	2021	2021	2023	2023	
AI or cloud or data analytics ([3])	**NA**	**NA**	**71%**	**55%**	**75%**
% enterprises			2023	2023	2030
Digitalisation of public services					
Digital public services for citizens	**85**	**85**	**86**	**79**	**100**
Score (0 to 100)	2021	2022	2023	2023	2030
Digital public services for businesses	**88**	**89**	**87**	**85**	**100**
Score (0 to 100)	2021	2022	2023	2023	2030
Access to e-health records	**NA**	**69**	**72**	**79**	**100**
Score (0 to 100)		2022	2023	2023	2030

(1) The 20 million target represents about 10% of total employment.
(2) The fibre to the premises coverage indicator is included separately as its evolution will also be monitored separately and taken into consideration when interpreting VHCN coverage data in the Digital Decade.
(3) At least 75% of EU enterprises have taken up one or more of the following, in line with their business operations: (i) cloud computing services; (ii) big data; (iii) artificial intelligence.

Source: Digital Economy and Society Index

ANNEX 11: INNOVATION

This Annex provides a general overview of the performance of the Dutch research and innovation system, which is essential for delivering the twin transition and ensuring long-term competitiveness.

The Netherlands is an 'Innovation leader' ranking fourth among the EU Member States, according to the European Innovation Scoreboard ([100]). Thanks to continuous improvements since 2015, the country's performance lead over the EU has remained stable. The Netherlands scores particularly high on all the indicators related to the attractiveness of the research system and the linkages in the innovation ecosystem.

R&D intensity ([101]) slightly increased in the last years, thanks to a growing business R&D intensity. In 2022 the R&D intensity reached 2.30% and it is now above the EU average of 2.24%. This results from a positive trend since 2018 (the lowest level of 2.14% in 2018). However, this is still below the spending of other Member States with similar levels of economic development. The increase has been achieved mainly thanks to growth in business R&D intensity, which reached 1.56% in 2022, above the EU average (1.48%). Public R&D intensity, at 0.74%, remains very close to the EU average (0.73%).

The National Growth Fund, put in place by the authorities in 2020, aims to leverage the efficiency of the Dutch R&D system. Overall, the indicators point to the high efficiency of the Dutch R&D system: investments in the Dutch R&D system are effective, making it possible to ensure innovation leadership and thereby Dutch productivity and competitiveness. This has been recognised by the Dutch authorities which leveraged this competitive advantage by making investment in R&I one of the pillars of the 2021-2025 National Growth Fund (NFG) ([102]), a 5-year initiative to support knowledge development, R&I projects that boost economic growth. Under the first three investment rounds, EUR 11 billion of the total EUR 20 billion NGF budget were committed to 53 projects in eight thematic areas.

There is potential for strengthening the societal impact of the Dutch R&I system in relation to environmental sustainability. The Netherlands has an excellent public science base, notably in green research: it ranks among the top performers in the EU for the share of scientific publications that are highly cited, both on average across all scientific fields and specifically in green research. However, the share of environment-related patents in total Dutch patent applications is lower than the EU average.

Stepping up R&I-related public and private commitments for sustainability is important for strengthening the societal impact of the Dutch R&I system. The mission-driven Innovation Policy and Invest-NL provide relevant frameworks for this. Furthermore, with the renewed Knowledge and Innovation Covenant (KIC) ([103]) for 2024-2027, businesses, knowledge institutions, public authorities and other organisations reaffirmed their shared commitment to mission-driven innovation policy for the coming years. Moreover, mobilising R&I for the green and digital transitions is a key priority for the funds allocated to R&I in the Dutch recovery and resilience plan (RRP) ([104]).

([100]) 2023 European Innovation Scoreboard (EIS), country profile: Netherlands https://ec.europa.eu/assets/rtd/eis/2023/ec_rtd_eis-country-profile-nl.pdf. The EIS provides a comparative analysis of innovation performance in EU countries, including the relative strengths and weaknesses of their national innovation systems (also compared to the EU average).

([101]) Defined as gross domestic expenditure on R&D as a percentage of GDP.

([102]) National Growth Fund https://www.nationaalgroeifonds.nl/english.

([103]) KIC 2024-2027 https://open.overheid.nl/documenten/2cc3f116-c82a-487c-8588-9f7b30b17ab2/file

([104]) Estimated amount of Recovery and Resilience Facility allocation to R&I: EUR 472 million (i.e. about 10% of the RRP).

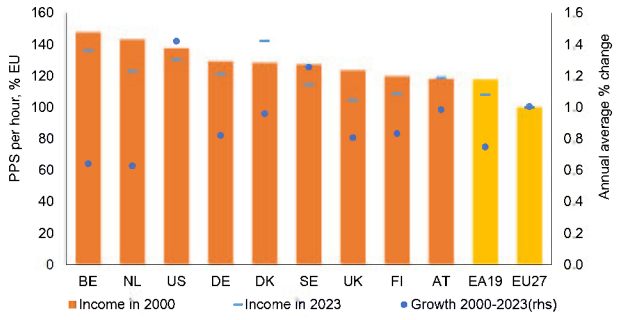
Table A11.1:**Key innovation indicators**

The Netherlands	2010	2015	2020	2021	2022	EU average (1)
Key indicators						
R&D intensity (GERD as % of GDP)	1.7	2.15	2.32	2.27	2.3	*2.24*
Public expenditure on R&D as % of GDP	0.89	0.77	0.78	0.77	0.74	*0.73*
Business enterprise expenditure on R&D (BERD) as % of GDP	0.82	1.35	1.55	1.5	1.56	1.48
Quality of the R&I system						
Scientific publications of the country within the top 10% most cited publications worldwide as % of total publications of the country	16.1	15.4	14.18	:	:	*9.6*
Patent Cooperation Treaty patent applications per billion GDP (in PPS)	5.2	6.1	5.06	:	:	*3.4*
Academia-business cooperation						
Public-private scientific co-publications as % of total publications	10	10.7	11.3	11.6	11.5	*7.6*
Public expenditure on R&D financed by business enterprise (national) as % of GDP	:	0.06	0.062	0.06	:	*0.054*
Human capital and skills availability						
New graduates in science & engineering per thousand pop. aged 25-34	9.2	:	11.2	12.4	:	*16.9*
Graduates in the field of computing per thousand population aged 25-34	2.4	:	2.5	3	:	*3.4*
Public support for business enterprise expenditure on R&D (BERD)						
Total public sector support for BERD as % of GDP	:	0.244	0.279	0.278	:	*0.204*
R&D tax incentives: foregone revenues as % of GDP	0.135	0.135	0.154	0.162	:	*0.104*
Green innovation						
Share of environment-related patents in total patent applications filed under Patent Cooperation Treaty (%)	11.9	10	11.5	:	:	*14.7*
Finance for innovation and economic renewal						
Venture capital (market statistics) as % of GDP	0.04	0.03	0.077	0.132	0.141	*0.085*
Employment share of high growth enterprises measured in employment (%)	:	17.35	16.95	:	:	*12.51*

(1) EU average for the last available year or the year with the largest number of country data.
Source: Eurostat, OECD, DG JRC, Science-Metrix (Scopus database and EPO's Patent Statistical Database), Invest EU

The Netherlands has a highly productive economy, but productivity growth has been low for more than a decade. Between 1980 and 2007, the Dutch economy was as productive as the US economy and one of the most productive EU countries ([105]). However, after the 2007-2008 financial crisis, productivity growth weakened compared to the euro area and peer economies. Over 2000-2023, labour productivity growth was lower than its peers and the euro area average (see Graph A12.1) Real GDP per person employed has been growing at or below the euro area average, starting in 2009. 2020 was the only year when Dutch productivity growth was above the euro area average (1.7% vs 1.1%), but this was an atypical year marked by crises. The Netherlands is forecast to record productivity growth rates at the euro area average in 2024 ([106]).

Graph A12.1: **Labour productivity (GDP per hour worked) in purchasing power standards and as percentage of the EU in 2023 vs growth rate 2000-2023**

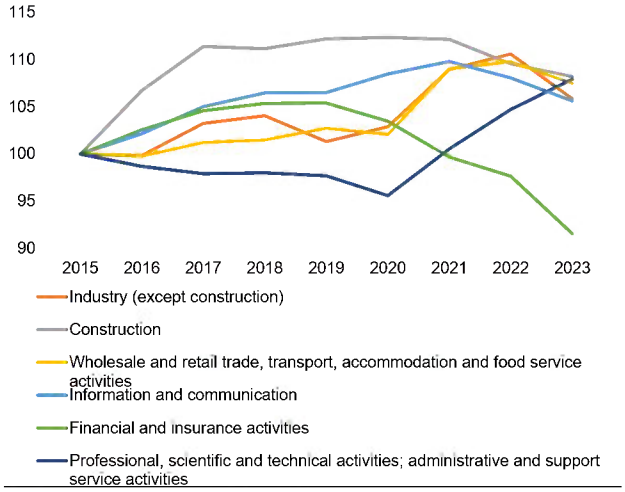


Source: AMECO database, European Commission

Low investment in the Netherlands is a contributing factor to its poor productivity growth. The level of net public investment in 2023 was well below the EU average. Over the last 5 years, the average addition to the public capital stock (in GDP terms) was one third of the EU average ([107]). Among its peers, only Germany had a lower rate. Since 2010, the Netherlands' total investment (as a share of GDP) has been below that of the EU and euro area except for 2015 and 2022 ([108]). The very large investment pools in the Netherlands (trillions in pension funds, retained profits ([109])) are mainly directed to outside the country for various reasons, including the yields and small size of the Dutch economy.

Industry is a factor of diversification and resilience for the Dutch economy. It accounted for 16.6% of Dutch gross value added in 2023, which makes it the second largest sector of the Dutch private economy, after retail ([110]). The government targets a manufacturing share of 10-15% of GDP, reflecting its desire to keep a strong industrial base in the Netherlands as a foundation for prosperity and resilience via the diversification of the economic structure ([111]) Businesses contributed two thirds of R&D expenditure in 2022 ([112]). Industry performed well over the last three years in terms of productivity, as shown in Graph A12.2.

Graph A12.2: **Real labour productivity, hours worked, 2015=100**



Source: European Commission

Construction plays an important role in addressing one of the key challenges for the Netherlands – housing. Property prices in

([105]) OECD Database. Where no source for the data is given, the source is the table at the end of this Annex.

([106]) 2024 Commission Spring Forecast, Table 27.

([107]) Commission calculation based on Eurostat data.

([108]) Eurostat, total investment.

([109]) The Dutch Central Bank (DNB) reported that pension funds had assets under management of EUR 1.54 trillion in Q1-2023 (down from EUR 1.92 trillion in 2021). 82% of these funds were invested abroad. See DNB, 'Dutch Pension Funds Invest More in the Netherlands', 13 June 2023.

([110]) Eurostat, Gross value added by industry.

([111]) Ministry of Economic Affairs and Climate, 'New Strategic and Green Industrial policy' (July 2022).

([112]) Eurostat, gross expenditure on R&D.

the country have doubled in the last 10 years. The government set itself a target of building 981 000 homes by 2030 to ease the housing shortage. However, reaching this target is likely to be challenging as labour shortages, issues related to environmental requirements, the slow permitting process and tighter financial conditions dampen construction activity. The number of construction permits issued in 2023 – 55,000 – is lower than in previous years. The construction sectors' share in f gross value added increased slightly from 4.7% in 2022 to 4.9% in 2023 (5.7% in the EU).

Decarbonisation remains a challenge. Netherlands is one the heaviest polluters in the EU (6th in 2020 in terms of greenhouse emissions per capita ([113]); see also Annex 6). The installed share of renewable electricity capacity in electricity production has increased recently and reached the EU average. For the country to reach its 2030 climate target of reducing emissions by 55% compared to 1990 levels, it will need to quickly and thoroughly implement planned measures. The previous government allocated substantial resources to greening, but the main challenge lies in implementation.

Greening the economy fast enough is a key factor in preserving the quality of the business environment. The business environment has traditionally been a key strength of the Dutch economy. But delivering on climate targets will be a key issue for economic performance in the coming years affecting companies' decisions to stay in the Netherlands or relocate, as will other important developments at EU and international level (e.g. the OECD agreement on profit taxation, US technology sanctions against China). Several big firms have moved their main headquarters abroad in the last 3 years.

Companies are affected by labour and material shortages. These shortages are acute in the Netherlands: 34.6% of companies reported problems in hiring staff compared to the EU average of 23.3%, while 23% are experiencing difficulties finding the material factors of production, which is also above the EU average (17.2%). The job vacancy rate is double the EU average but close to peers. Availability of skilled staff is the main barrier to long-term investment ([114]).

