



Dutch competitiveness in the light of the Draghi report

“The future of European competitiveness”

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Summary



The Draghi report compares Europe to the United States and China and makes recommendations to strengthen Europe's competitiveness. In terms of scale, the Netherlands is much smaller than Europe. The Netherlands also has a more specific economic sector structure and more specific strengths and weaknesses with regard to its innovation system. This report therefore translates Draghi's analysis to the specific Dutch situation and arrives at recommendations to improve Dutch competitiveness. We have done so for three selected themes, in line with Draghi's analysis:

Narrowing the innovation gap

Specific characteristics of the Netherlands are: labour productivity is relatively good, but its improvement is slowing down; investment in mainly private R&D is lagging behind and leans heavily on two narrow sectors (mechanical and electrical engineering); venture capital is more readily available than it is on average in Europe (but less so than in the US), but it is deployed too little for scaling up. To narrow the innovation gap while keeping the European social system intact, the Netherlands must commit to a new growth path with labour productivity growth as the driver and overall well-being as the key principle. The use of digital technologies, such as AI, is crucial, as is investment in intangible assets such as human capital. The Netherlands should learn from sectors with high labour productivity growth and tackle barriers in the

areas of regulation, digital infrastructure, and skills. The National Technology Strategy (NTS) focuses on acquiring control points in emerging value chains of 10 key technologies that are promising for the Netherlands. This can broaden R&D intensity in high-tech sectors and reduce dependence on the engineering industry. Targeted funding, consistent innovation policies, and more venture capital contribute to narrowing the innovation gap.

Decarbonisation and energy prices

Higher European energy prices serve the long-term sustainability goal. European electricity prices are now higher than the world average and are expected to remain so in the coming years. Neighbouring countries in the EU partly compensate for this through the use of ETS revenues, but the Netherlands does not. Among other effects, this puts pressure on the sustainability of energy-intensive Dutch industry. The trade war launched by the US is exacerbating this problem. In addition, retaliation by the EU would have dire consequences for the open Dutch economy. Scaling up electrification and making gas consumption more sustainable can keep energy prices manageable. To ensure a level playing field for entrepreneurs, the Netherlands can focus on the following: subsidies to bring down the electricity price for energy-intensive companies; finalisation of customised agreements; targeted subsidies for electrification and blue hydrogen use in production processes;

and a strengthening of the electricity and hydrogen infrastructure. Making long-term choices requires an understanding of how structural changes within sectors may affect strategic autonomy. In this respect, investments and strategic use of procurement budgets focused on clean tech, defence, and other strategic industries appear to be promising. Finally, a long-term commitment to talent and technology development remains a priority.

Strategic independence and defence

The Dutch defence industry is relatively small in size, but is high-tech and strong in specific niches (radar, sensing, maritime). The Netherlands needs to target investment more on its own industry, as well as collaborating at European level. The Netherlands can invest more in critical materials as well as in specific 'dual-use' key technologies, such as AI, quantum technology, radars, cyber, and the space industry. Key technologies require a new manner of collaboration between government, knowledge institutions, and startups, in which the Ministry of Defence can act as a launching customer. They also call for a culture that allows for experimentation and risk acceptance for faster innovation. Better use will also have to be made of the existing knowledge infrastructure. Furthermore, European collaboration (within EU and NATO) remains essential to create sufficient scale and reduce dependencies on imports of defence equipment and critical materials.

Understanding supply chains of critical materials is crucial for strategic autonomy and measures related to security of supply in a European context.

In summary

- Like Europe, the Netherlands faces challenges related to the innovation gap, decarbonisation and energy prices, and defence/strategic autonomy.
- In addition, the world is sharply polarised, creating pressure from import tariffs with which the US is protecting its own industry.
- Low R&D investment, high energy prices, and a lack of choices are hampering the competitiveness of the Netherlands.
- In this context, the Netherlands should analyse which basic and other industries remain viable over the long term or are essential for strategic autonomy, and support them, in addition to making a strong commitment to key technologies specifically relevant for the Netherlands as well as focus on a strong and flexible workforce.
- This commitment requires: 1) investment in education and targeted research (especially STEM); 2) targeted inflows of foreign knowledge workers; 3) simpler and more consistent policies and regulation; 4) venture capital focused on scaling up; 5) focusing procurement budgets on scaling up key technologies; 6) input of Dutch defence niches and key technologies into European defence projects; and 7)

developing insights into supply chains of critical materials and taking mitigating measures, including in an EU context.

Introduction

The Standing Committee on Economic Affairs asked TNO Vector to translate, using existing data and knowledge, the recommendations of the Draghi report¹ into specific implications for the future of the competitiveness of the Netherlands, for some specific topics.

The Draghi report makes observations that focus mostly on comparing Europe (or the EU) with the United States and China. For the Netherlands as a country to be prepared for the future, it needs to consider the extent to which the observations in the Draghi report apply to it.

This report answers the question in relation to three specifically requested topics:

1. Narrowing the innovation gap
2. Decarbonisation and energy prices
3. Strategic independence and defence

For each of these topics, the following questions have been answered:

- a. What does Draghi's analysis say about Europe?
- b. Where does the Netherlands stand in relation to Europe?
- c. What options does the Netherlands have to strengthen Dutch competitiveness?

To answer question (a), information was drawn from the Draghi report. The analysis of questions b) and c) is based on existing sources, using alternative data in cases where European data was missing and zooming in on specific countries to indicate differences from – or opportunities for – the Netherlands. A comparison with the US or China has also been made in some places to show how the Netherlands compares to these major players.



¹ Draghi, M., 2024, The future of European competitiveness, European Commission (https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en)



Narrowing the innovation gap

What does Draghi say about narrowing the innovation gap?

Improving labour productivity growth

European competitiveness is under pressure: this is reflected in stagnating labour productivity (e.g. due to a shrinking labour force), low business dynamism, declining international demand, and a deteriorating technological position, especially in digital technology, relative to the US. This is called the innovation gap. In this context, the Draghi report highlights the following barriers to innovation:

Increasing and capitalising on innovative capacity

Europe has a static sectoral structure with low investment in R&D:

The productivity gap between Europe and the US can be largely attributed to the high-tech ICT sector/tech companies. Whereas the US invests in new, high-growth sectors, investments in Europe focus mainly on established, less high-growth sectors, such as the automotive industry.

Lack of venture capital in Europe:

The share of globally available venture capital raised in the EU is only 5%, compared to 52% in the US and 40% in China. Innovative European companies are more likely to go to the US for funding and scale-up.

Solutions to barriers in the areas of:

Regulation

Entrepreneurs struggle with both stringent EU regulations and differences in regulations within Europe: More than half of SMEs in Europe regard regulation and the administrative burden as their biggest challenge.

Digital infrastructure

European digital infrastructure is inadequate: Data storage, computing power, and connectivity are essential to develop and implement future innovations. The availability of such infrastructure is limited in Europe and there is relatively little European investment in it.

Skills

Skills gap: the labour supply is under pressure due to the ageing population and does not sufficiently match demand, for example for tech talent and digital skills. In consequence, Europe benefits less from technological change than it could do.

For options for the Netherlands, see page 12.

Where does the Netherlands stand in relation to Europe?

Labour productivity growth continues to lag

- The Netherlands has comparatively high levels of labour productivity.
- However, **labour productivity growth** has been slowing for years (see arrow in figure below), partly due to the [phase-out of gas extraction](#), and in 2023 and 2024, labour productivity actually [contracted](#).
- Labour productivity growth** is a [key prerequisite for future prosperity](#). In the Netherlands, persistently lower productivity growth is prompting a downward adjustment of structural productivity growth to 0.7% a year,

which is 0.2 percentage point lower than in CEP2024 (CPB Netherlands Bureau for Economic Policy Analysis).

- The Netherlands currently ranks below comparable European countries in this respect, and also ranks below the US and China.

Static sectoral structure and lagging R&D spending

- Dutch R&D spending lags behind** other countries (including European countries). The Netherlands performs below the average of OECD countries and does not meet the standard of spending 3% of GDP on R&D.

