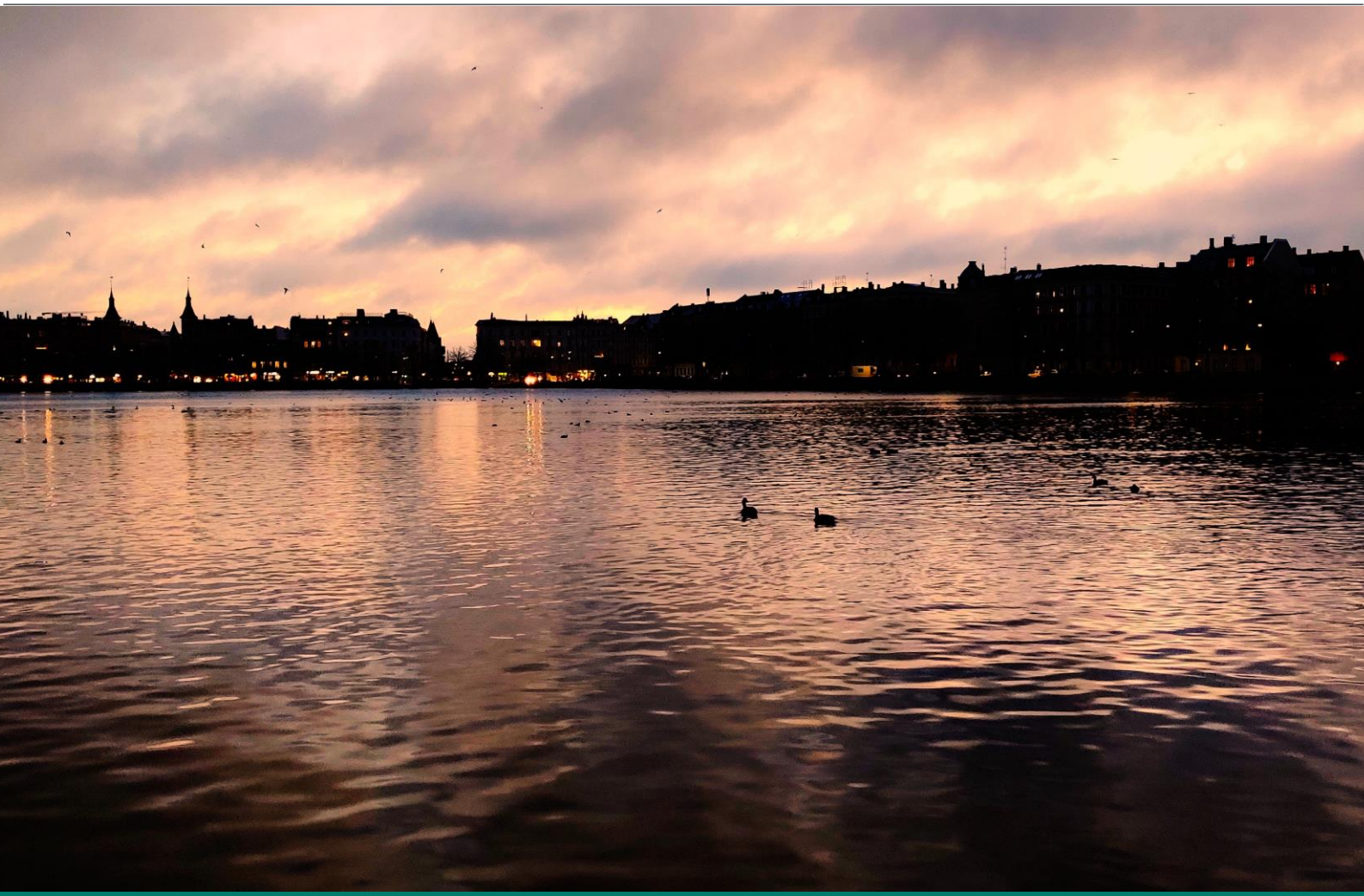
Circular economy country profile – the Netherlands



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Introduction

The European Commission requested the EEA to produce EU country profiles that offer an updated view of the following elements:

- circular economy policies being implemented at a national level with a particular focus on elements that go beyond EU mandatory elements; and
- best practice with a focus on policy innovation.

While implementing the EU Circular Economy Action Plan (CEAP 2020), Member States are encouraged to advance circularity at a national level by adopting policies and initiatives that go beyond EU regulations, while preserving the Single Market.

This circular economy country profile is based on information reported by the Eionet network and, in particular, the Eionet Group on Circular Economy and Resource Use in the second quarter of 2022. The information was reviewed and edited by the European Topic Centre on Circular economy and resource use (ETC CE). A selection of Eurostat data was made to further complement this country profile.

The information is current as of 27 September 2022 (final review), when members of Eionet verified the content of this profile.

The Netherlands – facts and figures

GDP: EUR 800.1 billion (6.0 % of EU27 total in 2020)

GDP per person: EUR 45 870 (purchasing power standard) (132.3 % of EU27 average per person figure in 2020)

Use of materials (domestic material consumption (DMC))
139.2 million tonnes DMC (2.3 % of EU27 total in 2020)
8.0 tonnes DMC per person (59.3 % of EU27 average per person in 2020)

Structure of the economy:
Agriculture: 1.8 %
Industry: 19.9 %
Services: 78.3 %

Employment in circular sectors:
111 305 people are employed in circular economy (CE) sectors (1.8 % of EU total in 2018)
People employed expressed as a percentage of total employment: 1.2 % (EU average 1.7 %)

