

# Circular economy in the Netherlands

## More than recycling only !

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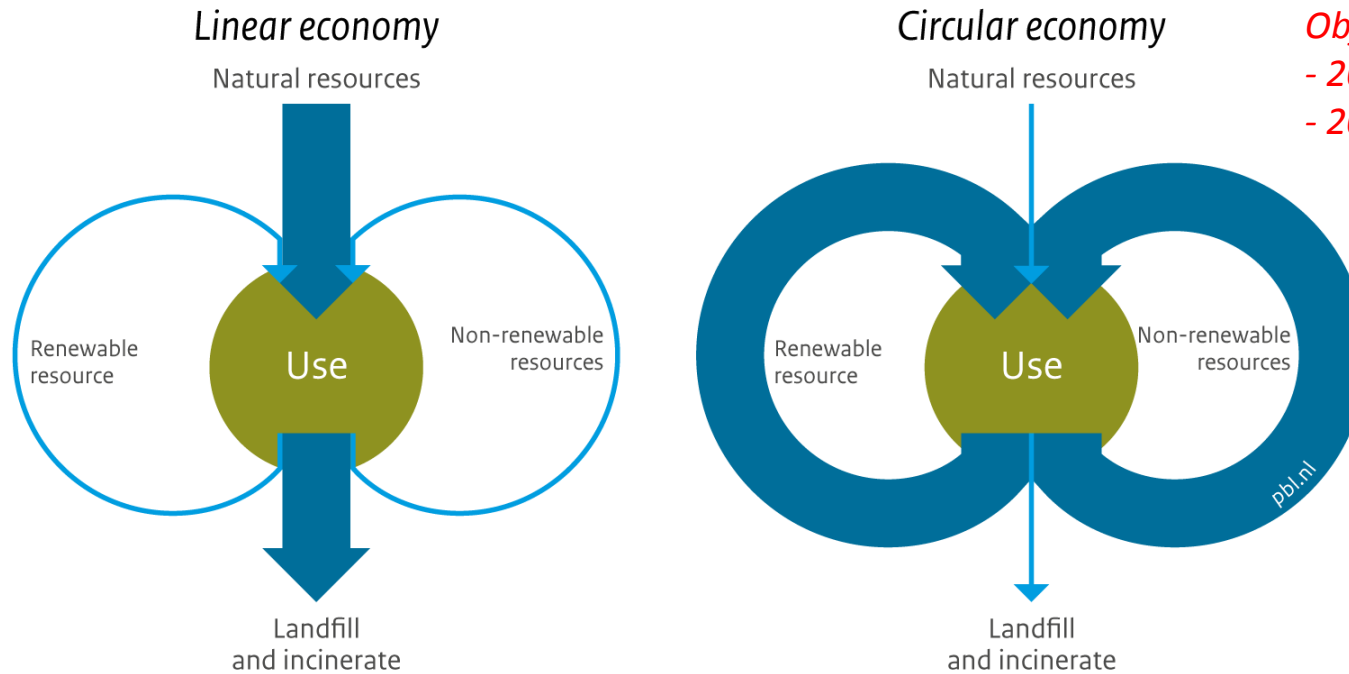
(JISEA, 13-14 March 2019, Denver)



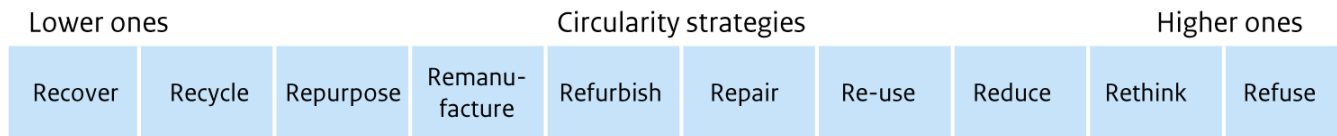
# Circular economy – Dutch policy plan

## 'A circular economy in the NlDs by 2050'

### From a linear to a circular economy



*Objectives for abiotic resources*  
- 2030: 50% less than 2014  
- 2050: Fully circular



1<sup>st</sup> & 3<sup>rd</sup> strategic pathway

Substitution of abiotic by sustainably extracted and general available resources 2<sup>nd</sup> strategic pathway

