




polykemi 

BRINGS OUT THE BEST IN PLASTICS

rondo 

BRINGS OUT THE BEST IN PLASTIC RECYCLING


*High quality virgin and recycled material
from a sustainability perspective*



Did you know that

60-80%

*of a product's total
CO₂ footprint comes
from the raw material?*

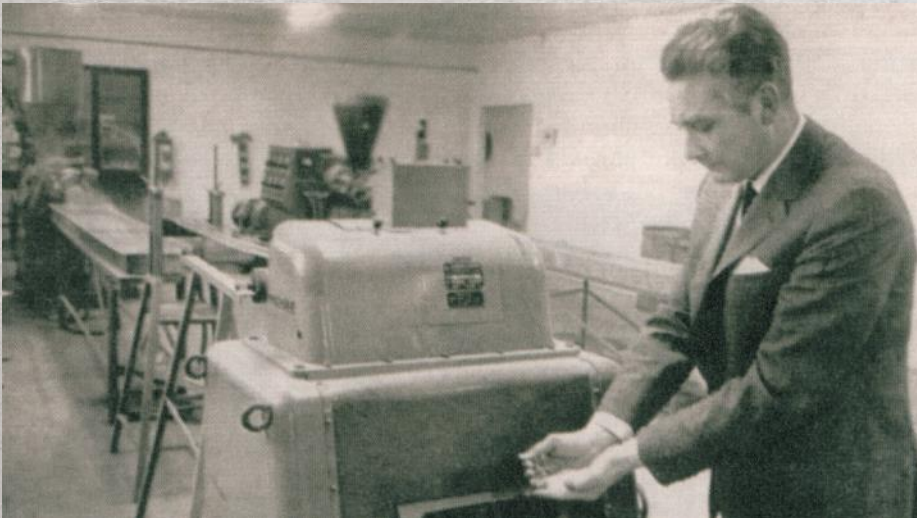


POLYKEMI GROUP

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BRINGS OUT THE BEST IN PLASTICS

*Ystad,
Sweden*



*More than 50 years of
virgin and recycled
compounds*

POLYKEMI GROUP

polykemi 

BRINGS OUT THE BEST IN PLASTICS

*Ystad,
Sweden*

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scanfill 

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polykemi 

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柏力开米（昆山）

polykemi 

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USA

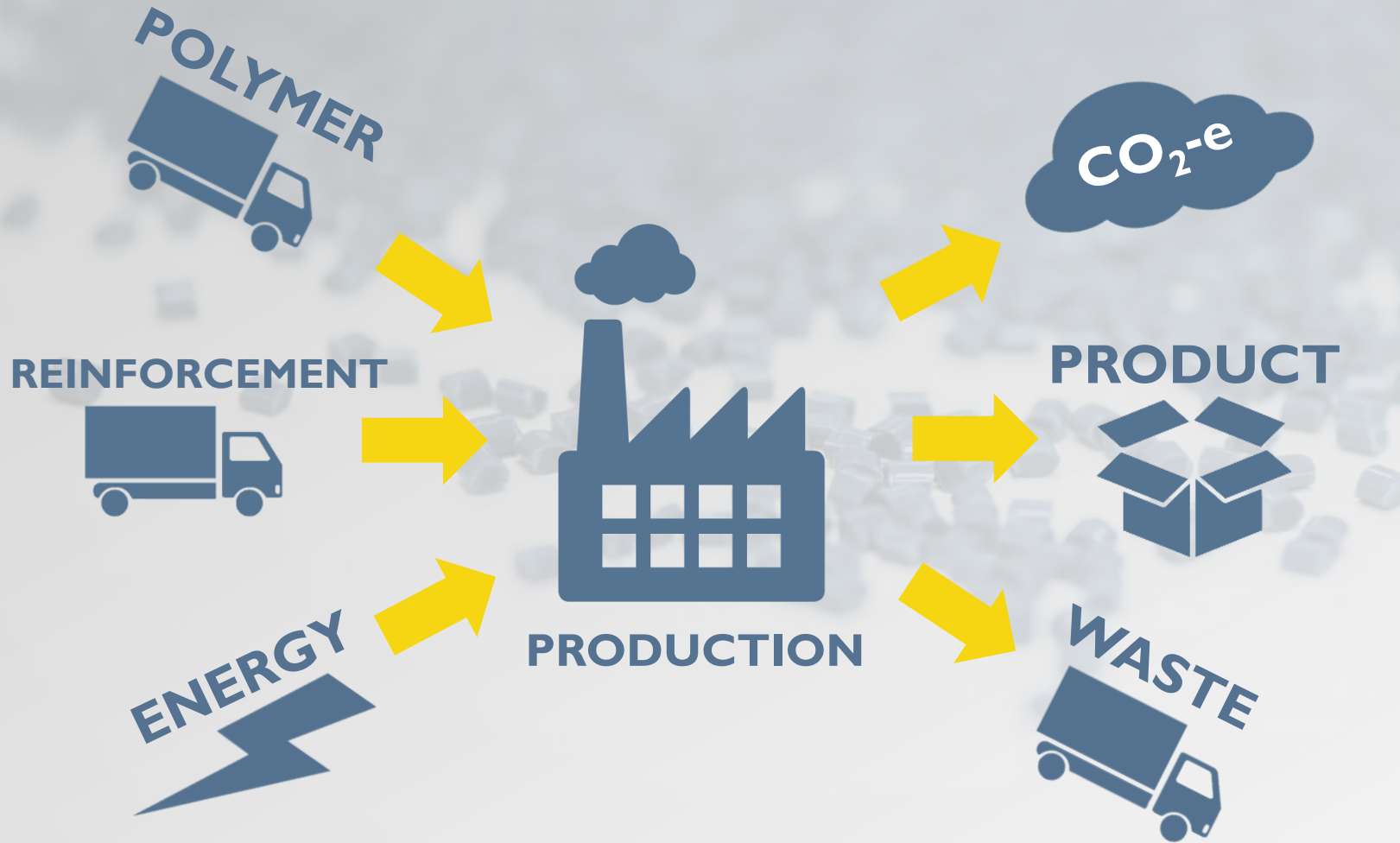
WE ARE WHERE YOU ARE



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CO₂-e/LCA CALCULATIONS



Workflow for CO₂/LCA data according to ISO 14040-44:2006.

Analysis third-party verified

Polykemi can present **GWP** & **full LCA-data** on individual compounds produced in Ystad & Kunshan.

OUR MATERIALS

ASA

PP

PA6 & PA66

SAN

PC

PMMA

PBT

POM

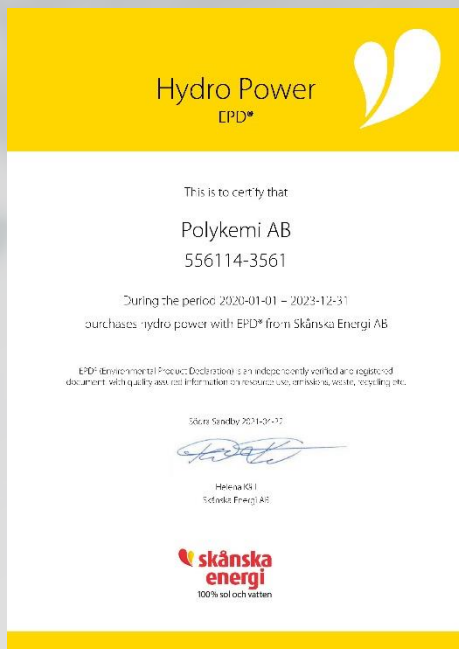
TPE

Blends

ABS

(PC/ABS, PC/PBT, PA/ABS, PA/ASA,
PBT/ASA, PC/ASA)

ENERGY – GREEN ELECTRICITY



Polykemi use 100% renewable electricity (Hydro & Solar)