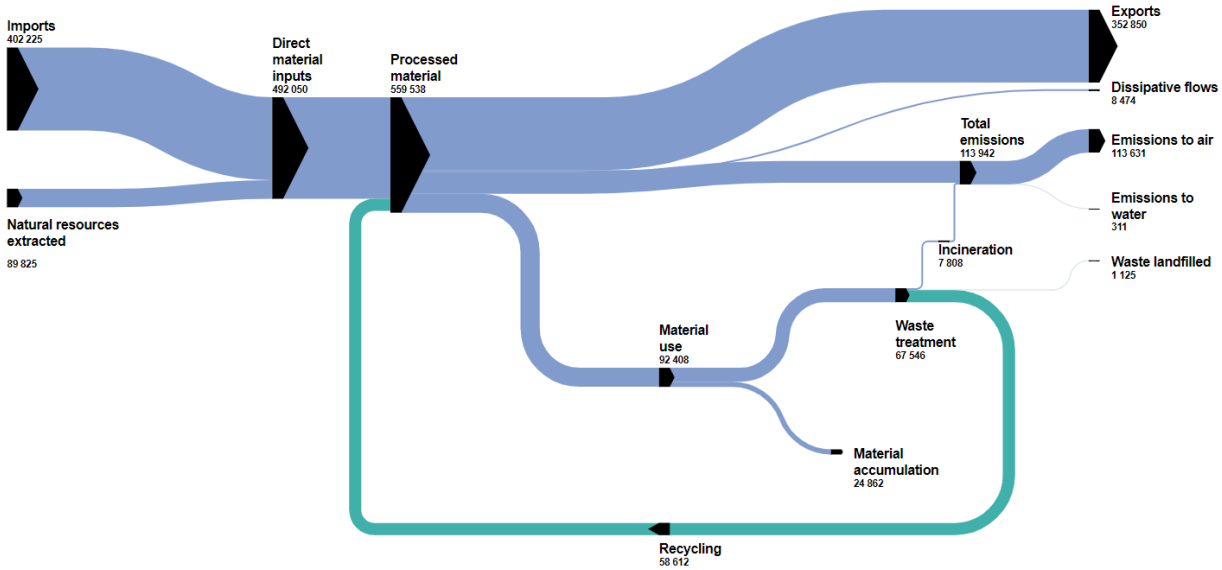
Surface area: 41 540 square kilometres (0.9 % of EU27 total)

Population: 17 407 585 (3.9 % of EU27 total in 2020)

Note: all definitions and metadata used in this profile are taken, as shown, from Eurostat

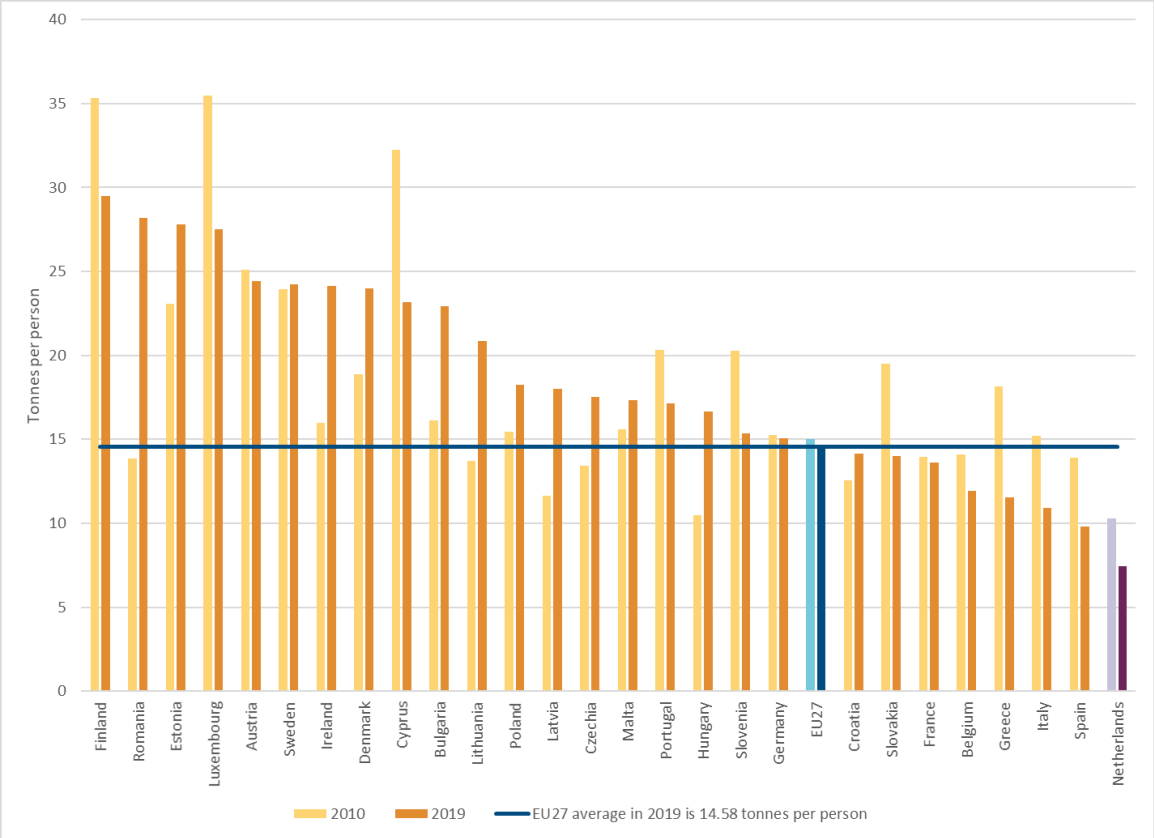
Source: Eurostat datasets, EU27 2020 (accessed 20 June 2022)

Figure 1 Material flow diagram for the Netherlands, 2020, '000 tonnes



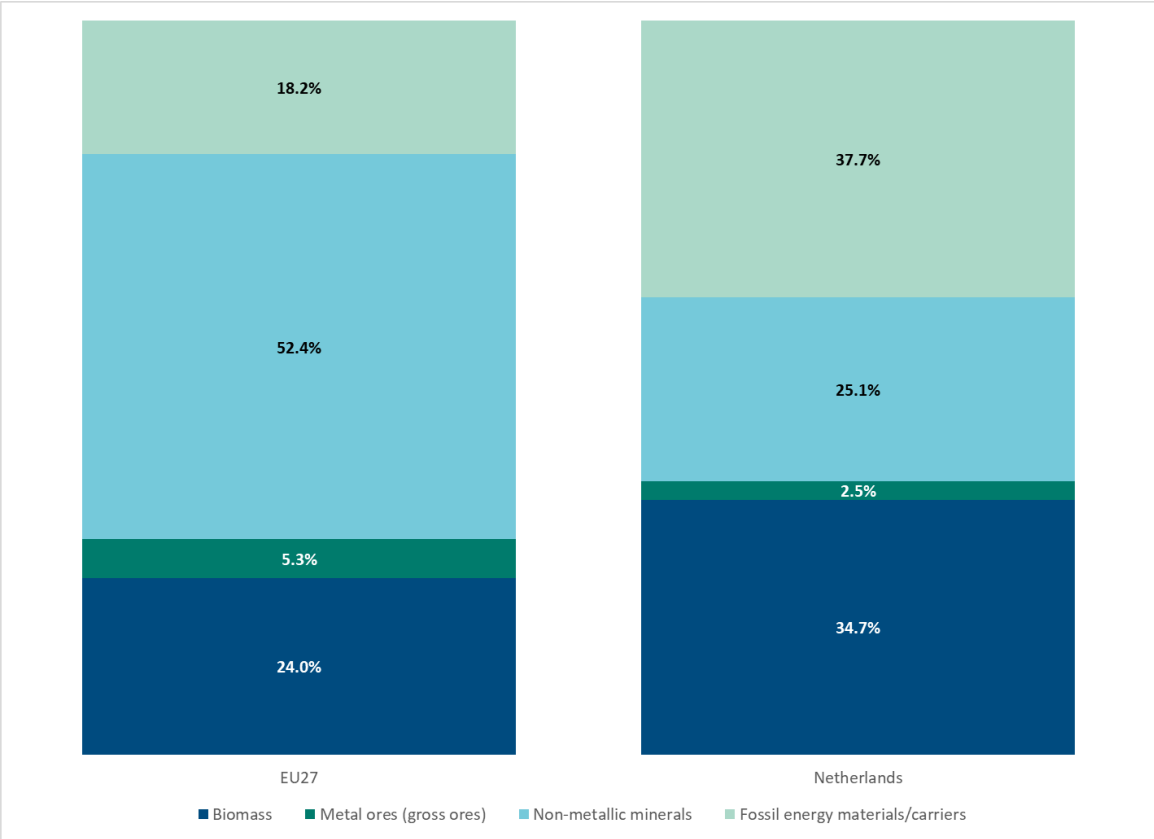
Source: Eurostat (2022) [env_ac_mfa], [en_ac_sd], [env_wassd] (accessed 20 June 2022)

