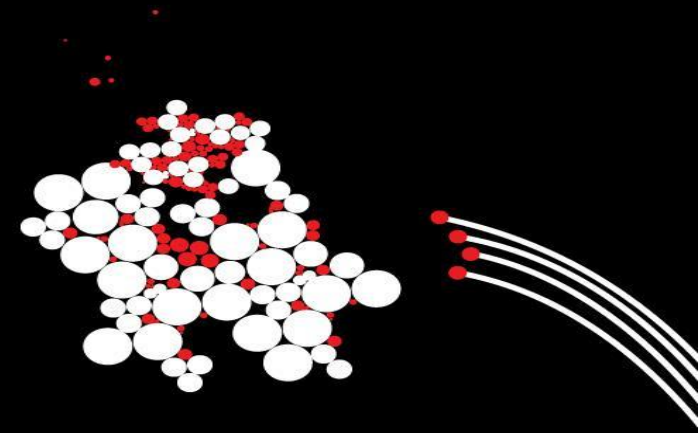


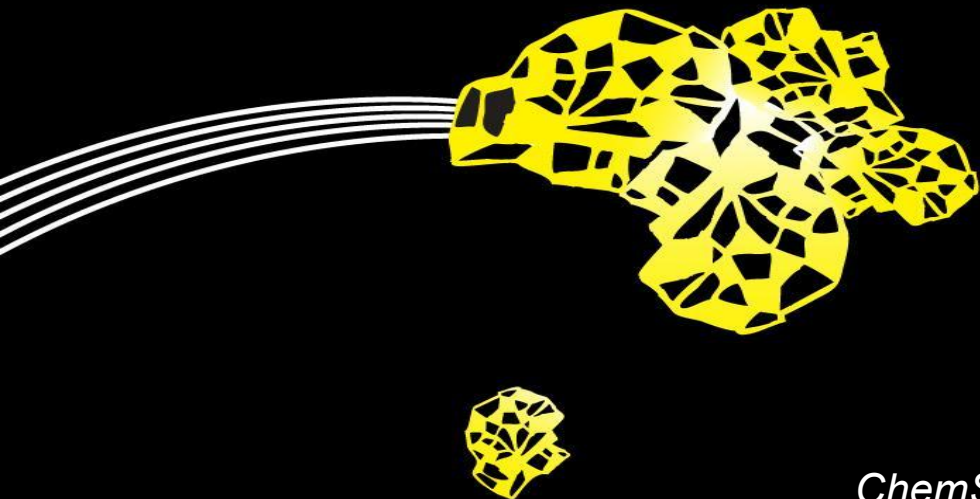
UNIVERSITY OF TWENTE.