The Netherlands is well integrated into the Single Market, but can improve its performance in the Single Market Scoreboard. In 2023, the country's trade integration in the single market for goods and services (45.60% of GDP) was above the EU average (43%). The OECD restrictiveness index shows that the Netherlands has the lowest barriers for trading in services among all EU countries. The 2023 Single Market Scoreboard indicates that performance is below the EU average on both the transposition deficit and conformity deficit. The Netherlands solved 73% of SOLVIT cases (48) it handled as lead centre (below the EU average of 88.3%).

The Netherlands has successfully implemented the components needed to connect to the Once-Only Technical System (OOTS). As part of the Single Digital Gateway Regulation, the system will enable the automated cross-border exchange of evidence between competent authorities, improving online access to information, administrative procedures, and assistance within the EU. The onboarding of the Dutch competent authorities is crucial for the system to function smoothly and to reduce administrative burden.

Small and medium-sized enterprises (SMEs) face multiple challenges and could benefit from better access to finance and public procurement. The top concerns for SMEs are related to staff shortages and energy prices. They could take better advantage of the large public procurement market in the Netherlands ([115]), including by opening up more sectors (such as social housing) to competition. Splitting calls for tender may help SMEs (16% split calls in the Netherlands vs 30% in EU in 2022).

([113]) Eurostat.

([114]) As reported by Dutch companies in the EIB Investment Survey, 2023 edition.

([115]) OECD data for 2021 show that public procurement accounted for around 45% of government expenditure or 20% of GDP. These figures place Netherlands at the top of the table for both EU and OECD countries.

Table A12.1:**Industry and the Single Market**

Netherlands							
POLICY AREA	**INDICATOR NAME**	**2019**	**2020**	**2021**	**2022**	**2023**	**EU27 average***
HEADLINE INDICATORS							
Economic Structure	Net Private investment, level of private capital stock, net of depreciation, % GDP[1]	4,5	3,7	4	4,1	4	**3,8**
	Net Public investment, level of public capital stock, net of depreciation, % GDP[1]	0,4	0,5	0,4	0,2	0,2	**1,2**
	Real labour productivity per person in industry (% yoy)[2]	-2,5	-2,3	8,2	0,7	-4,9	**-1,24**
Cost competitiveness	Nominal unit labour cost in industry (% yoy)[2]	5,2	5,5	-5,6	4	11	**9,83**
SINGLE MARKET							
Single Market integration	EU Trade integration, % (Average intra-EU imports + average intra EU exports)/GDP[2]	41,7	40,5	44,2	50,1	45,6	**42,9**
Compliance	Transposition deficit, % of all directives not transposed[3]	0,6	1	1,6	1,4	0,6	**0,7**
	Conformity deficit, % of all directives transposed incorrectly[3]	1,4	1,7	1,3	1,6	1,2	**1,1**
	SOLVIT, % resolution rate per country[3]	80,6	78,0	89,2	78,0	73,0	**88,3**
	Number of pending infringement proceedings[3]	23	26	24	21	23	**25,9**
Restrictions	EEA Services Trade Restrictiveness Index[4]	0,03	0,03	0,03	0,03	0,03	**0,05**
Public procurement	Single bids, % of total contractors[3]	15	13	13	19	19	**28,6**
	Direct Awards, %[3]	6	9	7	9	11	**8,1**
ECONOMIC STRUCTURE							
Shortages	Material Shortage (industry), firms facing constraints, %[5]	9,5	8,0	24,3	39,3	23,0	**17,2**
	Labour Shortage using survey data (industry), firms facing constraints, %[5]	22,7	14,8	23,3	36,9	34,6	**23,3**
	Vacancy rate, % of vacant posts to all available ones (vacant + occupied)[2]	3,6	2,6	4,2	5,4	4,9	**2,5**
Strategic dependencies	Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials[6]	0,18	0,19	0,19	0,18	0,3	**0,22**
	Installed renewables electricity capacity, % of total electricity produced[2]	0,2	0,3	0,3	0,4		**50**
BUSINESS ENVIRONMENT - SMEs							
Investment obstacles	Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle[7]	11,0	9,8	9,0	12,0	10,0	**22,2**
Business demography	Bankruptcies, Index (2015=100)[2]	63,4	53,1	30,1	35,6	54,9	**105,6**
	Business registrations, Index (2015=100)[2]	126,3	121,4	138,1	142,6	150,1	**120,2**
Late payments	Payment gap - corporates B2B, difference in days between offered and actual payment[8]	-	-2	11	13	13	**15**
	Payment gap - public sector, difference in days between offered and actual payment[8]	-	-1	11	13	16	**16**
	Share of SMEs experiencing late payments in past 6 months, %[9]	33,1	25,0	22,7	24,6	29,6	**48,7**
Access to finance	EIF Access to finance index - Loan, Composite: SME external financing over last 6 months, index values between 0 and 1[10]	0,23	0,21	0,26	0,25	-	**0,49**
	EIF Access to finance index - Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values	0,17	0,33	0,28	0,21	-	**0,17**

Source: (1) AMECO, (2) Eurostat, (3) Single Market Scoreboard, (4) OECD, (5) ECFIN BCS, (6) COMEXT and Commission calculations, (7) EIB Investment Survey, (8) Intrum Payment Report, (9) SAFE survey, (10) EIF SME

Source: Source: (1) AMECO, (2) Eurostat, (3) Single Market Scoreboard, (4) OECD, (5) ECFIN BCS, (6) COMEXT and Commission calculations, (7) EIB Investment Survey, (8) Intrum Payment Report, (9) SAFE survey, (10) EIF SME Access to Finance Index.

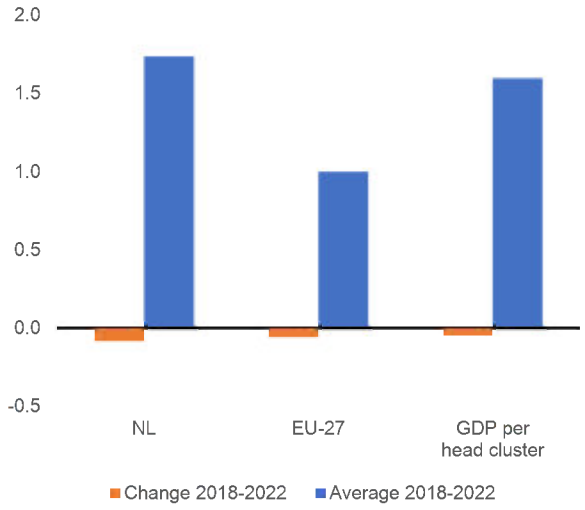
* Own Commission calculations for the EU27 average

The EIF index on access to finance signals that SMEs in the Netherlands face more difficulties in accessing loans than EU companies. This is confirmed by the 2023 EIB Investment Survey, where the share of Dutch companies that use external sources to finance investment (around 30%) is the second lowest in the EU, well below the EU average (43%). The same study shows, however, that Dutch companies' dependence on bank loans is limited, as they have internal resources to fall back on (e.g. it has the highest share of internal financing and

one of the lowest rates of financially constrained firms).

The Netherlands' public administration is essential for the economy's competitiveness by, in particular, shaping the conditions for the twin transitions and creating a favourable business environment. While the Netherlands' government effectiveness score remains one of the highest in the EU, it has fallen for the second year in a row, reaching its lowest-ever level (Graph A13.1). This is coupled with a reduction in trust in government ([116]).

Graph A13.1: **Government effectiveness**

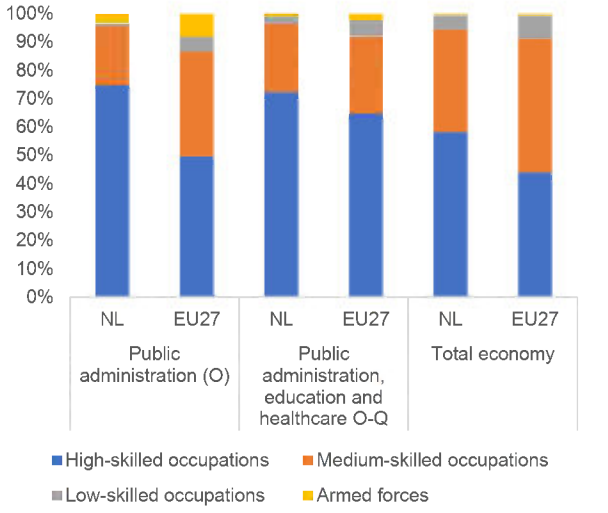


Notes: average value over 2018-2022 and change over 2018-2022.
The GDP per head bar shows the mean value of the government effectiveness indicator for the group of EU countries belonging to the same GDP per head cluster as the Netherlands (EU countries are ranked in terms of their GDP per head and grouped into three equally sized clusters).
Source: Worldwide Governance Indicators.

The share of public administration employees with higher education and their participation in adult learning indicate a high-skilled workforce compared to the EU-27 (Chart A13.2). Gender parity in senior civil service positions has improved in the last 5 years but remains slightly below the EU average (Table A13.1). The ratio of 25-49 to 50–64-year-old workers in public administration went up in 2023 (Table A13.1) against the backdrop of a visible employment increase in the 25-49 age bracket.

([116]) Standard Eurobarometer, 2023.

Graph A13.2: **Share of employed by occupation and by sector**



Notes: 2023 data
High-skilled occupations: managers, professionals, technicians, and associate professionals; medium-skilled occupations: clerical support workers, service and sales workers, skilled agricultural, forestry and fishery workers, craft and related trades workers, plant and machine operators and assemblers; c) low-skilled occupations: elementary occupations
Source: Eurostat. Employment by sex, age, occupation, and economic activity.

The Netherlands is one of the EU's best performers in digital public administration. The level of e-government maturity is high (the Netherlands: 85.2%, EU: 75.8%) with a wide range of services offered digitally and a high level of user centricity (the Netherlands: 96.2%, EU: 93%). The share of e-government users continues to rise, reaching 96% of internet users (EU: 75%). The Netherlands has started implementing the Digital Government Act (known as Wdo) that aims at increasing the security, privacy and user-friendliness of digital services.

The quality of policymaking in the Netherlands is high, but gaps in implementation limit policy impact. The fall of the government in July has limited the caretaker government's ability to develop major initiatives. The results of three recent parliamentary inquiries ([117]) have contributed to discussions on 'good governance' and could result in policymaking reforms by the government that will be formed. In October

([117]) These inquiries were related to (i) gas extraction in Groningen, (ii) the childcare allowance affair and (iii) the government's handling of the COVID-19 pandemic.

Table A13.1:**Public administration indicators**

NL	Indicator ([1])	2019	2020	2021	2022	2023	EU-27([2])
E-government and open government data							
1	Share of internet users within the last year that used a public authority website or app	n/a	n/a	n/a	96.9	95.5	75.0
2	E-government benchmark overall score ([3])	n/a	82.0	85.1	85.3	85.2	75.8
3	Open data and portal maturity index	0.8	0.9	0.9	0.8	0.8	0.8
Educational attainment level, adult learning, gender parity and ageing							
4	Share of public administration employees with higher education (levels 5-8, %)	56.1 (b)	58.6	57.6 (b)	59.3	60.7	52.9
5	Participation rate of public administration employees in adult learning (%)	24.6	23.6	36.0 (b)	33.7	32.9	17.9
6	Gender parity in senior civil service positions ([4])	25.4	23.4	20.2	17.2	11.6	9.2
7	Ratio of 25-49 to 50-64 year olds in NACE sector O	1.4	1.5	1.4 (b)	1.5	1.6	1.5
Public financial management							
8	Medium-term budgetary framework index	0.9	0.9	0.9	0.9	n/a	0.7
9	Strength of fiscal rules index	2.3	2.3	2.3	2.3	n/a	1.4
Evidence-based policy making							
10	Regulatory governance	n/a	n/a	2.07	n/a	n/a	1.7

([1]) High values denote a good performance, except for indicator # 6. ([2]) 2023 value. If not available, the latest value available is shown. ([3]) Measures the user centricity (including for cross-border services) and transparency of digital public services as well as the existence of key enablers for the provision of those services. ([4]) Defined as the absolute value of the difference between the percentage of men and women in senior civil service positions.
Flags: (b) break in time series; (d) definition differs; (u) low reliability.
Source: E-government activities of individuals via websites, Eurostat (# 1); E-government benchmark report (# 2); Open data maturity report (# 3); Labour Force Survey, Eurostat (# 4, 5, 7), European Institute for Gender Equality (# 6); Fiscal Governance Database (# 8, 9); OECD Indicators of Regulatory Policy and Governance (# 10).

2022, the Netherlands launched a new policy preparation framework that was rolled out throughout 2023 and will become a standard across the government ([118]). The framework emphasises the use of evidence and the need to gather evidence from many sources, including academic research, data analytics and stakeholders. In addition, the first *Staat van de Uitvoering* (state of implementation) reports on gaps in policy implementation that limit the effectiveness of public policies and reduce public trust ([119]).