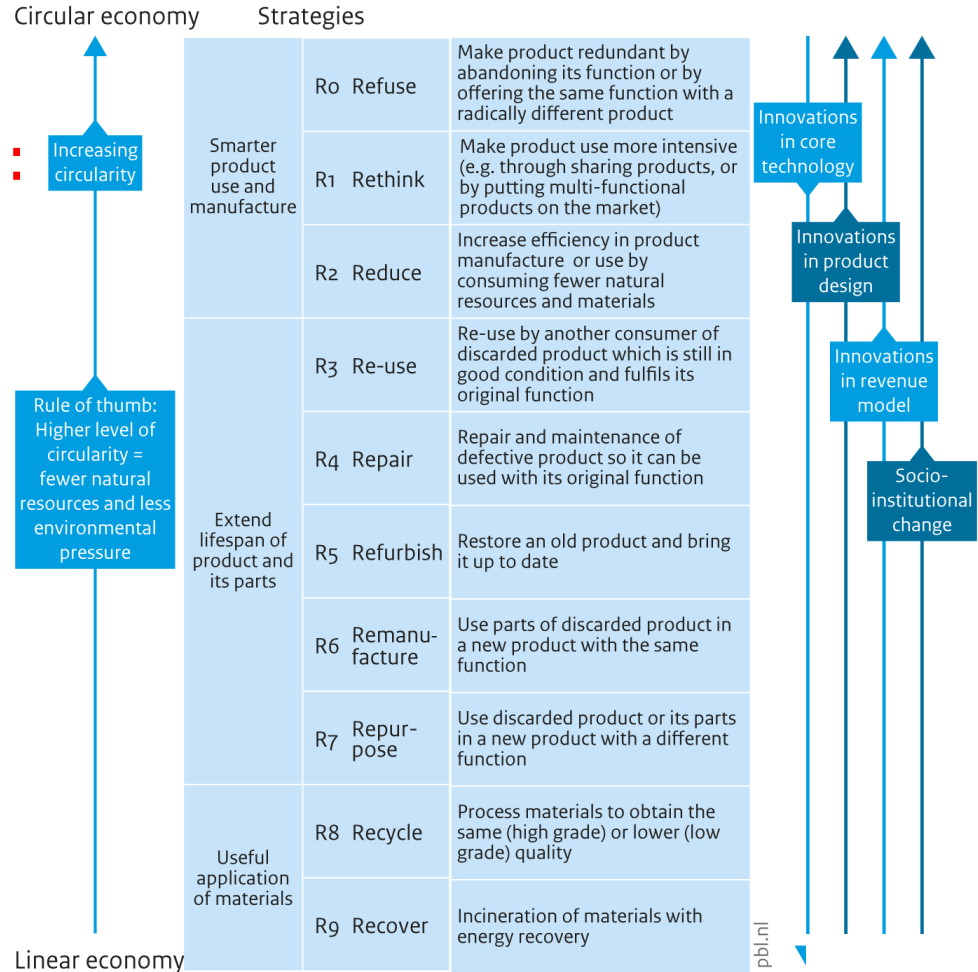
# Circularity ladder & innovations

Product **functions** central:

I don't need a drill.  
I need a hole in the wall



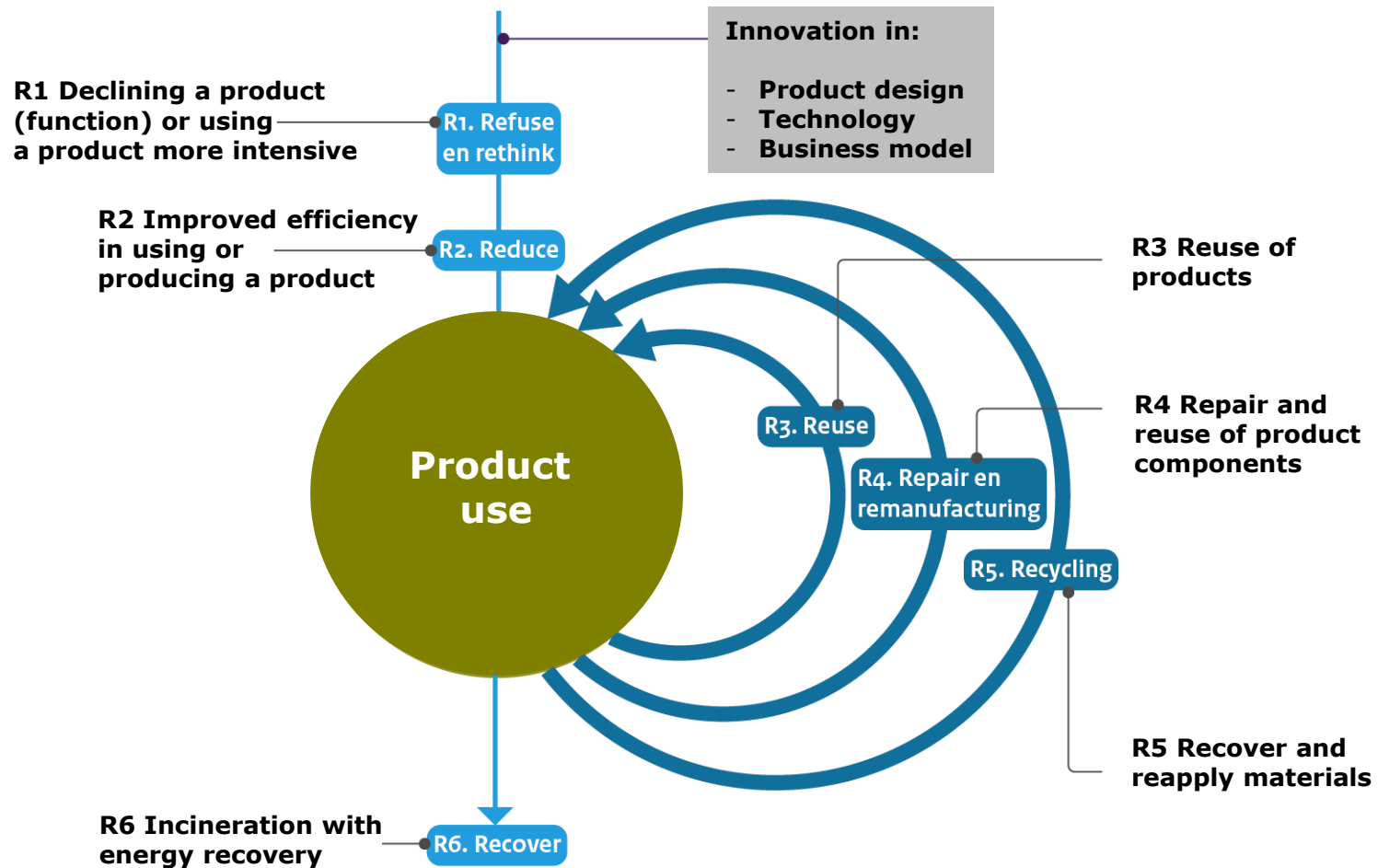
## Circularity strategies within the production chain, in order