Jean-Paul Lange - Prof. Chemical Biorefining



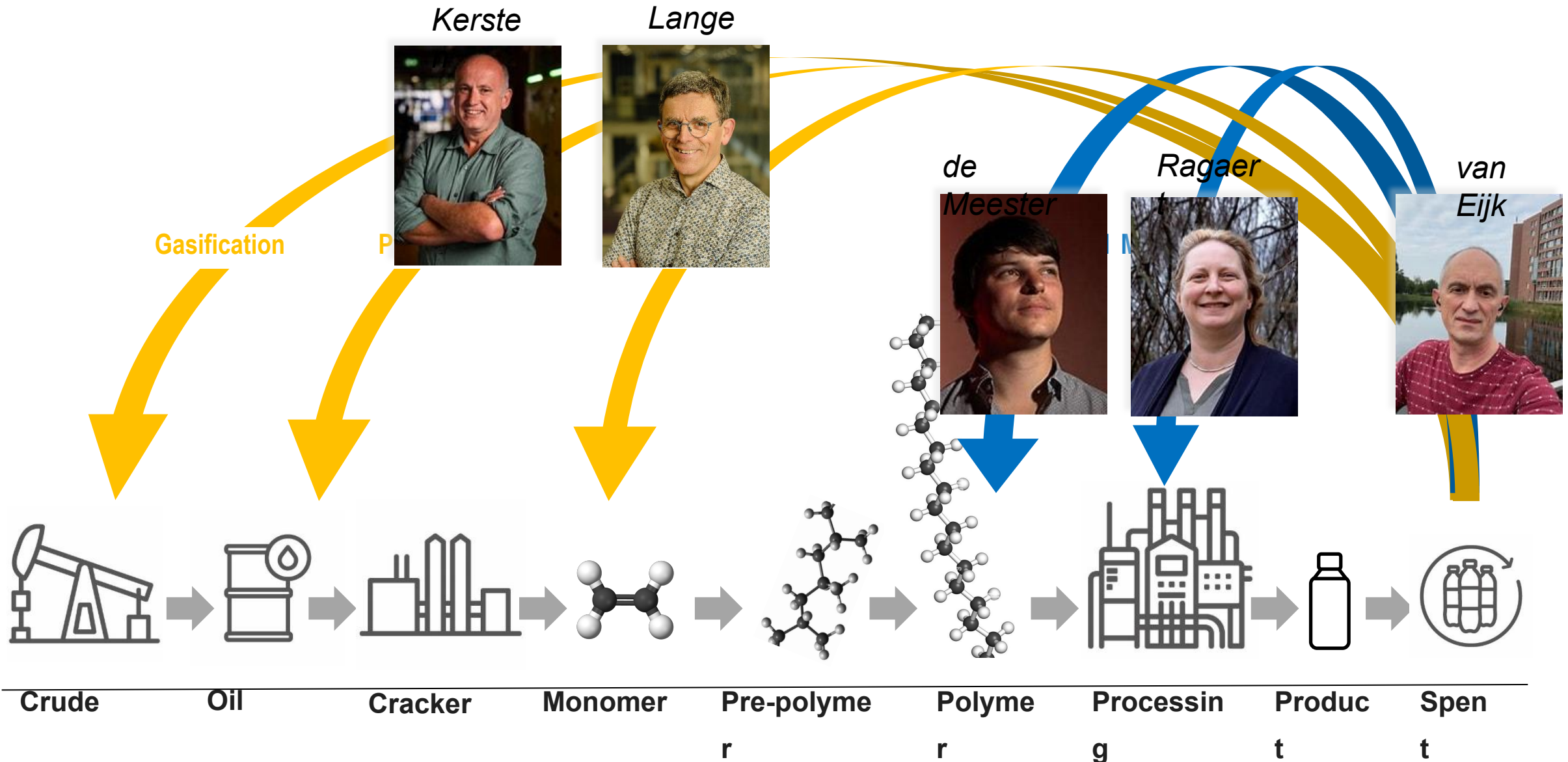
Recycling Cascade for Plastics Waste