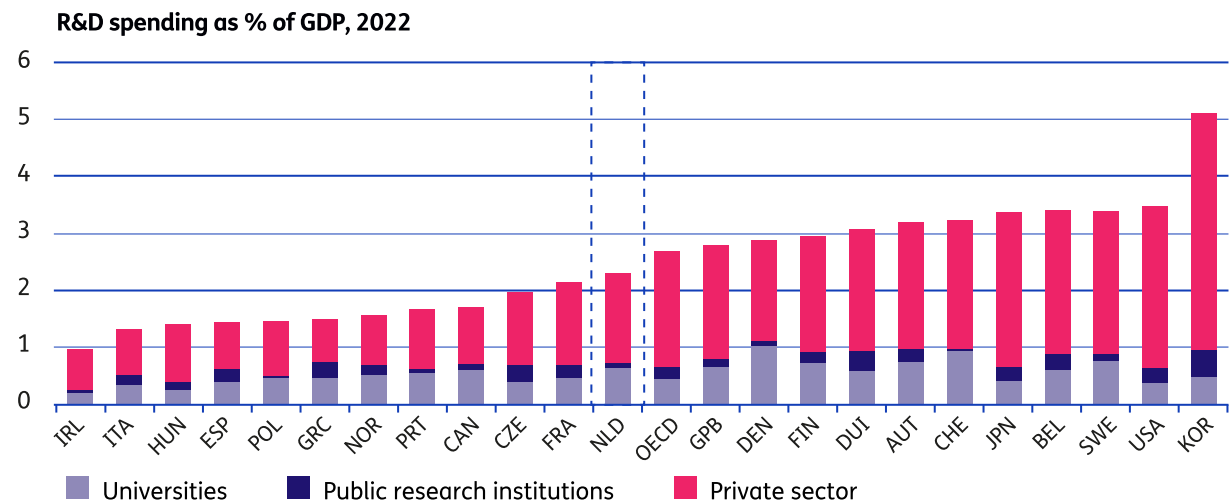
- In particular, the Netherlands lags behind in **private R&D spending**. R&D costs are mainly for [personnel](#) and are largely incurred by [major companies](#) and [innovative frontrunners](#). As the Netherlands has relatively few large companies (in tech and other sectors), this spending lags behind.
- In the Netherlands, the innovation gap seems to be particularly evident at later stages of R&D. The emphasis in knowledge development is on fundamental research and less on the applied and experimental research needed to develop new products/ processes or improve existing ones.

This is reflected in [the figures for spending on these various forms of R&D](#), as a percentage of GDP, in a comparison with other industrialised countries.

The lagging R&D spending is partly due to the Dutch sectoral structure. The Netherlands relies heavily on [a few companies](#) and the mechanical and electrical engineering industries (see upper right quadrant on next page). IT services and the chemical industry also make a considerable contribution to R&D spending but face a lower R&D intensity. [Other European countries](#) have a wider range of sectors with high R&D intensity, for example the biotech, pharmaceuticals, and automotive industries.



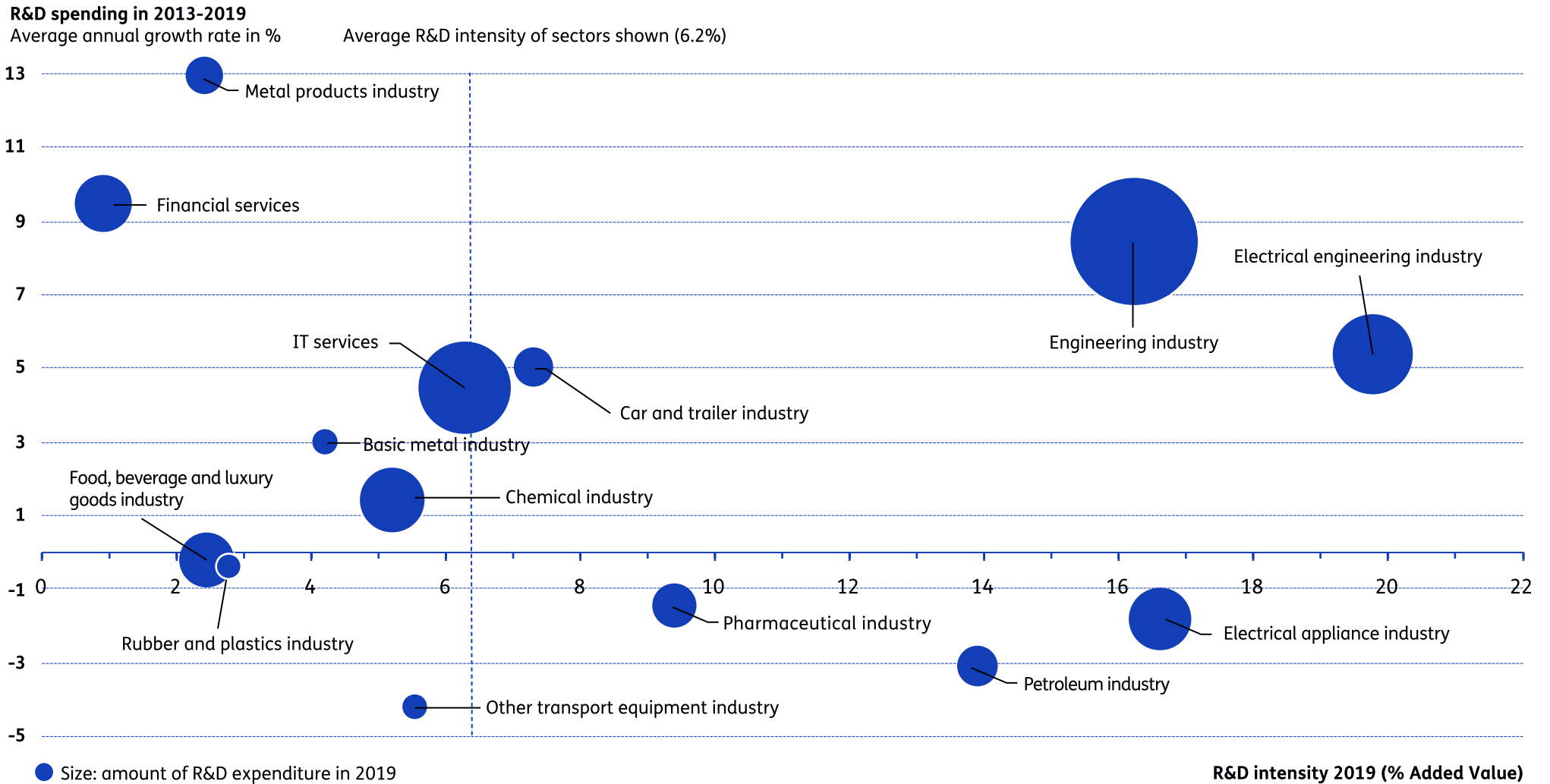
Source: Rabobank (2025)



Source: Rabobank (2025)

Narrowing the innovation gap | Where does the Netherlands stand in relation to Europe?

R&D spending growth versus R&D intensity of Dutch sectors



Source: TNO Vector (2024)

The graph concerns a TNO Vector analysis based on Statistics Netherlands (CBS) StatLine data. Only the sectors that spent more than €40 million on R&D in 2019 are included.

Narrowing the innovation gap | Where does the Netherlands stand in relation to Europe?

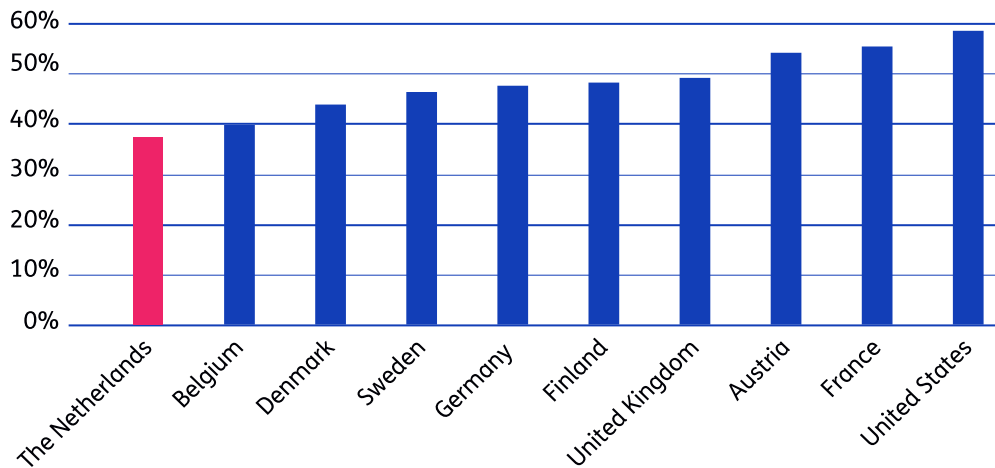
Lack of venture capital

- The Netherlands is one of **Europe's leaders in venture capital**. With a growing ecosystem of investors, the Netherlands ranks among [Europe's top](#) venture capital (VC) investors per capita.
- However, the Netherlands should not be over-optimistic about its investment climate. On a per capita basis, the US [invests three times as much](#).
- Furthermore, the Netherlands lags behind other European countries with regard to its share of venture capital investment in **deep tech**.² Such investments are essential for ground-breaking innovations in sectors such as AI, quantum technology, and biotech, and thus for driving economic growth.
- In terms of [venture capital investment for scaling up](#), the Netherlands also lags