Source: RLI 2015; edited by PBL

# Circularity strategies

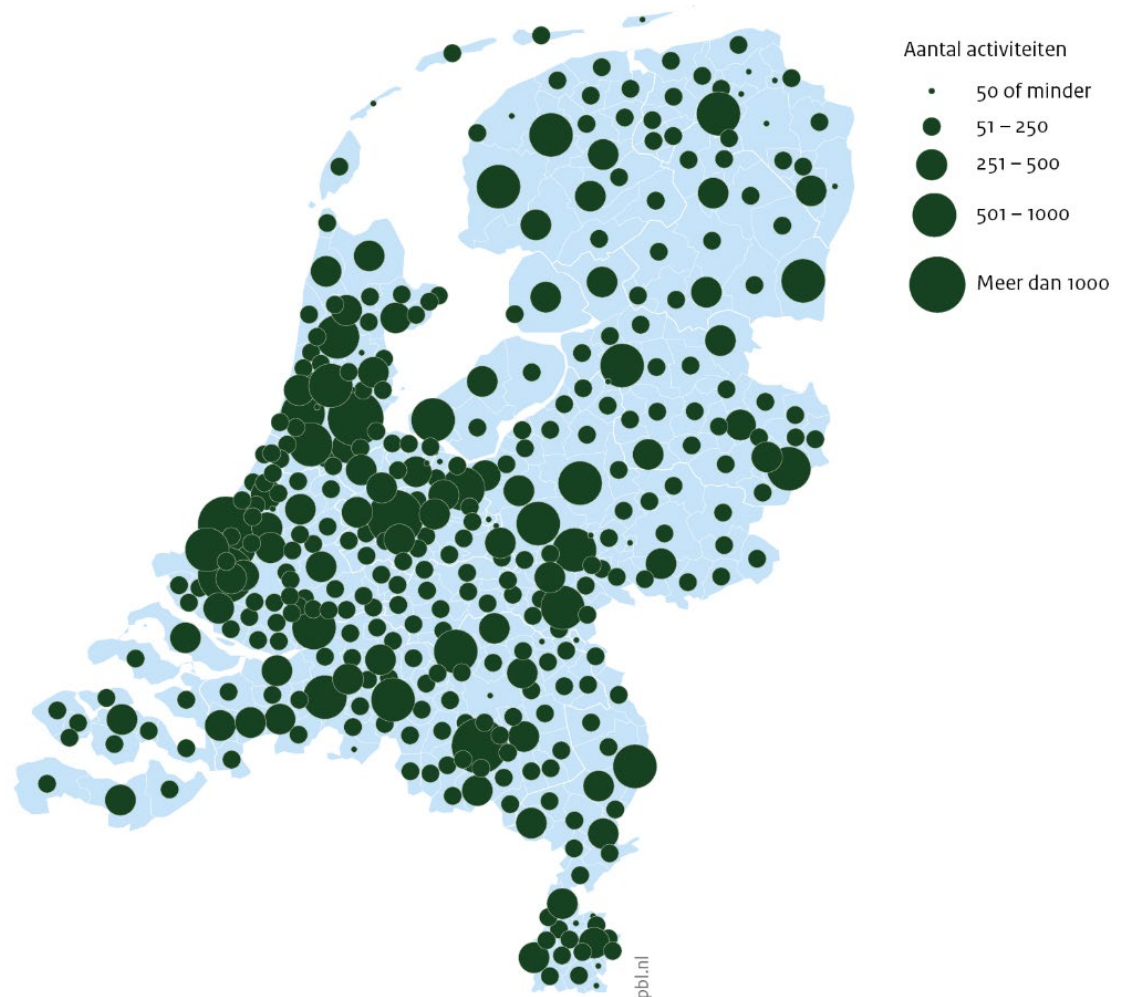
## R-ladder with strategies for circularity