7th business summit **Go Circular**, Mannheim, 25-26 March, 2026

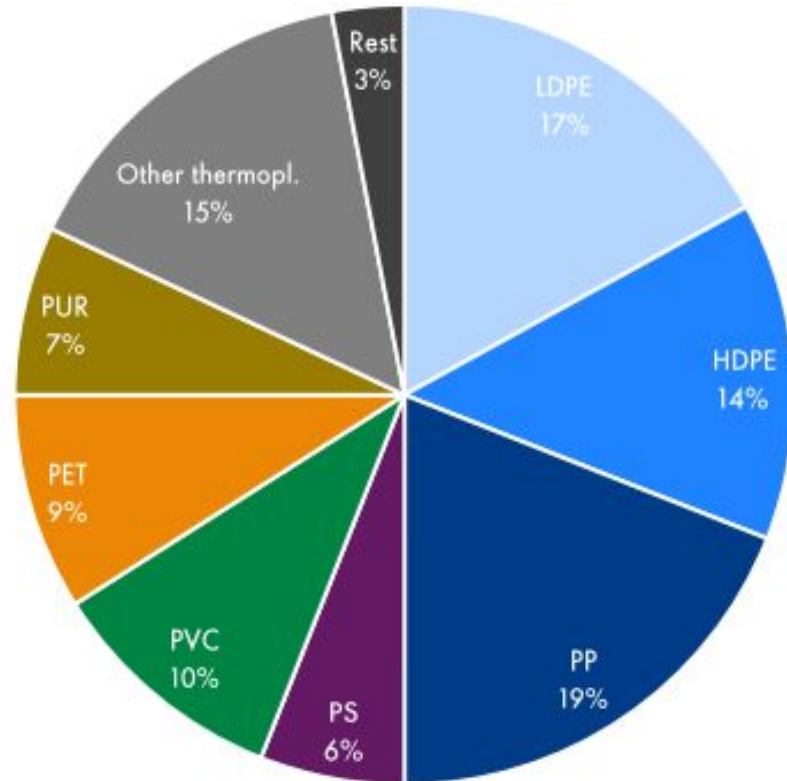


ChemSusChem 2024, 17, e202301320

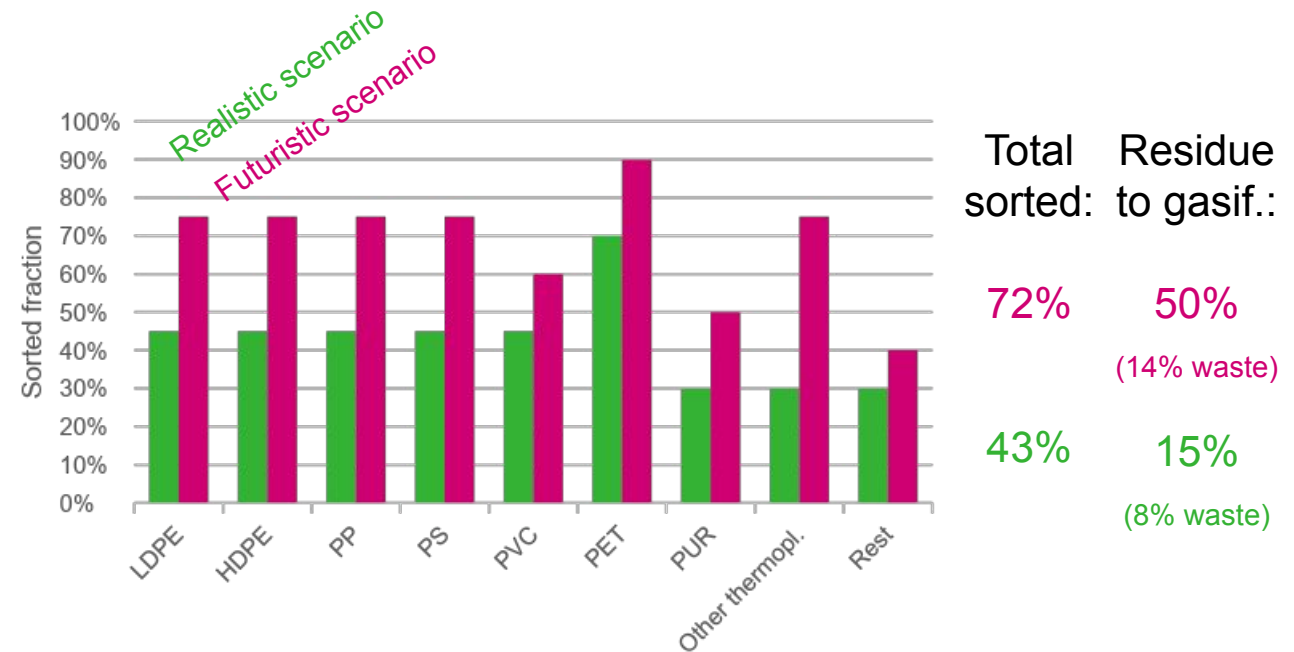
