

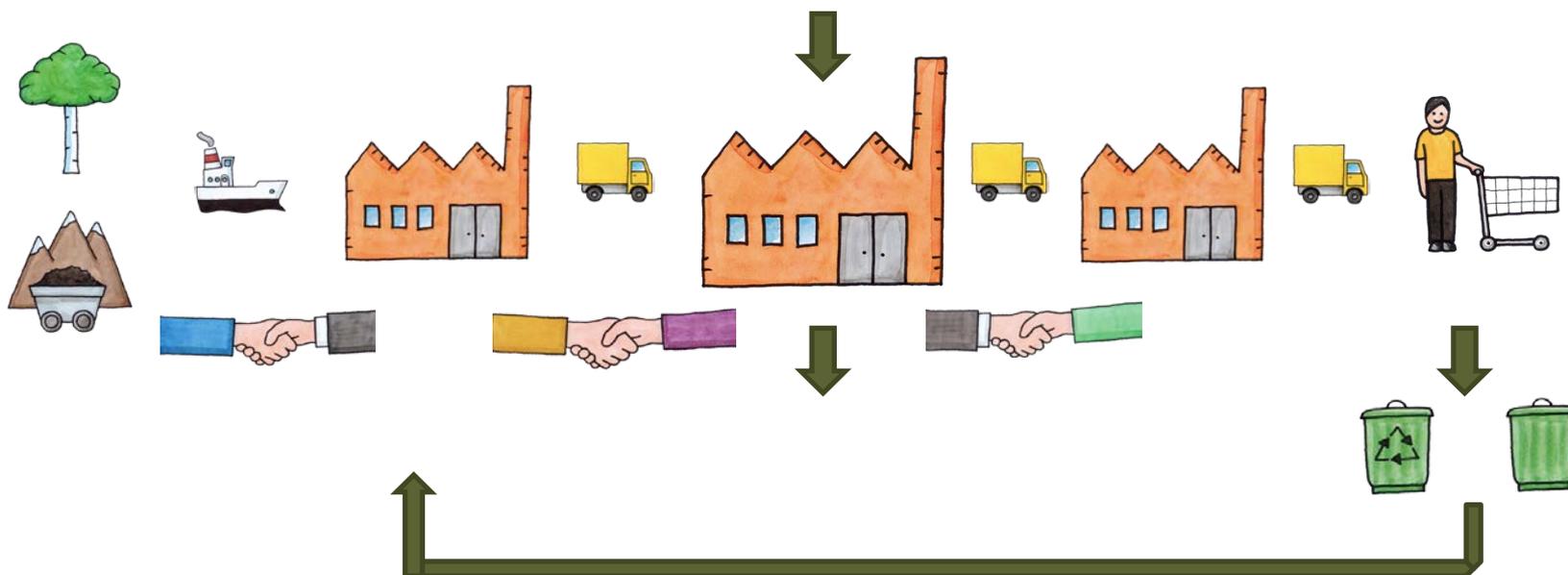
**Making sustainable innovation happen
- Life cycle thinking**



