A robust metal sector in our country by 2050? Essential, but by no means a given.

Seminar 'Doing more business with fewer resources"
(FCSD, Brussels, 30 October 2026)

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Content

1. Let’s not fool ourselves. We have lost time.
2. How robust is the metal sector today in our country?
3. What about a metal sector in our country by 2050?

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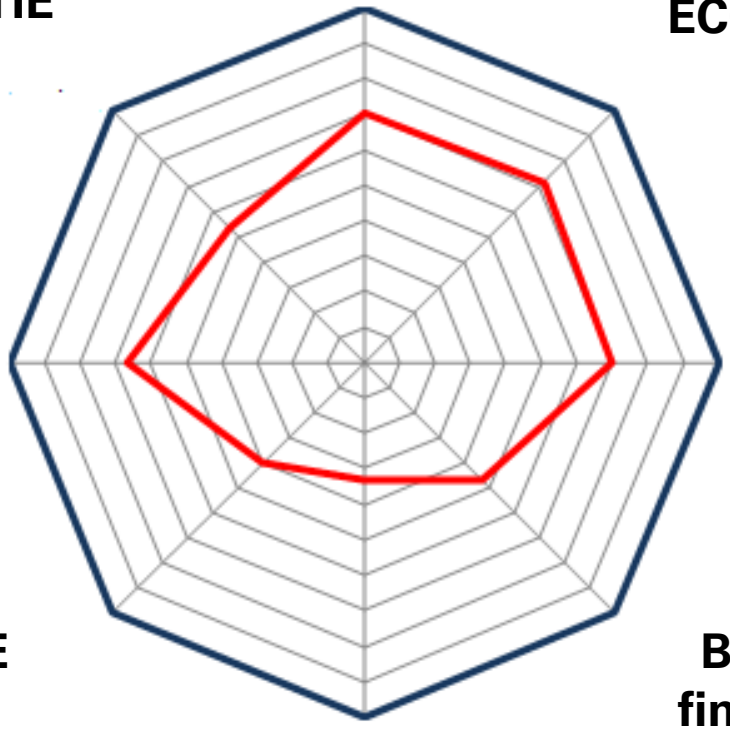
Mazijn B. en Devriendt S., (**2013**), *Naar een 'nieuwe industrialisering' van en voor de metaalsector. Een kringloopeconomie binnen de context van duurzame ontwikkeling*. Rapport in opdracht van ABVV Metaal. Instituut vóór Duurzame Ontwikkeling vzw, Brugge, 190 pp.



Mazijn B. en Devriendt S. (2014),
Instituut vóór Duurzame Ontwikkeling vzw

Research and analysis of the megatrend 'increasing scarcity of important raw materials' and the impact of this trend on the achievement of the Sustainable Development Goals (SDGs).

A study commissioned by FISD.

Mazijn B., Devriendt S., Blommaert C. en Borgo E. (2018),
Instituut vóór Duurzame Ontwikkeling vzw

Gebruik zeldzame metalen voor zonnepanelen, niet voor Playstations

Van: redactie op 6 oktober 2018

Nederland moet de bronnen van zeldzame metalen die in windmolens en zonnepanelen zitten, veilig stellen om de doelen van het Nederlandse Klimaatakkoord te halen. Dat staat in het rapport 'Metaalvraag van de Nederlandse Energietransitie'.

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Mazijn B. en Devriendt S., (**2026**), *De metaalsector. Naar een circulaire samenleving en economie: de 12 bouwwerven. Een ecologische en rechtvaardige transitie binnen de context van duurzame ontwikkeling.* Rapport in opdracht van ABVV-Metaal. Instituut vóór Duurzame Ontwikkeling vzw, Brugse regio, 163 pp . plus addendum.

Major societal challenges: linking '*megaforces*' / '*megatrends*'

- **energy and fuel**
- **climate change**
- **scarcity of resources**
- scarcity of water
- **population growth**
- **welfare**
- **urbanisation**
- food security
- degradation of ecosystems
- deforestation

(rare earth) metals
biomass

Low carbon society,
in particular,
greening the supply.

plus infrastructure for AI & 5G …

- space exploration
- military security

Race for space + Arms race.

Source: Mazijn B. and Devriendt S. (2013 & 2026)

Consumption of resources

Worldwide, in 2010.
Expectation for 2030-2035: + 55 %

Right now (2025): + 35 %
Expectation for 2030-2035: + 90 %

The profile of the metal sector **in our country**.

1. **The metal sector: economic profile**
   - Gross Production Index
   - Gross Value Added
   - Number of metal companies
   - Domestic and foreign trade
2. **The metal sector: number of employees**
   - Number of employees according to NACE
   - Number of employees according to PC's
3. **The metal sector: the environmental impact**
   - Energy consumption. Greenhouse gases. Ozone precursors. Dioxins. Metals in the air. Particulate matter – PM10. Metals in surface water. Water consumption. Waste materials.
   - Decoupling in the metal sector?