Many Recycling Options



Waste Composition

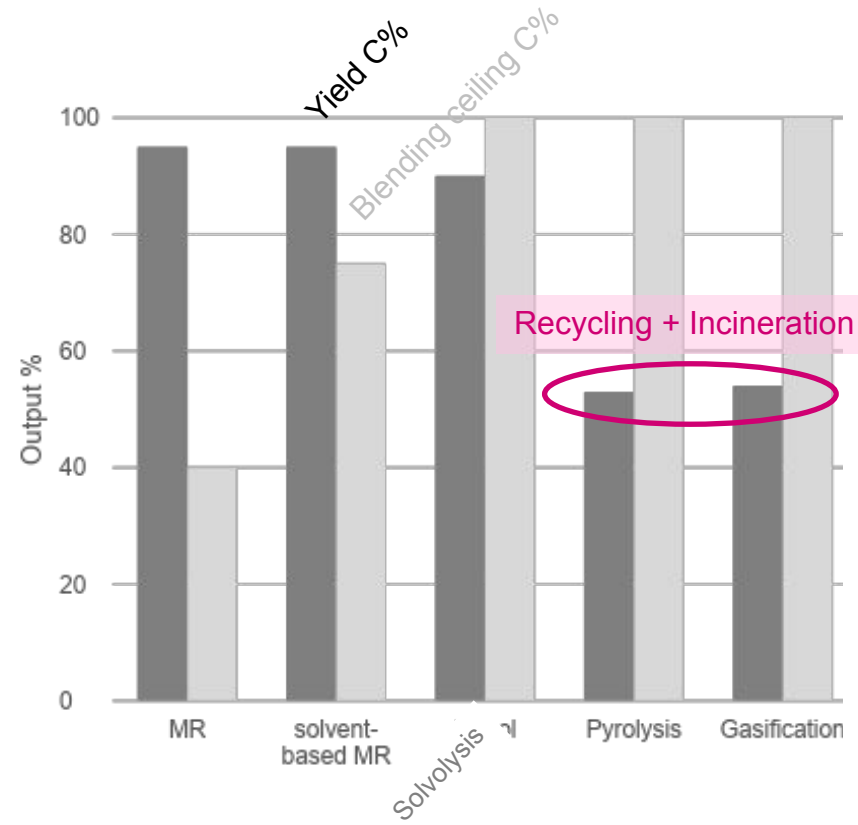
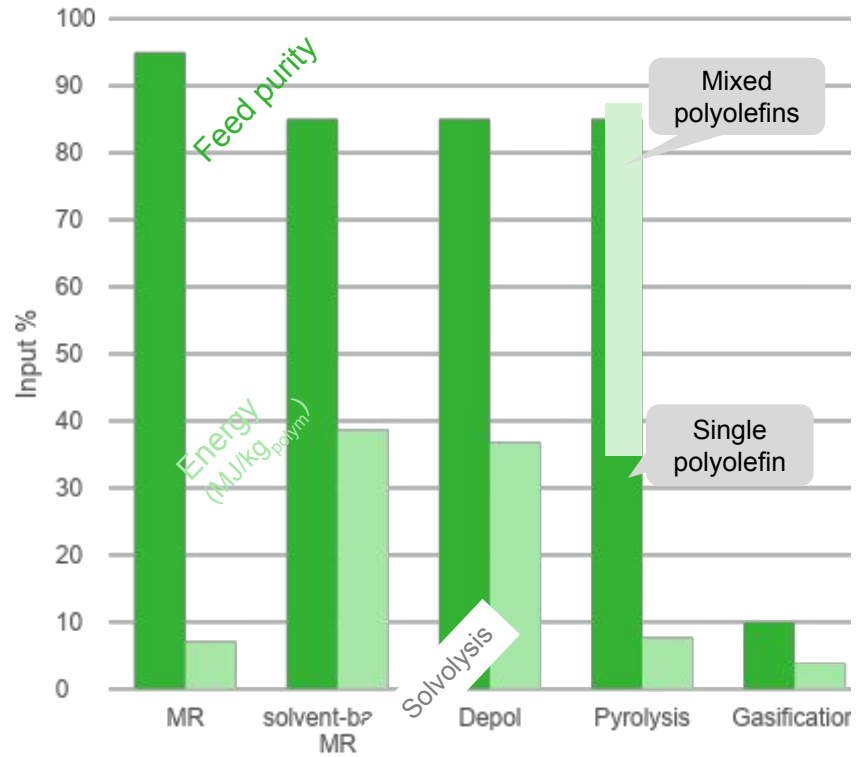