Figure 2 Material footprint (raw material consumption), EU27, 2010 and 2019, tonnes per person



Source: Eurostat (2020) [env_ac_rme] (accessed 4 July 2020)

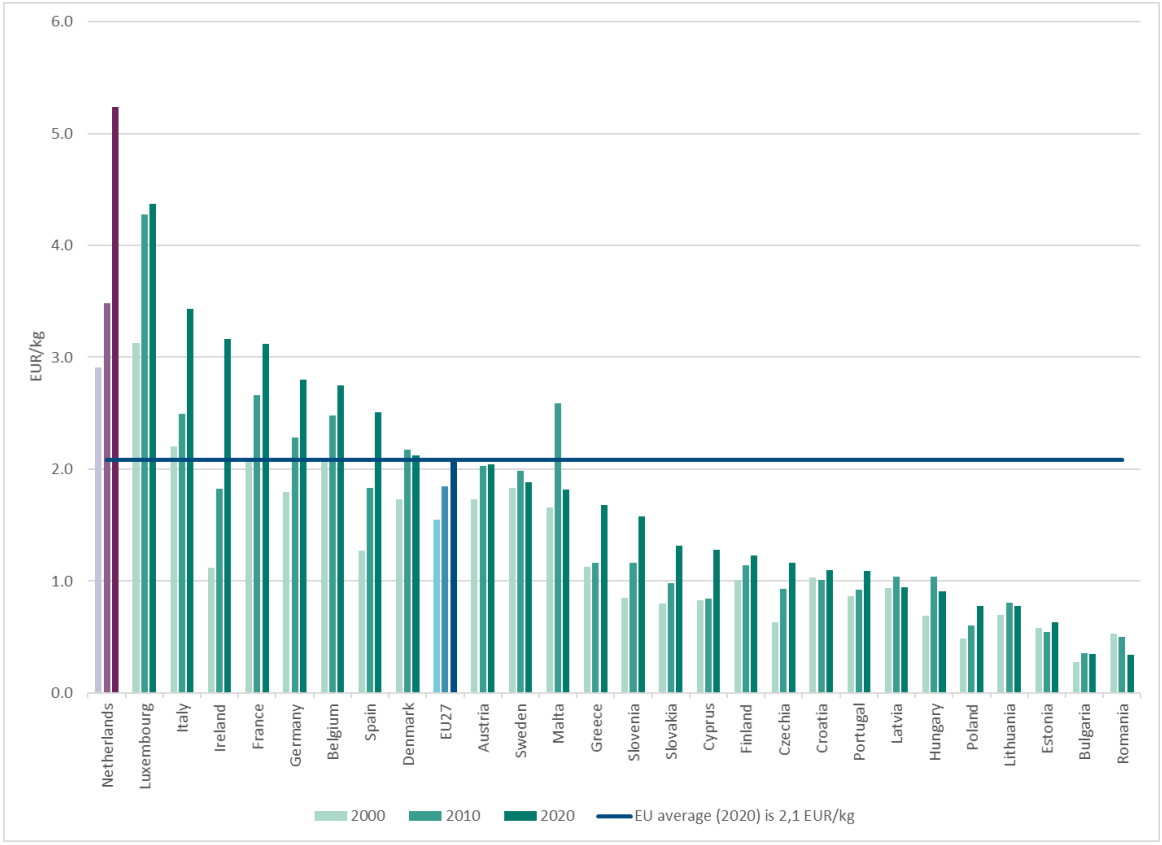
Figure 3 Domestic material consumption by selected material category, EU27 and the Netherlands, 2020, per cent