- behind other European countries. While early-stage investment is relatively strong, **there is a lack of Dutch or European capital for further growth** to international scale. This hampers the growth and scale-up of startups.
- The absolute scope and coordination of venture capital matters because a larger capital market offers more opportunities for technological breakthroughs and

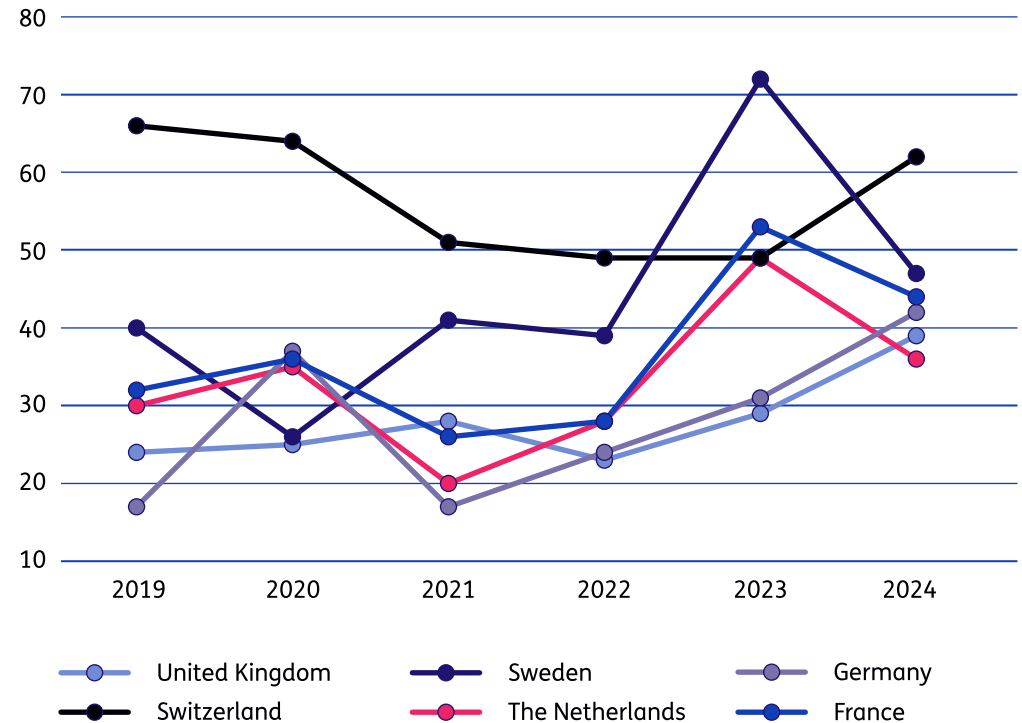
scaling up. However, there is no integrated [European capital market](#). This fragmented funding landscape hinders access to growth capital and inhibits innovation and competitiveness.

Later-stage venture capital investments as % of venture capital investments



Source: OECD (2025)

Share of deep tech investments



Source: Techleap (2025)

² By **deep tech** we mean new scientific or technical breakthroughs that provide solutions to complex societal problems through products and companies.

Regulation, digital infrastructure, skills

Regulation

- [Dutch entrepreneurs state](#) that **regulatory pressure, the administrative burden, and licensing** are their biggest concerns. More than 60% of entrepreneurs feel that this situation has worsened in recent years and expect this to continue in the coming years. The Dutch National Regulatory Burden Monitor shows that the costs of structural and one-off [regulatory burdens have risen](#) in recent years.
- This increasing pressure **undermines** entrepreneurs' **trust** in the government, reducing their willingness to invest and innovate. As a result, entrepreneurs risk having to curtail their growth ambitions or consider [stopping or leaving the Netherlands](#).

Digital infrastructure

- The [digital infrastructure of the Netherlands is among the best in Europe](#), with an advanced network of data centres, high internet connectivity, and fast broadband connections.
- Despite this position, [digital sovereignty is under pressure](#). The Netherlands relies heavily on the US at all layers of the digital stack. For example, in cloud storage and services, AI models, operating systems, cyber security, and social media platforms.

- With its large data centres and undersea and underground internet cables, the Netherlands is a digital hub for data traffic in Europe. [Responsibility for the various components](#) is already a point of concern.

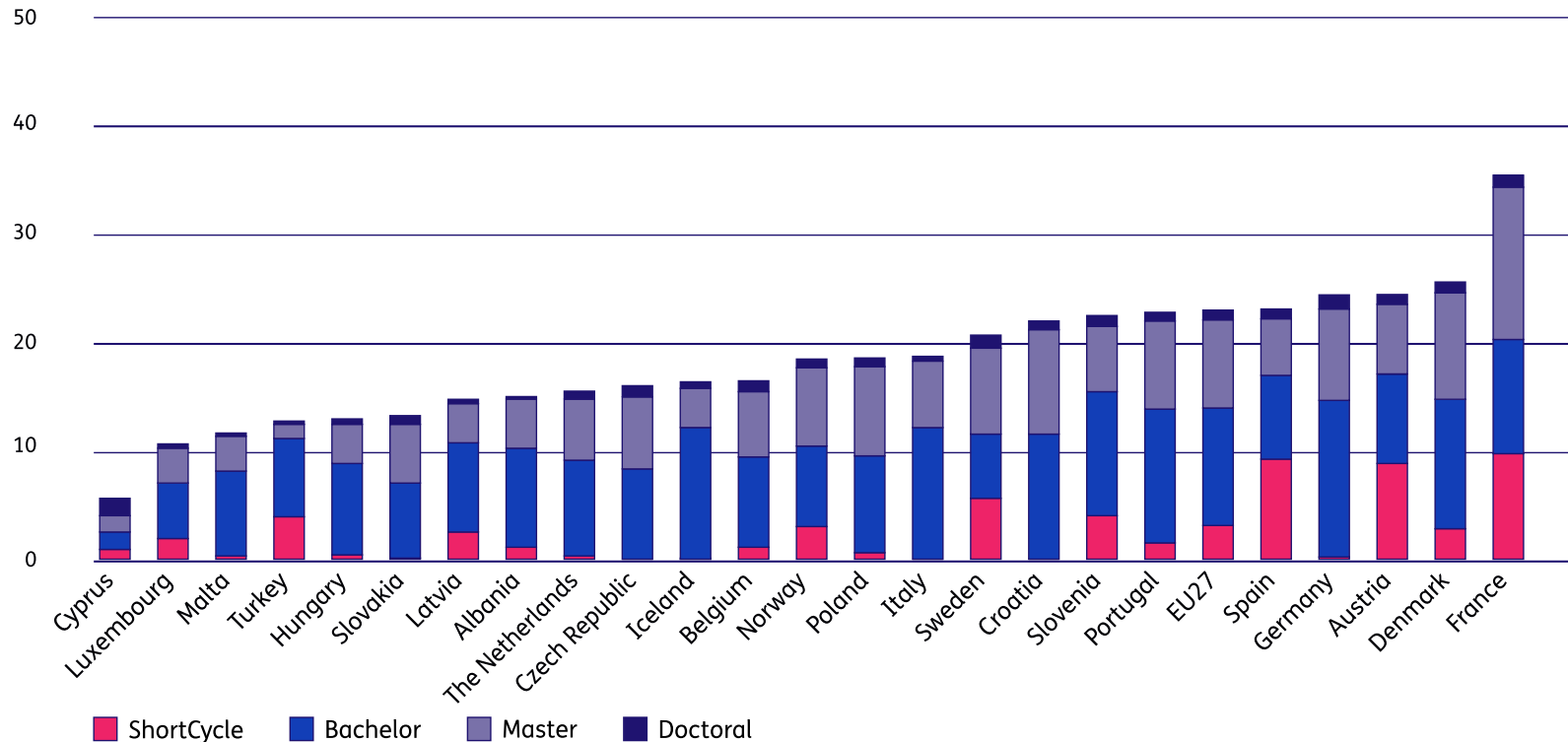
Skills

- Compared to the EU average (55.6%), the proportion of residents with [basic digital skills](#) is high in the Netherlands (82.7%).