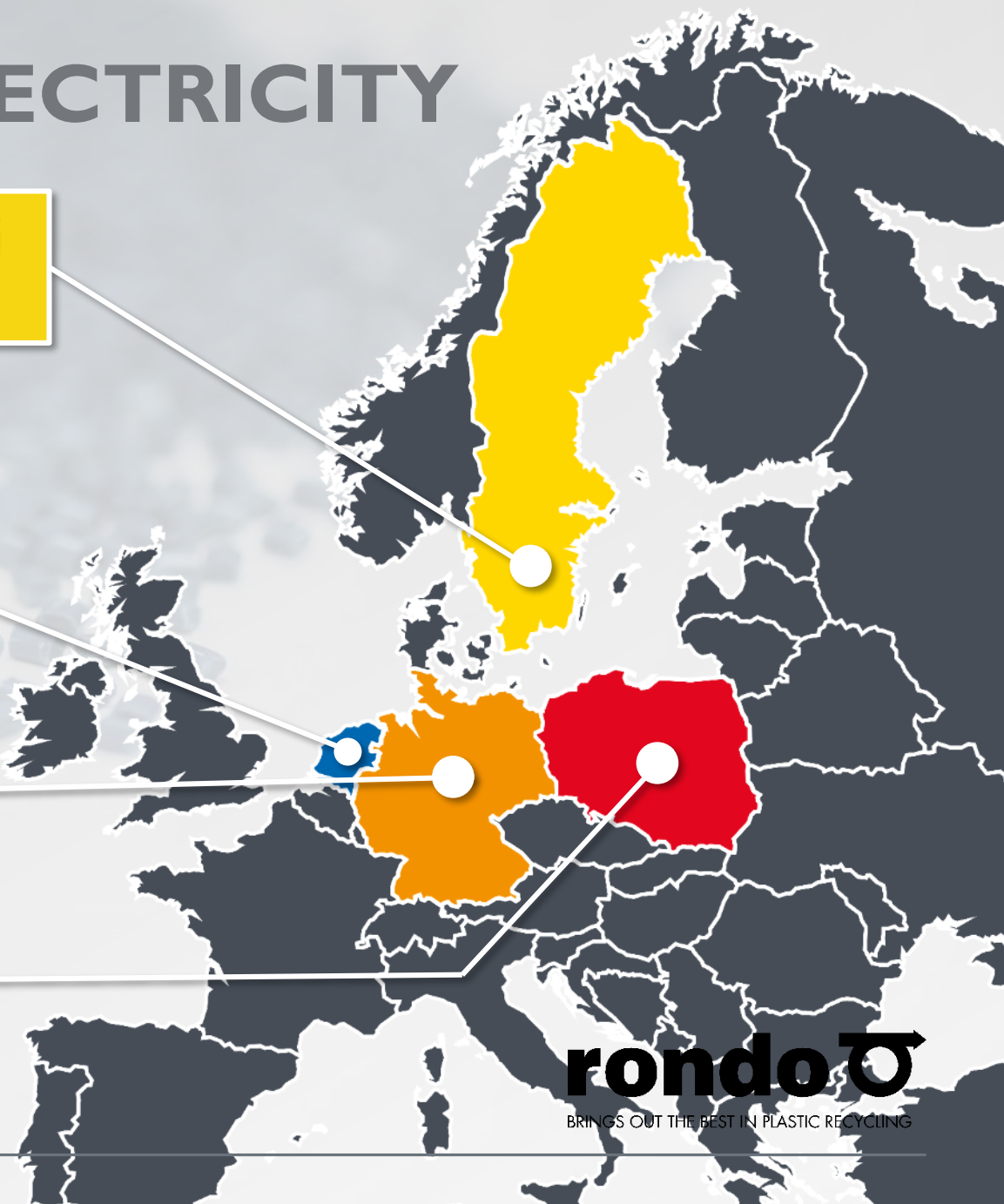
Electricity Polykemi
≈ 25g CO₂-e/kWh

Standard energy mix:

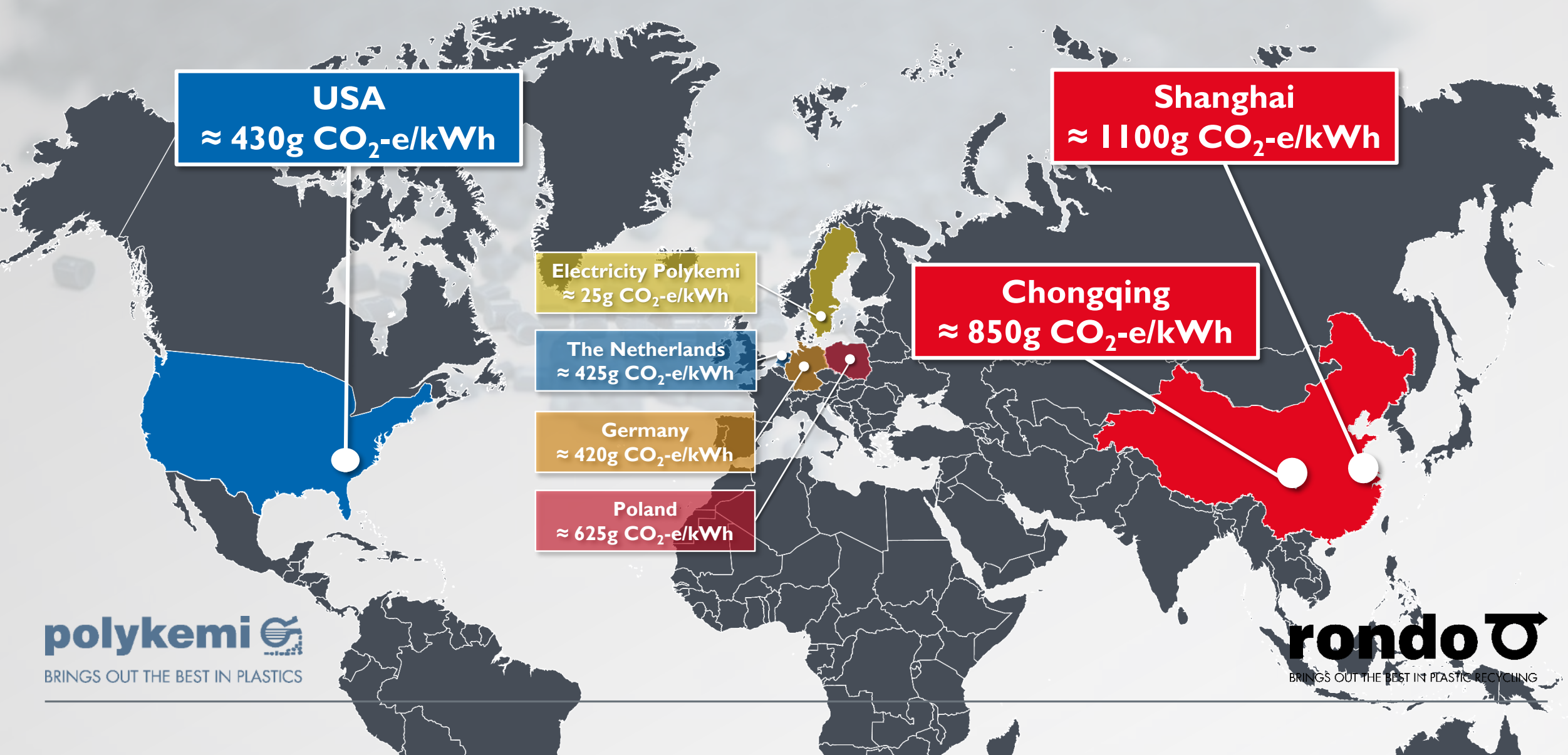
The Netherlands
≈ 425g CO₂-e/kWh

Germany
≈ 420g CO₂-e/kWh

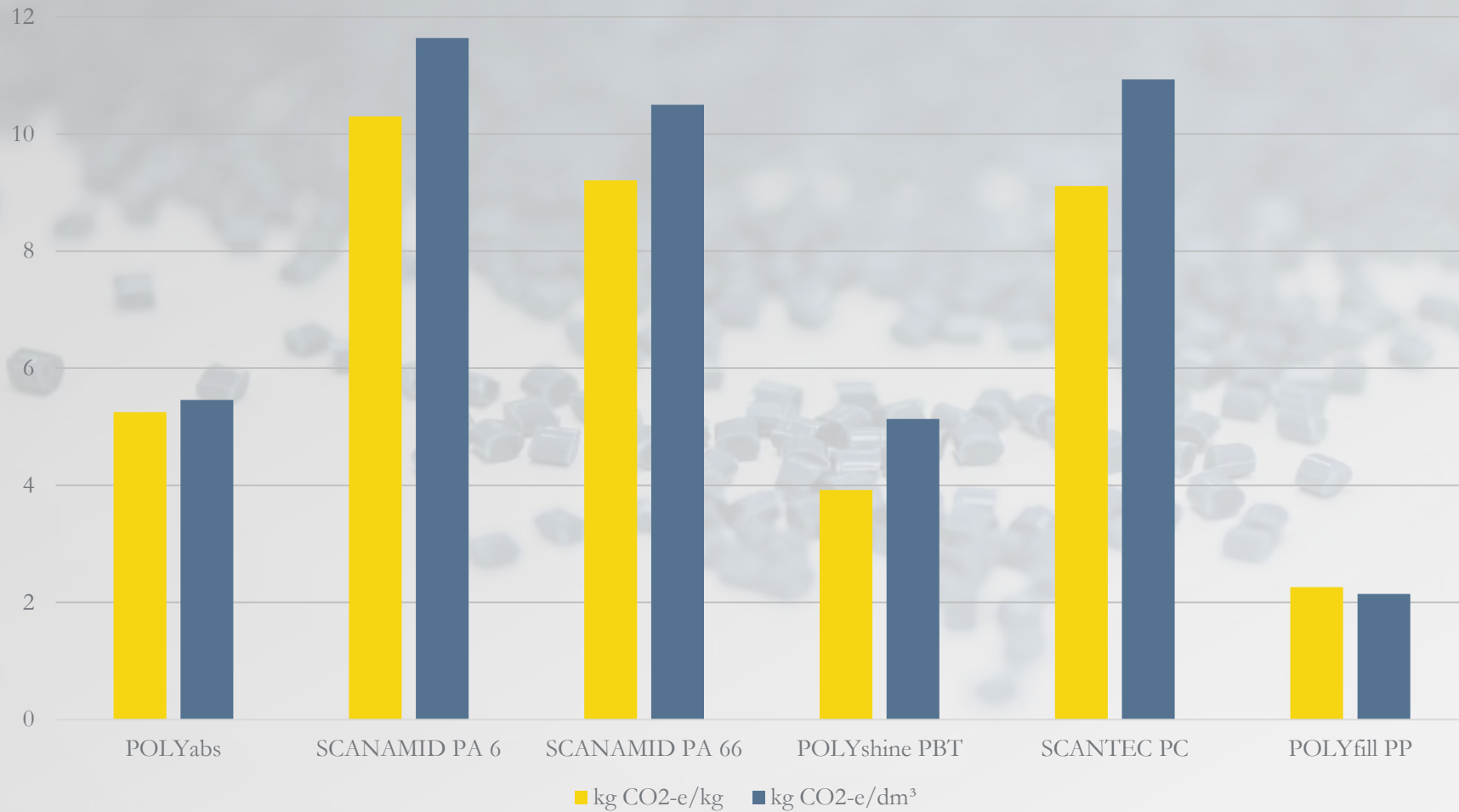
Poland
≈ 625g CO₂-e/kWh



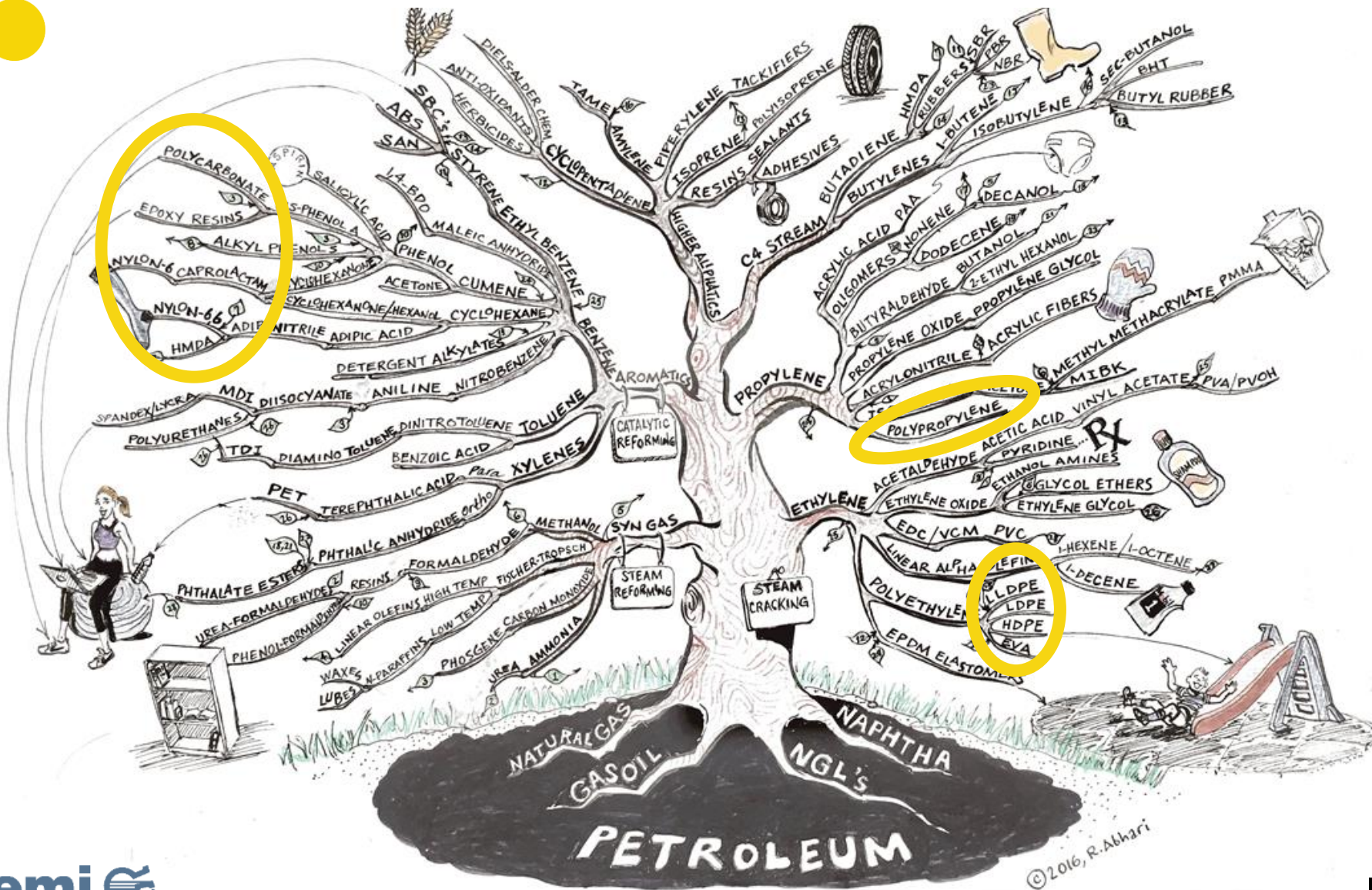
ENERGY – GREEN ELECTRICITY



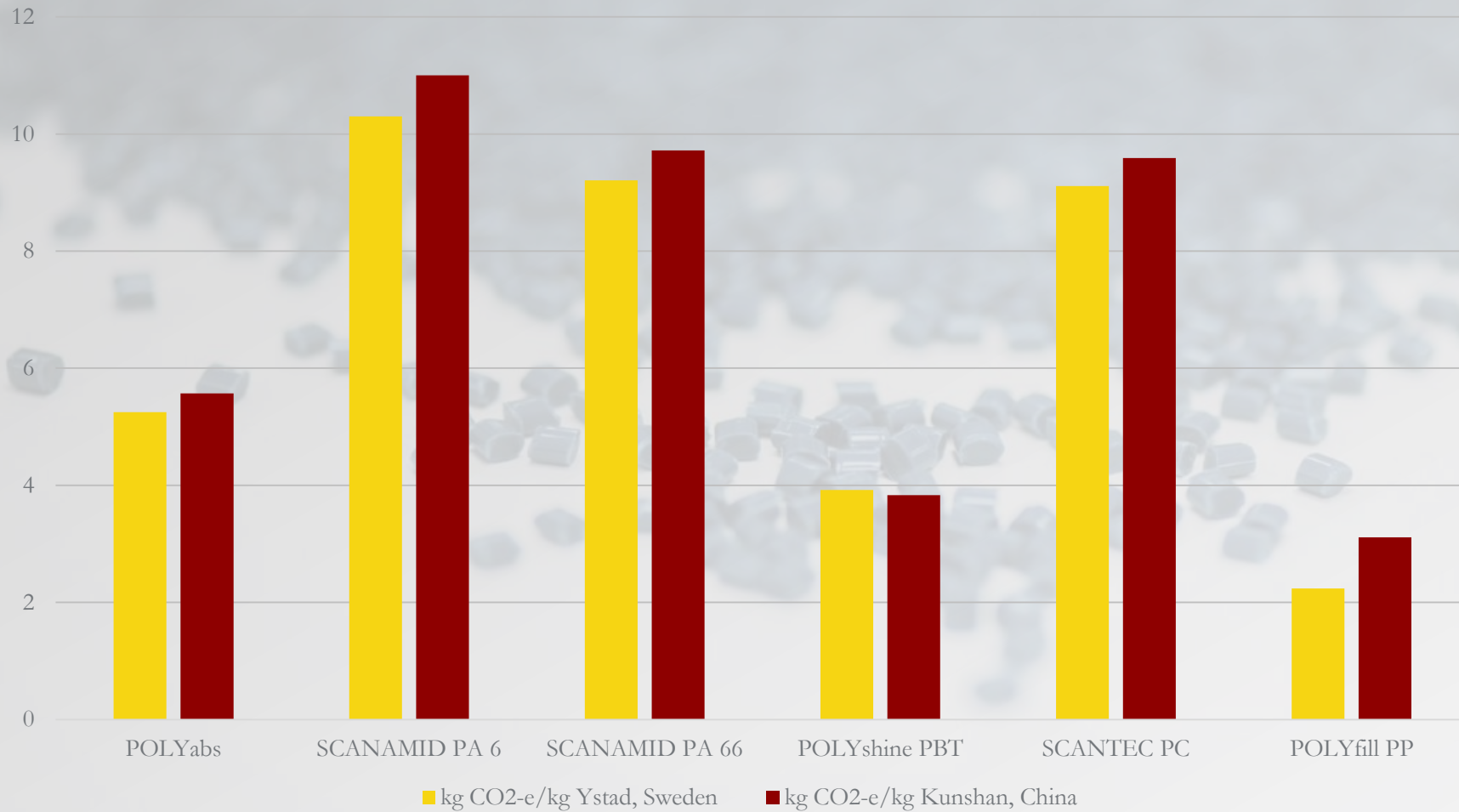
kg CO₂-e/kg & dm³



CO₂ footprint based on Polykemi LCA (cradle-to-gate).