The lack of data on the efficiency of litigious civil and commercial cases prevents properly evaluating the justice system's overall efficiency. Efficiency has improved in first-instance administrative cases (257 days in 2022 compared to 265 days in 2021). The overall quality of the justice system is good. However, judges and public prosecutors have expressed concerns about staff shortages and high workloads. Initiatives to improve access to justice, including reflections on a reform of the legal aid system, are ongoing. The level of digitalisation is advanced. Improved digital tools enable people to initiate and follow proceedings online although there is room for improvement in civil, administrative and criminal proceedings. More judgments have been published online, but the publication rate is low. On judicial independence, no systemic deficiencies have been reported ([120]).

([118]) Rijksoverheid, 2022.

([119]) Staat van de Uitvoering, 2023.

([120]) For more details, see the 2024 EU Justice Scoreboard and the Commission's 2024 Rule of Law Report (forthcoming).

ANNEX 14: EMPLOYMENT, SKILLS AND SOCIAL POLICY CHALLENGES IN LIGHT OF THE EUROPEAN PILLAR OF SOCIAL RIGHTS

The European Pillar of Social Rights is the compass for upward convergence towards better working and living conditions in the EU. This Annex provides an overview of the progress of the Netherlands in implementing the Pillar's 20 principles and the EU headline and national targets for 2030 on employment, skills and poverty reduction.

The Dutch labour market is performing well overall, but challenges persist in terms of labour market segmentation, and employment and social outcomes for certain groups. The employment rate in the Netherlands was 83.5% in 2023, well above the EU average (75.3%), and unemployment remains low (3.6% in March 2024). However, the level of flexible and temporary contracts remains far above the EU average (23.4% vs 12.2% in 2023), as does the number of self-employed workers without employees (11.7% vs 7.5%). Equal opportunities and fair working conditions, including income levels and social protection coverage, remain a challenge for certain groups. Over a million self-employed people without employees are not insured for unemployment benefits, paternity benefits, or benefits for accidents at or occupational diseases. To improve social protection for the self-employed, the Netherlands included a reform in its recovery and resilience plan (RRP) to introduce mandatory disability insurance for this group. The poverty rate of temporary contract workers is significantly higher than for workers with a permanent contract. Although the disability employment gap closed slightly in 2022, it remains above the EU average (25.2 percentage points (pps) vs 21.4 pps). And while the employment rate of people born outside the EU is just above the EU average of 64.6% (in 2023), the gap with people born in the country is over twice as big as the average gap at EU level. Labour market participation of women and their number of hours worked have recently increased, with a gender employment gap that is below the EU average (7.8 pps vs 10.2 pps in 2023). However, at 13.0% in 2022, the gender pay gap was still slightly above the EU average. Women are overrepresented among part-time workers (61.2% compared to 27.9% in the EU in 2023), in a country where part-time and other non-standard forms of employment remain widespread. At the same time, only 2.3% of those working part-time (3.8% for men and 1.8% for women) report doing so involuntarily ([121]), which is the lowest share in the EU. Nonetheless, the wide gender gap in part-time employment (42.3 pps against an EU average of 20.2 pps in 2023) fuels a very high, although slightly decreasing, gender pension gap (40.0% in 2022, from 65 to 79 years).

Table A14.1:**Social Scoreboard for the Netherlands**

Policy area	Headline indicator	
Equal opportunities and access to the labour market	Adult participation in learning (during the last 12 months, excl. guided on the job training, % of the population aged 25-64, 2022)	56.1
	Early leavers from education and training (% of the population aged 18-24, 2023)	6.3
	Share of individuals who have basic or above basic overall digital skills (% of the population aged 16-74, 2023)	82.7
	Young people not in employment, education or training (% of the population aged 15-29, 2023)	4.8
	Gender employment gap (percentage points, population aged 20-64, 2023)	7.8
	Income quintile ratio (S80/S20, 2022)	3.9
Dynamic labour markets and fair working conditions	Employment rate (% of the population aged 20-64, 2023)	83.5
	Unemployment rate (% of the active population aged 15-74, 2023)	3.6
	Long term unemployment (% of the active population aged 15-74, 2023)	0.5
	Gross disposable household income (GDHI) per capita growth (index, 2008=100, 2022)	111.9
Social protection and inclusion	At risk of poverty or social exclusion (AROPE) rate (% of the total population, 2022)	16.5
	At risk of poverty or social exclusion (AROPE) rate for children (% of the population aged 0-17, 2022)	13.6
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2022)	33.79
	Disability employment gap (percentage points, population aged 20-64, 2022)	25.2
	Housing cost overburden (% of the total population, 2022)	10
	Children aged less than 3 years in formal childcare (% of the under 3-years-old population, 2022)	72.3
	Self-reported unmet need for medical care (% of the population aged 16+, 2022)	0.2

Critical situation | To watch | Weak but improving | Good but to monitor | On average | Better than average | Best performers

Update of 25 April 2024. Members States are categorised based on the Social Scoreboard according to a methodology agreed with the EMCO and SPC Committees. Please consult the Annex of the Joint Employment Report 2024 for details on the methodology.
Source: Eurostat.

Labour and skills shortages remain a challenge, which may affect the green and digital transitions and undermine the Netherlands' economic competitiveness. Job tightness is prevalent in different sectors but is particularly high in services, ICT, technical jobs and construction. The growing shortage of teachers across the education system, as well as in vocational education and training ([122]), is a serious issue, also because

([121]) https://ec.europa.eu/eurostat/databrowser/view/lfsa_eppgai/default/table?lang=en

([122]) Code rood: lerarentekort loopt verder op (werk.nl)

the green and digital transitions require a sufficiently skilled workforce. Retiring teachers are not replaced at a sufficient rate, and many novice teachers leave the profession after the first few years. Participation in vocational education and training and adult learning remains significantly higher in the Netherlands than in other Member States. However, those for whom life-long learning would have the largest positive impact participate less, including lower-skilled people, people on temporary contracts and are not close to getting a job such as the (long-term) unemployed and those who are out of the labour force. Despite the decentralised system which enables a tailor-made approach, there is a difference between regions and municipalities in their outreach to people who have difficulties in finding a job or training (and whose labour potential is greatly needed). Continued investment in improving basic, technical and digital skills, increasing mobility between sectors and sustainable employability, and improving the quality and inclusiveness of education and training for all, are essential for the Netherlands to reach its national target of at least 62% of adults participating in training every year by 2030. Under the European Social Fund Plus (ESF+), the Netherlands will continue to make investments to increase the number of people from groups in an unfavourable employment and/or vulnerable social situation who find work or training, to help tackle labour shortages and activate people's untapped skills and labour potential. In addition, the Just Transition Fund, with its focus on emission-intensive regions most affected by the climate transition, provides upskilling and reskilling opportunities to workers and people at the margins of the labour market to ensure that people have the necessary skills for the transition.

Although the share of people at risk of poverty or social exclusion (AROPE) in the Netherlands is stable and well below the EU average, some groups face significant risks, such as people with a migrant background, children and persons with disabilities. In 2022, 35.1% of people living in the Netherlands who were born outside the EU were at risk of poverty or social exclusion, 20.6 pps higher than the share of people born in the Netherlands. The second generation of people with a migrant background has a much greater risk of poverty: in 2022, 29.3% of children with parents born outside the Netherlands were at risk of poverty. This rate is more than four times higher than the one for children whose parents were born in the Netherlands ([123]). While overall child poverty and social exclusion is below the EU average (12.7% compared to 19.3% in 2022), the poverty gap (AROP) for children compared to adults increased significantly, by 8.3 pps from 2020 to 2021, and remaining at 26.0 pps in 2022 ([124]). In addition, a quarter of persons with disabilities were at risk of poverty or social exclusion in 2022, a rate that is more than double that for persons without disabilities. There is therefore scope for greater social policy action for the Netherlands to reach its national target to reduce the number of people at risk of poverty or social exclusion by 163 000 by 2030, taking into account the gaps that persist between different groups.

Table A14.2:**Situation of the Netherlands on 2030 employment, skills and poverty reduction targets**

Indicators	Latest data	Trend (2016-2023)	2030 target	EU target
Employment (%)	83.5 (2023)		82.5	78
Adult learning[1] (%)	56.1 (2022)		62	60
Poverty reduction[2] (thousands)	54 (2022)		-163	-15 000

(1) Adult Education Survey, adults in learning in the past 12 months, special extraction excl. guided on-the-job training.
(2) Change in the number of persons at risk of poverty or social exclusion (AROPE), reference year 2019.
Source: Eurostat, DG EMPL.

The housing cost overburden remains a challenge, especially for lower-income households. The housing cost overburden rose by 1.7 pps to 10% in 2022 and is now above the EU average (8.7%). Housing costs, as a proportion of a household's disposable income, are especially high for households with an income below 60% of the median equivalised income (46.6%), which is far above the EU average of 37.9%. Inflation and energy prices, in combination with the lack of affordable and suitable housing, have negatively affected household disposable incomes, in particular among the most vulnerable and lower income groups. Tenants are disproportionately affected: 41.4% of

([123]) Eurostat: ilc_li34

([124]) Eurostat: ilc_li11

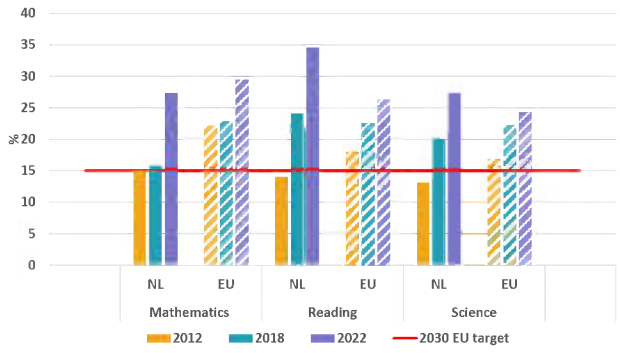
tenants who rent at the market price experience housing cost overburden, compared to 26.1% of tenants renting at a reduced price (such as for social housing) and 2% of homeowners with a mortgage or loan ([125]).

([125])Eurostat: tessi164

This Annex outlines the main challenges of Netherlands' education and training system based on the 2023 Education and Training Monitor and the 2022 OECD Programme for International Student Assessment (PISA) results.

Basic skills have deteriorated dramatically, representing a risk for skills development, labour productivity and competitiveness. While in 2012 the share of underachieving students was below the EU 2030 target (15%) and well below the EU average in all three domains, by 2022 it had almost doubled in mathematics and science, and it was 2.5 times higher in reading than in 2012. The underachievement rate only remains below the EU average in mathematics. Almost half of foreign-born students underachieve in mathematics (48.5%), while for native-born students with parents born abroad, the underachievement rate is considerably lower (37.9%). Underachievement in mathematics increased especially among disadvantaged students (26.1% in 2018 vs 42% in 2022). A steep decline in the basic skills of fourth grade pupils was also observed in the 2021 Progress in International Reading Literacy Study (PIRLS). Compared with 2016, the share of low achievers nearly doubled ([126]). The increasing share of underachieving students is especially a challenge regarding already existing skill shortages.

Graph A15.1: **Underachievement rates by field, PISA 2012, 2018 and 2022**



Source: OECD (2023).

The shares of top performers in mathematics and science are among the highest of the EU countries. Even though their share decreased significantly in mathematics (by 3 pps) since 2018, the rate is almost twice as high as the EU average in 2022 (15.4% vs EU: 7.9%). In science, the share remained stable, and it is now one of the highest rates in the EU with at 10.5% (EU: 6.9%). In reading, the rate decreased by 2.1 pps since 2018, but it remains above the EU average (7.0% vs EU: 6.5%). 5.7% of disadvantaged students are top performers, the highest share in the EU (EU:1.8%). Differences between schools have the greatest impact on pupils' performance of all EU countries, reflecting ability-based tracking from an early age.

The Netherlands has taken measures to improve learning outcomes and to promote equal opportunities. In May 2022, the government launched a basic skills master plan for early childhood education and school education. The plan promotes Dutch reading and writing skills, mathematics, citizenship education and digital literacy. In October 2022, a subsidy was created to fund school breakfasts and/or lunch for primary and secondary schools where over 30% of students come from low-income families.

The Netherlands faces growing teacher shortages in all sectors. In 2021-2022, 9.5% of teaching and 13.6% of director positions were not filled in primary education ([127]). Shortages are highest in the big urban areas, in special education, in schools with a disadvantaged student population, and in schools that were assessed as very weak by the Inspectorate of Education. Shortages often oblige schools to use emergency solutions such as employing teachers not yet qualified, merging classes, or asking pupils to stay at home for a day ([128]).