Life cycle perspective in innovation



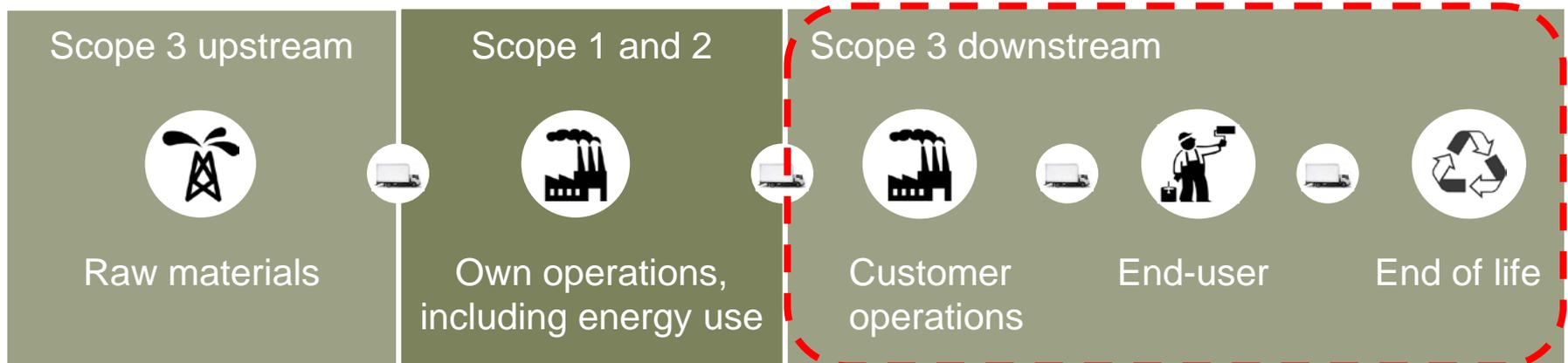
CHALMERS



Eco-Premium Solutions

Compared to the **mainstream** product on the market, an **Eco-Premium Solution**:

1. Provides the same or better **functionality** for the customer application
2. Is significantly more sustainable in at least one of seven criteria, when assessed along the **full value chain** (and not worse in any other)



Eco Premium Solutions matrix

	Energy efficiency	Use of natural resources/ raw materials	Emissions and waste	Toxicity & ecotoxicity	Risk (e.g. for accidents)	Land use, if applicable	Health / Wellbeing
Raw materials		√					
Processing							
Packaging/ distribution							
Customer	√			X			
Use/ lifetime							
End of life							
Total							