Bron: PBL

# Circular activities in the Netherlands

## Circular economy activities per municipality, 2018

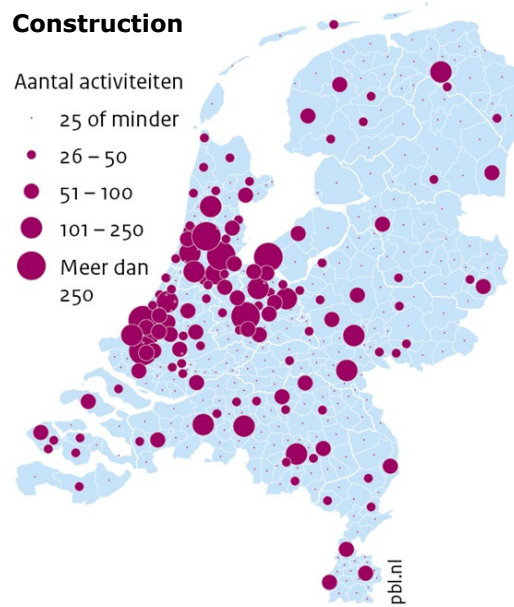


# Circular activities in the Netherlands

## Construction

Aantal activiteiten

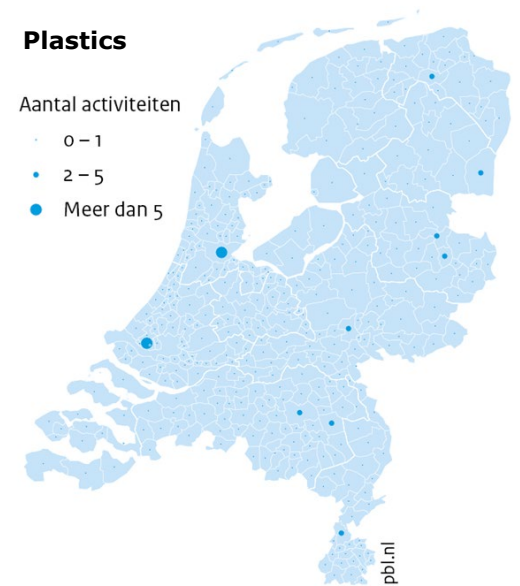
- 25 of minder
- 26 – 50
- 51 – 100
- 101 – 250
- Meer dan 250



## Plastics

Aantal activiteiten

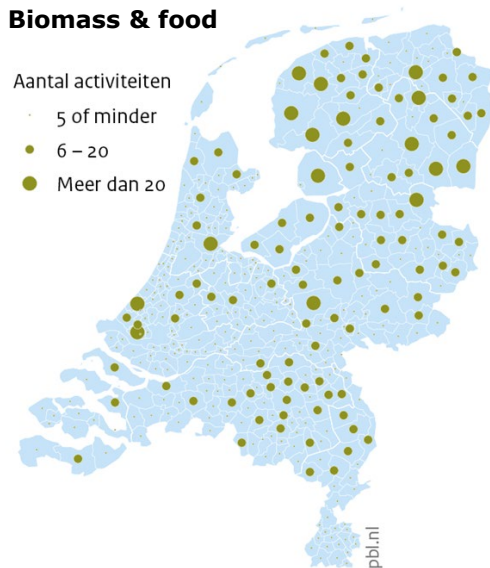
- 0 – 1
- 2 – 5
- Meer dan 5



## Biomass & food

Aantal activiteiten

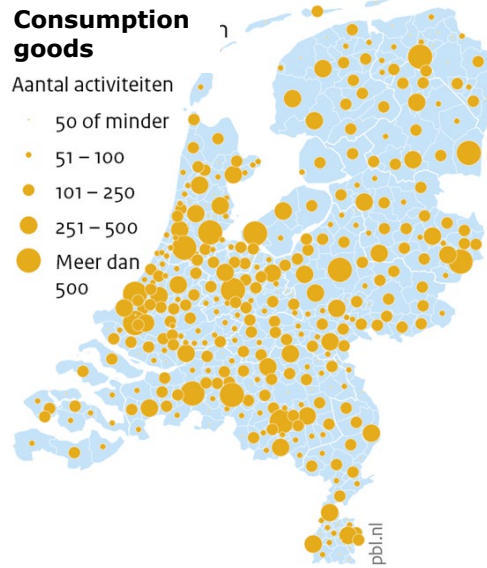
- 5 of minder
- 6 – 20
- Meer dan 20



## Consumption goods

Aantal activiteiten

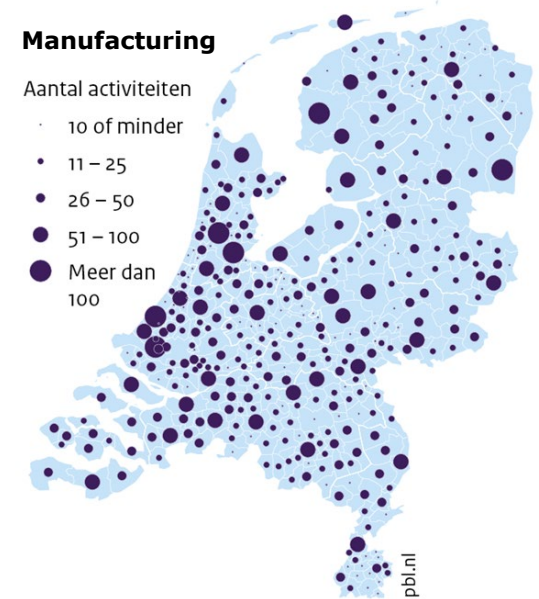
- 50 of minder
- 51 – 100
- 101 – 250
- 251 – 500
- Meer dan 500



