



PBL Netherlands Environmental
Assessment Agency

Integral Circular Economy Report ICER 2021

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ICER presents state of Dutch CE transition

- › Requested by Dutch cabinet in 2018
- › Report every two years
- › Independent scientific knowledgebase
- › Insights for accelerating the transition

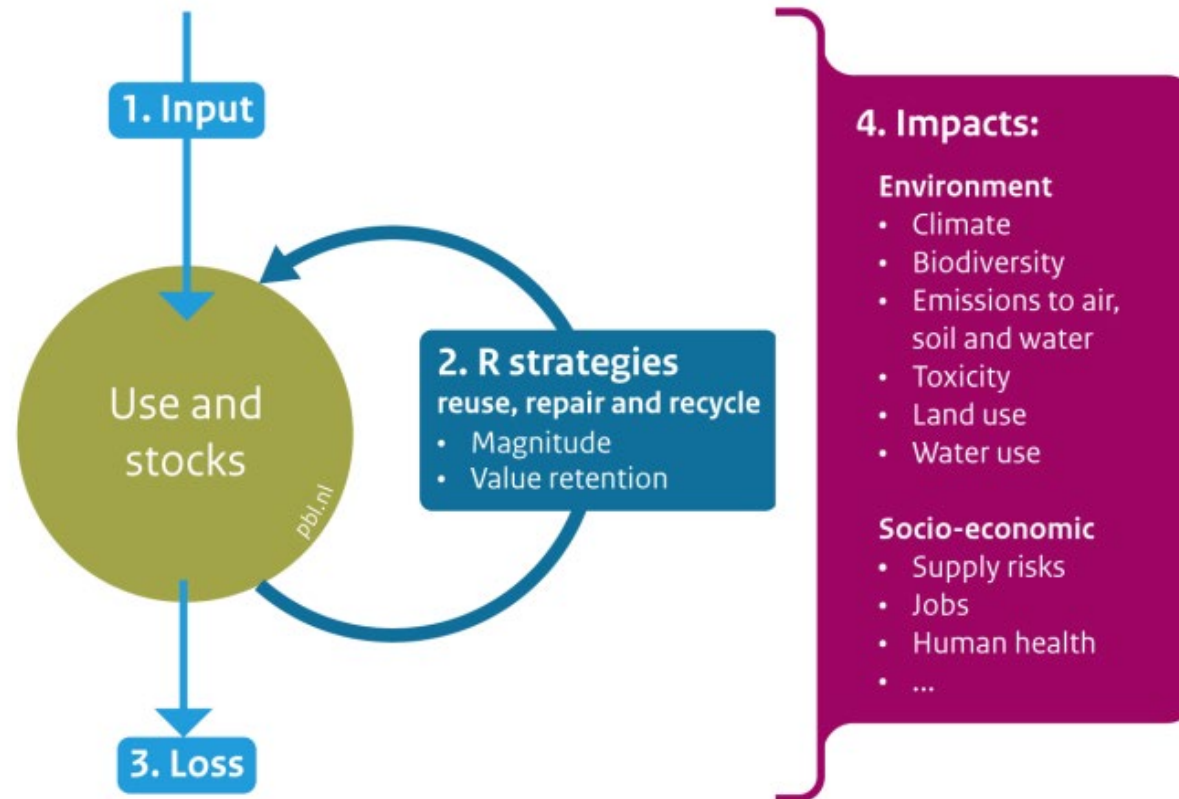


**Monitoring en Sturing
Circulaire Economie**

- › *In collaboration with CBS, CPB, CML, RIVM, RVO, RWS, TNO & UU*

Monitoring of material resources, impacts and transition process in NL

Framework for targets and indicators of circular economy monitoring



Elements of a successful transition to a circular economy





Material resource use and its impacts



Several trends for material resource
use not moving in the right direction

Use of material resources has hardly
changed

Dutch consumption requires more
land in production chain

Supply risks for Dutch economy have
increased, especially in the
manufacturing industry

Amount of landfilled waste has
increased, and many national waste
targets will likely not be achieved