- However, there has been a [shortage of ICT specialists](#) in the Netherlands for years, ranging from installation technicians to software developers.
- The Netherlands lags behind [in the number of technical graduates](#) in science, technology, engineering, and mathematics (STEM). In the Netherlands, there are 15.4 STEM graduates per 1,000 inhabitants, while the EU average is 23 per 1,000 inhabitants.

- Small Dutch [companies](#) in particular find it difficult to adopt new digital technologies: in 2024, 23% of companies with 10 or more employees used at least one AI technology.

STEM graduates aged 20-29 by level of education and per 1000 population (2022)



Source: Eurostat (2025)
Some European countries are not included in the graph due to a lack of relevant data

What options does the Netherlands have to strengthen competitiveness?

Labour productivity growth

- Commit to a [new growth path](#), with [labour productivity growth as the driver](#) and overall well-being as the basic principle.
- Increased use of digital technology may help in this regard, especially the use of AI, including in the public sector. At the same time, invest in intangible assets, such as human capital.
- Learn from sectors with high labour productivity growth, such as machinery manufacturers and suppliers.

Increasing and capitalising on innovative capacity

- Achieve the Lisbon target of spending 3% of GDP on R&D.
- With the National Technology Strategy, the Netherlands is focusing on acquiring [control points](#) in emerging value chains of 10 key technologies. In this way, the Netherlands is broadening its R&D intensity in high-tech sectors while reducing its dependence on the machinery industry. More radical innovation policies (e.g. the DARPA model) are needed, for example to enable electrification, in alternatives to gas, and in targeted defence investments in the Netherlands.
- European coordination of investments in key technologies and greater attention to the importance of [regional ecosystems](#) will strengthen European competitiveness.
- Giving direction to innovation policy is desirable in the form of [targeted funding](#), especially now that the National Growth Fund is coming to an end.
- We know from our neighbouring countries that a [consistent innovation policy](#) encourages more private R&D.
- More venture capital for scaling up ensures that potentially successful companies stay in the Netherlands.

Solutions to barriers in the areas of:

Regulation:

- Ensure consistent policies to boost confidence among entrepreneurs. For example, continue the expat policy.
- Put forward solutions to differences within Europe, such as in energy policy.
- Make grant and licensing processes simpler and more flexible.

Digital infrastructure:

- Continue to invest in new digital and other technology to maintain the strong position of the Netherlands.
- Analyse the Dutch control point position in the digital stack.
- Invest in European alternatives to reduce dependence on the US.
- Encourage demand for European alternatives and set a good example as a government (launching customer), for example in procurement policy.

Skills:

- Make it clearer what the Netherlands gains from technology and innovation, so that these are valued by the business community and citizens.
- Invest more in education and targeted research.
- Strengthen technical courses, make them more attractive to a broader public, and be open to foreign talent.
- Encourage learning of digital skills demanded by the labour market.



Decarbonisation and energy prices

What does Draghi say about decarbonisation and energy prices?

Rising energy costs

- **Increased energy costs have doubled and continue to rise rapidly:** The report highlights the impact of rising energy prices and energy demand on Europe's economic performance. The negative impact of higher energy prices reduced [potential GDP growth](#) cumulatively by 0.15% in 2023 and 2024. Draghi thus demonstrates the need to improve energy efficiency. According to investors, other economies, such as the US, are less dependent on this.

Economic earning power: challenges/opportunities

- **Short-term investment demand for a low-carbon future:** There is an urgent need for investment in decarbonisation. Worldwide, more than \$2 trillion was [invested in the energy transition](#) in 2024. A cumulative investment of \$10-15 trillion would be needed by 2050 to decarbonise industry ([OECD, 2025](#)). In the short term, this consists of investments in energy technologies such as hydrogen, offshore wind, nuclear, and batteries.
- **Industrial opportunities for the green transition:** The report identifies opportunities for European industry with spillovers from cars, chemicals, or oil & gas to batteries, wind, solar, and heat pumps. European industry also has a lead in, for example, electrolysers, carbon capture, and other clean tech, in contrast to the digital innovation position. Finally, the market is growing steadily – green energy consumption is increasing and was around 22% of the total in 2023, compared to 14% in China and 9% in the US.

Trade measures

- **Trade measures:** The EU's trade deficit with China [has worsened significantly](#) in recent years, heading towards €400 billion in 2022. Since the publication of the Draghi report, the US has been rigorously adjusting its trade agreements. In the context of the green transition, there is a need to reduce dependencies. This involves diversifying suppliers and strengthening economic security.

Competitiveness

- **Competitiveness:** Industry needs an action plan for strategic autonomy, in traditional R&D markets and through new pathways. The EU invests (mostly at Member State level) €1 billion annually in defence R&D. An additional €2 trillion is spent in the EU through *public procurement*. Supply chain resilience plays an important role.

For options for the Netherlands, see page 19.

Where does the Netherlands stand in relation to Europe?

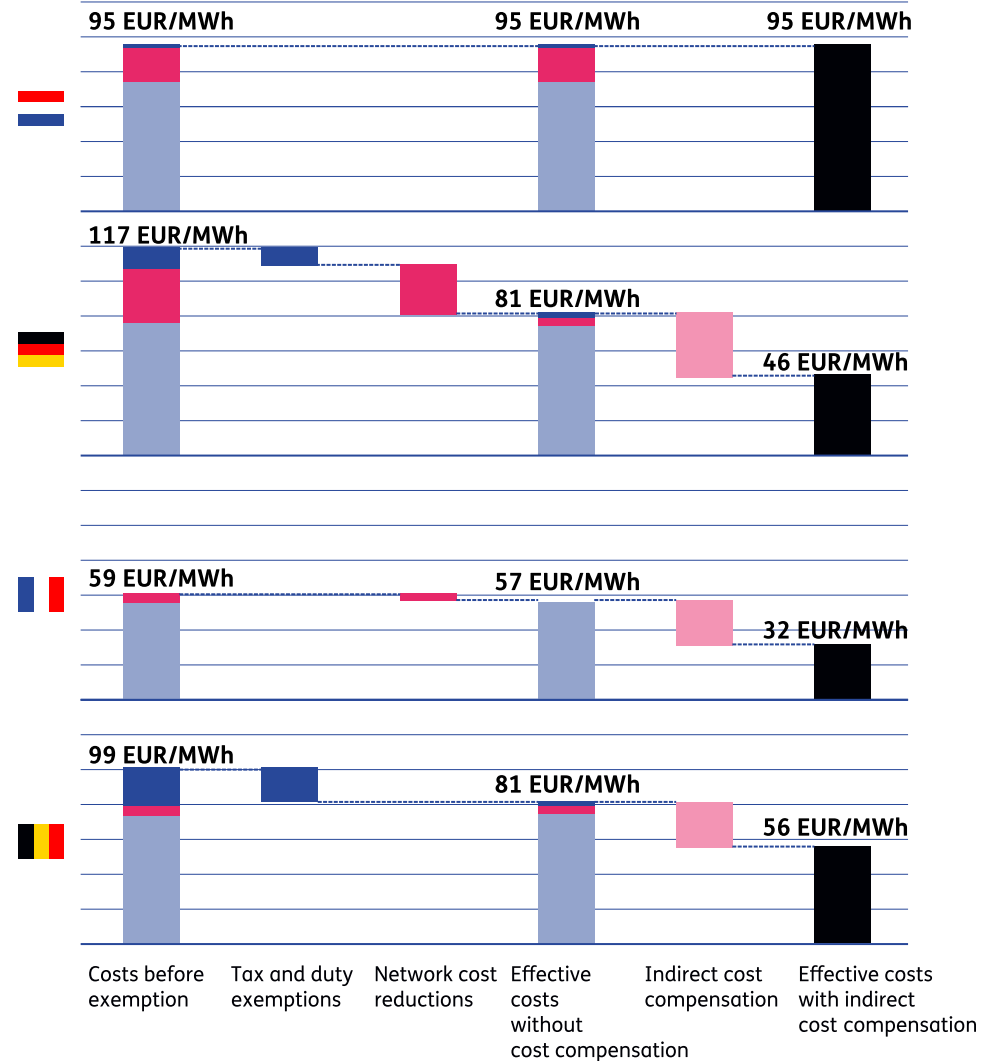
Rising energy costs: more often subsidised in neighbouring countries

There is a significant difference in the user price for energy-intensive companies between the Netherlands and our neighbouring countries. The cost in the Netherlands is €95/MWh (without offsets, as there are none in the Netherlands); in Germany, due to offsets, the cost is €46/MWh. Without additional policies, there is a good chance that the difference in user costs between the Netherlands and Germany will persist in the years to 2030.