Waste Sorting

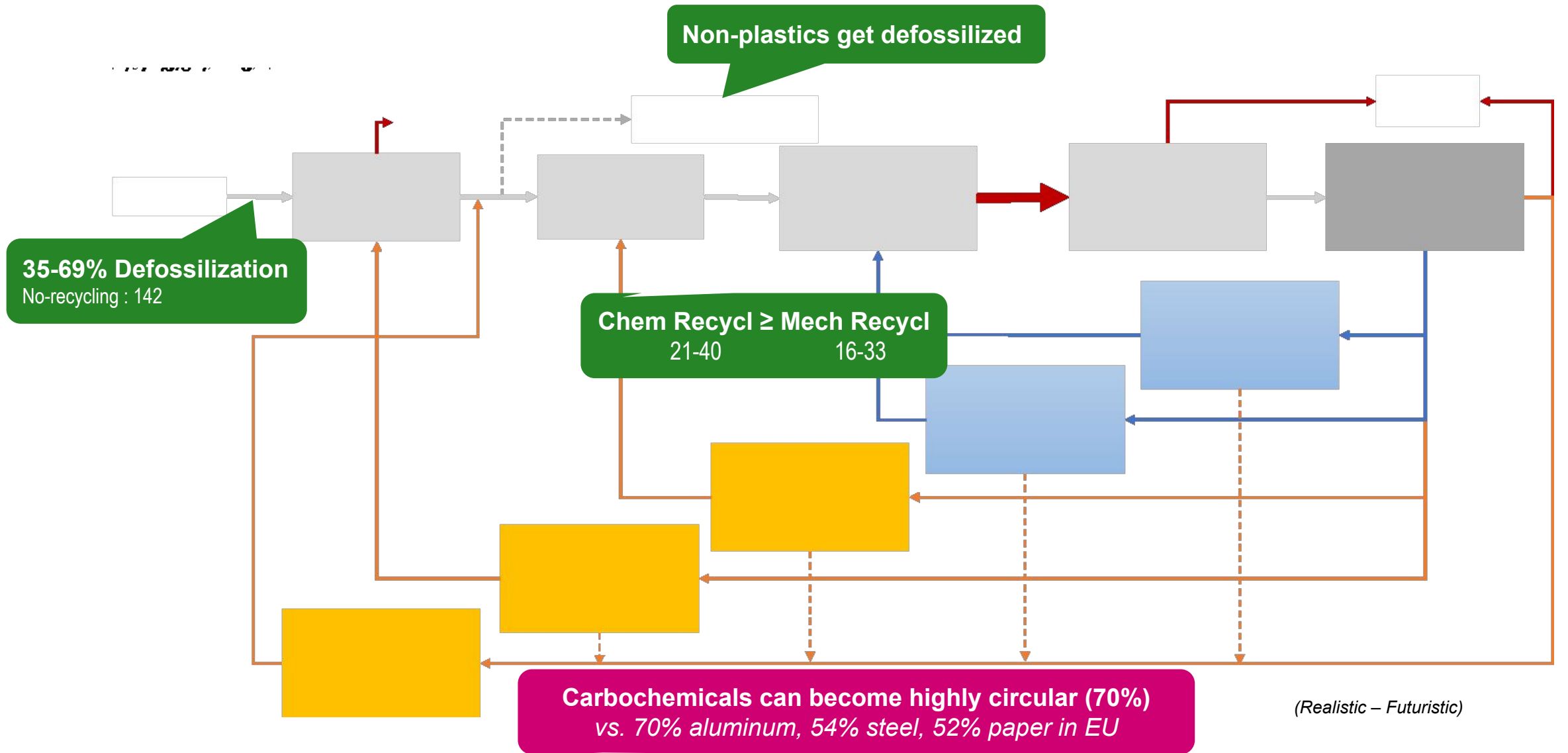


Recycling technologies - strengths and weaknesses in **input** and **output**

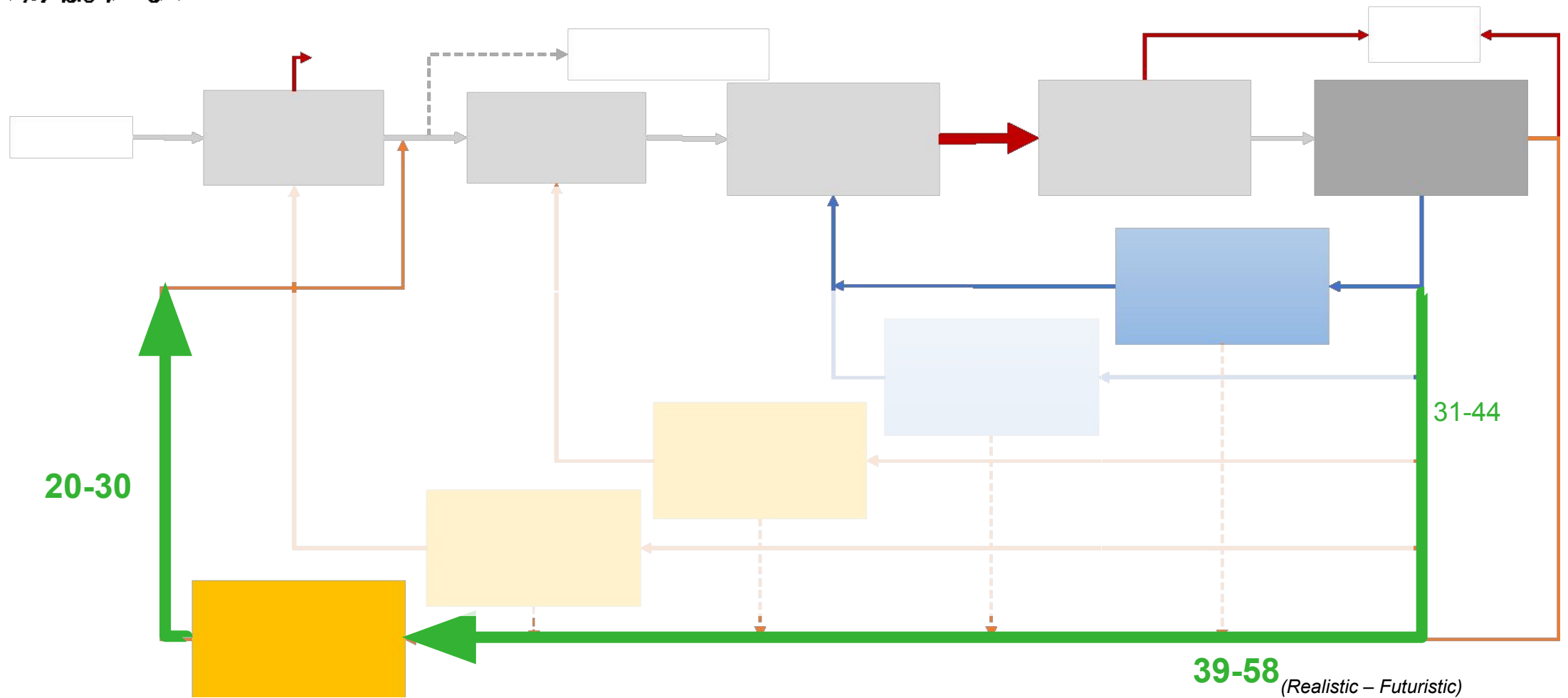
Plastic Diet