Several measures aim to enhance the attractiveness of the teaching profession. The Education Agreement of April 2022, between the Ministry of Education, Culture and Sciences, the trade unions and sectoral

([126]) European Commission: Children's reading competence and well-being in the EU: an EU comparative analysis of the PIRLS results

([127]) Ministerie van Onderwijs, Cultuur en Wetenschap: Trendrapportage Arbeidsmarkt Leraren po, vo en mbo 2022

([128]) Ministerie van Onderwijs, Cultuur en Wetenschap: Trendrapportage Arbeidsmarkt Leraren po, vo en mbo 2021

Table A15.1:**EU-level targets and other contextual indicators under the European Education Area strategic framework**

				2012		2018		2023	
Indicator			Target	Netherlands	EU-27	Netherlands	EU-27	Netherlands	EU-27
[1]Participation in early childhood education (age 3+)			96%	94.1% 2013	91.8% 2013	89.4%	92.2%	93.0% 2021	92.5% 2021,d
[2]Low-achieving 15-year-olds in:		Reading	< 15%	14.0%	18.0%	24.1%	22.5%	34.6% 2022	26.2% 2022
		Mathematics	< 15%	14.8%	22.1%	15.8%	22.9%	27.4% 2022	29.5% 2022
		Science	< 15%	13.1%	16.8%	20.0%	22.3%	27.3% 2022	24.2% 2022
Early leavers from education and training (age 18-24)	[3]Total		< 9 %	8.9%	12.6%	7.3%	10.5%	6.3%	9.5%
	[3] By gender	Men		10.5%	14.5%	9.3%	12.1%	7.3%	11.3%
		Women		7.2%	10.6%	5.3%	8.7%	5.2%	7.7%
	[4] By degree of urbanisation	Cities		8.2% b	11.2%	6.8%	9.4%	6.0%	8.6%
		Rural areas		9.8% b	14.0%	9.0%	11.0%	6.3%	9.9%
	[5] By country of birth	Native		8.7%	11.3%	7.0%	9.2%	5.8%	8.2%
		EU-born		13.2%	26.2%	15.6%	22.4%	13.2%	21.0%
		Non EU-born		12.1%	30.1%	9.4%	23.0%	9.0%	21.6%
[6]Socio-economic gap (percentage points)				18.2	:	20.8	29.5	32.1 2022	37.2 2022
[7]Exposure of VET graduates to work-based learning			≥ 60% (2025)	:	:	:	:	94.9%	64.5%
Tertiary educational attainment (age 25-34)	[8]Total		45%	41.4%	34.1%	47.6%	38.7%	54.5%	43.1%
	[8] By gender	Men		37.7%	29.1%	42.8%	33.3%	50.4%	37.6%
		Women		45.0%	39.2%	52.5%	44.2%	58.8%	48.8%
	[9] By degree of urbanisation	Cities		48.8% b	43.5%	52.6%	49.0%	60.3%	53.3%
		Rural areas		29.1% b	24.8%	34.8%	27.7%	37.3%	31.7%
	[10] By country of birth	Native		43.1%	35.4%	49.6%	39.7%	56.0%	44.2%
		EU-born		42.0%	29.3%	40.5%	36.7%	50.2%	40.2%
		Non EU-born		29.8%	24.2%	32.8%	31.0%	46.9%	37.1%
[11]Participation in adult learning (age 25-64)			≥ 47% (2025)	:	:	57.1% 2016	37.4% 2016	56.1% 2022	39.5% 2022
[12]Share of school teachers (ISCED 1-3) who are 55 years or over				26.9% 2013	22.7% 2013	27.7%	23.8%	25.5% 2021	24.5% 2021

Notes: b = break in time series; d = definition differs; e = estimated; p = provisional; u = low reliability; : = data not available.
Source: 1,3,4,5,7,8,9,10,12=Eurostat; 11= Eurostat, Adult Education Survey; 2,6=OECD, PISA.

organisations, involved closing the salary gap between primary and secondary school teachers; for this, the government set aside EUR 919 million per year ([129]). The agreement also contains commitments for additional funding to reduce the workload in secondary education (EUR 300 million) and more funding for continuous professional development (EUR 118 million). In February 2023, a proposal was approved to enhance teacher quality, the National Plan for Teachers' Professionalisation, financed from the National Growth Fund.

Participation in early childhood education and care (ECEC) from age 3 is higher than the EU average. From age 3, 93.0% of children in the Netherlands participate in ECEC, above the EU average (92.5%) but below the EU-level target (96%) for 2030. A special form of ECEC is the early childhood education scheme for disadvantaged children. While the number of participating children from the target group remained stable between 2019 and 2021, the number of available places fell between 2020 and 2021. The shortages are greater in moderately and highly urban areas (28.6%) ([130]), which may put at risk the development of children who most need these services.

The share of early school leavers is below the EU-level target, but it slightly increased in 2023. At 6.3%, the Netherlands is well below the EU-level ceiling (less than 9%) for early leavers from education and training, but this is higher than the historic low of 2021 (5.1%). National data on the number of young people dropping out from school each year over the past decade without obtaining a basic qualification also indicates a comparable trend, only briefly broken during the years of school closures linked to the pandemic. Based on the recent increase, the government initiated some

([129]) Ministerie van Onderwijs, Cultuur en Wetenschap: Lerarenstrategie

([130]) Inspectie van het Onderwijs: De Staat van het Onderwijs

new actions to reduce the number of early school leavers ([131]).

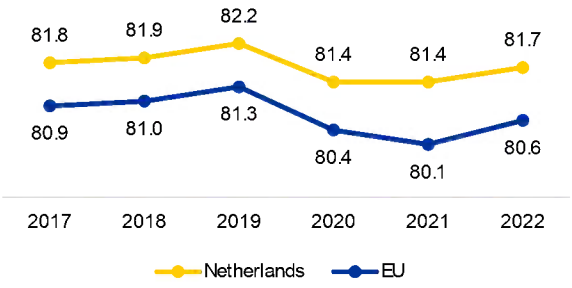
The tertiary attainment rate is among the highest in the EU. 54.5% of the population aged 25-34 holds a tertiary degree (EU: 43.1%). Overall participation in vocational education and training and in lifelong learning activities is high (see Annex 14).

([131]) Ministerie van Onderwijs, Cultuur en Wetenschap: Kamerbrief over hoofdlijnen aanvalsplan voorkomen voortijdig schoolverlaten en begeleiden naar een kansrijke toekomst

A healthy population and an effective, accessible and resilient health system are prerequisites for a sustainable economy and society. This Annex provides a snapshot of population health and the health system in the Netherlands.

Life expectancy in the Netherlands is above the EU average but has declined since 2019 due to the COVID-19 pandemic. In 2022, life expectancy partially rebounded, as COVID-19 mortality declined ([132]). In general, the Netherlands fares comparatively well in avoiding deaths from treatable causes. However, cancer mortality is above the EU average, with one of the main mortality causes being lung cancer. This correlates with tobacco consumption being the leading behavioural risk factor for mortality in the Netherlands. In 2021, cancer mortality was followed by cardiovascular diseases and COVID-19 as main causes of deaths.

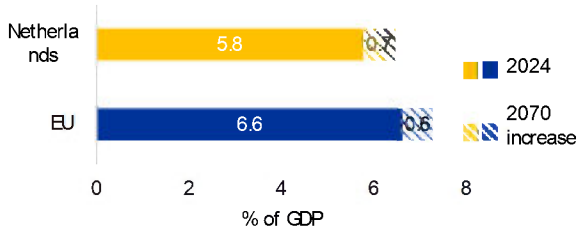
Graph A16.1: **Life expectancy at birth, years**



Source: Eurostat

Health spending relative to GDP in the Netherlands was slightly above the EU average in 2021. It was slightly down in 2020, however (despite an 8% increase in nominal terms). This is in line with a trend reflecting the effect of economic recovery after 2020. Provisional data for 2022 (from the OECD) indicate a stark drop in total spending on healthcare to 10.2% of GDP. Public sources cover a high proportion of health expenditure, resulting in a low proportion for out-of-pocket payments. There is also a large voluntary health insurance sector, covering services outside the statutory benefits package for healthcare. Based on the age profile of the Dutch population, the projected increase in public expenditure on health by 2070 as a share of GDP is 0.7 percentage points (pps), compared to 0.6 pps for the EU overall (see Graph A16.2 and Annex 21).

Graph A16.2: **Projected increase in public expenditure on healthcare over 2024-2070**



Baseline scenario
Source: European Commission / EPC (2024)

Spending on preventive care more than doubled in nominal terms from 2020 to 2021. In 2021 it accounted for 8.7% of total health spending – above the EU average of 6%. The increase was attributable to expenditure on COVID-19 testing, tracing and vaccines, which collectively accounted for more than two thirds of spending on preventive care in 2021. Provisional data for 2022 (from the OECD) indicate a stark drop to 5.7% of total health spending going on preventive care.

The country has a strong primary care system. This is combined with a relatively low number of hospital beds per population, and low hospital admission rates compared to other EU countries. This corresponds with a higher spending per capita on outpatient care than the EU average on the one hand, and lower spending on inpatient care on the other hand.

Structural shortages of certain health workers are an ongoing challenge. The number of doctors relative to the population is slightly below the EU average, while the number of nurses relative to the population is above the EU average. Nurses in the Netherlands participate in task-sharing and advanced practices, creating a comparatively attractive job profile. Moreover, in recent years, there has been a sharp increase in the number of healthcare workers, who constitute 15% of the total workforce. However, nursing staff are overburdened in certain settings, such as hospitals, and not all trained nurses work (full-

([132])Based on data provided directly by Member States to the European Centre for Disease Prevention and Control, under the European Surveillance System.

Table A16.1:**Key health indicators**

	2018	2019	2020	2021	2022	EU average (latest year)
Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare)	64,7	61,4	59,0	59,7	NA	93.3 (2021)
Cancer mortality per 100 000 population	269,8	266,6	261,3	256,2	NA	235.4 (2021)
Current expenditure on health, % GDP	10,0	10,1	11,2	11,1	NA	10.9 (2021)
Public share of health expenditure, % of current health expenditure	82,1	82,8	85,0	84,9	NA	81.1 (2021)
Spending on prevention, % of current health expenditure	3,2	3,3	4,6	8,7	NA	6.0 (2021)
Available hospital beds per 100 000 population	318	302	291	295	NA	525 (2021)
Doctors per 1 000 population	3,7	3,8	3,8	3,9	NA	4.1 (2021)*
Nurses per 1 000 population	11.2**	10.8**	11.1**	11.4**	NA	7.9 (2021)
Total consumption of antibacterials for systemic use, daily defined dose per 1 000 inhabitants per day ***	9,7	9,5	8,5	8,3	9,1	19.4 (2022)

Note: The EU average is weighted for all indicators except for doctors and nurses per 1 000 population, for which the EU simple average is used. Doctors' density data refer to practising doctors in all countries except Greece, Portugal (licensed to practise) and Slovakia (professionally active). Nurses' density data refer to practising nurses in all countries except Ireland, France, Portugal, Slovakia (professionally active) and Greece (hospital only).
Source: Eurostat Database; except: * OECD, ** Joint Questionnaire on non-monetary healthcare statistics, *** ECDC, **** Council Recommendation on stepping up EU actions to combat antimicrobial resistance in a One Health approach.

time) in the profession. There is also an increasing trend for health workers to be self-employed instead of being salaried. Public campaigns aim to increase the number of staff. '*Ik Zorg*', for instance, brings together people who want to work in healthcare and organisations looking for employees. Recent estimates forecast a shortage of almost 200 000 staff by 2033 (including for long-term care services) ([133]). In autumn 2022, the Dutch Ministry of Health published a programme to future-proof the healthcare labour market, which will look at new ways of organising care processes, retention of staff and space for learning and development ([134]). The programme builds on the need for organisational change, as growth in demand for healthcare is expected to outstrip supply in its current form.

Through its recovery and resilience plan (RRP), the Netherlands plans to invest EUR 172 million (3.15% of the RRP's total value) in healthcare. Health-related investments are planned in surge capacity of additional human resources for crisis times (including a new national healthcare reserve), architectural adjustments and staff training in intensive care, e-health, and health research infrastructure. The plan includes specific measures to temporarily alleviate the shortage of healthcare workers at times of an acute crisis but does not sufficiently address structural labour shortages in the health sector. Furthermore, under the EU cohesion policy funds programmed for 2021-2027, the Netherlands plans to invest around EUR 7 million in e-health services and applications ([135]).

([133]) Kamerbrief nieuwe arbeidsmarktprognose zorg en welzijn 2023 | Brief | Prognosemodel Zorg en Welzijn (prognosemodelzw.nl).

([134]) https://www.rijksoverheid.nl/documenten/publicaties/2022/09/30/programmatoekomstbestendigearbeidsmarktzorgwelzijn.

([135]) The EU cohesion policy data reflect the status as of 13 May 2024.