This is partly because:

- Network costs will double in the Netherlands over the next five years.
- Wholesale prices will fall by 15-20% according to PBL's Climate and Energy Outlook, under the assumption that offshore wind (5GW) will be rolled out successfully over the next five years. As a result, gas-fired power stations will be significantly less likely to be price-setting.
- Cost offsets in Germany are already in policy plans through ETS revenue funding. To date, no cost offsets are planned in the Netherlands.

Electricity costs for large-scale industrial use



Decarbonisation and energy prices | Where does the Netherlands stand in relation to Europe?

Gas prices are also more than 50% lower in the US compared to the EU and the Netherlands. The international gas price is likely to fall because:

- globally, the supply of LNG is increasing.
- in the EU, gas storage capacity and LNG infrastructure are being expanded.

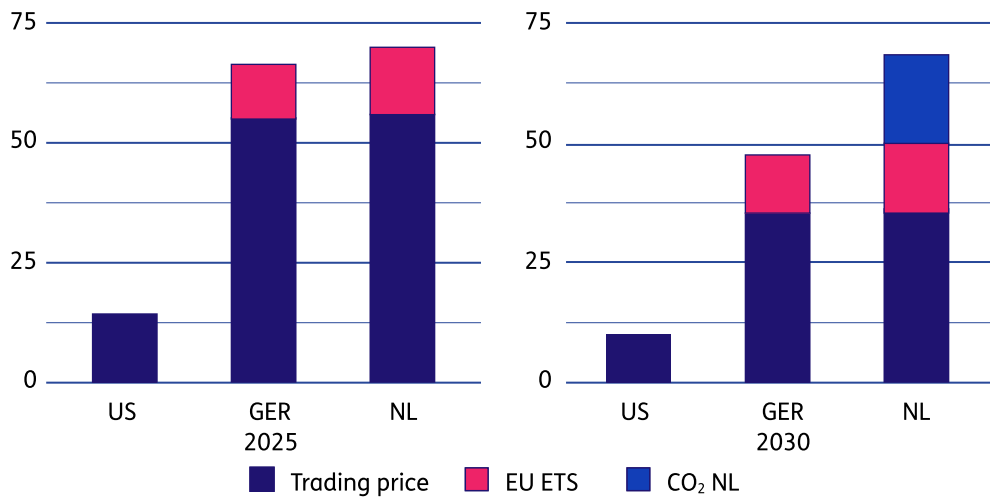
In the EU, there is a mark-up on gas through EU ETS1, which will rise to €110/t CO₂.

The national carbon tax was originally meant to be a mix of pricing and subsidy (“*carrot and stick*”). The tax and subsidies were not meant to generate tax revenue. However, the 2024 Dutch Annual Budget mentions revenues from the national carbon tax. So, as with EU ETS1, there is a mark-up of the national CO₂ tax on gas that will further increase the gas user price in the Netherlands.

It cannot be seen in this graph, but consider that the basic prices of the EU/China are increasingly correlated through the LNG market (IEA, 2024).

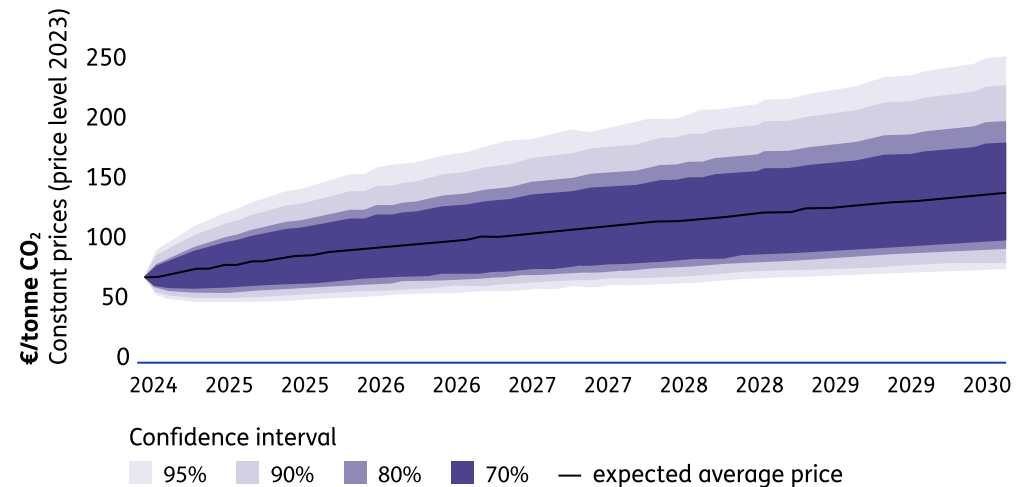
Gas user prices will rise in the Netherlands (especially for the chemical sector) and fall in the US.

Handelsprijs van gas (€/m³, annual average including VAT remittance) and contribution to gas price by European Emission Trading Scheme (EU ETS) and national CO₂ tax (CO₂ NL) in United States (US), Germany (GER) and the Netherlands (NL), in 2025 and 2030



Source: Edit TNO (2025) based on Dutch Ministry of Finance (2024) and TNO (2024).

CO₂ price on the EU ETS1 market



Source: TNO (2025)

Economic earning power: level playing field in industry under pressure due to energy costs and policy, and service sector growth

The graph shows three lines that indicate the development of industrial production in the Netherlands up to 2035.

The solid line is the Climate and Energy Outlook (KEV) base path (PBL, 2024): slight growth in industry with a European level playing field.

The dashed line shows what happens if neighbouring countries continue to subsidise their electricity prices. Production in the Netherlands then becomes relatively expensive. Industrial companies – especially in energy-intensive sectors – relocate activities abroad (Bollen et al., 2020). This relocation is not temporary, but structural.

In the Netherlands, this leads to industry contracting. Labour and investment shift to less energy-intensive sectors, especially the service sector. This sector grows, but it does not fully compensate for the loss of industrial value creation. The result is a **structural loss of productivity and earning power**, with a structural loss of GDP that could cumulate to €17 billion on average by 2035 (Bollen et al., 2020).

The dotted line (TNO, 2024) shows the risk scenario in the event of a sharp increase in the gas price. This could arise due to geopolitical tensions and a limited group of LNG suppliers, such as the US (PBL, 2024). As gas-fired power stations often set the price for power (TNO, 2024), this further increases electricity prices.

The chemical and steel sectors are hit particularly hard by such rises. They may lose up to 15% of their production (Bollen et al., 2020 and TNO, 2024). Industry as a whole contracts more sharply, with a structural GDP loss that could cumulate to €40 billion on average as early as 2035.

The graph therefore not only shows effects on production, but also reflects a broader economic adjustment:

- Significantly less energy-intensive manufacturing in the Netherlands
- Loss of strategic chains, such as chemicals with Germany
- Adjustment costs: frictions in the labour market, lower returns on investment
- **Acceleration towards a service economy** (already around 60% of GDP), which is less capital and export-driven. Opportunities for economic earning power lie mainly in the service sector. The Netherlands has a strong [knowledge](#) position and a solid trade position. Combined with European collaboration, this offers scope for longer-term growth in strategic services, [clean tech](#), and deep tech. But these opportunities will only bear fruit with targeted policies for infrastructure, talent, and innovation.