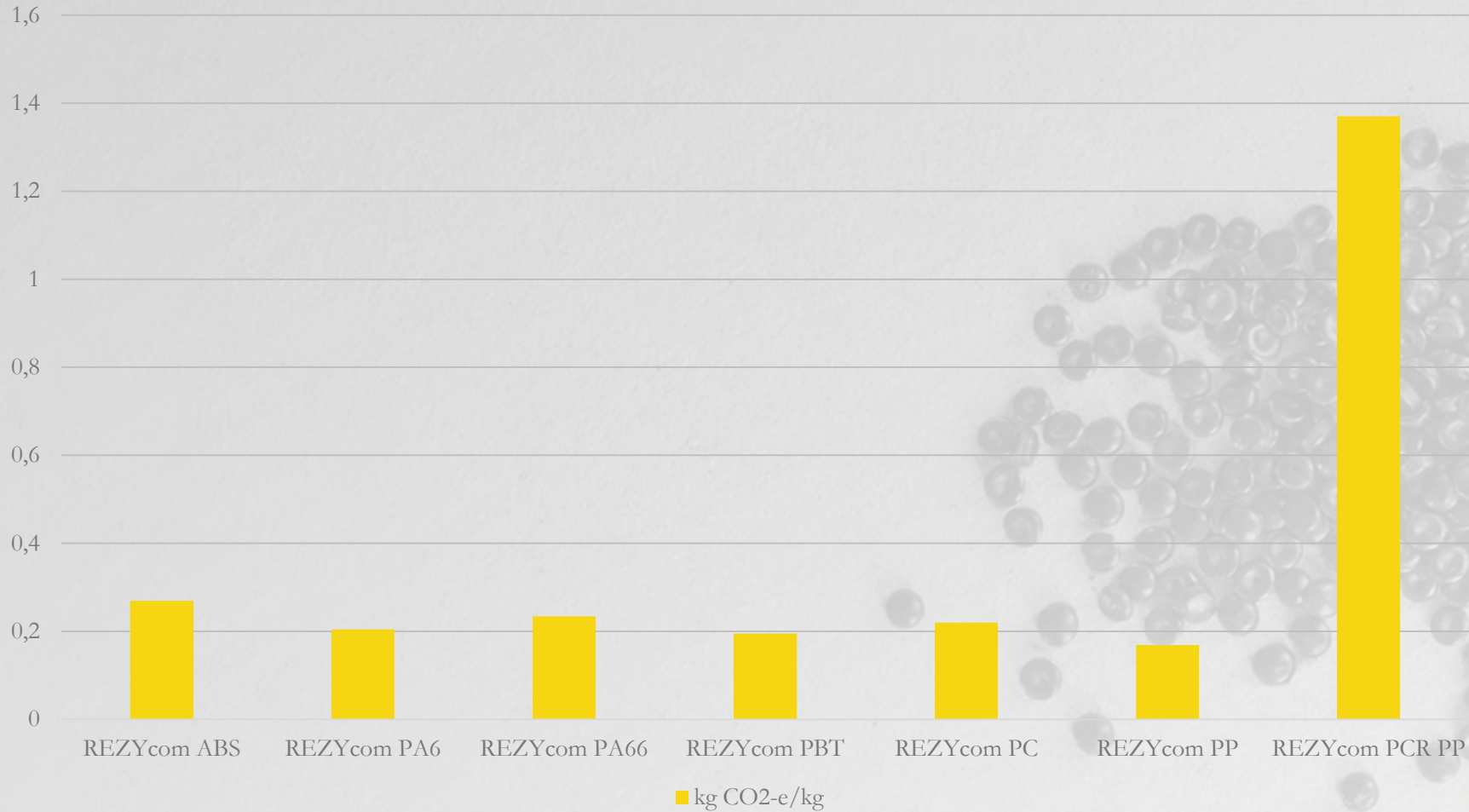


kg CO₂-e/kg



CO₂ footprint based on Polykemi LCA (cradle-to-gate).

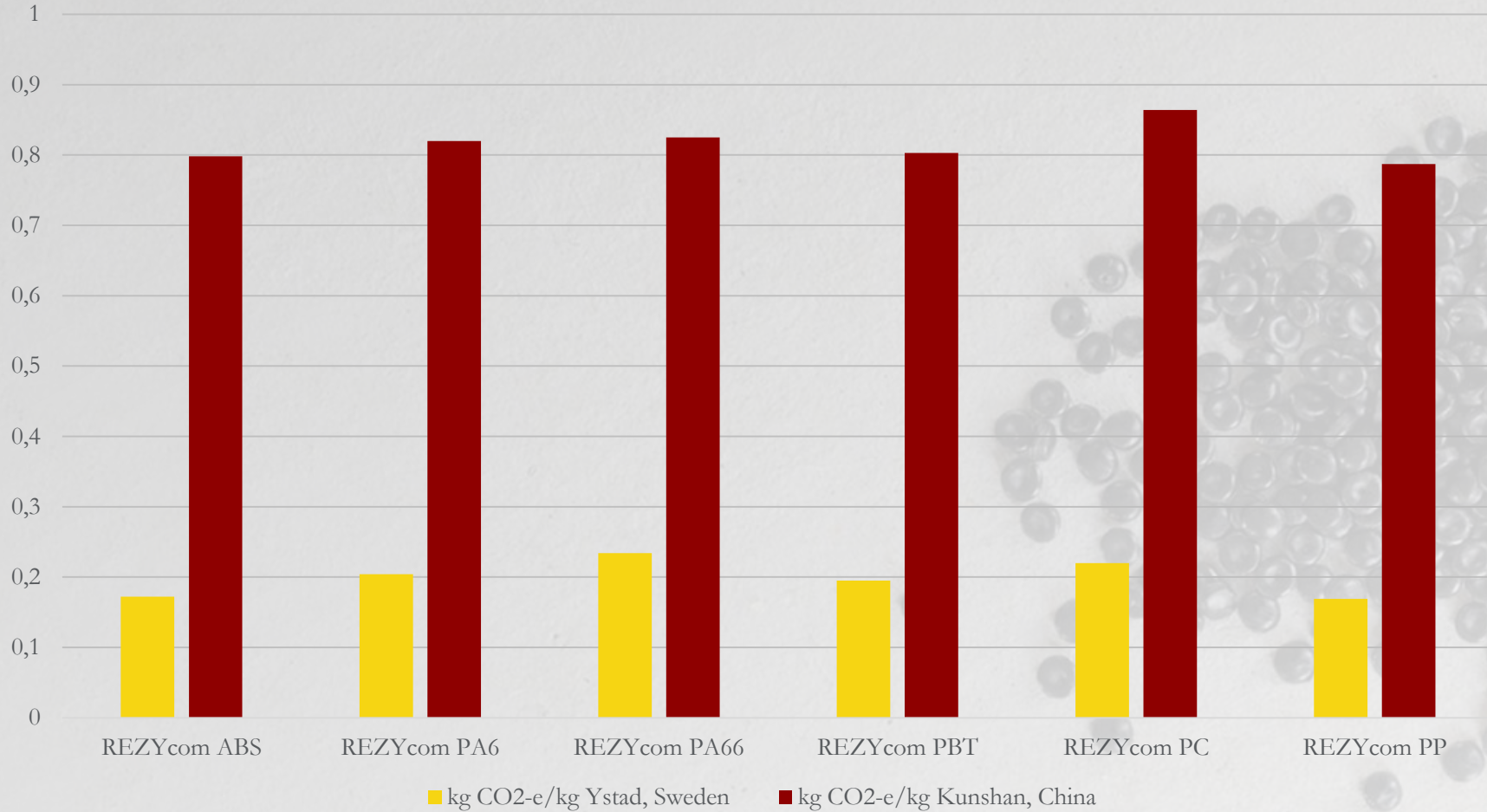
● kg CO₂-e/kg RECYCLATES PIR & PCR



Polymers based on Polykemi LCA (cradle-to-gate).