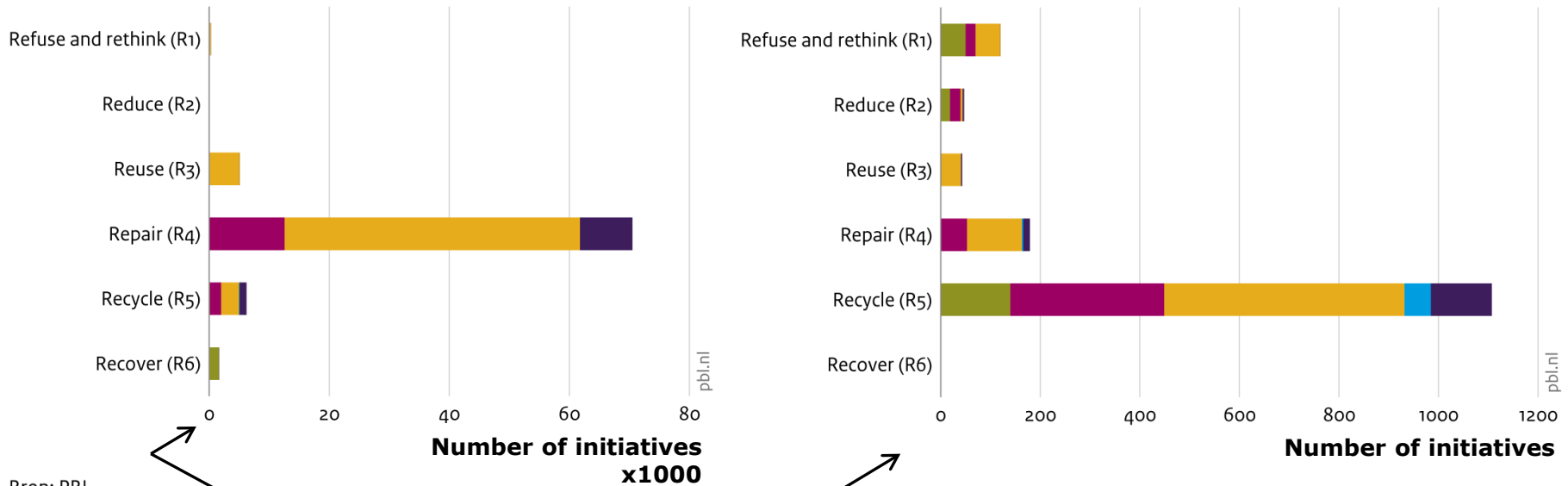
## Manufacturing

Aantal activiteiten

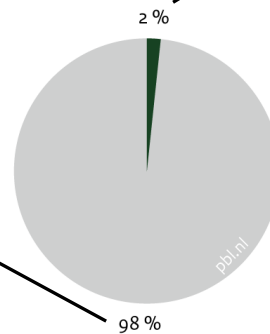
- 10 of minder
- 11 – 25
- 26 – 50
- 51 – 100
- Meer dan 100