Indicator	Magnitude			Trend		Compared with EU-27
	2010	2016	2018	2010–2018	2016–2018	per capita in 2018
Natural resources required						
Material resources for domestic use, DMC ¹ (Mt)	195	193	195	0%	1%	-22%
Material resource footprint domestic use, RMC ² (Mt)**	-	-	-	-	-	-
Resource efficiency (GDP in EUR/kilo DMC)	3	4	4	12%	5%	+125%
Material resources for the economy, DMI ³ (Mt)	401	402	397	-1%	-1%	+95%
Material resource footprint of the economy, RMI ⁴ (Mt)	597	627	647	8%	3%	+89% (2017)
Share bio-based resources (kilo/DMI, in %)	24	25	26	8%	5%	+5%
Total sustainable renewable material resources (kilo/DMI)	-	-	-	-	-	-
Share secondary materials, CMUR (kilo secondary/DMI, in %)	-	13	14	-	6%	+167% (2017)
Use phase						
Lifespan	-	-	-	-	-	-
Value retention	-	-	-	-	-	-
Waste processing and recovering						
Dutch waste (Mt)	60	60	61	2%	2%	+44% (2016)
Share recycled waste in processed waste (recycled waste/waste, in %)	81 (2012)	79 (2012)	80	-1%*	+1%	+31%
Waste recycled in the Netherlands (Mt)	54 (2012)	52	53	-1%*	3%	+111% (2016)
Incinerated waste in the Netherlands (Mt)	10 (2012)	10	11	11%*	6%	+74% (2016)
Landfilled waste in the Netherlands (Mt)	2	3	3	51%	14%	-81% (2016)
Effects						
Environmental impact						
National greenhouse gas emissions (MtCO ₂ e)	214	195	188	-12%	-4%	+33%
Greenhouse gas emission footprint of consumption (MtCO ₂ e)	300	252	282	-6%	12%	+35% (2015)
Greenhouse gas emission footprint of production (MtCO ₂ e)	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 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 in %)	4	4	4	1%	0%	-
Circular employment (no. of circular jobs in FTEs) (*1,000)	311	318	326	5%	2%	-
Share circular employment (no. of jobs/total no. of jobs in %)	4	4	4	-2%	-2%	-