PCR PP as included based on current value chain and LCA assumptions. Will change!

kg CO₂-e/kg RECYCLATES

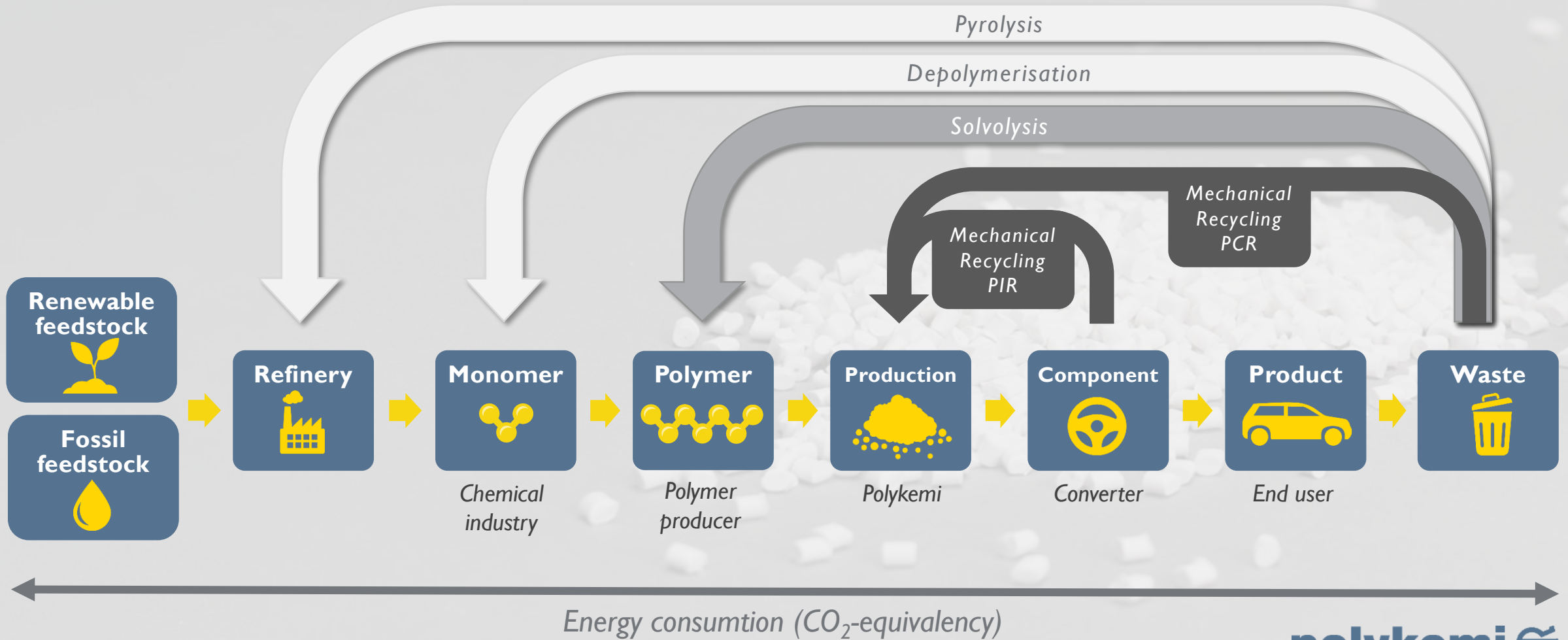


Polymers based on Polykemi LCA (cradle-to-gate).

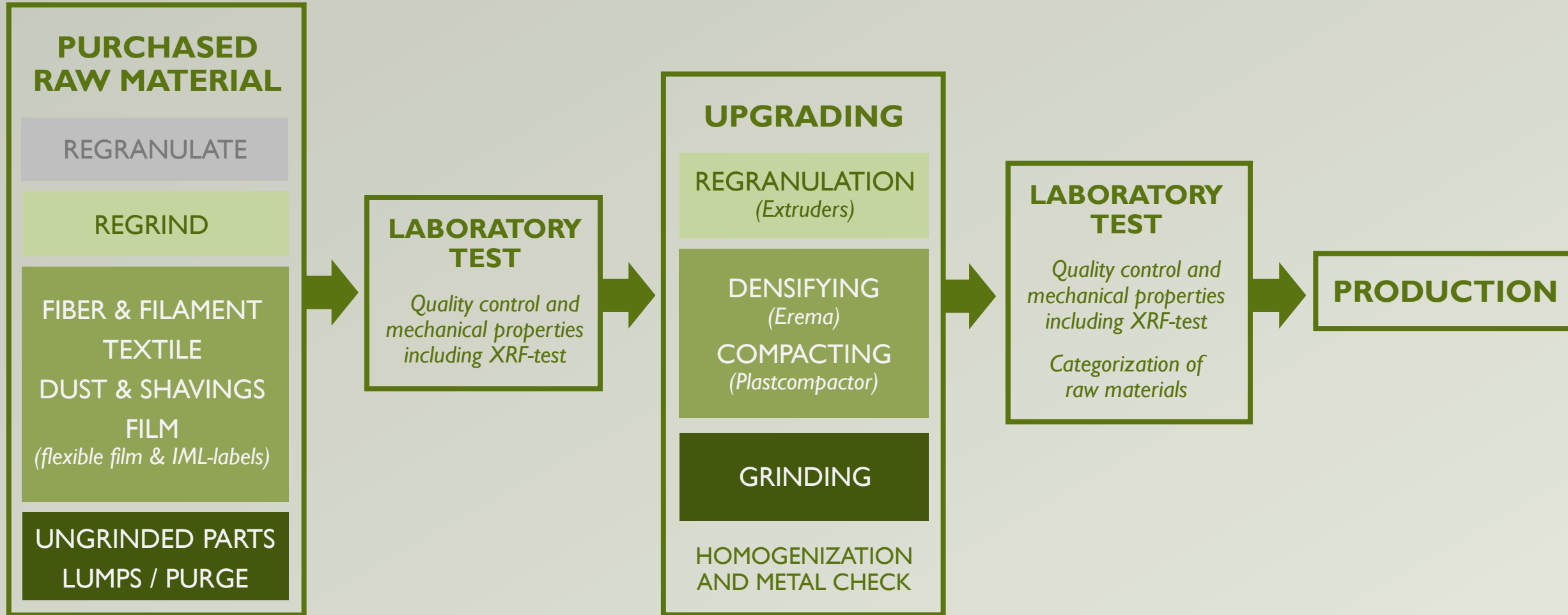
Reinforcements has an impact depending on both the filler itself and changes in added energy in compounding.