# Circular initiatives in the Netherlands



Bron: PBL

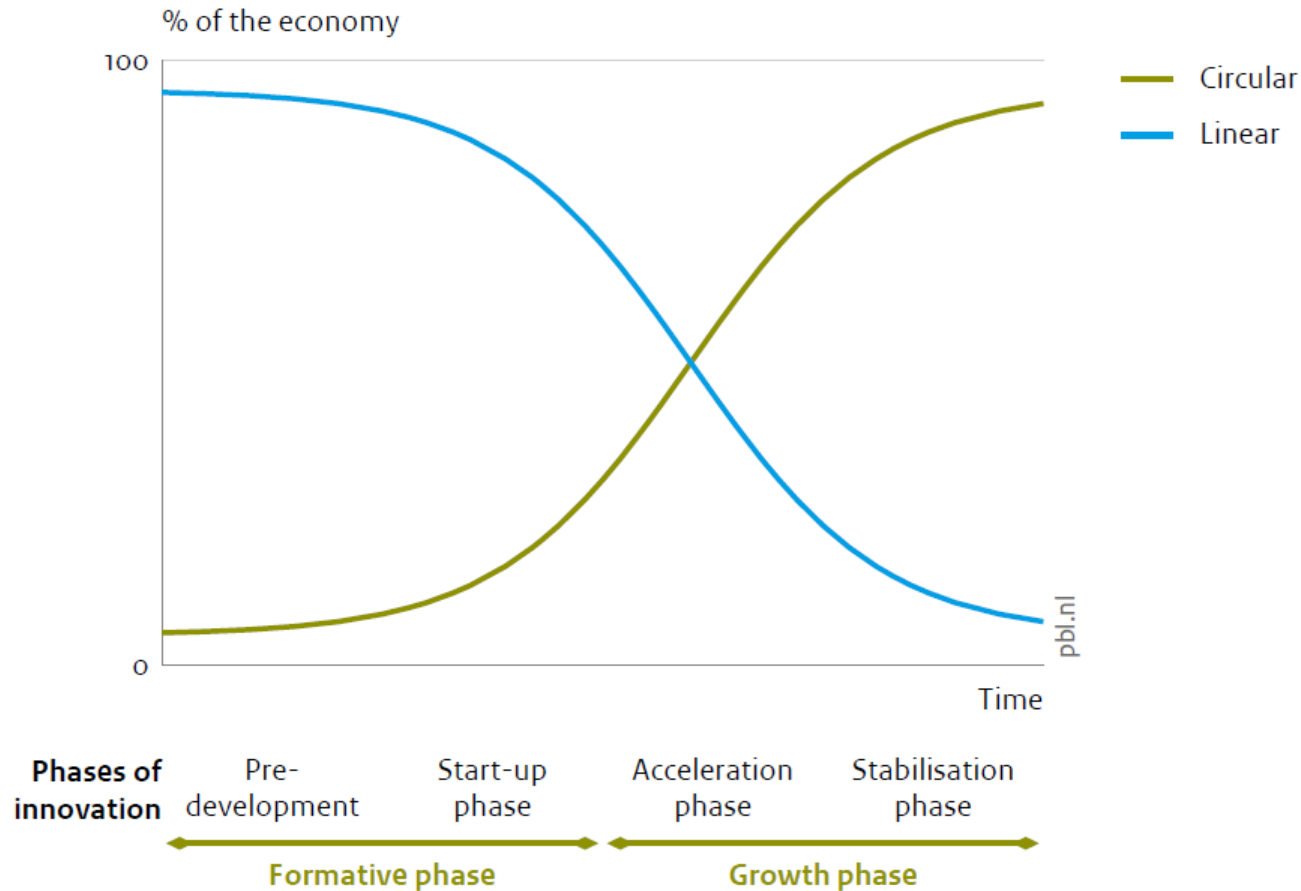


- Transition agenda**
- Biomass & food
  - Construction
  - Consumption goods
  - Plastics
  - Manufacturing