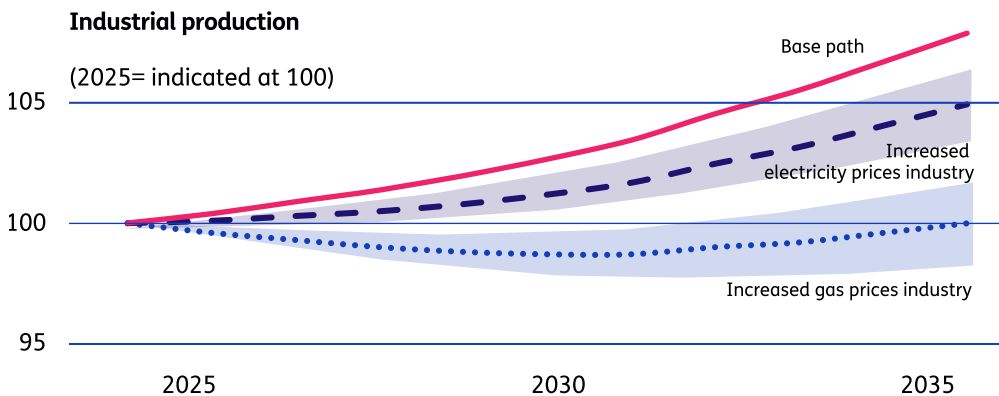
These adjustments are not neutral. They result in an economy **that generates less revenue structurally than it would on a level playing field.**

Trade measures: international value chains under pressure from import tariffs

The graph on the next page shows how the GDP of various countries falls as import tariffs rise. These tariffs are used to protect domestic production but they restrict global trade. As a result, international value chains are disrupted. Existing chains will be broken, while new, less efficient ones will be created. This leads to lower productivity and therefore less economic growth, especially in [open economies](#) such as the Netherlands.

The US is shown in blue. Counter-measures by China, the EU, and other OECD countries make the negative effects there the strongest. The Netherlands (pink) also loses a lot in relative terms, due to our open economy and heavy reliance on trade. Compared to other EU countries, our losses are higher with equal tariffs.

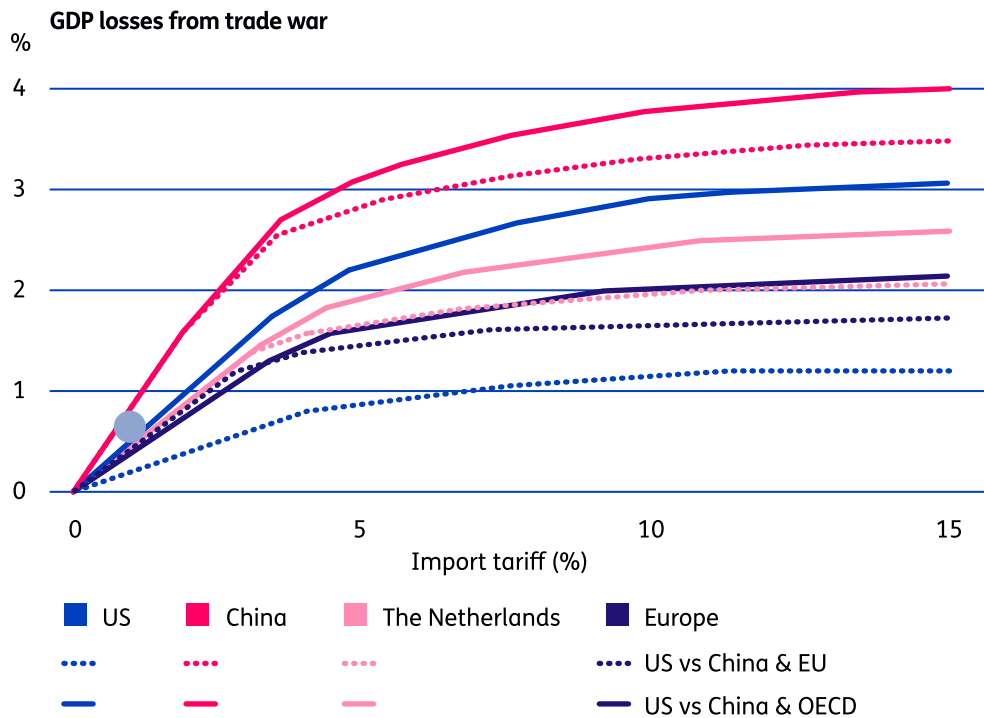
The dot in the graph on the next page shows where we are now: tariffs have been active since the previous US administration. Trump has announced new tariffs of up to more than 20%, effective from April 2025. Many of the existing tariffs from his previous term remained in place under [Biden](#).



Source: PBL (2024) en TNO bewerking van Bollen et al. (2020) en Bollen en Hers (2024)

Decarbonisation and energy prices | Where does the Netherlands stand in relation to Europe?

- According to the Dutch Central Bank (DNB), a trade war (“an eye for an eye”) is economically damaging. Counter-measures appear logical, but lead to scaling down, less specialisation, and lower productivity. It is precisely in this context that strengthening the [EU single market](#) is of strategic importance, especially for the Netherlands, as highlighted in the Draghi report.
- The consequences are structural: loss of GDP for the Netherlands may reach 1.5-2% (see graph). It should also be considered that losses will not be uniformly distributed across sectors.
- Finally, a shift in import and export flows leads to a change in labour demand. Retraining and upskilling is becoming crucial for talent development, to keep workers employable and resilient in a [sustainable economy](#).



Source: Bollen et al. (2018)

Competitiveness: government procurement, a new generation of disruptors, and security of supply

- As energy demand grows, so does our international dependence. A **strong economic position in clean tech** is therefore not only strategic but also offering opportunities. Stability and predictability of demand are essential for investments in clean technology. However, the [Dutch share of global clean tech](#) is declining: from 7% in 2002 to 3% today.
- Dutch investment in startups (€3 billion) provides more than 150,000 [jobs](#) and an ecosystem worth around €240 million, but is dwarfed by **procurement budgets** of €73 billion ([the Netherlands](#)), and €2,000 billion ([Europe](#)). The Netherlands performs slightly above the EU average, but has dropped to 10th place in the [EU benchmark](#) (2024).
- In a similar way to the call in Chapter 1, **patience and consistency are also crucial** for clean tech. Building a strong position and gaining a **strategic ‘control point’** take time. On average, it takes 7 to 10 years for a new technology to scale up successfully. The Netherlands is lagging behind, as only 19% of our innovations scale up successfully, compared to 22% in Europe and 32% in Germany. This makes it harder to keep up with new technological developments. At the same time, the innovation landscape is changing rapidly. There are fewer IPOs, and more [mergers and acquisitions](#). As a result, ever more value flows back to established, capital-rich innovation clusters abroad.
- Trade policy is fundamental to an open economy such as the Netherlands. It helps combine decarbonisation with competitiveness, protects strategic supply chains, and supports access to new markets. It is also a response to state-sponsored competition elsewhere in the world. This calls for smart partnerships with countries where energy is more affordable, as well as a combination of public procurement, international relations, and private disruptors based in the Netherlands.

What options does the Netherlands have to strengthen competitiveness?

Rising energy costs

Societal and industrial demand for energy continues to grow, so energy prices will need to remain manageable to ensure strategic autonomy. This can be done, for example, by taking measures to:

- [Scale up electrification](#): examples are the accelerated roll-out of renewable energy sources such as Offshore Wind; investing in grid reinforcement and/or making consumption more flexible; and back-up and reuse, for example through E-boilers.
- [Make gas consumption more sustainable](#): for example by scaling up CCS technology; stimulating blue hydrogen, as well as green hydrogen over the long term; or tapping sources such as North Sea gas or LNG (including Middle East).

Economic earning power: Challenges/Opportunities

It continues to be important to create a **level playing field** for Dutch entrepreneurs.

We expect ETS prices to rise further, leading to greater distortion of the level playing field. One possible measure to restore the level playing field at least within the EU is to increase coordination on climate policy by linking electricity subsidies to EU ETS revenues (e.g. substantially increase Indirect Costs Compensation budget).

At the same time, the Netherlands itself can take measures to further rectify this, such as:

- Finalising customised agreements to ensure a prudent pace for increasing sustainability.
- Targeted subsidies for electrification and hydrogen use in production.
- Building hydrogen infrastructure.
- Examining industries/sectors to assess their long-term national contribution to earning power, strategic autonomy, and overall well-being (here and elsewhere).