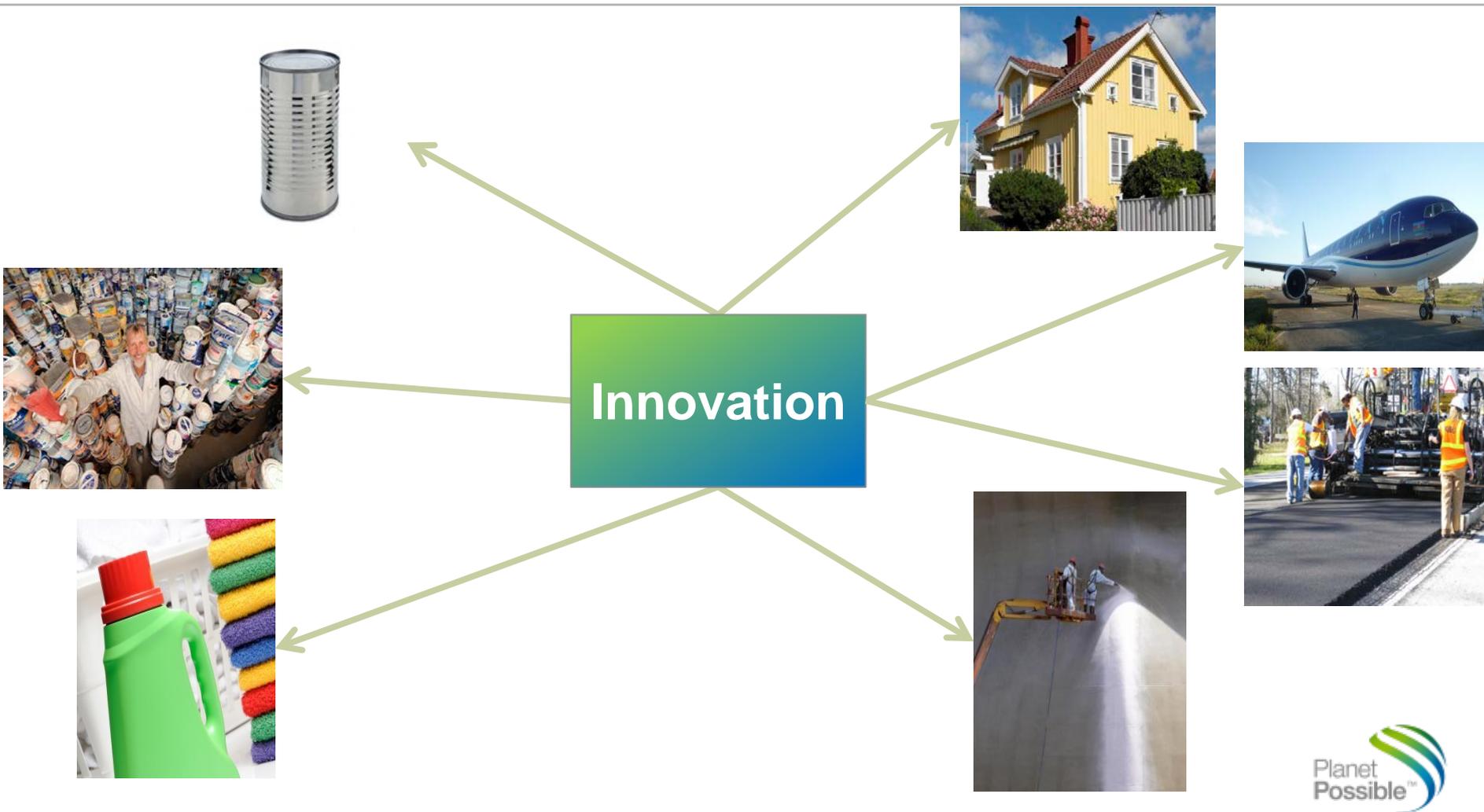


Stage Gate[®] process

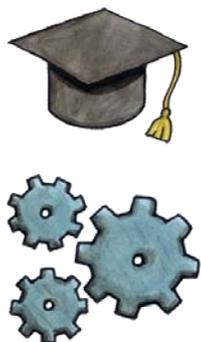
	Gate 1 Pre-project	Gate 2 Project	Gate 3 Process & scale up	Gate 4 Pre- launch	Gate 5 Launch	Gate 6 Regular sales
Focus criterias	Eco- efficiency criteria for R&D "positive"	Draft Eco Premium evaluation	Start EEA	Draft EEA (ESR)	EEA done	EPS (EPD) Eco footprint



Driving innovation & differentiating us versus competitors



New business model



- Reduced fuel consumption by 9% average!
- Longer time between repaints!
- No biocides!



No sales!