A sustainable SWOT analysis of the metal sector in Belgium / Flanders (2012–2013 & 2025–2026)

Strengths

- classical knowledge, R&D capacity, structures, consultation, strong trade union...
- **creating supply and demand for all Rs of a circular economy (including in government procurement)**
- vertical cooperation

Weaknesses

- insufficient new knowledge among social partners regarding R&D, education/training, etc.
- strong dependence on energy and (rare) (earth) metals
- horizontal cooperation

Opportunities

- preparing for a circular economy (cf. all the ‘Rs’)
- **policy framework**
- **financing, including through a wealth tax**

Threats

- the impact of the ‘megaforces’ on Belgium/Flanders
- **flip-flop policy framework**
- **electrification ↓ trade tariffs ↑**

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Tranformation within the context of sustainable development.

What is important for our children and grandchildren?

What kind of industry will be needed for this by 2050?

	Basic Needs	Food	Shelter	Care	Mobility	…
	System	Agriculture	Construction	Health Care	Transport	
Transversal policy and strategy	Work					
	Education					
	Finances and investments					
	Resources and energy					
	Gender					
	Poverty eradication					
	International cooperation					
	…					

Guiding principles for circularity … and the metal sector.

War on resources ?!

European Court of Auditors (2026), about the CRM Act:
" Critical raw materials for energy transition – Not a rock-solid policy."

A circular economy ?!

European parliament (2022), about circularity:
" A carbon neutral, environmentally sustainable, toxic-free and fully circular society and economy by 2050."

A just transition towards circularity ?!

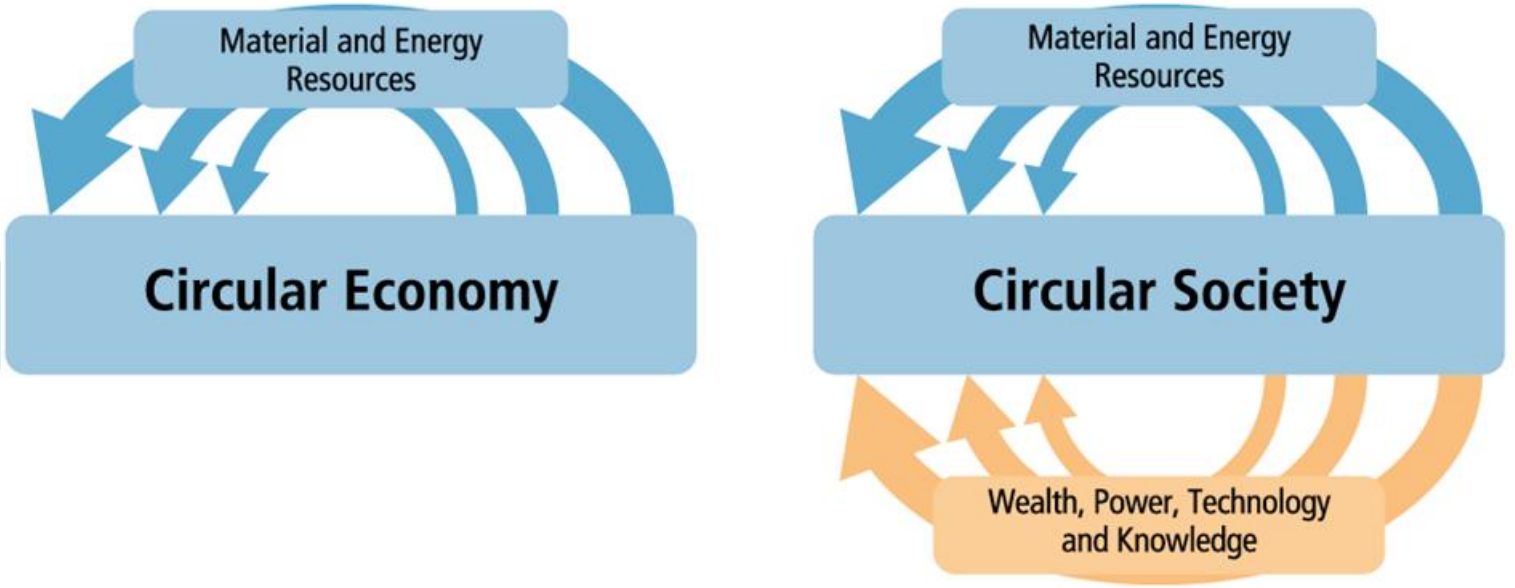
IDO vzw (2026), about priorities:
" It is unclear on the basis of which needs these sectors and technologies have been identified—let alone whether or how it has been documented that they will (directly) contribute to meeting fundamental needs, both today and in the future."

Strategies within the production chain/value chain, in order of priority: 9 R's + 1

- A smarter product use and manufacture (**r**efuse, **r**ethink, **r**educe)
- To extend lifespan of product and its parts (**r**euse, **r**epair, **r**efurbish, **r**emanufacture, **r**epurpose)
- The useful application of materials (**r**ecycle, **r**ecover)

Source: Potting, Hekkert, Worrell, & Hanemaaijer (2016)

Conceptual distinction between a circular economy and a circular society.