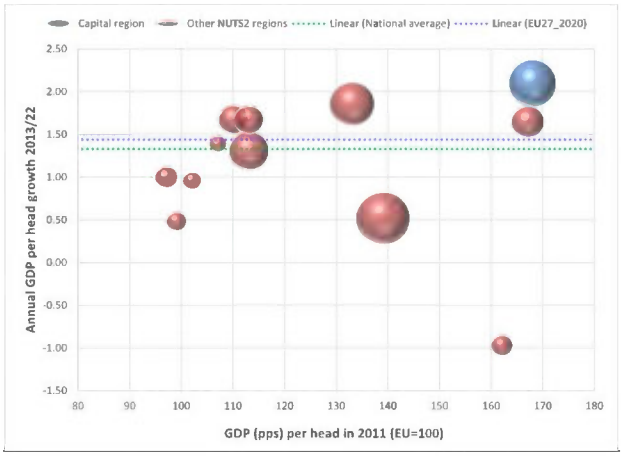
ANNEX 17: ECONOMIC AND SOCIAL PERFORMANCE AT REGIONAL LEVEL

Annex 17 showcases the economic and social regional dynamics in the Netherlands. It provides an analysis of economic, social, and territorial cohesion in the Dutch regions and assesses emerging investment needs to foster economic growth, social development, and competitiveness in the country.

Overview of economic and social performance at regional level

Regional disparities in GDP (gross domestic product) per capita have remained stable over the last decade. The Noord-Holland region, which includes the capital Amsterdam, had the highest GDP per capita (168% of the EU average, 2022) as well as the highest GDP per capita growth (2.1%) between 2013 and 2022 (Figure A17.1). The 3 regions with the lowest GDP per capita, Drenthe, Flevoland, and Friesland, had a GDP per capita just below the EU average and fairly low growth rates: 0.48%, 0.96% and 1% respectively. In Groningen, GDP per capita shrunk by -0.97%, which was mainly due to the shutdown of natural gas extraction.

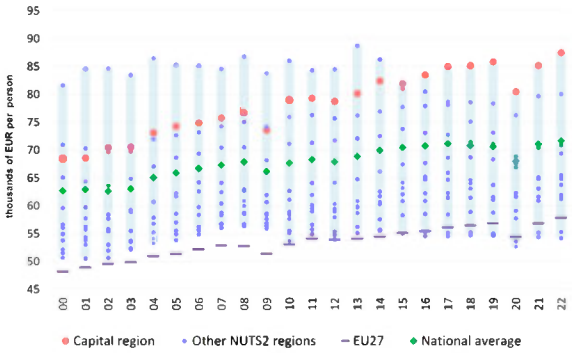
Graph A17.1: **The Netherlands, NUTS2: GDP per capita (2012) and GDP growth (2013-2022)**



Source: DG REGIO calculations based on JRC (ARDECO) and Eurostat data

Labour productivity showed regional variations in line with differences in GDP per capita. Noord-Holland and Groningen were the most productive regions (respectively 125% and 117% of the EU average) while labour productivity in Drenthe and Friesland was below the EU average (85% and 87% respectively). Average real productivity growth between 2013 and 2022 was fairly low ranging between -2.0% in Groningen and 1% in Noord-Holland, Noord-Brabant and Overijssel.

Graph A17.2: **The Netherlands, NUTS2: Labour productivity (real GVA per worker), EU-27, 2000-2022**



Source: ARDECO, DG REGIO elaboration

The Dutch regions tend to have high level of human capital. The share of the Dutch population aged 30-34 with a high education was high at 54.3% (2023), reaching 66.9% in Utrecht and 62.5% in Noord-Holland. Only Zeeland (34.7 %), Flevoland (39.5 %) and Drenthe (35.7 %) had a rate just below the EU average of 43.9 %. In all regions the percentage of early school leavers was below the EU average of 9.5% (2023). However, the increasing share of underachieving students is a challenge, especially regarding already existing skill shortages.

All Dutch regions ranked well above the EU average in terms of competitiveness, but differences exist (Map A17.1). The Regional Competitiveness Index (2022) ([136]) tended to be lower in the northern regions and Zeeland and higher in the regions in the western part of the country. The index value varied between 117 in Friesland to 151 in Utrecht.

Innovation performance remained high with moderate regional differences. In 2023, the Netherlands remained one of the five innovation leaders in the EU according to the European innovation scoreboard. Compared to 2022, innovation performance has increased for all 12 regions. Six are innovation leaders and six strong innovators. Noord-Holland was

([136])https://ec.europa.eu/regional_policy/information-sources/maps/regional-competitiveness_en

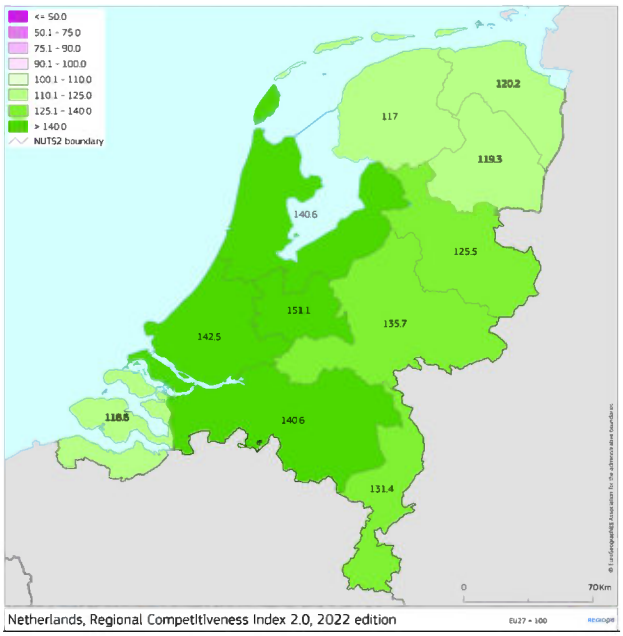
Table A17.1:**Selected indicators at regional level in the Netherlands**

NUTS 2 region	GDP per head (PPS)	Productivity (GVA (PPS) per person employed)	Real productivity growth	GDP per head growth	Employment rate	Unemployment rate	At-risk-of-poverty or social exclusion	Population with high educational attainment	EU Regional Competitiveness Index 2.0	Innovation performance
	Index, EU27 = 100, 2022	Index, EU27 = 100, 2022	Average % change on the preceding year, 2013-2022	Average % change on the preceding year, 2013-2022	% of population aged 20-64, 2023	% of active population, 2023	% of population, 2022	% of population aged 30-34, 2023	Index, EU27 = 100, 2022	Regional performance group, 2023
European Union	100	100	0.70	1.44	75.3	6.1	21.6	43.9	100	
Nederland	131	108	0.50	1.33	83.5	3.6	16.5	54.3	137.0	
Groningen	132	117	-2.00	-0.97	80.4	4.2	22.2	55.6	120.2	Strong innovator +
Friesland (NL)	94	87	0.20	1.00	83.6	4.0	17.6	48.3	117.0	Strong innovator -
Drenthe	89	85	-0.20	0.48	84.0	3.3	15.9	35.7	119.3	Strong innovator -
Overijssel	109	90	1.00	1.67	84.5	2.9	15.0	46.9	125.5	Strong innovator +
Gelderland	108	94	0.60	1.31	83.7	3.3	15.2	50.0	135.7	Innovation Leader -
Flevoland	95	100	0.80	0.96	82.7	4.3	14.4	39.5	140.6	Strong Innovator +
Utrecht	159	116	0.50	1.65	85.1	3.3	13.1	66.9	151.1	Innovation Leader -
Noord-Holland	168	125	1.00	2.10	84.0	3.8	18.7	62.5	140.6	Innovation Leader
Zuid-Holland	127	110	-0.20	0.52	82.9	4.0	18.8	54.3	142.5	Innovation Leader -
Zeeland	111	103	0.70	1.39	84.0	2.1	14.6	34.7	118.6	Strong Innovator -
Noord-Brabant	132	106	1.00	1.85	84.9	3.2	13.7	54.3	140.6	Innovation Leader -
Limburg (NL)	116	99	0.80	1.67	79.9	3.4	16.2	49.0	131.4	Innovation Leader -

Source: Eurostat, EDGAR database

the most innovative region with a regional innovation index at 137% of the EU average. Friesland's index stood at the EU average and Drenthe scored just above the average (102%).

Map A17.1: **The Netherlands, NUTS2: Regional Competitiveness Index (2022)**



Source: DG REGIO, JRC

All regions had a high level of employment and a low unemployment rate. Employment rates ranged from 79.9% in Limburg to 85.1% in Utrecht in 2022. The unemployment rate remained stable. Flevoland had the highest unemployment rate at 4.3% in 2023, which was still below the EU average of 6.1%. Zeeland had the lowest unemployment with 2.1%.

Labour market shortages remained high in 2023 ([137]). In the Netherlands, 114 job vacancies were recorded per 100 unemployed in the third quarter of 2023, slightly down from 122 in the third quarter of 2022. Labour market tightness in the third quarter of 2023 was the highest in Zeeland (150) followed by Utrecht (137). Labour market tightness was the lowest in Groningen (86) and Flevoland (87). While labour market shortages are high, the Netherlands also has significant unused labour potential, such as part-time workers.

The share of population at-risk-of-poverty and social exclusion (the AROPE rate) showed regional differences. In the Netherlands, the AROPE rate stood at 16.5% in 2022. With 22.2%, Groningen had the highest rate followed by Zuid-Holland and Noord-Holland with respectively 18.8% and 18.7%. Utrecht (13.1%) and Noord-Brabant (13.7%) had the lowest AROPE rates.

The transition to a carbon-neutral economy affected regions differently. Regions with

([137]) CBS (Statistics Netherlands), 2023.

clusters of emission-intensive industries ([138]) face challenges in reducing greenhouse gas emissions, sustainably transforming their industries, developing alternative sustainable economic activities, and reskilling and upskilling workers. Widespread congestion of the power grid, which hinders electrification and limits new connections, complicates the transition.

Investment and subnational reform needs ahead

In the Netherlands, cohesion policy investment priorities mainly focus on supporting innovation, labour market opportunities for vulnerable groups and the country's green and digital transition. The priorities set out in the 2021-2027 programmes, which were adopted in 2022, remain valid under the current economic and social circumstances. The Netherlands would benefit from continuing to invest in research and innovation under the framework of regional smart specialisation strategies, in addressing the important challenges that it faces related to the energy and climate transition and the circular economy, and in integrated sustainable urban development. It would also benefit from continuing to invest in life-long learning and up- and reskilling, including for the transition to a climate-neutral economy, as well as in actions to improve employment opportunities for those at the margins of the labour market and for inactive people.

Further areas of priority in the context of cohesion policy for the Netherlands include developing, testing and piloting solutions to tackle the congestion of the power grid. The Netherlands could benefit from the opportunities under the Strategic Technology for Europe Platform to boost investments in critical technologies to support industry transformation and to facilitate investments in net-zero technology manufacturing.

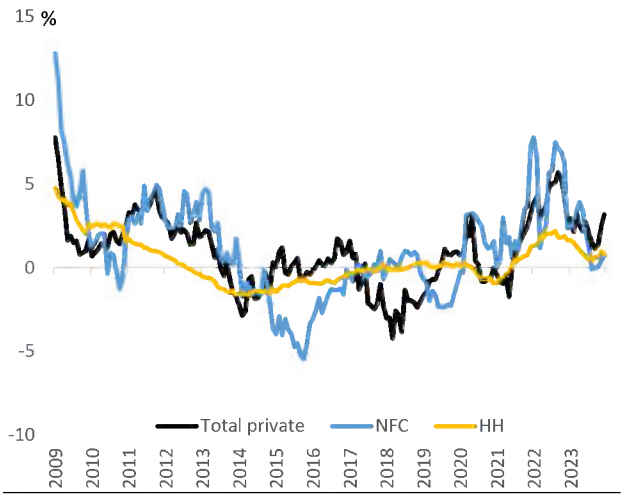
([138]) The main areas of emission-intensive industries in the Netherlands are Delfzijl/Eemshaven in the province of Groningen, the North-Sea channel area (Amsterdam/Ijmond), Rotterdam and West-North-Brabant, Zeeuws-Vlaanderen and other zones in Zeeland, and South-Limburg. The JTF programme for the Netherlands supports six areas that are situated in or closely linked to these areas.