RAW MATERIALS FOR COMPOUND PRODUCTION

- Chemical recycling
- Physical recycling
- Mechanical recycling

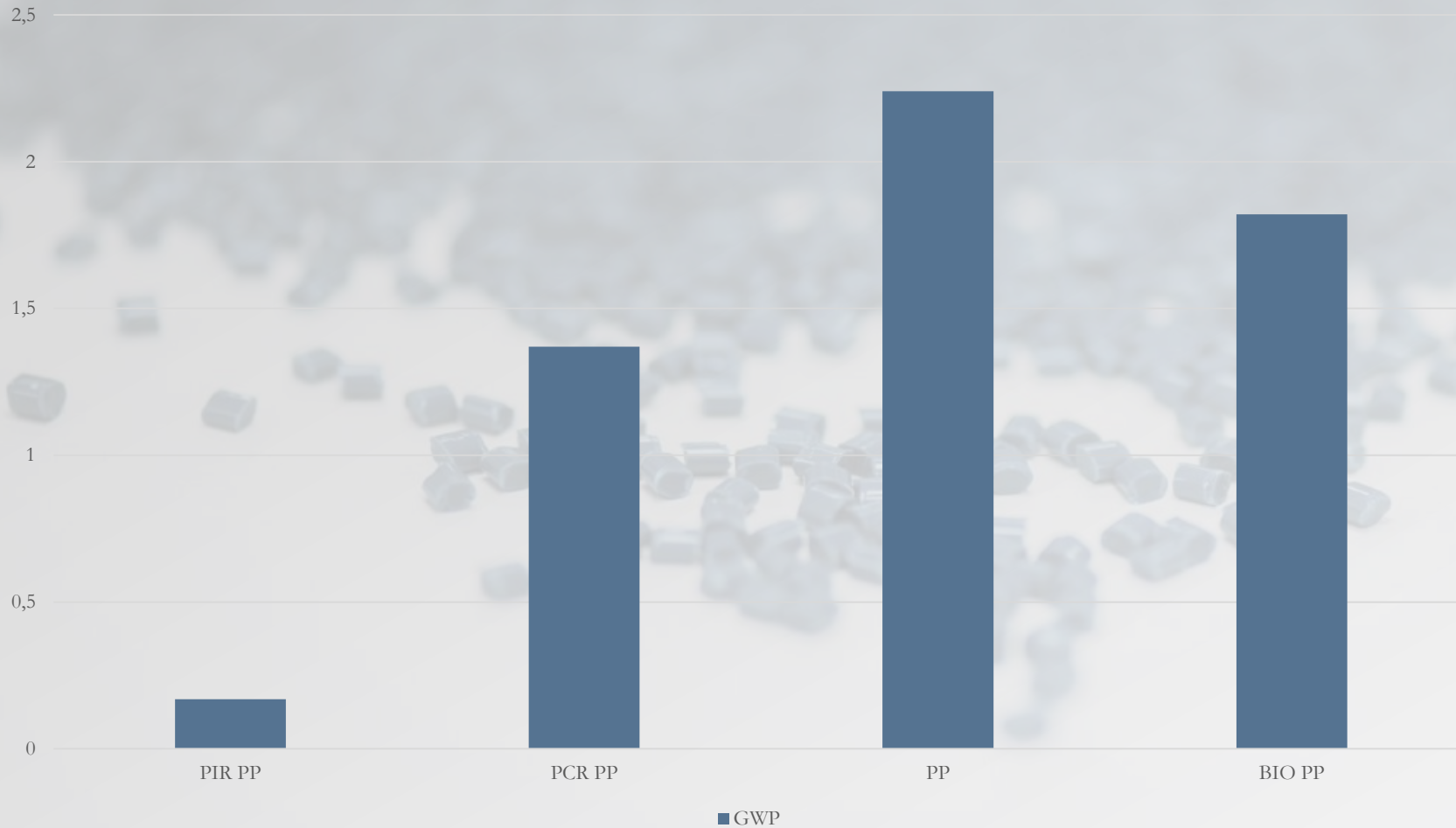


THE RAW MATERIALS - Recycling

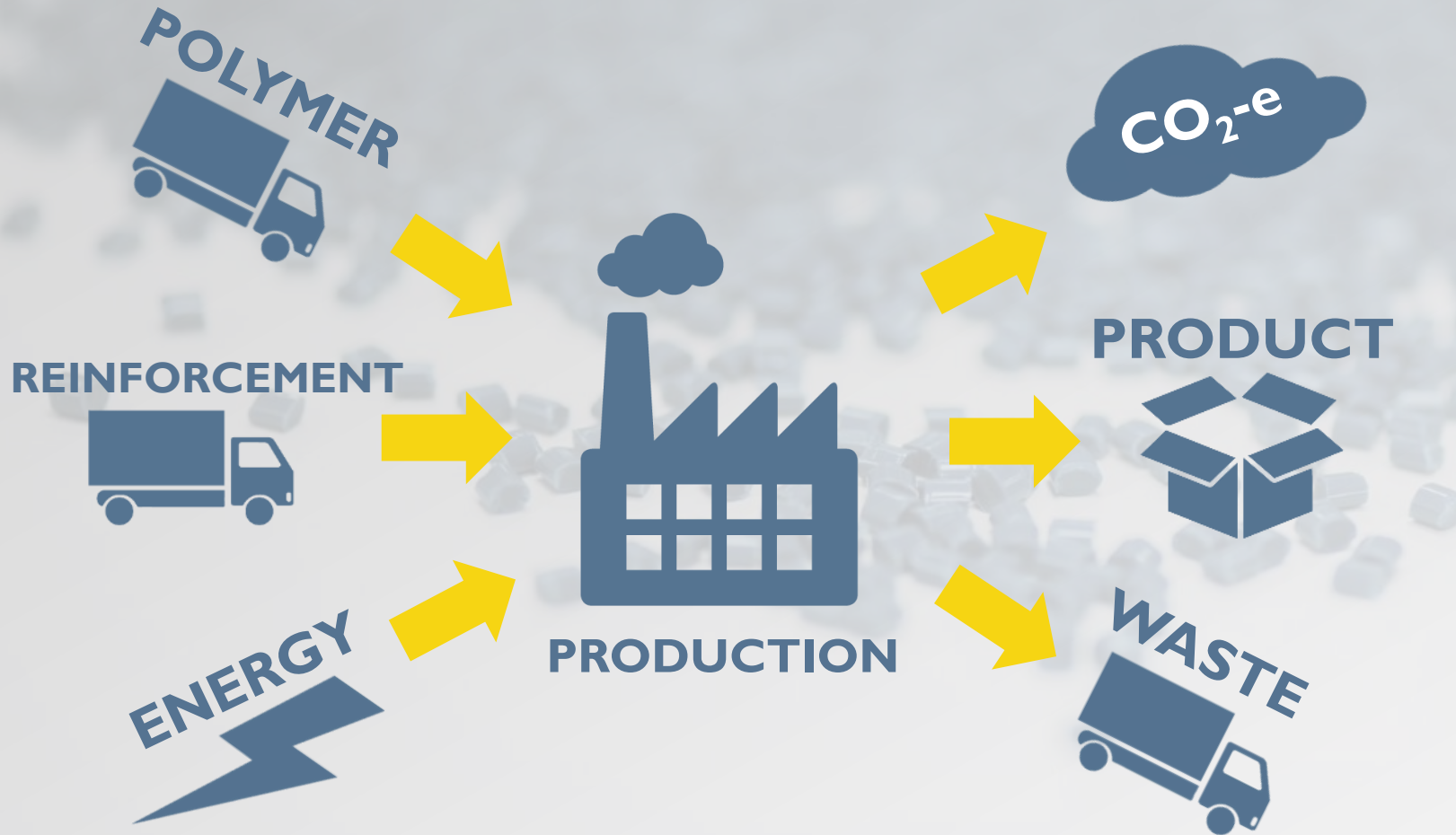


Recyclate – Virgin - Biobased

Data from Polykemi
LCA (cradle-to-gate).



CO₂-e/LCA CALCULATIONS



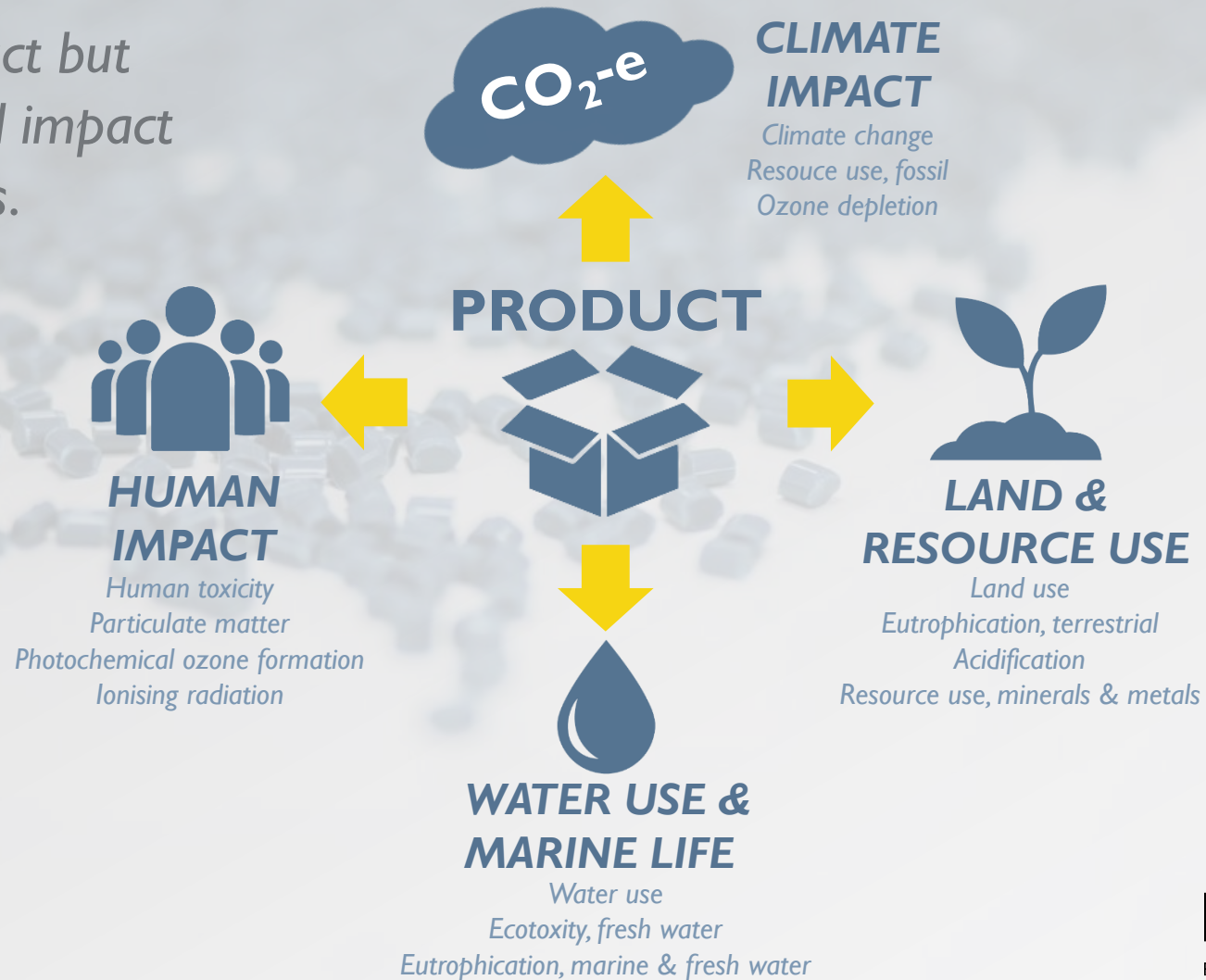
Workflow for CO₂/LCA data according to ISO 14040-44:2006.