Note: totals may not sum to 100 % due to rounding

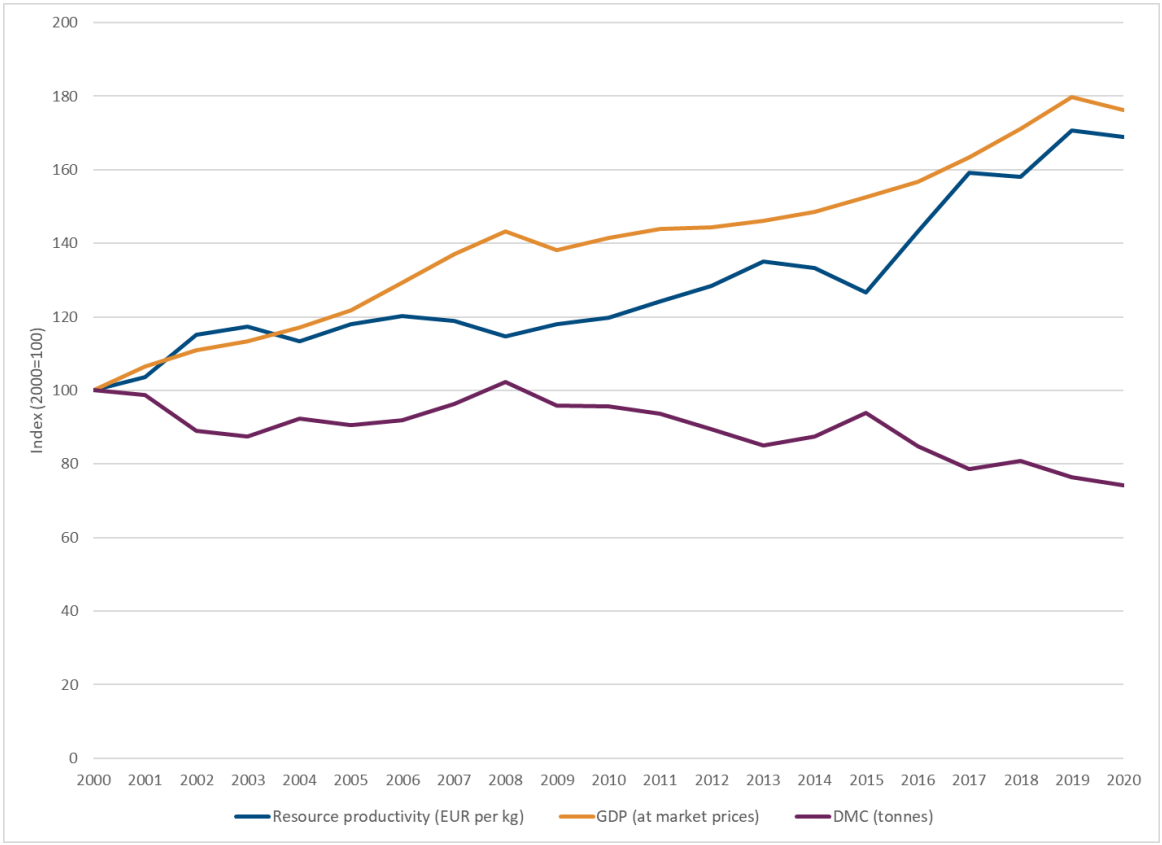
Source: Eurostat (2022) [env_ac_mfa] (accessed 20 June 2022)

Figure 4 Resource productivity (gross domestic product/domestic material consumption), EU27, 2000, 2010 and 2020, EUR per kilogram



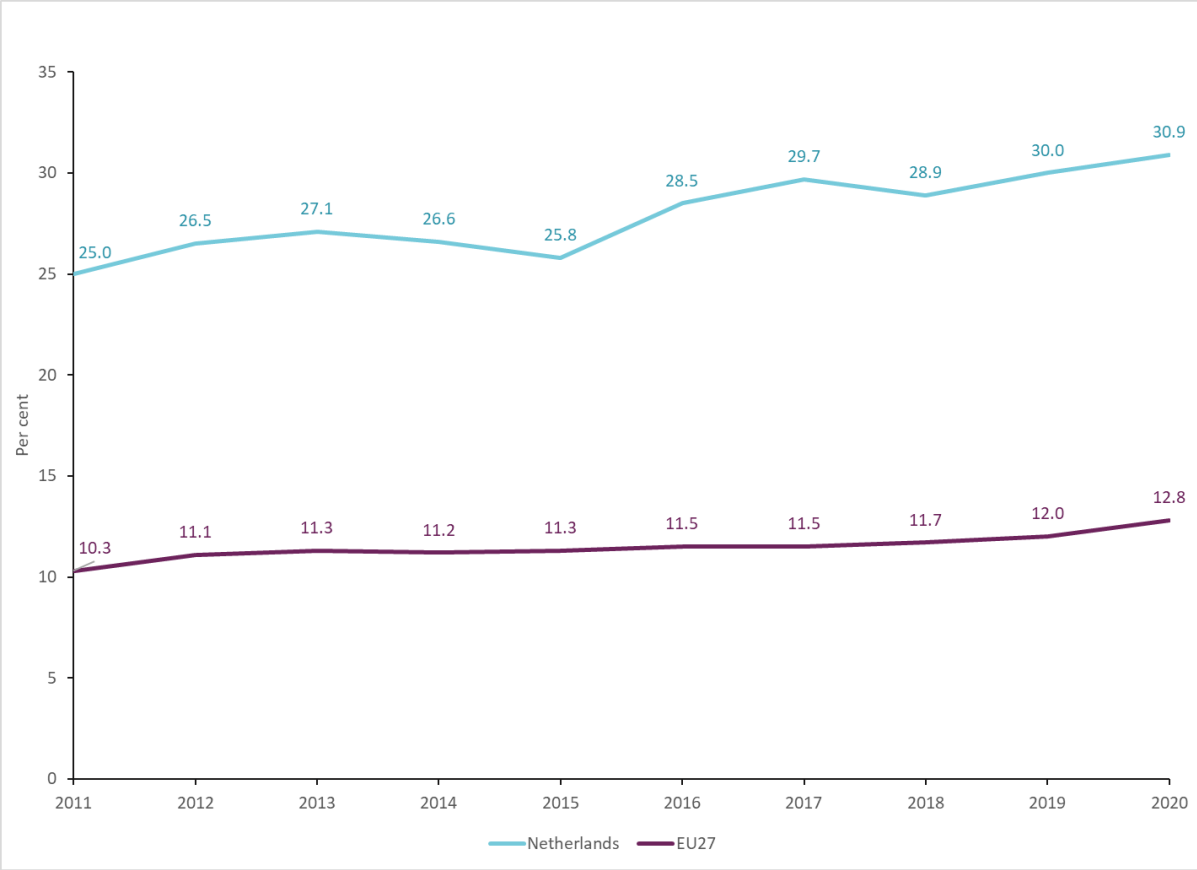
Source: Eurostat (2022) [env_ac_rp] (accessed 20 June 2022)

Figure 5 Gross domestic product, domestic material consumption and resource productivity trends, the Netherlands, 2000–2020, index (2000=100)



Source: Eurostat [env_ac_mfa], [env_ac_rp] & [nama_10_gdp] (accessed 4 July 2022)

Figure 6 Circular material use rate in the Netherlands, 2011–2020, per cent



Source: Eurostat (2022) [env_ac_cur] (accessed 20 June 2022)

Existing policy framework

Dedicated strategy, roadmap or action plan for circular economy

The **main objectives** are:

- a 50 % reduction in raw material consumption by 2030;
- a circular economy by 2050.

The government-wide programme for a Circular Economy, entitled *A Circular Economy in the Netherlands by 2050*[1], was presented to the House of Representatives on 14 September 2016. The programme sets out what needs to be done to utilise raw materials, products and services in more efficient and smarter ways, thus enabling the realisation of the ambition for the Netherlands to be circular by 2050.