ANNEX 18: KEY FINANCIAL SECTOR DEVELOPMENTS

The Netherlands has well-developed financial markets, with a relatively large domestically owned banking sector. Although smaller than a decade ago, the Dutch banking sector is one of the largest in the EU, both in relative and nominal terms. Total assets are equivalent to 283.2% of GDP, and about 93% of assets are domestically owned, while the five largest banks hold 82.5% of Dutch financial institutions' total assets. The Dutch National Bank (DNB) has identified one global systemically important institution and four other systemically important institutions. The Netherlands has deep financial markets, with a sizeable non-bank financial intermediation (NBFI) sector of EUR 8 trillion in 2022. Although on a slightly declining trend since its peak in 2019, Non-Bank Financial Institution (NBFI) sector assets are still almost twice the size of the banking sector and among the largest in the world ([139]). The narrow measure of NBFI sector assets, including only components which resemble vulnerabilities that also occur in the banking sector, declined in 2022 to their lowest level since 2010 (EUR 362 billion) ([140]) to about 38% of GDP. The Netherlands is a significant issuer of green bonds, which accounted for 6% of its total outstanding debt in July 2023. Among the issuers of green bonds, the financial holding companies are the largest (EUR 44 billion), followed by non-financial corporations (EUR 31 billion) and banks (EUR 27 billion).

The banking sector is adequately capitalised and profitable, but banks could be affected in the future by less accommodative monetary policy and the increased bank tax. The capital of the Dutch banking sector exceeded minimum requirements in Q3-2023 and was slightly above the previous year's level. The total capital ratio increased by 0.4 percentage points from end-2022, reaching 21.5% in Q3-2023, while the common equity tier 1 ratio was at 16.8%, up from 16% in the previous year. The liquidity position was comfortable in Q2-2023, with the liquidity coverage ratio inching up to 160.9% and the net stable funding ratio at 135.9%. Profitability improved, as Dutch banks benefited from the rise in interest rates that has only to a limited extent been passed through to depositors due to the liquidity availability in the market. The return on equity of 12.6% in September 2023 was the highest in 7 years, as was the return on assets (0.8% in Q3-2023). However, because of the relatively long fixed-interest-rate period on the asset side, the time needed for higher interest rates to be reflected in the income of banks is longer than in the case of funding. In effect, less accommodative monetary policy and tighter financing conditions can push up financial institutions' funding costs and increase the liquidity risk. The increase in the bank tax approved in 2023 could also negatively impact Dutch banks' profitability and their ability to build up buffers.

Graph A18.1: **Evolution of credit activity**



Adjusted for loan sales and securitisations.
Source: ECB.

While asset quality is currently strong, there is a risk of deterioration in the future. After strong lending activity in 2021 and 2022, the pace of lending slowed in 2023, turning negative in the second half of the year. In September 2023, outstanding loans and advances were 6.6% smaller than in September of the previous year ([141]), due to repayments and a slight contraction in lending to companies. Credit quality is currently strong, with the annualised non-performing loan (NPL) ratio historically low (1.3% in Q3-2023), and lower than the EU average of 1.8%. The

([139]) FSB - Global Monitoring Report on Non-Bank Financial Intermediation.

([140]) DNB Statistics.

([141]) EBA Risk Dashboard.

Table A18.1:**Financial Soundness Indicators**

	2017	2018	2019	2020	2021	2022	2023	EU	Median
Total assets of the banking sector (% of GDP)	322.0	299.9	297.0	319.0	303.7	299.5	267.7	257.0	184.6
Share (total assets) of the five largest banks (%)	83.8	84.7	84.7	84.3	84.1	82.5	-	-	69.6
Share (total assets) of domestic credit institutions (%)[1]	92.6	93.3	93.7	94.2	91.5	92.4	92.7	-	62.9
NFC credit growth (year-on-year % change)	-0.7	-0.3	-1.0	1.6	7.3	2.4	0.7	-	2.4
HH credit growth (year-on-year % change)	0.0	0.2	0.2	-1.0	1.2	1.6	0.8	-	1.4
Financial soundness indicators:[1]									
- non-performing loans (% of total loans)	2.1	1.9	1.8	1.9	1.4	1.3	1.3	1.8	1.8
- capital adequacy ratio (%)	22.1	22.4	22.9	23.2	22.7	21.2	21.5	19.6	20.1
- return on equity (%)[2]	8.8	8.1	7.7	3.1	8.2	7.7	12.2	9.9	13.2
Cost-to-income ratio (%)[1]	57.3	59.8	58.1	58.0	57.0	55.7	47.9	52.8	44.9
Loan-to-deposit ratio (%)[1]	117.7	117.5	119.4	104.3	101.3	104.3	104.4	93.3	80.2
Central bank liquidity as % of liabilities	1.5	1.4	1.4	6.8	7.8	2.8	0.4	-	0.7
Private sector debt (% of GDP)	247.6	241.3	229.9	233.1	223.7	210.1	-	133.0	118.4
Long-term interest rate spread versus Bund (basis points)	20.5	18.0	18.2	13.4	4.5	23.5	35.8	107.7	104.2
Market funding ratio (%)	52.1	50.3	50.0	44.9	49.8	47.8	-	50.8	39.8
Green bonds outstanding to all bonds (%)[3]	-	-	-	3.1	4.5	5.7	7.0	4.0	2.7

1-3 | 4-10 | 11-17 | 18-24 | 24-27 — Colours indicate performance ranking among 27 EU Member States.

(1) Last data: Q3 2023.
(2) Data is annualized.
(3) Data available for EA countries only, EU average refers to EA area.
Source: ECB, Eurostat.

coverage rate is also relatively low (25% in Q3-2023), while slower economic growth, the high level of private sector indebtedness, higher interest rates and higher inflation have the potential to generate an increase in credit losses and consequently may require higher provisions in the future. Non-financial corporations (NFCs) face higher risk than households as the fixation period on NFC debt is shorter, and 56% of total Dutch corporate debt is due to mature or have an interest-rate review within the next 2 years. In addition, the number of bankruptcies has increased since Q1 2023, although it is still lower than before the COVID-19 pandemic. For households, only 13% of mortgage debt is due to mature or have an interest-rate review in the next 2 years. To increase banks' resilience as risks build up, the DNB has increased the countercyclical capital buffer from 1.0% to 2.0%, effective as of 31 May 2024.

Although there are no visible signs of distress in real-estate markets, the exposure of banks to this sector raises risks. Since 2015, house prices in the Netherlands have continuously increased, peaking in September 2022 (a 90% increase compared with September 2015). However, they have fallen since 2022, posing a risk of negative equity for some homeowners. Household outstanding debt as a percentage of GDP remains high, albeit on a path of continuous decline (90% in Q2-2023 vs 102.6% 3 years earlier), driven by relatively generous loan-to-value limits on mortgage borrowing and tax relief on mortgage payments. However, this debt gets reduced gradually, and banks are well capitalised. The mortgage NPL ratio was as low as 0.9% in June 2023, and below the total NPL ratio in the Netherlands (1.3%), while higher costs due to interest-rate hikes are being passed on to borrowers only gradually, given the relatively high share of fixed-rate loans. In addition, Dutch households' wealth is high and rising, although a large part of it is held in less-liquid assets such as pension and insurance funds. On the back of growing cyclical and structural risks, as well as higher construction costs, the value of Dutch commercial real estate (CRE) has fallen in the past year by 13%. Banks' outstanding exposure to CRE has been on an upward trend for the last 4 years, reaching 8.75% ([142]) of total lending in Q2-2023 (vs 35.8% household-mortgage exposure). The NPL ratio on these CRE loans has inched up 0.3 percentage points since Q1-2023, to 3.2% in June 2023, but it is still low by historical standards (the average was 5.5% between 2016 and 2022). The average interest rate on new real estate loans was around 4.7%, almost double the rate of 3 years earlier. Although the average loan-to-value ratio has fallen to below 60% in recent years, around 20% of CRE loans are under-collateralised. In addition, the high indebtedness of Dutch NFCs, although on a decreasing trend, increases the risks of default and of loan losses in the event of default. The

([142]) EBA Risk Dashboard.

risks stretch outside the banking sector, and into other financial markets, as investments in CRE account for 7% of pension funds' balance sheets and 8% of those of insurers. Vulnerabilities in open-ended investment funds invested in CRE also warrant close monitoring, as large-scale withdrawals could exacerbate a price correction in the market, even though most Dutch open-ended funds allow redemptions only once a year.

The Dutch insurance sector has shown resilience, despite falling asset valuations. In 2022, insurers' solvency ratio of 189% was robust, and well above statutory requirements. Nevertheless, this level was slightly below that of the previous year, as the average solvency ratio of life insurers fell in 2023 compared with 2022. Total assets have been decreasing slowly since Q4-2020, and the trend became steeper in 2022, when total assets reached EUR 438 billion, 16% less than in 2021. The decrease occurred mostly in the first half of 2022, due to the lower value of the main invested assets. The increasing damage from natural hazards raises important issues for non-life insurers and could lead to changes in cover and premiums. In addition, many consumers are not sufficiently aware of the possibilities of insuring themselves against climate damage or are unaware of the claims that can be insured ([143]). Among the measures taken to address the protection gap in the Netherlands: (i) 'flooding' was added as a standard category in the EU's standard insurance product-information document; and (ii) in accordance with the Dutch Disaster Act, partial compensation for damages from flooding may now be available from the government for both private individuals and companies.

Dutch pension funds have benefited from higher interest rates, but these higher rates also entail risks. In 2022, the increase in interest rates decreased the value of pension funds' liabilities, with a positive effect on the nominal policy funding ratio (120% in Q4-2022). However, in 2023 the trend reversed, as the value of their liabilities exceeded that of their investments. This meant that by the end of the year the funding ratio had declined to 114.6%, from 123.1% in Q3-2023. This was partly the result of the pension indexation granted in 2023, following the high level of inflation in 2022. Higher interest rates have benefited pension funds' solvency positions, but there is a risk of losses due to price corrections in the real-estate market as well as in financial markets. This risk is accentuated by the increasing investment of pension funds in riskier assets. The significant use of derivatives poses a liquidity risk if interest rates rise suddenly, as pension funds may need cash to meet margin calls in portfolios.

([143])AFM Annual Report 2022; Radar survey.

This annex provides an indicator-based overview of the Netherlands tax system. It includes information on the tax structure (the types of taxes that the Netherlands derives most of its revenue from), the tax burden on workers, and the progressivity and redistributive effect of the tax system. It also provides information on tax collection and compliance, and on the risks of aggressive tax planning activity.

In the Netherlands, tax revenues as a percentage of GDP are similar to the EU aggregate. In 2022, total Dutch tax revenues were 38.5% of its GDP, which was slightly below the EU aggregate of 40.2% (Table A19.1). The main sources of tax revenues in the Netherlands in 2022 were labour taxes (18.4% of GDP) and consumption taxes (11.0% of GDP), for which the values were close to the EU aggregate. Revenues from environmental taxes as a percentage of GDP were among the highest in the EU and the Dutch RRP furthermore includes a reform of car taxation. Pollution and resources taxes account for 14.1% of environmental tax revenue, the highest share in the EU. However, there could be potential to strengthen the application of the 'polluter pays' principle. The Netherlands has only implemented two of the six main types of pollution and resources taxes (i.e. taxes on waste landfilling and incineration and plastic products). There remains scope to implement the other four types (i.e. taxes on NOx emissions, waste loadings to water, fertilisers and pesticides). The Netherlands has recently reformed its energy tax system by shifting taxation from electricity to gas. Revenues from capital taxes are higher than the EU aggregate, but different sources of wealth are taxed at very different rates, incentivizing in particular the accumulation of illiquid forms of wealth. Revenues from property taxes (expressed as a percentage of GDP) were slightly below the EU aggregate, as were revenues from recurrent property taxes, which are particularly conducive to growth. Increased use of recurrent property taxes could also be beneficial, given the housing market imbalances in the Netherlands and given that mortgage interest tax relief encourages the accumulation of household illiquid debt.