Analysis third-party verified

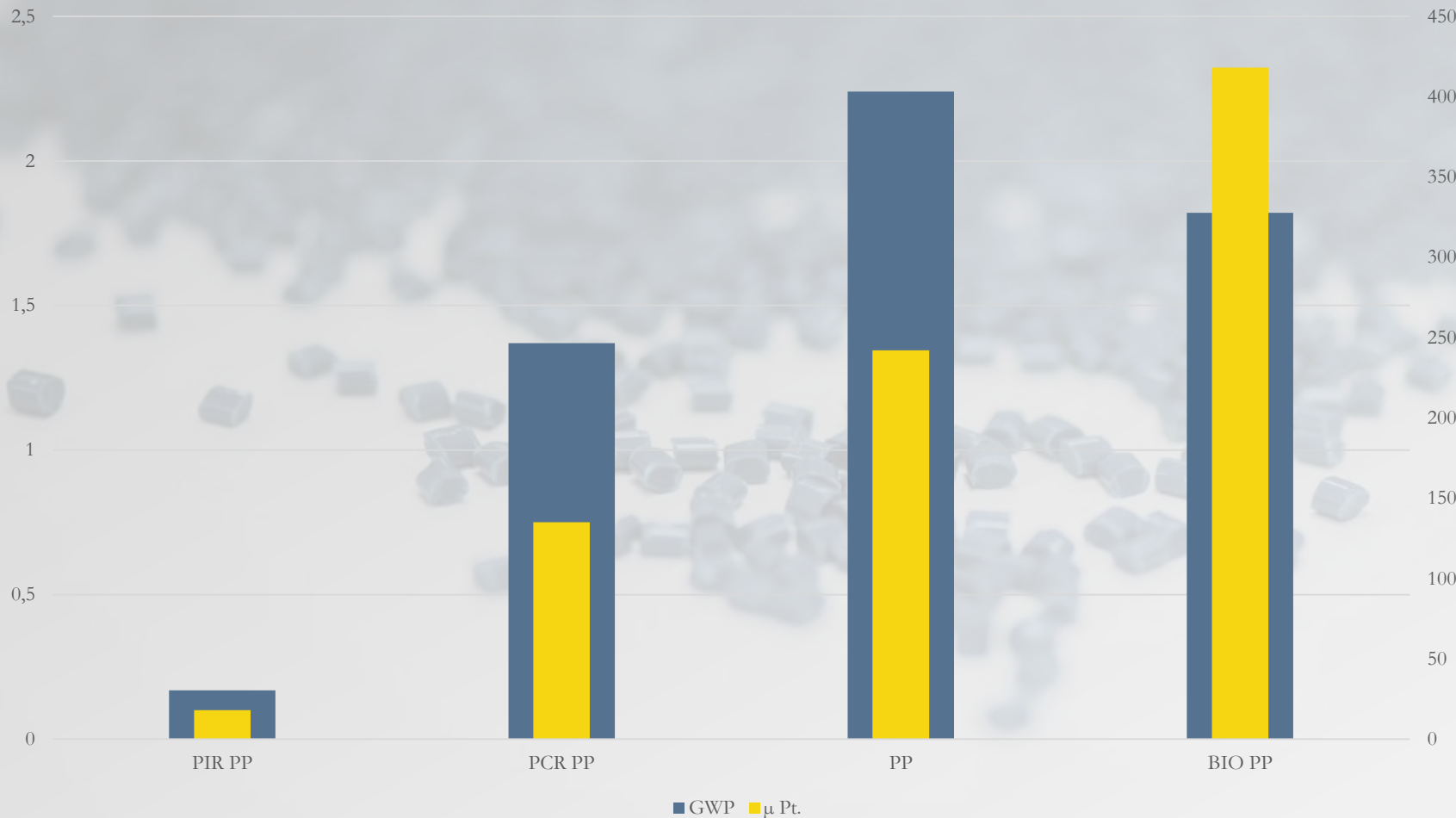
Polykemi can present **GWP** & **full LCA-data** on individual compounds produced in Ystad & Kunshan.

CO₂-e/LCA CALCULATIONS

Not only the climate impact but also the full environmental impact = all 16 impact categories.