By 2030 consumption of primary abiotic raw materials should be halved.

The Dutch government has set out three underlying goals aimed at making the Dutch economy circular as quickly as possible.

1. To ensure production processes use raw materials more efficiently, so that fewer are needed.
2. When new raw materials are needed, to use sustainably produced renewable and widely available raw materials, such as biomass – raw material made of plants, trees and food waste. This will make the Netherlands less dependent on fossil fuel resources, and it is better for the environment.
3. To develop new production methods and design new products to be circular.

These national goals are linked to international goals to which the Netherlands is committed, including EU circular economy policy, the UN 2030 Sustainable Development Goals (SDGs) and the Paris Agreement on climate.

The Dutch government webpage on circular economy[2] includes a timeline for the transition towards 2050 and the relevant published policy documents (up to the end of 2021).
Implemented initiatives are:

- The 2017 Raw Materials Agreement[3] sets out what is to be done to ensure that the Dutch economy can run on renewable resources. The agreement is signed by more than 400 parties from both government and industry.
- In 2018, the government and the signatories to the Raw Materials Agreement drew up five transition agendas, focusing on five sectors and value chains that are important to the economy but also carry a high environmental burden. They are the transition agendas for **plastics**, **consumer goods**, **manufacturing**, **construction**, and **biomass and food**. The agendas set out how the sector in question can become circular by 2050, and what action needs to be taken.
  The webpage *Accelerating the transition to a circular economy*[4] describes the transition agendas.
- In 2019, the Dutch government presented its Circular Economy Implementation Programme[5], which translates the five transition agendas into concrete action and projects to be put into effect between 2019 and 2023.

1 https://www.government.nl/documents/discussion-documents/2017/01/24/national-agreement-on-the-circular-economy
2 https://www.government.nl/topics/circular-economy/circular-dutch-economy-by-2050
3 https://www.rijksoverheid.nl/documenten/rapporten/2017/01/24/grondstoffenakkoord-intentieovereenkomst-om-te-komen-tot-transitieagenda-s-voor-de-circulaire-economie (in Dutch)
4 https://www.government.nl/topics/circular-economy/accelerating-the-transition-to-a-circular-economy
5 https://www.rijksoverheid.nl/documenten/rapporten/2021/09/30/uitvoeringsprogramma-circulaire-economie-2021-2023 (in Dutch)

- In both 2020 and 2021 the Circular Economy Implementation Programme was updated. The 2021-2023 update[6] is available.

Circular economy policy elements included in other policies

Government policy consists of the government-wide circular economy, the government response to the transition agendas and the implementation programmes for the circular economy. In the government-wide circular economy programme, the Ministry of Infrastructure and Water Management has a coordinating role for circular economy policies. In addition, each of the following ministries is responsible for one or several transition themes:

- Ministry of the Interior and Kingdom Relations: construction (housing and non-residential);
- Ministry of Infrastructure and Water Management: construction (civil engineering);
- Ministry of Economic Affairs and Climate Policy: manufacturing industry;
- Ministry of Infrastructure and Water Management: plastics and consumer goods;
- Ministry of Agriculture, Nature and Food Quality: biomass and food.

There are also contacts with other Ministries about education, the labour market and fiscal policy.

A recent analysis shows that the participating ministries are especially involved in the transition agendas which they oversee but less responsible for the circular economy policy as a whole. These ministries also draw up specific and operational policies to stimulate the transition within the transition themes for which they are responsible. Examples include the toughening of environmental performance requirements for buildings, introduced by the Ministry of the Interior, and the promotion of circular agriculture by the Ministry of Agriculture.

6 https://www.government.nl/ministries/ministry-of-infrastructure-and-water-management/documents/reports/2021/10/21/updated-circular-economy-implementation-programme-2021-2023-summary (in Dutch, summary only in English)

Monitoring and targets

Assessment of circular economy performance

The main findings of the Integral Circular Economy Report 21 (ICER 21) are as follows.

"*Looking at how material resources are being used in the Netherlands and the effects related to this use, the ICER 21 finds that various trends are going in the wrong direction. Although it is true that resource efficiency has increased, this has not led to a sharp reduction in the use of raw materials. Since 2010, their total use has hardly changed in the Netherlands. Moreover, Dutch consumption also requires more and more land in the production chain. In addition, the amount of landfilled waste has increased since 2014, six of the seven overall national targets for waste are not expected to be achieved, and the supply risks for the Dutch economy have also increased. Manufacturers are running the largest supply risks because of their dependence on cobalt, indium, rare-earth metals, tantalum, tin and tungsten. These critical metals are used, for example, in machines, in vehicle parts and electronics, and are important for the energy transition.*"

Table 1 The Netherlands, overview of material resource use and its impact Indicator Magnitude Trend

Indicator	Magnitude			Trend		Compared with EU27
	2010	2016	2018	2010-2018	2016-2018	per person, 2018
				%	%	%
Natural resources required						
Material resources for domestic use, DMC (mt)	195	193	195	0	1	-22
Material resource footprint domestic use, RMC (mt)**	–	–	–	–	–	–
Resource efficiency (GDP in EUR/kilo DMC)	3	4	4	12	5	+125
Material resources for the economy, DMI (Mt)	401	402	397	-1	-1	+95
Material resource footprint of the economy, RMI (Mt)	597	627	647	8	3	+89 (2017)
Share of bio-based resources (kilo/DMI, %)	24	25	26	8	5	+5
Total sustainable renewable material resources (kilo/DMI)	–	–	–	–	–	–
Share of secondary materials, CMUR (kilo secondary/DMI, %)	–	13	14	–	6	+167 (2017)
Use phase						
Lifespan	–	–	–	–	–	–
Value retention	–	–	–	–	–	–
Waste processing and recovery						
Dutch waste (Mt)	60	60	61	2	2	+44 (2016)
Share of recycled waste in processed waste (recycled waste/waste, %)	81 (2012)	79 (2012)	80	1*	1	+31
Waste recycled in the Netherlands (Mt)	54 (2012)	52	53	1*	3	+111 (2016)
Incinerated waste	10 (2012)	10	11	11	6	+74 (2016)
Landfilled waste in the Netherlands (Mt)	2	3	3	51	14	+81 (2016)
Effects						
Environmental impacts						
National greenhouse gas emissions ($MtCO_2$ eq.)	214	195	188	-12	-4	+33
Greenhouse gas emission footprint of consumption ($MtCO_2$ eq.)	300	252	282	-6	12	+35 (2015)
Greenhouse gas emission footprint of production ($MtCO_2$ eq.)	462	432	–	-7 (2016)	–	+54 (2015)
Emissions to air, water and soil, such as nitrogen and particulate matter	–	–	–	–	–	–
Land-use footprint of consumption (million ha)	10	–	10 (2017)	3 (2017)	–	-15 (2015)
Land-use footprint of production (million ha)	11	12 (2015)	–	9 (2015)	–	-28 (2015)
Water abstraction	–	–	–	–	–	–
Water footprint of consumption (km^3)	52 (2008)	–	–	–	–	+21 (2008)
Biodiversity footprint of consumption (million MSA loss ha/year)	19	–	–	–	–	+1 (2010)
Biodiversity footprint of production (million MSA loss ha/year)	20	–	–	–	–	+2 (2010)
Toxicity	–	–	–	–	–	–
Socio-economic impact						
Supply risks (indicator being developed)	–	–	–	–	–	–
Added value of circular activities (EUR billion)	28	31	34	23	9	–
Share circular activities (added value circular/GDP, %)	4	4	4	1	0	–
Circular employment (no. circular jobs, FTEs, '000*)	311	318	326	5	2	–
Circular employment share (no. circular jobs/total no. jobs, %)	4	4	4	-2	-2	–