Trade measures

The European Union has primacy with regard to mitigating the effects of a trade war, but within the EU, the Netherlands can advocate, for example:

- Making **treaties** with emerging economies, preferably countries with a digital and defensive strategy.
- Conducting research into the impact of specific **trade measures** on Dutch competitiveness and productivity. This includes coordinating countermeasures with other countries.
- Investing in the long-term **sustainable employability** of talent, industry, and capital.

Competitiveness

Overall well-being must be front and centre to ensure long-term security. To this end, research is needed on how structural changes within and across sectors can affect strategic autonomy. Follow-up steps may include:

- Driving venture capital investment or co-investment for clean tech, defence, and other strategic industries to create a **bridge** to profitability.
- Targeted use of funding and **procurement budgets**, and driving the EU single market for innovators and new industrial activity, especially sustainable industry.
- Long-term commitment to talent development, valorisation of an idea to a technology and **growth** to impactful deep tech.



Strategic independence and defence

What does Draghi say about strategic independence and defence?

Defence spending and innovation power

The EU needs to **invest in its own defence knowledge and capabilities**. This is essential to tackle geopolitical risks while offering economic opportunities. The defence industry has historically been a driver of innovation, with breakthroughs such as infrared, the Internet, and GPS. European technology is well positioned to compete with the US in terms of quality and performance, particularly in key battle tanks and sub-systems, conventional submarines and naval shipyard technology, rotorcraft and transport aircraft.

Some **40% of EU imports come from a limited number of suppliers and are difficult to substitute**. This makes the EU vulnerable to price volatility, geopolitical pressures, or even sudden supply disruptions, which underlines the importance of its own technological capabilities and supply security.

The European defence industry accounted for €135 billion in turnover (including €52 billion in exports) and 500,000 jobs in 2022. In 2023, EU Member States spent around €300 billion on defence, while the US and China spent \$916 billion and \$296 billion respectively (about €848 billion and €274 billion). Only 10 EU Member States met NATO's defence spending guideline of 2% of GDP.

Structural market constraints

Defence industries within the EU struggle with differences in specifications and certification. This hinders scaling up and standardisation, and increases dependence on external suppliers. For example, Europe produces 12 types of battle tanks, compared to one in the US. Member States now often choose US systems because of simplicity and interoperability, while European alternatives are sometimes lacking or underused.

The US defence market remains largely closed to European defence companies, whereas the EU market is quite accessible to US suppliers. This creates an uneven playing field that limits the competitiveness of the European defence industry.

Strategic dependencies (defence equipment)

Draghi identifies that the EU is strategically dependent on imports of defence equipment, particularly from the US. Between June 2022 and June 2023, **78% of defence spending went to suppliers outside the EU** (63% to the US). European fighter jets, such as the Eurofighter, Rafale, and Gripen, make up only a third of the total European fleet; the rest are US aircraft.

The EU is **strong in space technology, but lags behind the US in certain segments**, such as missile propulsion and telecom constellations. The EU is also dependent on imports of advanced electronic components, such as semiconductors, and is struggling to maintain its position in the commercial launch of satellites.

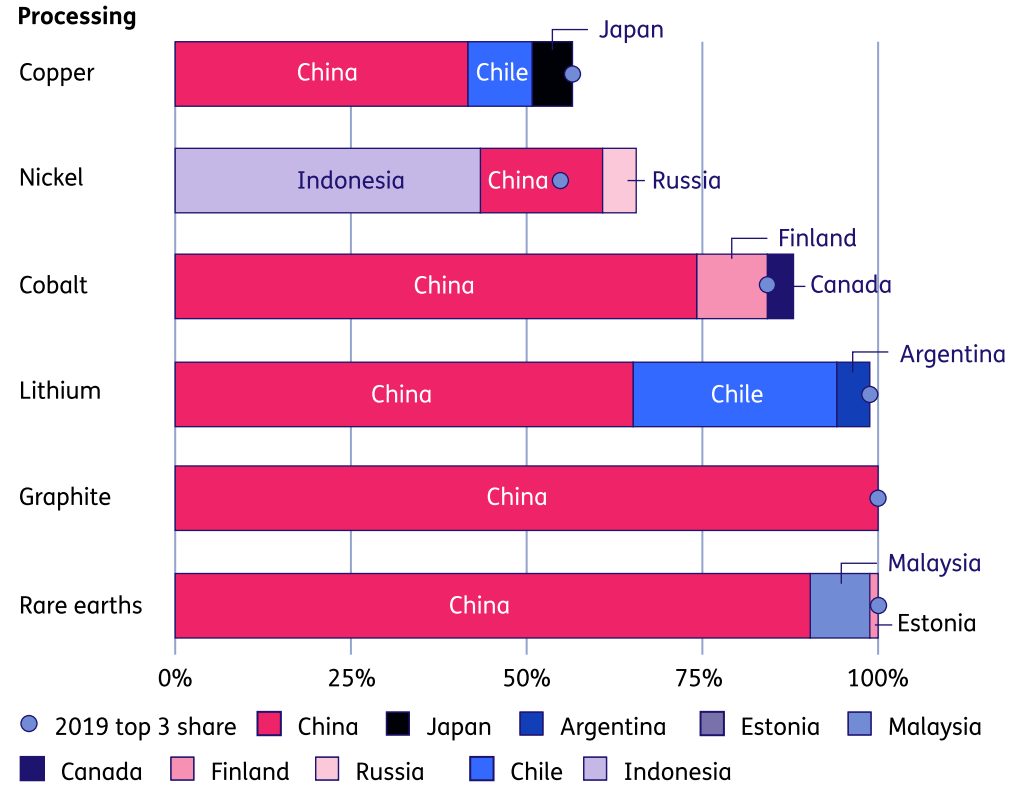
For options for the Netherlands, see page 25.

Strategic dependencies (critical materials)

The EU is heavily dependent on foreign countries within the value chains of components that incorporate critical materials. In particular, the processing (refining) of critical materials takes place in China. For mining, the EU relies heavily on imports of raw materials such as lithium (Chile) and nickel (Indonesia, but largely owned by Chinese parties). These are crucial for the green (lithium, cobalt, and nickel for batteries) and digital (gallium for semiconductors) transitions, aerospace (titanium, tungsten), and defence, such as for [air defence and command frigates](#).

Draghi argues that the underlying dependencies should be seen as potential vulnerabilities. Europe's defence industry has been squeezed by years of under-spending, leading to fragmentation and broader shortfalls in ammunition, weapons systems, and industrial readiness. To operate more autonomously, the EU will need to invest more in its defence industry, and with better coordination. **With a larger and less divided production scale, dependencies can be reduced**, supply chains strengthened, and thus effectiveness increased.

EU Dependency for processing critical materials



Source: Draghi (2024)

Where does the Netherlands stand in relation to Europe?

Defence spending and structural market constraints

Defence spending and innovation power
Dutch investment in defence has increased as a consequence of geopolitical developments. At [€22 billion](#), the Dutch government will spend 2.08% of GDP on defence in 2025, according to NATO's calculation. This places Dutch defence spending above the NATO guideline of 2% for the first time and around the European average.

The Dutch [Defence White Paper 2024](#) also includes expenditure of €1.1 billion on strengthening the defence industry and innovation. This does not exclusively concern research and technology (R&T), for which Europe, through the European Defence Agency (EDA), has set a benchmark of 2% of defence spending. In this specific R&T category, the Netherlands currently spends about €250 million, which is around 1.14% of the total defence budget of €22 billion. This still leaves the Netherlands well below the European standard of 2%.

The Dutch Defence and Security-related Technological Industrial Base (NLDTIB) contains around 1,000 companies, with a

turnover that grew from €4.7 billion in 2021 to €7.7 billion in 2023. Companies in the Netherlands have a strong position in shipbuilding (Damen), radar (Thales), aerospace (Airbus NL), and small satellites. The Netherlands hold niche (knowledge) positions in the fields of encryption, quantum aviation, and advanced cyber security (e.g. Fox-IT). [Targeted export and investment policies](#) strengthen the strategic position of Dutch companies. In critical sectors, the Netherlands can make use of Article 3.4.6 of the Procurement Act for special investments outside of European tender procedures.