Source: Calisto Friant, Vermeulen, & Salomone (2020)

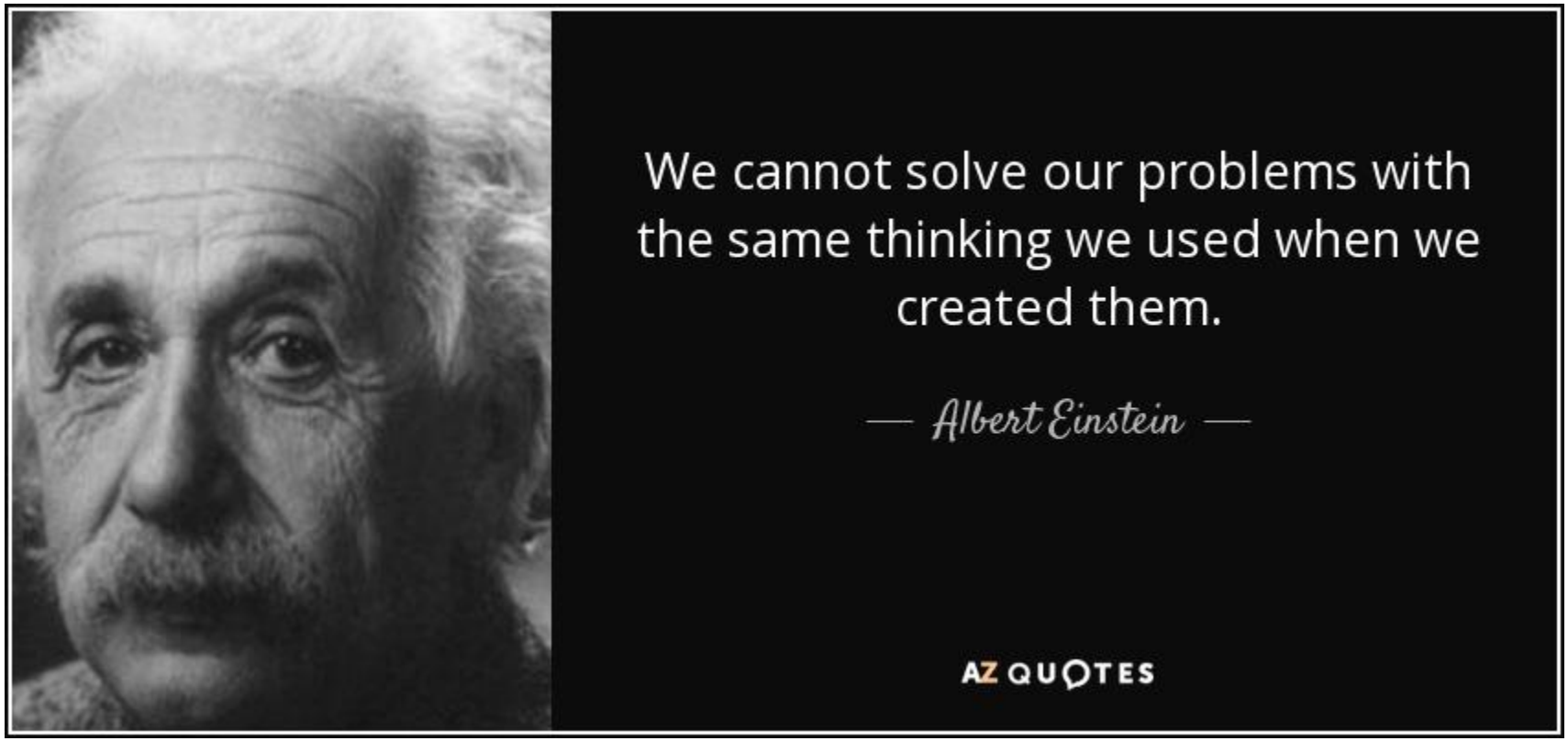
Typology of circularity in discourse: not value free.

		An approach that takes into account social, economic, ecological, and political considerations.	
		Holistic	**Segmented**
Technological innovation and ecological collapse	**Optimist**	**Reformist Circular Society**	**Technocentric Circular Economy**
	Sceptical	**Transformational Circular Society**	**Fortress Circular Economy**

Source: Calisto Friant, Vermeulen, & Salomone (2020)

‘A Just Transition to Circular Economy.’ (EC ETC-CE, 2025)

- **A just circular economy must be actively shaped…**
- Policies and practices often neglect social dimensions and, consequently, aspects of justice;
- Significant justice-related issues exist within global value chains;
- Inclusive governance structures, participatory decision-making, and the recognition of contributions from marginalized groups are essential and critical;
- Transparency throughout the value chain, monitoring and evaluation mechanisms, standardized measurement methods, and effective communication are vital;
- Supporting stakeholder initiatives, education, and new, justice-oriented business models is essential for fostering a fair and inclusive circular transition;
- If managed well, the circular transformation can enhance social impact.



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