Key

Trends
- Trend moving in right direction
- Trend moving in wrong direction

Compared with the EU27
- NL scores better than EU27
- NL scores worse than EU27

Trend is stable, hardly any difference (up to 5%) Hardly any difference (up to 5%)

Notes
Deviating years are provided in brackets
* 2012–2018, no data available for 2010
** RMC requires new calculation
– No data available
CMUR Circular Material Use Rate
DMI Domestic material input
FTE Full-time equivalent
ha Hectare
km3 Cubic kilometres
Mt Million tonnes
$MtCO_2$ Million tonnes of carbon dioxide equivalent
MSA Mean Spicies Abundance
RMI Raw material input

Source: ICER21

Table 1 shows that material resource use in the Dutch economy is more or less constant. The total use of material resources has hardly changed since 2010, both in domestic consumption and the economy as a whole. Over the same period, however, biotic resource use, i.e. minerals, metals and fossil raw materials, has declined, by 0.5–1 % each year. Resource efficiency has increased by 12 % since 2010, but this improvement has not led to a significant change in the amount of materials used. The material resource footprint of the Dutch economy increased by 8 %, between 2010 and 2018. This footprint also includes the resources used in the production of materials, parts and products abroad.

With regard to country characteristics or policy action that may explain differences between the Netherlands and the average EU performance, the main findings of the ICER 21 state that
the Netherlands recycles 80 % of its waste. This makes it one of the front runners in Europe, although it should be noted that this 80 % often involves low-grade recycling. The use of raw materials for Dutch consumption is 22 % lower than the EU average. In part because of the population density that makes the usage of the raw materials needed for infrastructure (roads, railroads and pipe systems) relatively efficient. Moreover, the Netherlands has a service-oriented economy.

The EU circular economy policy is of great importance to the Netherlands when it comes to taking further steps towards a circular economy. Setting requirements for the use of material resources in product design or preventing the use of harmful substances in products particularly requires an EU-level approach. The EU's plans for Extended Producer Responsibility (EPR) schemes and product design and repair requirements would ensure a more level playing field between Member States. The Netherlands would likely benefit from this more than the average Member State, thanks to its very open economy and ambitious waste policy from recent decades, which has recently further developed into circular economy policy.

Circular economy monitoring frameworks and their indicators beyond the ones from Eurostat

As mentioned in the previous section the available knowledge on the progress of the circular economy is published every two years in an Integral Circular Economy Report that mainly focusses on the national level. The ICER 21[7] is the first of these that makes use of a nationally developed circular economy assessment policy framework. It also includes an assessment of the circular transition process with indicators. In the years between ICERs, a less extensive CE progress report[8] for the Netherlands is published. The 2022 report was the first of these.

[7] https://www.pbl.nl/sites/default/files/downloads/pbl-2021-integral-circular-economy-report-2021-4582.pdf
[8] https://www.pbl.nl/en/publications/circular-economy-progress-report-2022

The ICER focuses on what the Netherlands needs to know and can measure in the circular economy domain. It describes a framework for monitoring the transition to a circular economy, which comprises two core elements. The first addresses the visualisation of material resource use and the intended environmental and economic impacts of the transition. The second deals with the transition process, which is made up of various ways, action and efforts of government and societal stakeholders, and paves the way for achieving the intended impacts.
Appendix 2 of ICER 21 provides a more detailed description of the underlying methodology.

Circular economy targets

The government's objective is to achieve a fully circular economy by 2050. The government has formulated an interim target for 2030 of halving the use of primary abiotic resources.

Innovative approaches and good practices

Examples of public policy initiatives (national, regional or local)

Examples from the ICER 21 focussed on national activities.

➔ *Good practice example: knowledge exchange/learning from peers and collaboration*

The Netherlands Enterprise Agency (RVO) runs two programmes that focus on the exchange of knowledge between different kinds of organisation. The Dutch Green Deals approach promotes cooperation between government authorities, entrepreneurs, civil society organisations, research, education and citizens. In a Green Deal[9], the participating parties work out agreements on circular initiatives and other matters. Examples of deals reached since 2011 include ones on circular procurement, circular festivals and circular buildings. Between 2016 and 2018, a total of 34 deals were reached, 18 of which focussed partly or wholly on the circular economy. Most centred on the transition agendas for construction, and biomass and food. Over the same period, one deal covered the manufacturing industry agenda, but none addressed plastics.

An example was Green Deal 156[10], the Netherlands Hotspot for Circular Economy (2013), which mainly focussed on the financial support of programmes and knowledge exchange on such topics as research and circular business models. The Green Deal *Betrouwbaar bewijs voor toepassen van kunststof recyclaat* (Reliable proof for the use of plastic recyclate) (2020) focussed on how to determine the amount of recyclate in products in a transparent way.

➔ *Good practice example: product related policies including R-strategies*

DuurzaamDoor[11] (Sustainable Door) is another instrument, which enables parties to cooperate and learn from each other (RVO, 2020). From 2016 to 2019, it managed 13 circularity projects, most of which focussed on biomass and food, as well as circular building.

Example from the Implementation programme, CE 2021–2023.