Full technology cascade

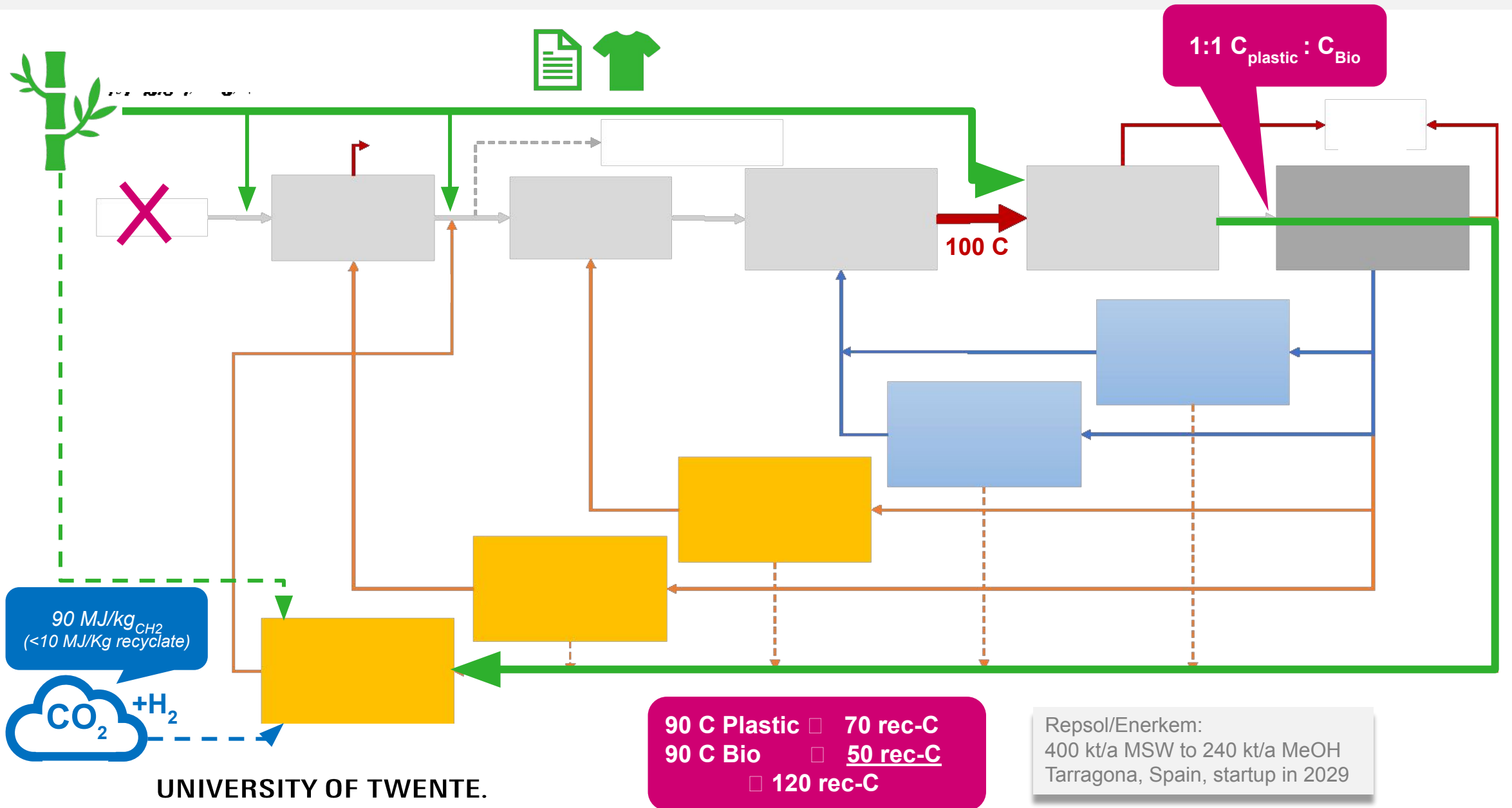


Minimal technology cascade

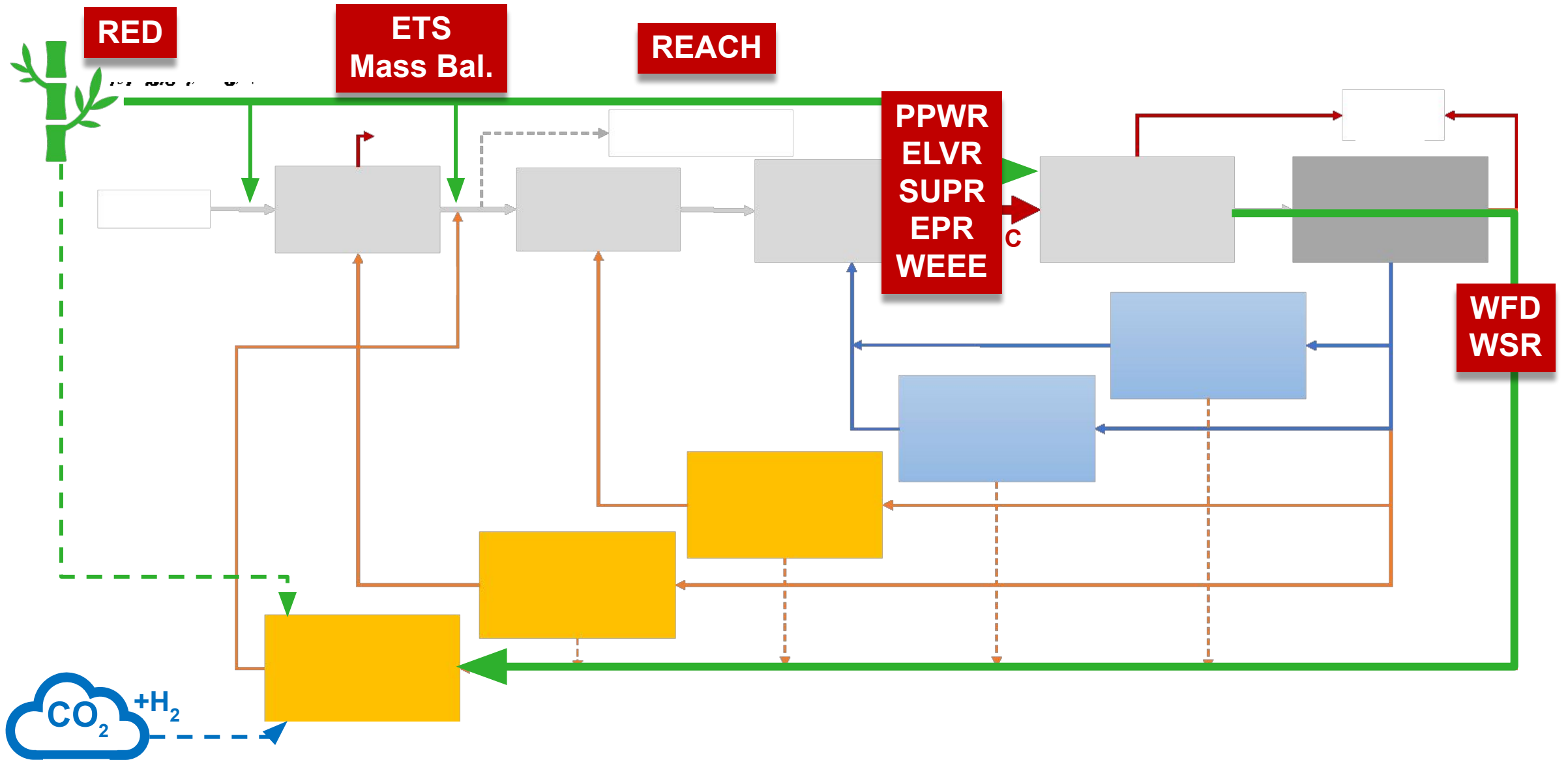


MR + Gasification already displaces 30–55% of naphtha