- Innovative initiatives
- Common business

# Course of circular transition & resistance

## Degree of circularity of the economy

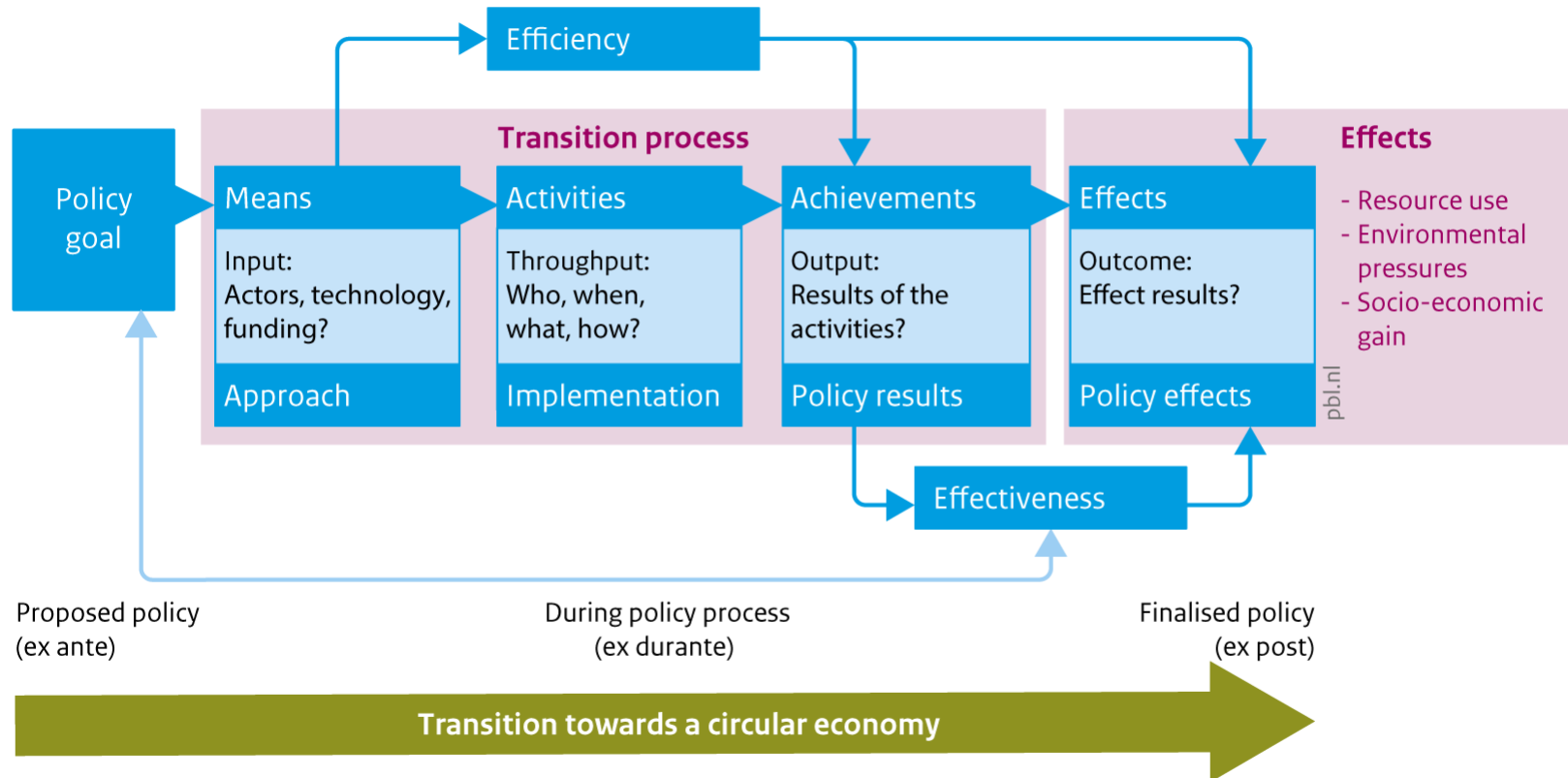


Source: DRIFT; adaptation by PBL



# Monitoring circular economy policy program

## Policy assessment framework for measuring the progress of the transition towards a circular economy



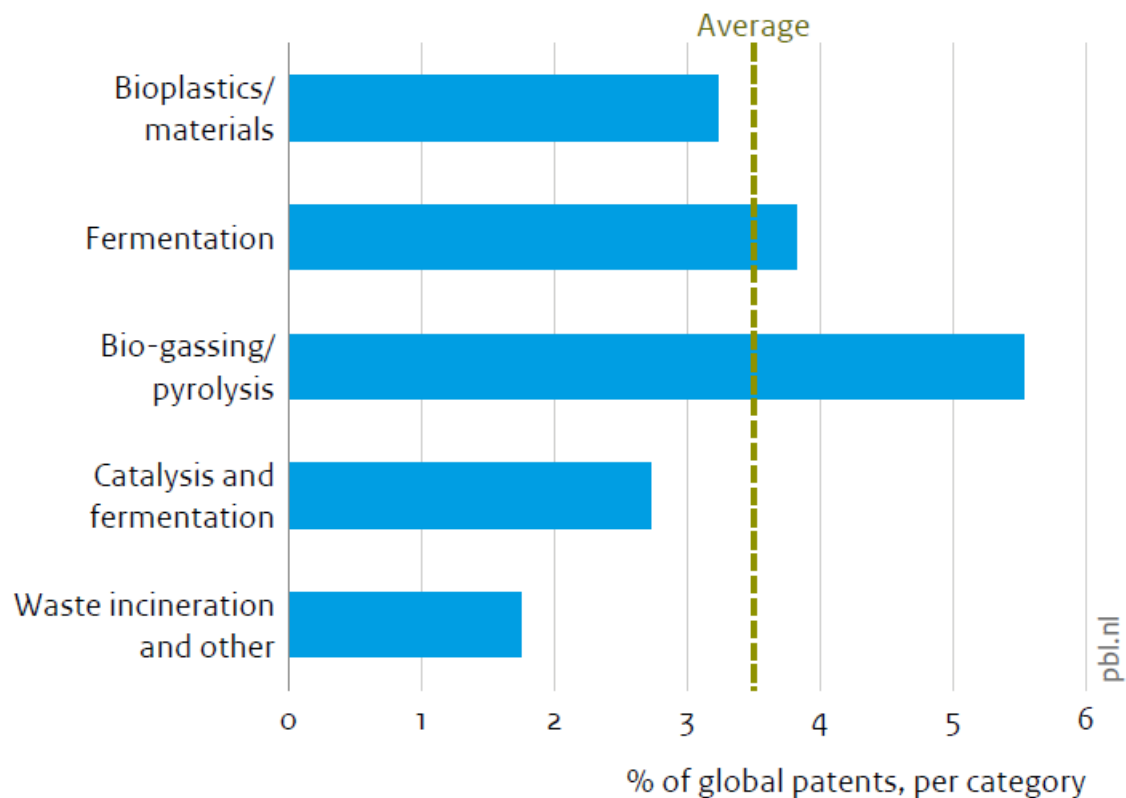
Source: Netherlands Court of Audit 2005; edited by PBL

# Suggested indicators for measuring transition process

	Capacity (able to)	Permission (allowed to)	Motivation (want to)
	All the indicators below are measured in three sub-classes (see Figure 2.2 for an explanation of the R numbers): R0–R2: Smarter product use and manufacture R3–R7: Extend lifespan of product and its parts R8–R9: Useful application of materials		
<b>Means (input)</b>	For increasing circular knowledge and expertise, e.g.: - Number of circular economy researchers (in FTE) - Investment in research (in euros) - Circular courses	For developing circular regulations and change 'linear' regulations, e.g.: - Number of circular policy advisers (in FTE) - Number of circular advisers in branch organisations (in FTE)	For developing circular visions and transition agendas, e.g.: - Number of people actively working on this (in FTE)
<b>Activities (throughput)</b>	Related to knowledge and expertise, e.g.: - Number of circular innovation projects - Share of circular projects in total number of innovation projects - Number of network meetings for circular projects	Related to developing circular and changing 'linear' regulations, e.g.: - Policy process for new circular laws and regulations - Negotiations for circular standards	Related to increasing motivation for the circular economy, e.g.: - Number of vision-forming meetings - Number of awareness campaigns - Description of awareness campaigns - Development of new laws and regulations that discourage linear practices (e.g. resource tax, public circular procurement, resource passport)
<b>Achievements (output)</b>	Knowledge- and expertise-related activities, e.g.: - Number of publications - Number of patents (technology, product design) - Number of new revenue models - Number of new circular products - Share of circular products in total number of products - Number of circular start-ups	New and changed regulations that permit circular initiatives, e.g.: - Number of legal and regulatory barriers to the circular economy removed - Description of new standards and regulations	Results of activities that increase motivation for circular economy, e.g.: - Number and description of vision documents - Number of circular economy media reports - Consumer perception of circular economy - Market volume of public circular procurement - Number and description of new laws and regulations that discourage linear practices (e.g. resource tax, public circular procurement, resource passport)
<b>Core achievements (core output)</b>	Circularity strategies (see Fig. 2.2; realisation of first and third strategic objectives) & Substitution (first and third strategic objectives)		