➔ *Good practice example: producer responsibility/supplier responsibility*

Operational deposit system for small plastic bottles: with the decision to proceed with the introduction of a system for small plastic bottles and drinks cans in order to combat litter, a 20-year political discussion was settled. The deposit system for plastic bottles, which has been operational since 1 July 2021, and a deposit system for beverage cans, which will come into effect on 31 December 2022, are the responsibility of the producers. This is because the existing extended producer responsibility (EPR) for packaging has been amended. On 1 July 2021, the revised Packaging Management Decree (AMvB) came into force. The targets that producers have to meet have been broadened and include reuse in addition to recycling. Furthermore, packaging producers will become responsible for packaging used by other businesses.

➔ *Good practice example: spatial planning and urban policy*

Tightening of requirements for circular construction: the first tightening of the environmental performance requirements took effect on 1 July 2021 with an amendment to the 2012 Building Decree. This requires builders to construct more circular and environmentally friendly buildings. The legal requirements will be tightened step by step and the aim is to halve the requirement of raw materials by 2030 at the latest. Regulations currently only apply to new homes and offices, but investigations are now being carried out into how these can be extended to cover other uses including the renovation of homes and offices.

9 https://www.rijksoverheid.nl/onderwerpen/duurzame-economie/green-deal
10 https://www.greendeals.nl/green-deals/nederland-hotspot-voor-circulaire-economie
11 https://www.duurzaamdoor.nl/

Examples from ICER 21 focused on regional activities.

➔ *Good practice example: sustainable/circular public procurement*

Regional authorities have used their purchasing power to promote approximately 400 CE activities. By far the most popular are for civil engineering, about 150, and, to a lesser extent, for housing and non-residential building, about 30 activities.

➔ *Good practice example: spatial planning, urban policy and facilities management*

The Civil Engineering Green Deal has perhaps stimulated these. An example of this kind of circular procurement processes is the province of Flevoland's tender for the construction of bridges according to circular criteria. Local and regional authorities can also contribute to the CE by fitting out and managing their own property in a circular way. Municipalities and provinces have undertaken about 40 and 10 of such activities respectively. In addition, there are about 60 instances of municipalities working on circular urban area development to, for example, make it easier for companies to use each other's residual flows. Furthermore, there are about 60 examples of action of water boards to extract resources from wastewater, such as struvite, a biobased substance, and cellulose, which can be used in the production of bioplastics.

➔ *Good practice example: financial support programmes, and research and innovation*

Most of the provincial subsidies that can be used for circular projects undertaken by businesses are broadly centred on innovation. These are mainly related to financial support programmes, and research and innovation. The most important source of capital is the European Regional Development Fund, on which all provinces draw as co-financing to set up regional programmes, such as *OP Zuid*, *OP Noord*, *OP Oost*, and *Kansen voor West*. Between 2014 and 2020, the provinces jointly put up EUR 229 million per year for such programmes, but it is not known how much of that was allocated to CE projects. In addition, all provinces pay half of the regional shares of the Innovation Incentives Scheme for Regional and Top Sectors. In 2015–2020, this amounted to a total of EUR 118 million, or about EUR 20 million per year for all provinces taken together. In 2018, approximately 10 % of the schemes' funding was allocated to circular projects. The provinces, together, spend EUR 107 million per year on loans granted through their general investment funds. It is difficult to indicate exactly what proportion is dedicated to circular projects, but in some cases the figure is known. For example, 13 % of the amount lent by the Innovation and Energy Fund Gelderland goes to circular businesses. Most provinces also have specific CE-related subsidies and are spending a collective annual total of EUR 11.1 million on them.

Examples of private policy initiatives (sectoral)

ICER 21 refers the number of businesses that implement R-strategy activities (pages 115–119)

- In 2018, there were more than 100 000 circular businesses in the Netherlands (Royal HaskoningDHV, 2020). This amounts to almost 6 % of the total number of businesses for that year. A circular business is any business that applies one or several R-strategies in practice.
- Several entrepreneurs are engaged in activities related to circularity. They can make use of various programmes that are aimed at supporting and promoting entrepreneurship, such as Nederland Circulair, the business support organisation Versnellingshuis and the instruments implemented by the Netherlands Enterprise Agency (RVO) on behalf of the government. At present, more than 100 000 businesses are putting one or several R-strategies into practice. It is not possible to determine whether the number of entrepreneurs is high enough to advance the transition. Besides the number of businesses, it is also relevant to acquire an insight into their turnover and market shares. For the identified businesses, these data are not yet available in a complete and structured form. Nevertheless, it is possible to get an idea of the direction and pace of the transition based on the number of businesses.

Information on electronics, packaging, plastics and textiles can be found in the transition agenda for consumer goods. Furthermore, information can be found in the transition agendas for the construction economy, and biomass and food. More recent examples of action for the transition agendas can be found in the implementation programme. Amongst them are the following.

- CIRCO helps companies to realise circular design. The CIRCO programme encourages companies and designers to use circular design for their products and services. By mid-2021, 1 000 companies have done a CIRCO Track and 500 professional designers have participated in a CIRCO (training) Class. In a Track, companies are helped with a concrete circular business proposition for their product, installation, construction or service. In a CIRCO Class the focus is more on creative entrepreneurs.
- Heat as a service: a collaboration between the installation branch, Overijssel province and the heating industry.
- Plastic Pact NL: an agreement between the national government in the Netherlands and 110 companies to place plastics on the Dutch market that are reusable where possible and appropriate, and are in any case 100% recyclable, use 20 % less plastics for one-time packaging, at least 70% of all single-use plastics that reach the disposal stage are recycled to a high standard and single-use plastics contain at least 35 % recyclate.
- City Deal Circular and Conceptual Construction has resulted in both cities and businesses having a great deal of knowledge and expertise, which will be important in bringing about a CE in the future. This city deal focusses on cooperation by participants in these domains in expanding CE knowledge and ensuring it is made widely available.
- Dutch Circular Textile Valley works on the creation of a circular textile value chain to reduce its environmental impact by preventing and reducing textile waste and the use of virgin fibres.
- Het Groene Brein (in Dutch) is a network of 140 scientists to support companies working in the field of CE.

Examples from the textile industry

In its textile policy programme, the government has set intermediate targets for the sector's value chain for 2025, 2030 and 2035 with the aim of ultimately achieving a fully circular economy by 2050.
Halving the ecological footprint of the textile sector largely requires action in the design and production phases. The use of sustainable and recycled materials plays an important role in this. It should be possible to set the percentage of recycled and sustainable materials to be used in new textile products at an average of 25 % of recyclate from used (post-consumer) textiles by 2025. To encourage circular design and production, EPR for textiles will be introduced. With the Denim Deal, the denim industry is demonstrating what is already possible on a large scale among frontrunners.