More materials for economy than consumption

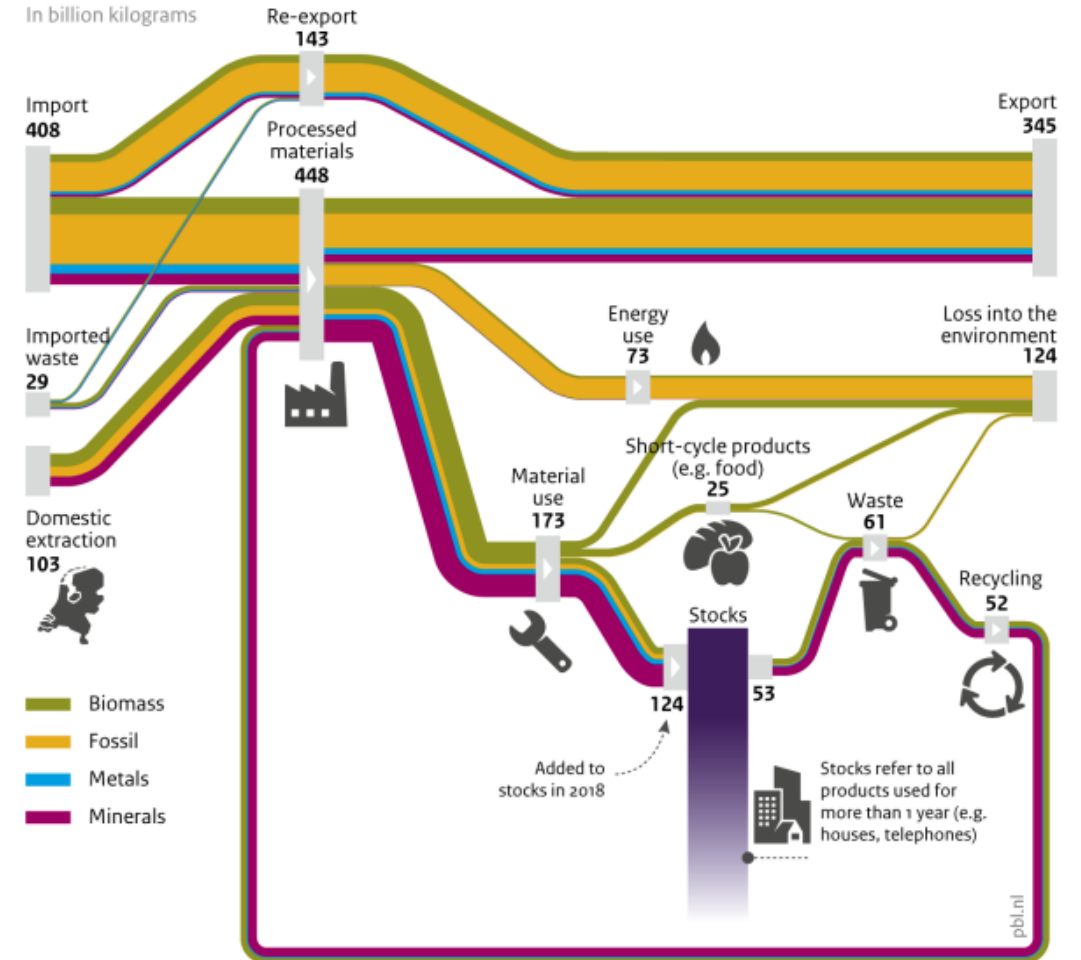
(Re-)export relatively large

80% of waste is recycled

Challenge is higher quality use and
other forms of circularity

Resource flows Dutch economy, 2018

In billion kilograms



Source: CBS 2021



Transition process in the Netherlands



Monitoring transition process for timely adjustments

Increase in:

Number of circular firms

Number of scientific publications

Financial resources for CE

Education programmes on CE

Elements of a successful transition to a circular economy

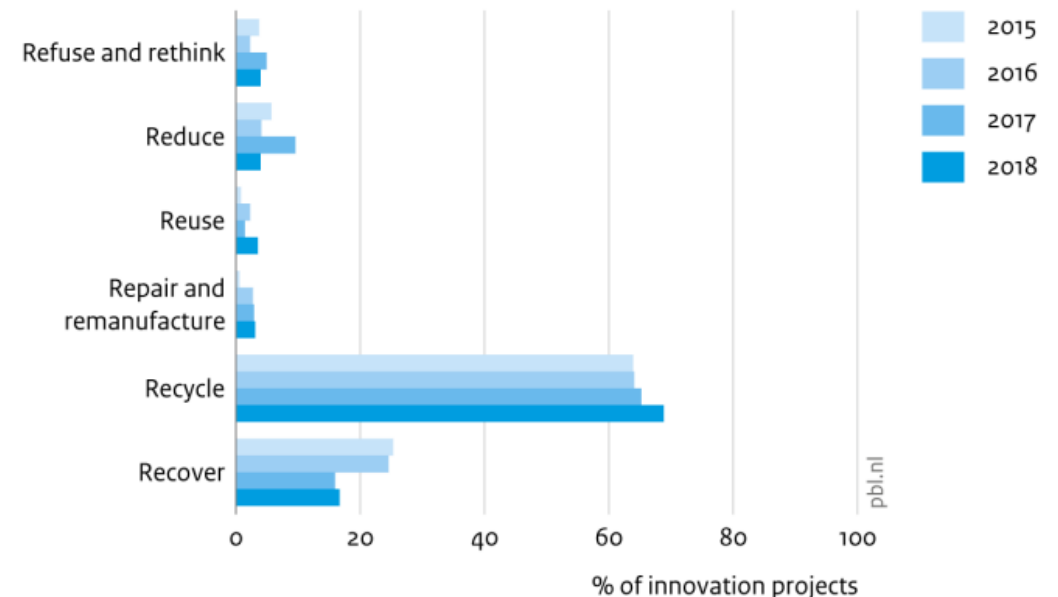


Source: PBL 2013; based on Hekkert et al. 2021

Transition is still in initial phase

- › Share of circular companies is declining
- › Dutch economy mainly functions via linear principles
- › Emphasis on recycling and technological solutions
- › Consumers not fully open for circular products and services

Share of innovation projects per R-strategy



Source: RVO.nl



Circular economy policy & main messages



Dutch Government has created basis and structure for achieving a circular economy

- Collaborative, public-private approach
 - Focus on five transition themes
- National policy mainly uses voluntary instruments
 - Knowledge development and coalition forming; Plastic Pact, Concrete Agreement, and more
- Fits with initial phase of transition



Main messages ICER 2021

- Several trends for materials and impacts are not moving in the right direction
- Dutch economy still functions largely according to linear principles
- Government has created basis and structure for achieving a circular economy
- National policy mainly uses voluntary instruments



Stronger policy is needed to realise ambitions

1. Elaborate on vision and concrete goals
2. Make more use of coercive measures, such as taxation and regulation
3. Implement stepwise increases in the circularity requirements used in government purchasing and procurement, and in the context of producer responsibility
4. Government-wide approach is necessary



What we want to know and can(not) measure

- › Several topics come to mind regarding data gaps
- › Material resources in use phase (material registration vs emission registration)
- › Options to reduce material use, including costs
- › Transition indicators that are relevant at the national level
- › Market share of circular products and services



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Thank you for your attention



[Link to ICER 2021 English](#)



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