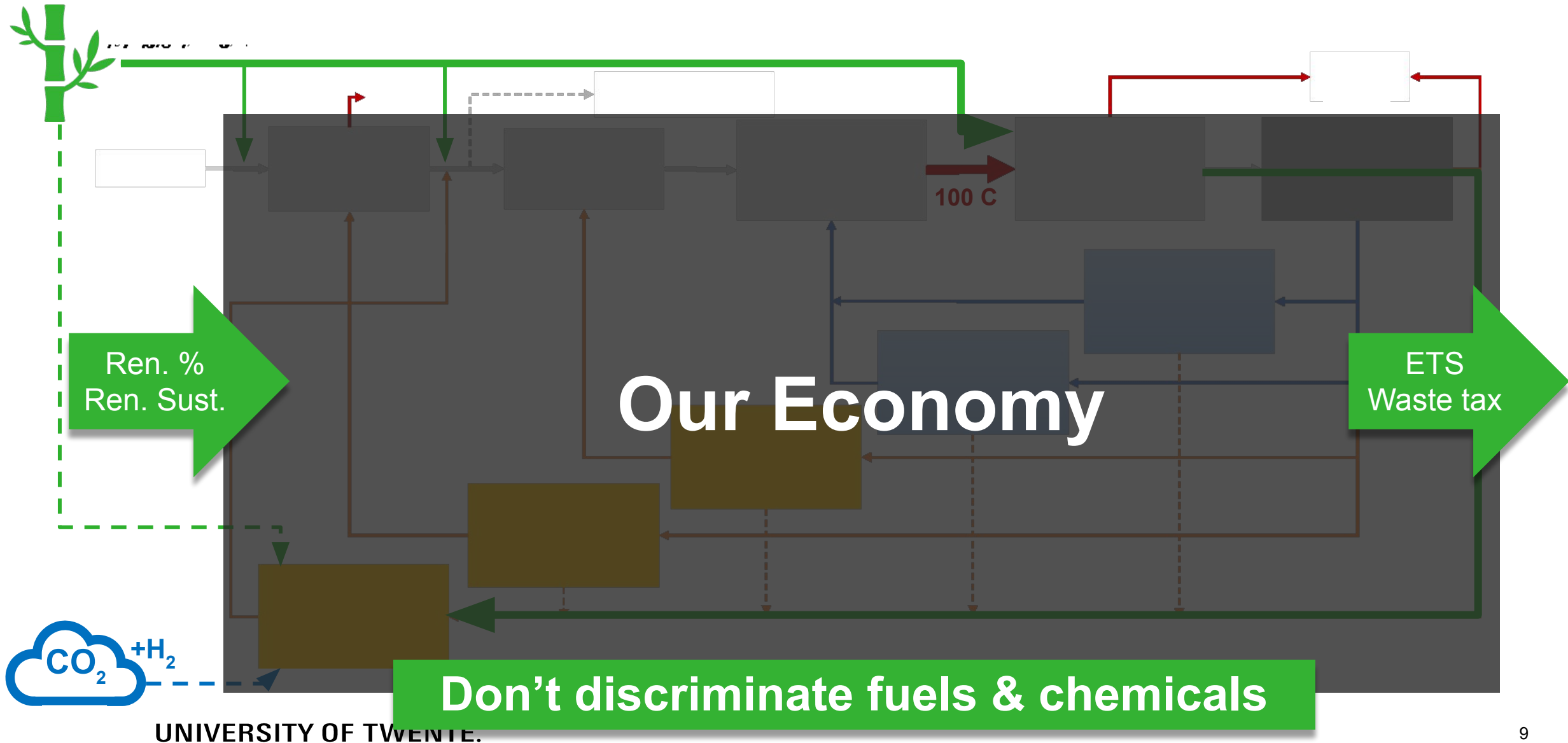
Complement recycling with renewable carbon



Driving circularity with regulations



Rebranding to goal - No fossil + No waste



Conclusions

- **Cascade of Recycling technologies for high defossilisation (70%)**
- **Renewable C for complete defossilisation**
- **'No fossil + No waste' for 'Fuels + Chemicals' for simpler regulations**