Carbon credits

Gold Standard[®] Intersleek[®]
Carbon Credits

Improving the sustainability of international shipping



126,785 verified carbon credits represents avoidance of emitting

126,785

TONNES OF CO₂

2,400

TONNES OF SO₂

2,000

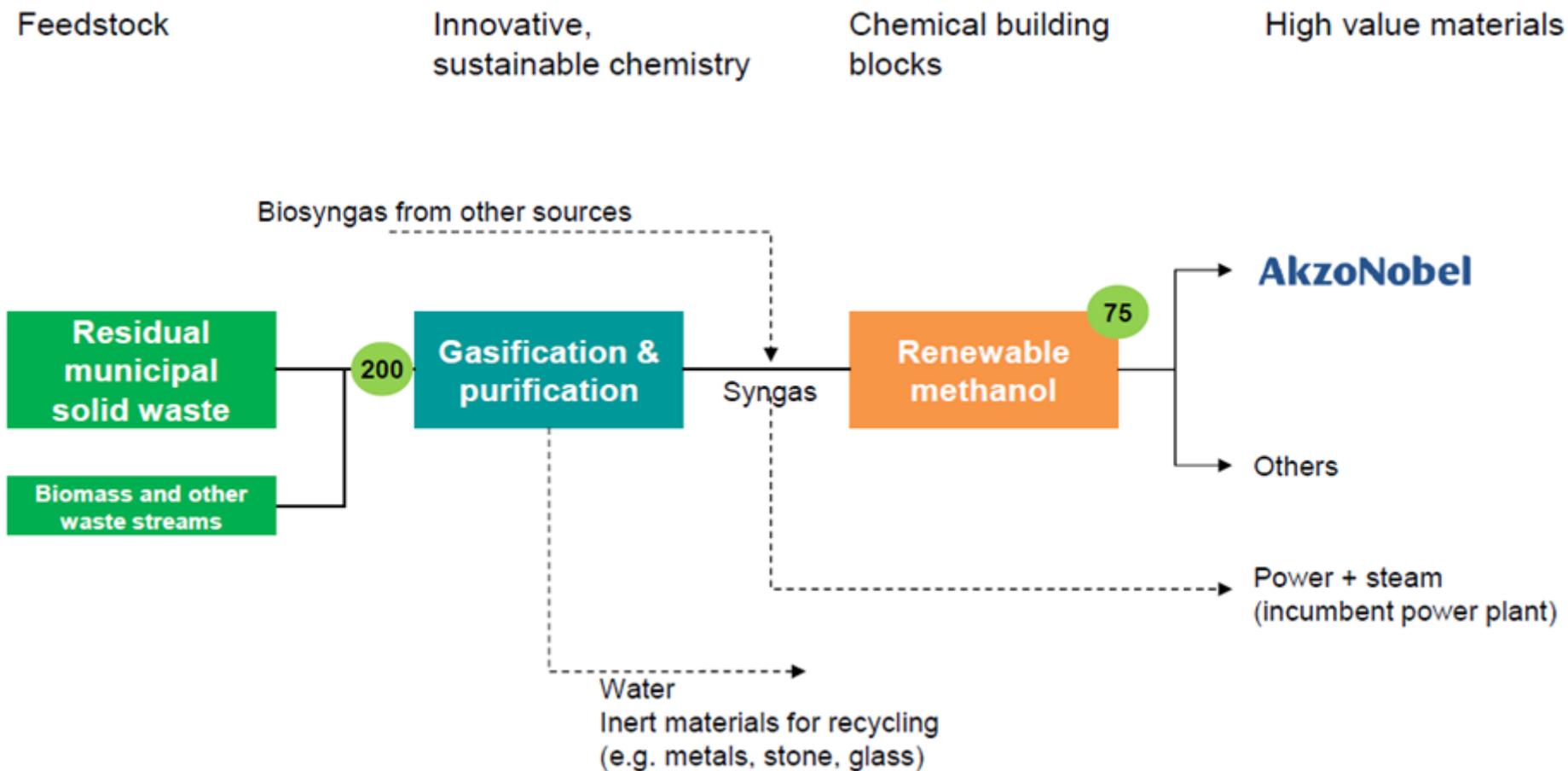
TONNES OF NO₂

400

TONNES OF BLACK CARBON

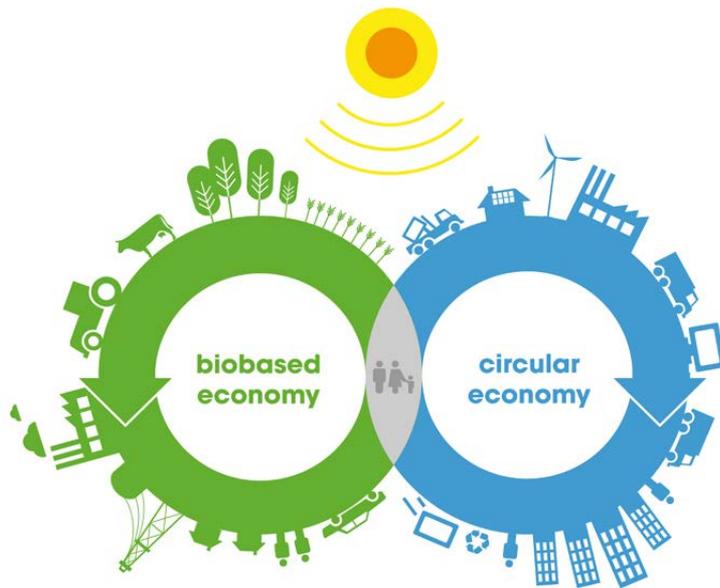


Circular chemicals: Methanol from waste



Circular economy – how do we make it happen?

It's about innovation!
It's about cooperation!
It's about changing our habits!



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