Some other examples:

On 29 October 2020, the Green Deal Circular Denim (Denim Deal) was concluded between the State Secretary of Infrastructure and Water Management; various parties from the textile chain, including textile waste processors, fibre spinners, weavers, production companies, brand owners and retailers; the municipalities of Amsterdam and Zaanstad, and the Metropolitan Region of Amsterdam; and the Minister of Economic Affairs and Climate Change. Under the Denim Deal, it was agreed that, through cooperation in the value chain, the signatory brand owners and retailers would produce 3 million pairs of denim jeans in the next three years that incorporate 20 % post-consumer recycled cotton. In addition, a minimum standard of 5 % post-consumer recycled material will be introduced that will apply to all denim garments.

The Dutch Circular Textile Valley (DCTV) is a collaboration to help create a circular textile chain. The expertise and network of DCTV partners is being pooled to accelerate a scale-up tailored to need. Support is mainly related to project investments, networking and costumer orientation. The DCTV has focused on clustering knowledge and innovation in four hubs: fiber recycling technology, circular design and materials, brand and business development and corporate clothing. In addition, work has been done on the sorting of used clothing in the Fibresort project.

In June 2020, producers of mattresses started to develop a label that shows the composition of the mattress and another that has a colour code to indicate how recyclable the mattress is. Furthermore, agreements on EPR for mattresses have been establised and producers have submitted a request to the Ministry of Infrastructure and Water Management to declare these agreements generally binding. The agreements leave room for tariff differentiation based on criteria such as repairability, reusability, recyclability and the absence of hazardous substances. Research into materials innovation is also underway.

The way forward

Addressing barriers and challenges

The barriers and challenges are dependent on the stakeholder in the CE transition.

Companies active in the CE transition indicated the following barriers in a recent survey of the Versnellingshuis that was established to provide knowledge to those involved in the CE transition. The publication *Rode Draden 2022*[12], that was sent to parliament in February 2022, highlights the following eight main barriers for companies that are active in the CE:

1. policies, laws and regulations;
2. coordination of the transition;
3. price *versus* value – the valuation of environmentally harmful effects;
4. direction of the transition, e.g. operational targets;
5. market for circular products and services;
6. financing;
7. trade in secondary products, materials and raw materials;
8. cost of labour.

Regarding new (types of) policy initiatives that could address the main barriers and challenges, the main findings of the ICER 21 state the following (on page 15/16).

"*National policy, to date, has mainly focused on the formation of a broad coalition of stakeholders within society and on facilitating circular initiatives — for example, by promoting knowledge development and bringing parties together on the basis of voluntary agreements such as the Concrete Agreement Netherlands and the Plastics Pact NL. This fits in with the initial phase of circular economy policy. However, voluntary and non-committal approaches will ultimately be insufficient to meet* [the] *Cabinet's firm ambition to switch to a fully circular economy by 2050.*

PBL makes the following recommendations for achieving transition towards a circular economy:

1. Ensure that environmental damage is factored into the prices of products and services and that legislation and regulations no longer cause disadvantages for circular initiatives compared to the already established linear practices. For example, new raw materials, currently, are cheaper than recyclates, and buyers are wary of circular products for which no quality standards have been set.
2. Make more use of coercive measures in circular economy policy, such as taxation and regulation, including standardisation. Important in this respect is the awareness that elaboration and implementation of regulating or guiding economic and legal instruments often take a long time, as shown by the long history of the introduction of a deposit refund system for small bottles. It is therefore important to start the process early.
3. Implement stepwise increases in the circularity requirements used in government purchasing and procurement, including those in the context of producer responsibility. Examples include a minimum recycling rate that is subsequently adjusted upwards, over time, and setting preconditions on purchasing and procurement that go beyond recycling. In this way, the quality of recyclate and high-quality reuse of material resources become benchmarks for designing production processes.
4. Develop an elaborated vision on the circular economy that is widely supported by companies and civil society organisations, and turn this vision into concrete goals. These goals can differ per transition theme, chain or product group, which calls for a differentiated approach. At the end of 2020 the national government started a process to develop such differentiated goals for relevant product groups together with involved parties for the different transition themes.
5. Ensure a clear division of roles between the various stakeholders involved in the implementation of circular economy policy. For example, what are the responsibilities and powers of the various

[12] https://www.rijksoverheid.nl/documenten/rapporten/2022/02/01/bijlage-1-rode-draden-notitie-2022-van-versnellingshuis

transition teams and what is the role of the national government in these teams? These questions are currently being debated."

With regard to suggestions for how policy at a national (or subnational), European or international levels could help overcome the barriers to the CE in the Netherlands, the main findings of the ICER 21 state the following.

"*The Netherlands has an interest in circular economy policy on an EU level. In order to take further steps towards a circular economy in the Netherlands, EU policy is of great importance. This applies particularly to those areas where the European Union has far-reaching powers, such as in trade, product and waste policies. Setting requirements for the use of raw materials in the design or repairability of products or concerning the presence of harmful substances in products particularly requires an EU approach. The European Union is also working on expanding producer responsibility, whereby producers remain responsible for what happens to their products after they are discarded by consumers. An EU approach would create a more level playing field for the Member States. This is to the benefit of the Netherlands, more so than is the case for other Member States, because the Netherlands has been pursuing an ambitious waste policy.*"

Ranking types of barrier

High barrier	Institutional challenge to develop policy for a complex cross-sectoral issue
⬆	Consumer behaviour and awareness
	Market barriers for recycled resources
	Companies' ability to grasp opportunities
Low barrier	Good indicators and targets

Future policy plans

The Netherlands has not yet submitted their National Recovery and Resilence plan although a first draft was discussed (*1e concept voor een Nederlands Herstel- en Veerkrachtplan* ([13])) in the National Parliament on 28 March 2022. The final document is not yet publicly available on the European Commision's website on the Recovery and Resilience Facility[14].

13 https://www.rijksoverheid.nl/binaries/rijksoverheid/documenten/kamerstukken/2022/03/28/1e-concept-voor-een-nederlands-herstel--en-veerkrachtplan/1e-concept-herstel-en-veerkrachtplan.pdf (In Dutch)

14 https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en#national-recovery-and-resilience-plans

European Topic Centre on
Circular economy and resource use
https://www.eionet.europa.eu/etcs/etc-ce

The European Topic Centre on Circular economy and resource use (ETC CE) is a consortium of European institutes under contract of the European Environment Agency.

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