The Netherlands wants to engage in [more targeted investment](#) and seek multipliers in order to excel in key technologies for defence, such as smart materials, intelligent systems (including AI and autonomous weapon systems), quantum technology, space, and sensors. Finally, there is also too little private funding for high-tech innovations and dual-use technologies, ([€1.2 trillion in the past five years](#)), leaving the Netherlands lagging behind countries such as the US, China, and France.

Structural market constraints

The European defence market is too fragmented along national lines, which prevents economies of scale. **The Netherlands has no [major national defence OEMs](#)** (original equipment manufacturers), unlike France (Naval Group), Germany (Rheinmetall), or Italy (Leonardo), which limits its international competitiveness. **It also lacks support for large-scale ammunition production capacity**, which increases dependence on external suppliers.

In the Netherlands, technology transfer is increasingly moving [from civilian to military applications](#) – the opposite of the traditional trend.

Public-private partnerships are fragmented and [there is no comprehensive vision to structure defence innovation effectively](#). However, alternatives are possible. One example is **Maintenance Valley**, a cluster in Woensdrecht and Gilze-Rijen, among other places, where companies and knowledge institutions work together on maintenance and innovation in defence equipment, aeronautical engineering, and high-tech systems. **DEFPORT** was recently launched to strengthen the defence

industry: a partnership between the ministries of Defence and Economic Affairs, industry trade associations (VNO-NCW, FME, and NIDV), and knowledge institutions (TNO, NLR, and MARIN).

Strategic dependencies

Defence equipment

The Security-Related Industry Resilience bill ([wetsvoorstel weerbaarheid defensie- en veiligheidsgerelateerde industrie \(WWDVI\), target date 1 Jan 2026](#)) will consider, among other things, the role of the private sector during crises or military conflicts.

For defence equipment, the Netherlands is largely [dependent on imports, especially from the US](#) (Lockheed Martin), **Germany** (Rheinmetall), **and France** (Airbus). For advanced weapon systems (including F-35 fighter jets, Apache helicopters, Patriot missiles, and air combat simulators), the Netherlands relies heavily on the US. In turn, these manufacturers often also depend on components with critical materials from China, for example.

Dutch defence companies are highly integrated into the European supply chain, but [in many cases lack the full autonomy to produce defence equipment and technology themselves](#). For example, Thales Netherlands plays a major role in radar and sensor technology, but these capabilities are intertwined with French and German programmes. The Netherlands has more strong technology clusters (such as ASML for semiconductor machinery or Damen Naval for shipbuilding), but depends on foreign companies for many defence technologies, such as high-end chips,

avionics, and cyber security. In addition, the US and China are investing significantly more in AI, quantum, and cyber security, causing the Netherlands and the EU to fall behind.

Critical materials

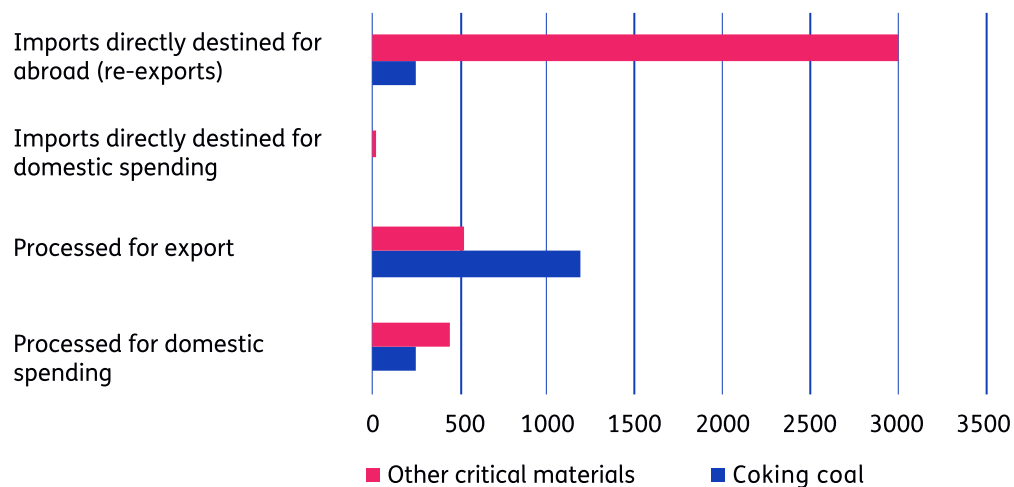
Dependence on critical materials mainly concerns *components* into which they are incorporated. These are important inputs for the manufacturing industry.

Through chain relationships, Dutch industry is [heavily dependent on importing components with critical raw materials](#).

For the [defence industry](#), for example, imports come from China in particular (rare earths, graphite, nitrocellulose), **but also Russia** (titanium), **Australia** (lithium), **Congo** (cobalt), **and Indonesia** (nickel). Through the Critical Raw Materials Act and the National Raw Materials Strategy, the Netherlands and the EU are working to [reduce vulnerable dependencies](#) and strengthen security of supply.

Dutch parties play a key role in trade, transport, transshipment, storage, and stockpiling of critical materials and the components into which they are incorporated. Within the EU, [the Netherlands is the largest importer of critical materials for 12 out of 35 substances](#). The figure shows that the Netherlands imported critical materials worth a total of €5.7 billion in 2022, of which €3.2 billion (57.2%) was directly re-exported.

Destination distribution for imports of critical materials in million euros, 2022



Source: CBS (2023), edit TNO

The Netherlands is mainly a transit country of critical materials to Europe

Most imports of critical materials to the Netherlands are immediately re-exported. A smaller proportion is *processed* by Dutch industry for export or to sell in a processed form on the Dutch market. Virtually no critical materials are imported to sell *directly* on the market.

What options does the Netherlands have to strengthen competitiveness?

Defence spending and innovation power

The Netherlands could prioritise better by focusing on [key enabling technologies](#), such as:

- Intelligent (automated) systems (AI for autonomy, technology for independent GPS)
- Quantum technology (encryption and sensors)
- Smart materials (alternatives to scarce materials)
- Sensors (radar)
- Space technology (optical communication)

The Netherlands could **invest more in** – and make better **use of – existing knowledge** within the relevant ministries, as well as within universities and research institutes, in order to [create a culture centred on innovation](#). For example by:

- Placing defence liaisons in knowledge institutions
- Having a key technologies envoy at the Ministry of Defence
- Investing in strategic and technological foresight
- Investing in training, upskilling, and attracting technical talent

Structural market constraints

As a high-tech country, with targeted policy choices and budget, the Netherlands could achieve a sustainable defence industry in a few years, which would contribute to the strategic autonomy of the Netherlands within Europe.

This requires **government, knowledge institutions, and startups** to create a new way of collaborating in the defence domain. Conditions for this include the following:

- The private sector needs a clear commitment from government to unlock private investment
- The public sector should ask clear, mission-driven innovation questions, while private parties should be given room to experiment
- Short-cycle innovation is needed to respond quickly to new technologies and threats. Legislation and regulation that allow for greater risk-taking are needed to enable this
- As a launching customer, the Ministry of Defence can encourage and guide the development of new innovation

Strategic dependencies

The Netherlands can increase its **economic security** by:

- Limiting foreign takeovers of critical companies
- Stopping the leakage of sensitive knowledge and strengthen strategic sectors
- Systematically analysing where the Netherlands depends on foreign technology (a foreign control point), as a basis for strategic innovation and industrial policy

Targeted European collaboration choices can contribute to the necessary upscaling and [strategic autonomy](#) through, for example:

- Influencing technology development through active participation in EU initiatives such as PESCO and the European Defence Fund (EDF)
- Cooperating within NATO to improve interoperability and standardisation, as well as joint development and production of systems
- Cooperating with Germany and France for large-scale production capacity, especially in the maritime and aviation fields

The Netherlands has an important role to play in reducing dependence in relation to critical materials and components containing such materials, for example by:

- Gathering [information on supply chains](#) (from Dutch trade and logistics parties) for decision-making (including EU decision-making) regarding supply chain security.
- [Stockpiling](#) at a central place in the chain, like the place the Netherlands occupies in the EU.
- Having materials experts in the Netherlands conduct research on substitutes.
- Using diplomatically strong ties with certain traditional mining countries for EU and non-EU collaboration.

[European decision-making](#) is the basis for **effective measures**, for example through: joint procurement; investment in – and faster approval of – production capacity projects; investment in recognised mining countries; and collaboration for circular use of critical materials.

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Draghi analysis for the Netherlands

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