# Example of results.....

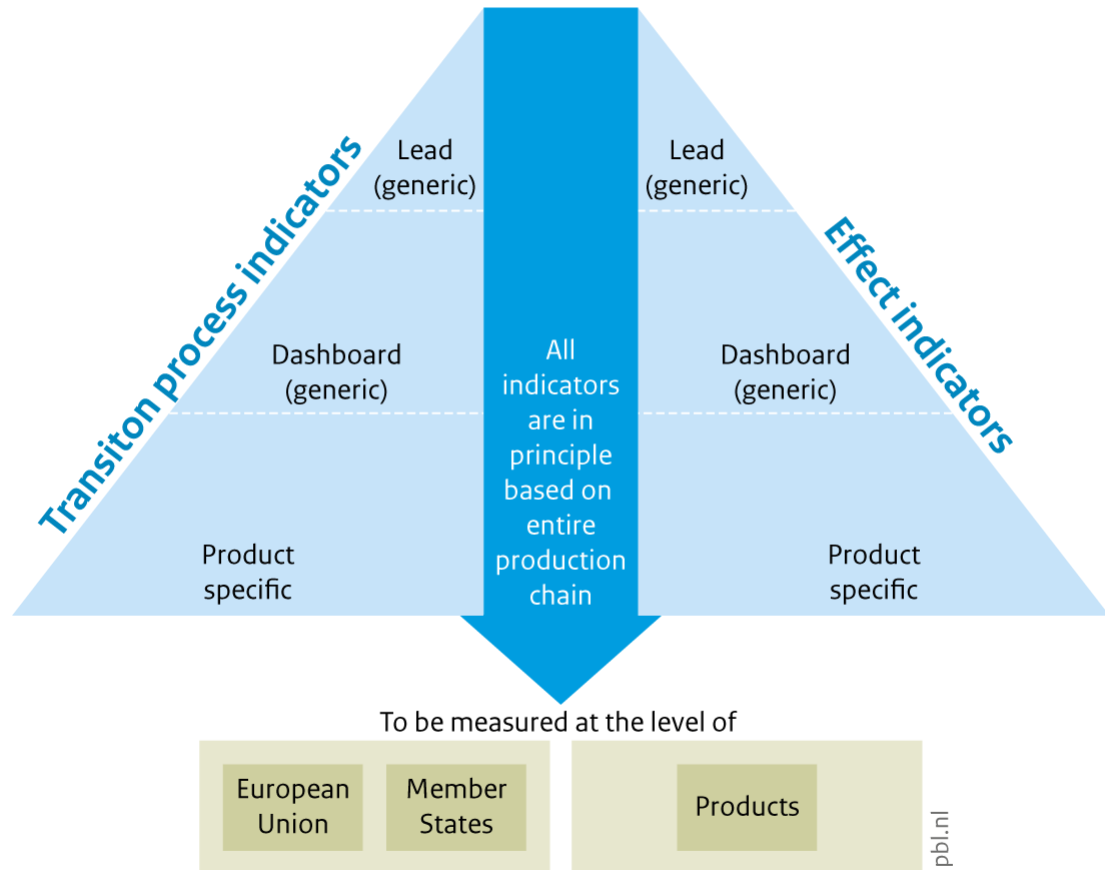
## Share of Dutch bio-based patents, 2008 – 2013



Source: RVO

# Overall monitoring framework

## Proposed monitoring structure circular economy



# Circular economy & energy transition

- 40% of Dutch fossil energy use for materials & products
  - ~ 31% Direct fossil-use (feedstock & process energy)
  - ~ 9% Indirect fossil-use (energy for energy)
  - ~ . .% Abroad for Dutch production
- 55-77 % of CO<sub>2</sub> for materials & products in the NlDs
  - ~ 19% Direct from production & manufacture
  - ~ 24-30% Direct & further up-/downstreams in the NlDs
  - ~ 31-47% Abroad for Dutch production

# Conclusions

- Circular economy is more than recycling
- Circular economy: Resource management (incl. waste management)
- Dutch ambition: 50% resource use in 2030, fully circular in 2050
- Presently 85.000 circular activities in the NlDs
  - > 85% Repair activities
  - ~ 2% Innovative activities (recycling dominant)
- Considerable overlap between circular economy & energy transition
- Monitoring progress towards circular economy :
  - Effect indicators: Partly available ('classical' indicators)
  - Transition process: Novel, to be further elaborated


# Sources used

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<https://www.pbl.nl/sites/default/files/cms/publicaties/pbl-2019-circulaire-economie-in-kaart-3401.pdf>

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Questions?  
Comments?  
Discussions?

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To explore  
the potential  
of nature to  
improve the  
quality of life