The tax-benefit system reduces income inequality, but non-tax compulsory payments (e.g. pension contributions) drive up the compulsory payment wedge on labour. In 2023, the tax wedge in the Netherlands was considerably lower than the EU average at various wage levels (Graph A19.1). However, the tax wedge does not include compulsory contributions under collective labour agreements that are paid by employees and employers to privately managed pension funds. If non-tax compulsory payments are included, the compulsory payment wedge for a single earner amounted

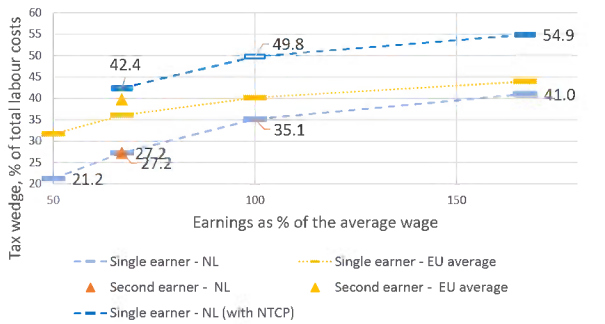
Table A19.1:**Taxation indicators**

		The Netherlands					EU-27				
		2010	2020	2021	2022	2023	2010	2020	2021	2022	2023
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	35.5	39.9	39.2	38.5		37.9	40.0	40.4	40.2	
	Labour taxes (as % of GDP)	19.5	20.5	19.1	18.4		20.0	21.3	20.7	20.3	
	Consumption taxes (as % of GDP)	11.0	11.9	11.8	11.0		10.8	10.7	11.2	11.0	
	Capital taxes (as % of GDP)	5.0	7.5	8.3	9.1		7.1	8.0	8.6	8.9	
	Of which, on income of corporations (as % of GDP)	2.3	3.1	3.9	4.8		2.4	2.5	3.0	3.4	
	Total property taxes (as % of GDP)	1.3	1.9	1.9	1.7		1.9	2.3	2.2	2.1	
	Recurrent taxes on immovable property (as % of GDP)	0.6	0.9	0.9	0.7		1.1	1.2	1.1	1.0	
	Environmental taxes as % of GDP	3.5	3.2	3.0	2.4		2.4	2.2	2.3	2.0	
Progressivity & fairness	Tax wedge at 50% of average wage (Single person) (*)	28.3	23.3	21.7	22.9	21.2	33.9	31.7	32.1	31.8	31.7
	Tax wedge at 100% of average wage (Single person) (*)	38.1	36.1	35.0	35.8	35.1	41.0	40.1	39.9	40.0	40.2
	Corporate income tax - effective average tax rates (1) (*)		23.7	23.7	24.5			19.5	19.0	19.0	
	Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*)	10.0	9.3	9.7	9.6		8.6	8.1	8.2	7.9	
Tax administration & compliance	Outstanding tax arrears: total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*)		11.7	12.5				40.9	35.5		
	VAT Gap (% of VAT total tax liability, VTTL)(**)	5.4	4.0	-0.2	4.9			9.7	5.4		

(1) Forward-looking effective tax rate (OECD).
(2) A higher value indicates a stronger redistributive impact of taxation.
(*) EU-27 simple average.
(**) Forecast value for 2022, if available. For more details on the VAT gap, see European Commission, Directorate-General for Taxation and Customs Union, 2023, *VAT gap in the EU*, https://data.europa.eu/doi/10.2778/911698.
For more data on tax revenues as well as the methodology applied, see the Data on Taxation webpage, https://ec.europa.eu/taxation_customs/taxation-1/economic-analysis-taxation/data-taxation_en.
Source: European Commission and OECD

in 2023 to 42.4%, 49.8% and 54.9% with a wage of 67%, 100% and 167% of the average wage, respectively. These levels are well above the EU average. Labour taxation is more progressive in the Netherlands than in the EU as a whole. This contributes to the higher ability of the tax-benefit system to reduce income inequality (as measured by the Gini coefficient) than the EU average in 2022. (Table A19.1). In the Netherlands, taxes and benefits reduced the Gini coefficient on average by 9.6 pps in 2022 (compared with the EU average of 7.9 pps).

Graph A19.1: **Tax wedge for single and second earners as a % of total labour costs, 2023, with and without non-tax compulsory payments (NTCPs)**



Note: The second earner tax wedge assumes a first earner at 100% of the average wage and no children. For the methodology of the tax wedge for second earners, see OECD, 2016, *Taxing Wages 2014-2015*.
Source: European Commission and OECD

In its Recovery and Resilience Plan (RRP), the Netherlands has included measures to reduce differences between employees and self-employed. To reduce the incentives stemming from the tax system to become self-employed, the maximum amount that a self-employed may deduct from their taxes will be gradually reduced from EUR 6 310 EUR in 2022 to EUR 3 710 in 2026. The maximum deductible amount is expected to reach EUR 1 200 EUR or less in 2030.

In 2024, the Netherlands has introduced some measures to increase capital taxation. The box 3 rate (taxation on income from assets) increased from 32% in 2023 to 36%. In addition, the tax-free allowance in box 3 has not been indexed. The tax-free allowance has therefore remained EUR 57 000. Furthermore, the government announced that the exemption for green investments in box 3 will be reduced from EUR 65 072 in 2023 to EUR 30 000 in 2025, and the implementation of a new box 3 system, based on actual returns, has been postponed from 2026 to 2027. For box 2 (taxation on income from a 'substantial interest' ([144]), the tax rate was 26.9% in 2023. However, box 2 is divided into two brackets from 2024 onwards. The first bracket taxes box 2 income up to EUR 67 000 per person at a rate of 24.5%. The second bracket will apply a rate of 33% to any income exceeding this amount.

The Netherlands is doing well on digitalisation of the tax administration, which can help reduce compliance costs. According to the OECD Tax Administration 2023 ([145]), the Netherlands scores highly on filing tax, with more than 98% of tax returns being submitted electronically, i.e. online (100% for VAT and CIT returns in 2021). The VAT gap (the gap between revenues actually collected and the theoretical tax liability) in the Netherlands decreased from 5.4% in 2019 to 4% in 2020. The strong VAT gap decrease in 2021 has to be seen in the context of anomalies related to the COVID-19-induced economic crisis, such as increased tax compliance by companies so that they could qualify for COVID-19 support measures. Estimates indicate that the VAT gap is expected to have bounced back to 4.9% in 2022 ([2]).

The flows of royalty payments made from the Netherlands and of interest payments decreased significantly, albeit from high levels. As Graph A19.2 shows, royalty payments to non-EU countries decreased from EUR 46.8 billion in 2017 (and an estimated EUR 56 billion in 2019) to around EUR 24.5 billion in 2021, with a substantial drop to EUR 14.2 billion in 2022. Interest payments decreased from EUR 21 billion in 2019 to EUR 10.8 billion in 2021 and remained stable in 2022 with a slight increase to EUR 11 billion. Recently implemented reforms are likely to have contributed to this decrease.

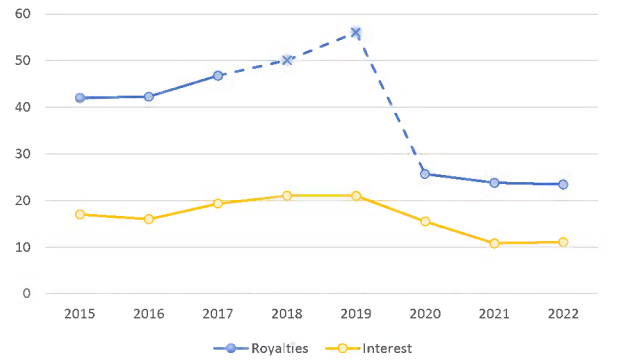
([144]) A Dutch resident who (either alone or together with a spouse or other close relatives) holds at least 5% of the shares or a class of shares in a company or who holds rights to acquire a 5% interest in a company has a 'substantial interest'. The benefits derived from this 'substantial interest' are taxable in box 2.

([145]) Electronic filing | Tax Administration 2023 : Comparative Information on OECD and other Advanced and Emerging Economies | OECD iLibrary (oecd-ilibrary.org).

In the context of the RRP, the Netherlands has introduced several reforms to increase transparency and tackle aggressive tax planning. To counter the use of special purpose entities for aggressive tax planning purposes ([146]), the Netherlands has introduced a new withholding tax on royalties and interest payments between affiliated entities that either go to low tax jurisdictions or constitute tax abuse under the Dutch anti-abuse regulations. The new withholding tax entered into force in January 2021 and continues to have an impact on interest and royalty flows.

Other reforms were introduced as a part of a broader effort by the Netherlands to tackle tax avoidance. Previous reforms included further limits to loss relief and an anti-abuse provision concerning the arm's length principle. These measures are already in force. The Netherlands has also introduced a dividend withholding tax that applies to affiliated entities when payments are made to low-tax jurisdictions or tax abuse is taking place. The new dividend withholding tax has been applied since 1 January 2024, so its impact will be measured only in the next period.

Graph A19.2: **Flows of Dutch interest and royalty payments to non-EU countries, in EUR billion**



(1) Data on extra-EU-27 flows for royalties are confidential for 2018 and 2019. The figures shown for these dates have been estimated using linear regression.
Source: European Commission

([146]) Among the special purpose entities existing in the Netherlands, there are also special vehicles (the so-called Dutch STAKs - *Stichting Administratiekantoor*) that are not commonly used for the type of tax avoidance countered by the recently introduced measure, but still constitute legal structures potentially leading to tax avoidance due to their lack of transparency.

ANNEX 20: TABLE WITH ECONOMIC AND FINANCIAL INDICATORS

Table A20.1:**Key economic and financial indicators**

	2004-07	2008-12	2013-20	2021	2022	2023	forecast 2024	forecast 2025
Real GDP (y-o-y)	2.8	0.0	1.3	6.2	4.3	0.1	0.8	1.5
Potential growth (y-o-y)	.	0.9	1.5	1.8	1.9	2.1	1.8	1.7
Private consumption (y-o-y)	0.8	-0.4	0.3	4.3	6.6	0.4	1.5	1.7
Public consumption (y-o-y)	3.0	1.4	1.3	5.0	1.6	3.0	2.6	2.0
Gross fixed capital formation (y-o-y)	6.2	-4.1	3.8	2.9	1.8	1.8	-2.1	1.2
Exports of goods and services (y-o-y)	6.6	2.0	3.1	8.0	4.5	-1.3	-0.1	2.4
Imports of goods and services (y-o-y)	6.8	1.1	3.4	6.2	3.8	-0.8	-0.1	2.8
Contribution to GDP growth:								
Domestic demand (y-o-y)	2.4	-0.7	1.2	3.8	3.5	1.3	0.9	1.5
Inventories (y-o-y)	0.0	0.0	0.0	0.4	-0.2	-0.7	-0.1	0.0
Net exports (y-o-y)	0.4	0.8	0.0	2.0	1.0	-0.6	-0.1	-0.1
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	.	0.2	0.8	0.8	0.9	1.2	1.0	0.8
Capital accumulation (y-o-y)	.	0.5	0.5	0.6	0.6	0.6	0.5	0.5
Total factor productivity (y-o-y)	.	0.3	0.2	0.4	0.4	0.4	0.4	0.4
Output gap	-0.4	-1.1	-0.9	-0.3	2.0	0.0	-1.1	-1.3
Unemployment rate	6.0	5.8	6.2	4.2	3.5	3.6	3.9	4.0
GDP deflator (y-o-y)	2.0	1.0	1.4	2.9	5.5	7.8	3.7	2.3
Harmonised index of consumer prices (HICP, y-o-y)	1.5	1.9	1.0	2.8	11.6	4.1	2.5	2.0
HICP excluding energy and unprocessed food (y-o-y)	1.0	1.7	1.2	1.6	5.5	7.4	2.6	2.2
Nominal compensation per employee (y-o-y)	2.1	2.2	1.8	2.1	4.0	6.2	5.9	3.8
Labour productivity (real, hours worked, y-o-y)	1.6	0.2	0.2	2.8	0.4	-1.0	-0.2	0.8
Unit labour costs (ULC, whole economy, y-o-y)	0.4	2.3	1.9	-2.0	3.6	7.8	5.7	2.6
Real unit labour costs (y-o-y)	-1.5	1.3	0.5	-4.8	-1.9	0.0	1.9	0.3
Real effective exchange rate (ULC, y-o-y)	-0.5	0.3	0.4	-2.1	-0.1	0.9	1.2	0.2
Real effective exchange rate (HICP, y-o-y)	-0.2	-0.5	0.2	0.2	1.9	-0.4	.	.
Net savings rate of households (net saving as percentage of net disposable income)	3.0	6.9	11.6	17.0	12.7	.	.	.
Private credit flow, consolidated (% of GDP)	11.9	7.6	2.2	9.6	6.9	.	.	.
Private sector debt, consolidated (% of GDP)	228.8	243.3	248.2	223.7	210.1	.	.	.
of which household debt, consolidated (% of GDP)	107.9	116.6	106.8	98.9	92.4	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	120.9	126.7	141.3	124.9	117.7	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (1)	.	2.4	2.1	1.3	1.2	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	8.0	6.9	4.0	8.9	17.2	16.7	18.2	18.5
Corporations, gross operating surplus (% of GDP)	27.3	27.7	26.7	27.1	27.0	28.1	27.9	28.0
Households, net lending (+) or net borrowing (-) (% of GDP)	-2.4	1.4	3.6	5.6	3.2	-6.2	-5.9	-6.1
Deflated house price index (y-o-y)	2.4	-3.6	4.6	11.1	6.0	-10.0	.	.
Residential investment (% of GDP)	6.0	4.8	4.4	5.5	5.4	5.1	.	.
Current account balance (% of GDP), balance of payments	7.7	7.2	7.3	12.1	9.3	10.1	10.2	10.2
Trade balance (% of GDP), balance of payments	8.5	8.4	9.9	11.3	10.8	11.1	.	.
Terms of trade of goods and services (y-o-y)	-0.1	-0.5	0.4	-1.1	-2.7	2.3	0.6	0.3
Capital account balance (% of GDP)	-0.4	-0.3	-0.1	0.1	11.1	-0.2	.	.
Net international investment position (% of GDP)	-5.5	10.3	71.1	93.3	75.2	71.8	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2)	-64.3	-73.2	-22.9	21.4	18.5	25.3	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (2)	326.3	387.0	390.6	335.7	345.1	312.6	.	.
Export performance vs. advanced countries (% change over 5 years)	.	.	-1.8	7.5	3.3	0.6	.	.
Export market share, goods and services (y-o-y)	-1.5	-2.7	0.7	-2.8	-2.1	-2.4	-3.5	-1.2
Net FDI flows (% of GDP)	4.6	5.8	2.5	14.2	13.6	0.8	.	.
General government balance (% of GDP)	-0.6	-3.8	-0.4	-2.2	-0.1	-0.3	-2.0	-2.1
Structural budget balance (% of GDP)	.	.	0.0	-1.9	-1.1	-0.8	-1.3	-1.4
General government gross debt (% of GDP)	47.1	59.7	58.2	51.7	50.1	46.5	47.1	48.4

(1) domestic banking groups and stand-alone banks, EU and non-EU foreign-controlled subsidiaries and EU and non-EU foreign-controlled branches.
(2) NIIP excluding direct investment and portfolio equity shares.
Source: Eurostat and ECB as of 2024-5-17, where available; European Commission for forecast figures (Spring forecast 2024).