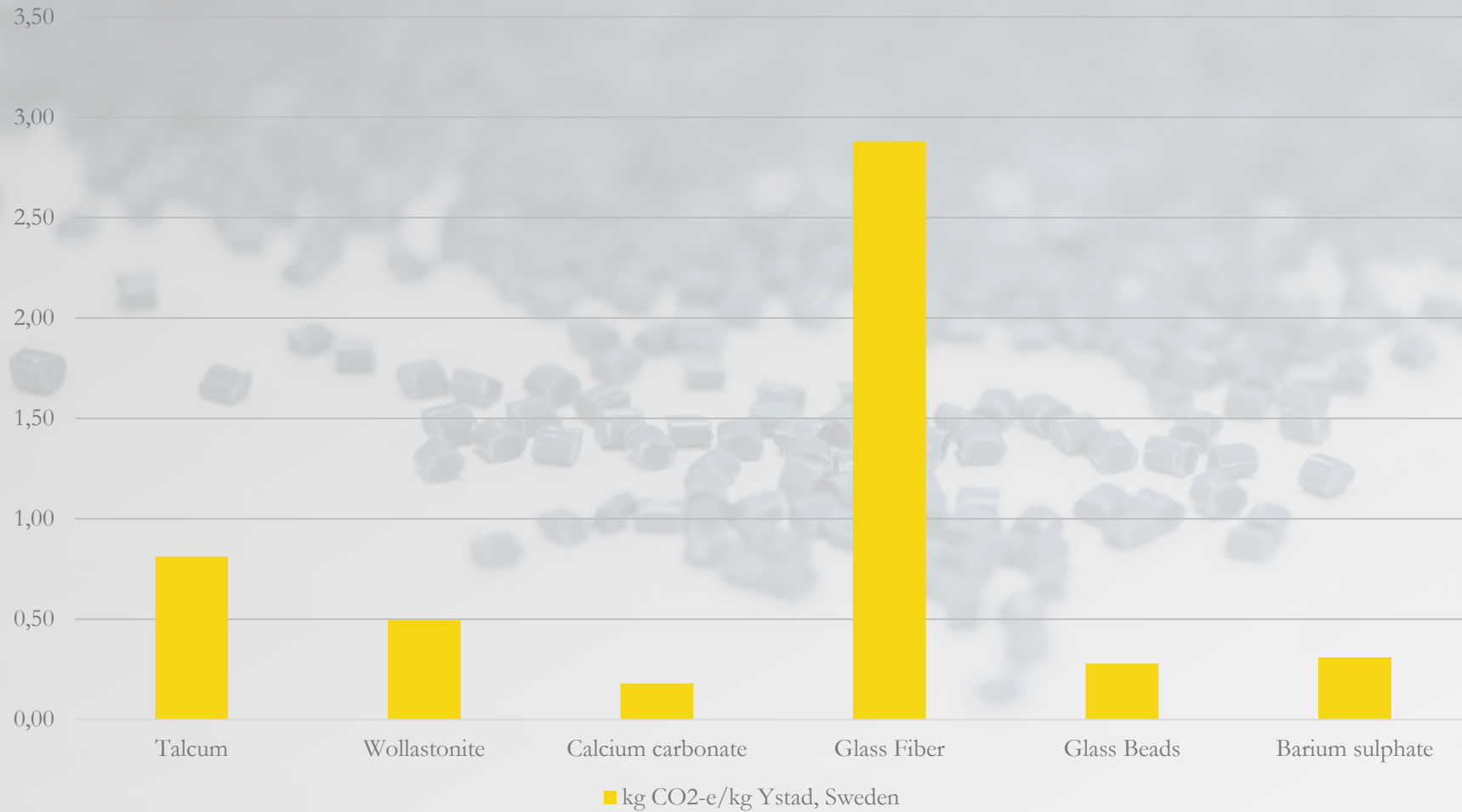


Recyclate – Virgin - Biobased



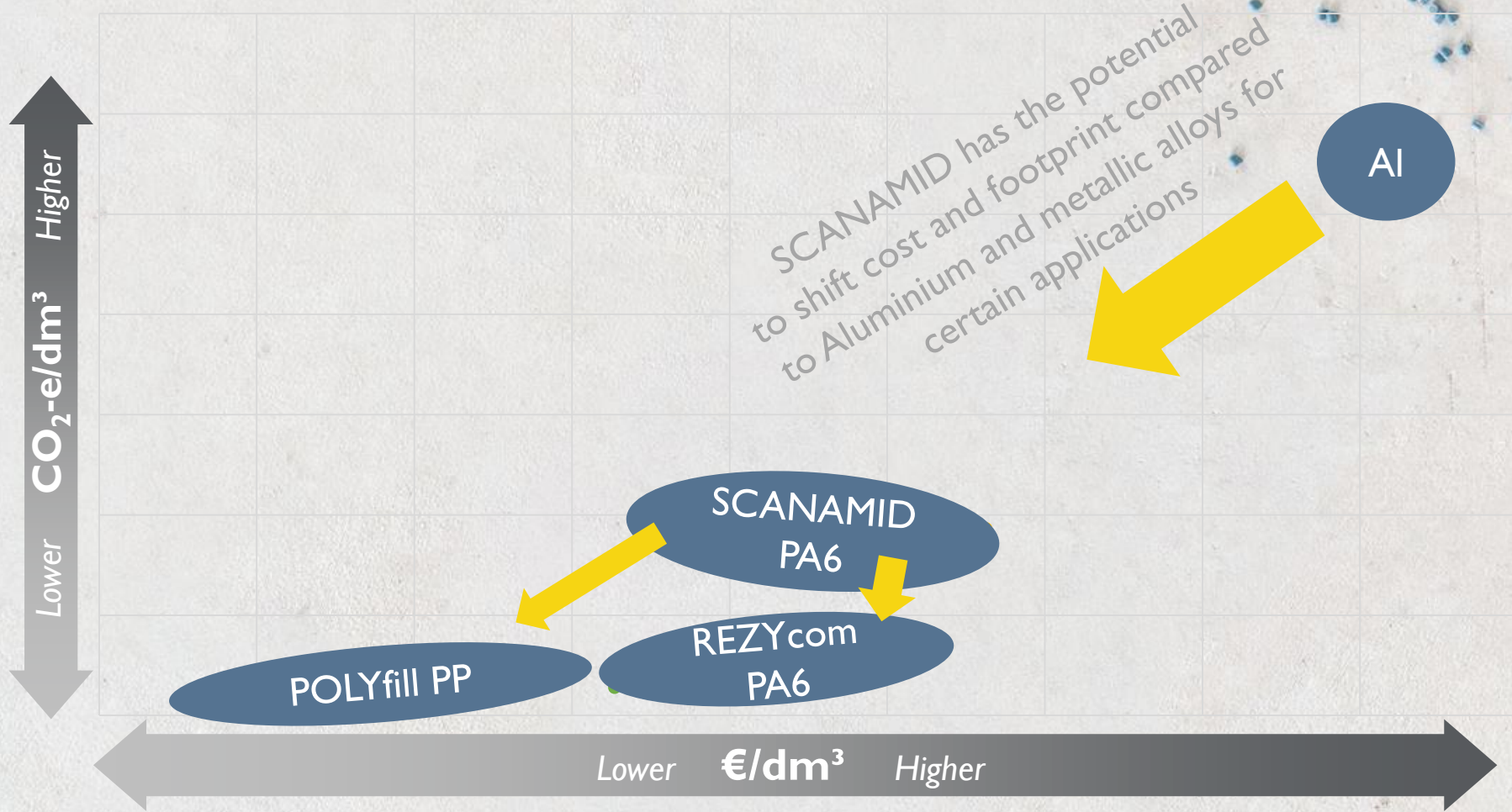
Data from Polykemi LCA (cradle-to-gate).

kg CO₂-e/kg



CO₂ footprint based on Polykemi LCA (cradle-to-gate).

CO₂-e vs. Cost



CALCULATOR Kg CO₂-e/kg

Current material

PA6 GF30 ▼

Component weight (g)

1000

Replacement material

PP GF30 ▼

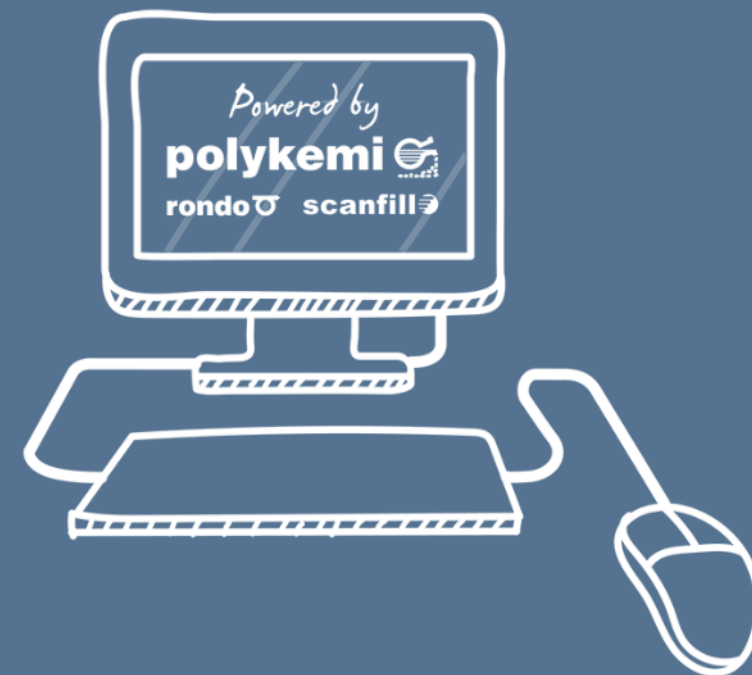
If you change from **PA6 GF30** to **POLYfill PP GF30**,

the climate impact decreases by:

75 %

and the component will be:

4 times more material-smart



CALCULATOR Kg CO₂-e/kg

Material Footprint

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Ystad

Original: Suggestion:

PA6	70%	POLYfill PP GF5030HC /	100%
PIR Content	%	PIR Content	%
Glass Fiber	30%		%

Result

kg CO ₂ -e/kg:	8,07	kg CO ₂ -e/kg:	2,01
		Difference:	-6,06

Annual Volume (kg): 100000

Saving (kg CO₂-e): 606000

km* times around the world* No of cars per year*

5600739	139,75	400
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*) Based on EU27 median car 2020, (14000km/year 0,108 kg CO₂-e/km)

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Calculate Clear Config Close Form & Save Close form Mail

- Simplified benchmark tool
- Gives indicative values
- Accurate values (Cradle-to-Gate) will be provided when material is developed and tested

CALCULATOR Kg CO₂-e/kg



CO₂-e CALCULATOR – RAW MATERIAL

PA6 GF15 vs. 70% PIR PA6 GF15

	Original	Optimized	Saving
Total kg CO ₂ -e/kg material	9,19	3,18	6,01

PA6 GF15 vs. PP GF15

	Original	Optimized	Saving
Total kg CO ₂ -e/kg material	9,19	2,34	6,85

-7,28 with density compensation

● IN CONCLUSION...

- Polymer choice can have a higher impact than only using recyclates.
- Polykemi can help you simulate climate impact of different material choices.
- Biocircular materials will reduce climate impact, but might be worse for the environment,



A black and white photograph of a man in a suit operating a large industrial machine in a factory. The man is looking down at the machine, which has a large cylindrical component. The background shows other industrial equipment and a factory floor.

“If you stop getting better,
you stop being good”

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*Scan with the camera
on your phone*

Read more at
www.materialsmart.info