This annex assesses fiscal sustainability risks for the Netherlands over the short, medium and long term. It follows the multi-dimensional approach of the European Commission's 2023 Debt Sustainability Monitor, updated based on the Commission 2024 spring forecast.

1 – Short-term risks to fiscal sustainability are low. The Commission's early-detection indicator (S0) does not point to any major short-term fiscal risks (Table A21.2) ([147]). Government gross financing needs are expected to decrease to around 10% of GDP on average over 2024-2025 (Table A21.1, Table 1). The sovereign credit rating has been steadily improving and has returned to investment grade at two of the four major rating agencies by the cut-off date of this report.

2 – Medium-term fiscal sustainability risks appear low.

The DSA shows that, under the baseline, the government debt ratio is projected to increase over the medium term to around 56% of GDP in 2034 (Graph 1, Table 1) ([148]). The assumed structural primary balance (a deficit of 0.6% of GDP, excluding changes in cost of ageing) contributes to these developments. This appears plausible compared with past fiscal performance, indicating that the country has room for corrective action. At the same time, the baseline projections up to 2034 benefit from a still favourable (although diminishing) snowball effect of -0.7 pp. Government gross financing needs are expected to slowly increase over the projection period, reaching 10.5% of GDP in 2034, above the level forecast for 2024.

The baseline projections are stress-tested against four alternative deterministic scenarios to assess the impact of changes in key assumptions relative to the baseline (Graph 1). Under the *historical structural primary balance (SPB) scenario* (i.e. the SPB returns to its historical 15-year average) the debt ratio would be lower than under the baseline by about 4 pps. in 2034. However, under the *adverse interest-growth rate differential scenario* (i.e. the interest-growth rate differential deteriorates by 1 pp. compared with the baseline), the debt ratio would be higher than under the baseline by around 4 pps. in 2034. Under the *financial stress scenario* (i.e. interest rates temporarily increase by 1.0 pp. compared with the baseline) the government debt ratio would be almost unchanged compared with the baseline in 2034. Finally, under the *lower structural primary balance scenario* (i.e. the projected cumulative improvement in the SPB over 2023-2024 is halved) the debt ratio would be higher than under the baseline by about 2 pps. in 2034.

The stochastic projections indicate low risk, pointing to the moderate sensitivity of these projections to plausible unforeseen events ([149]). These stochastic simulations indicate a 64% probability that the debt ratio will be higher in 2028 than in 2023, entailing low risk given the initial low debt level. In addition, the uncertainty surrounding the baseline debt projections (as measured by the difference between the 10th and 90th debt distribution percentiles) is low, reaching around 16 pps. of GDP in five years' time) (Graph 2).

([147]) The S0 is a composite indicator of short-term risk of fiscal stress. It is based on a wide range of fiscal and financial-competitiveness indicators that have proven to be a good predictor of emerging fiscal stress in the past.

([148]) The assumptions underlying the Commission's 'no-fiscal policy change' baseline include in particular: (i) a structural primary deficit, before changes in ageing costs, of 0.6% of GDP from 2024 onwards; (ii) inflation converging linearly towards the 10-year forward inflation-linked swap rate 10 years ahead (which refers to the 10-year inflation expectations 10 years ahead); (iii) the nominal short- and long-term interest rates on new and rolled over debt converging linearly from current values to market-based forward nominal rates by T+10; (iv) real GDP growth rates from the Commission 2024 spring forecast, followed by the EPC/OGWG 'T+10 methodology projections between T+3 and T+10 (average of 1.2%); (v) ageing costs in line with the 2024 Ageing Report (European Commission, Institutional Paper 279, April 2024). For information on the methodology, see the 2023 Debt Sustainability Monitor (European Commission, Institutional Paper 271, March 2024).

([149]) The stochastic projections show the joint impact on debt of 10,000 different shocks affecting the government's budgetary position, economic growth, interest rates and exchange rates. This covers 80% of all the simulated debt paths and therefore excludes tail events.

3 – Long-term fiscal sustainability risks appear overall medium. This assessment is based on the combination of two fiscal gap indicators, capturing the required fiscal effort to stabilise debt (S2 indicator) and bring to 60% of GDP (S1 indicator) over the long term ([150]). This assessment is mainly driven by the projected increase in ageing costs and the favourable initial budgetary position. Hence, these results are conditional on the country maintaining a sizeable SPB over the long term.

The S2 sustainability gap indicator points to medium risk. The S2 indicator suggests that the Netherlands would need to improve its structural primary balance by 4.6 pps. of GDP in 2025 to ensure debt stabilisation over the long term. This result is underpinned by the projected increase of ageing costs (2.8 pps. of GDP) and the initial unfavourable budgetary position (1.8 pps. of GDP). The key factors behind the increase in ageing costs are expenditure in long-term care (contributions of 1.6 pps.), pensions (1.2 pps.) and health care (0.6 pp.), which is partly offset by education spending (-0.7 pp.) (Table A21.1, Table 2). Hence, additional measures may be required to further improve the efficiency of the Dutch long-term care system and its fiscal sustainability.

The S1 indicator points to medium fiscal sustainability risks. The indicator shows that a consolidation effort of 3.0 pps. of GDP would be needed to bring debt to 60% of GDP by 2070. This result is mainly driven by the projected increase in ageing costs (contribution of 2.0 pps. of GDP), and the unfavourable initial budgetary position (contribution by 1.2 pps. of GDP) (Table A21.1, Table 2).

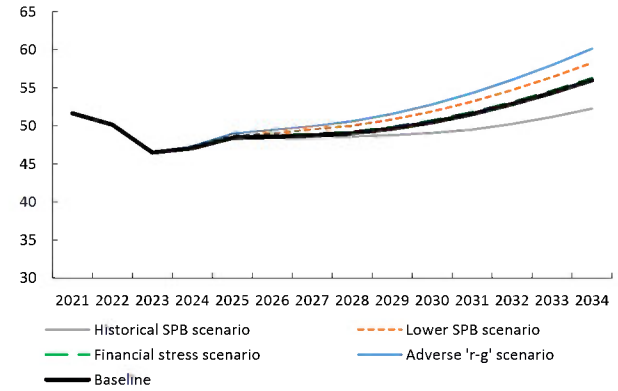
4 – Finally, several additional risk factors need to be considered in the assessment. On the one hand, risk-increasing factors are related to the recent increase in interest rates and the relatively high share of short-term government debt (in total debt). On the other-hand, risk-mitigating factors include the lengthening of debt maturity in recent years, relatively stable financing sources (with a diversified and large investor base), and the currency denomination of debt.

([150]) The S2 fiscal sustainability indicator measures the permanent SPB adjustment in 2025 that would be required to stabilise public debt in the long term. It is complemented by the S1 indicator, which measures the permanent SPB adjustment in 2025 to bring the debt ratio to 60% by 2070. The impact of the drivers of S1 and S2 may differ due to the infinite horizon component considered in the S2 indicator. For both the S1 and S2 indicators, the risk assessment depends on the amount of fiscal consolidation needed: 'high risk' if the required effort exceeds 6 % of GDP, 'medium risk' if it is between 2% and 6% of GDP, and 'low risk' if the effort is negative or below 2% of GDP. The overall long-term risk classification combines the risk categories derived from S1 and S2. S1 may notch up the risk category derived from S2 if it signals a higher risk than S2. See the 2022 Debt Sustainability Monitor for further details.

Table A21.1:Debt sustainability analysis - the Netherlands

Table 1. Baseline debt projections	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Gross debt ratio (% of GDP)	**51.7**	**50.1**	**46.5**	**47.1**	**48.4**	**48.6**	**48.7**	**49.0**	**49.6**	**50.5**	**51.5**	**52.9**	**54.3**	**56.0**
Changes in the ratio	-3.0	-1.5	-3.7	0.6	1.4	0.2	0.2	0.3	0.6	0.8	1.1	1.3	1.5	1.7
of which														
Primary deficit	1.7	-0.4	-0.3	1.3	1.4	1.3	1.2	1.1	1.3	1.4	1.7	1.9	2.0	2.2
Snowball effect	-4.1	-4.2	-3.0	-1.3	-1.0	-1.1	-1.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Stock-flow adjustments	-0.6	3.1	-0.3	0.6	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross financing needs (% of GDP)	11.3	10.7	7.3	9.6	10.2	9.5	9.5	9.6	9.9	10.3	10.7	11.2	11.7	12.2

Graph 1. Deterministic debt projections



Graph 2. Stochastic debt projections 2024-2028

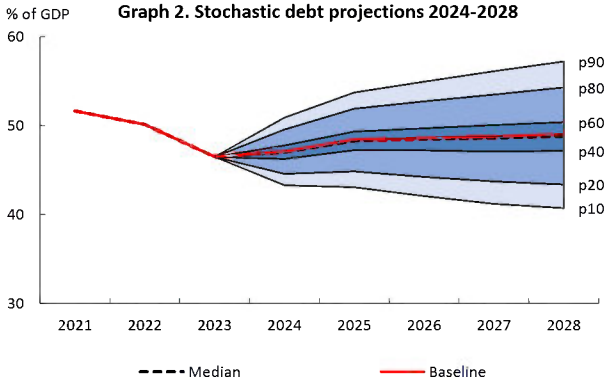


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

		S1	S2
Overall index (pps. of GDP)		**3.0**	**4.6**
of which			
Initial budgetary position		1.2	1.8
Debt requirement		-0.3	
Ageing costs		2.0	2.8
of which	*Pensions*	0.9	1.2
	Health care	0.4	0.6
	Long-term care	1.2	1.6
	Education	-0.5	-0.7

Source: Commission services.

Table A21.2:Heat map of fiscal sustainability risks - the Netherlands

Short term	Medium term - Debt sustainability analysis (DSA)							Long term		
Overall (S0)	Overall		Deterministic scenarios				Stochastic projections		S1	Overall (S1 + S2)
			Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress			
LOW	LOW	Overall	LOW	LOW	LOW	MEDIUM	LOW	LOW	MEDIUM	MEDIUM	
		Debt level (2034), % GDP	56.0	52.3	58.3	60.1	56.2			
		Debt peak year	2034	2034	2034	2034	2034			
		Fiscal consolidation space	97%	85%	100%	97%	97%			
		Probability of debt ratio exceeding in 2028 its 2023 level						64%		
		Difference between 90th and 10th percentiles (pps. GDP)						16.5		

(1) Debt level in 2034. Green: below 60% of GDP. Yellow: between 60% and 90%. Red: above 90%. (2) The debt peak year indicates whether debt is projected to increase overall over the next decade. Green: debt peaks early. Yellow: peak towards the middle of the projection period. Red: late peak. (3) Fiscal consolidation space measures the share of past fiscal positions in the country that were more stringent than the one assumed in the baseline. Green: high value, i.e. the assumed fiscal position is plausible by historical standards and leaves room for corrective measures if needed. Yellow: intermediate. Red: low. (4) Probability of debt ratio exceeding in 2028 its 2023 level. Green: low probability. Yellow: intermediate. Red: high (also reflecting the initial debt level). (5) the difference between the 90th and 10th percentiles measures uncertainty, based on the debt distribution under 10000 different shocks. Green, yellow and red cells indicate increasing uncertainty. (For further details on the Commission's multidimensional approach, see the 2023 Debt Sustainability Monitor)

Source: European Commission (for further details on the Commission's multidimensional approach, see the 2023 Debt Sustainability Monitor)

Source: Commission services.