



Direct Air Capture promises near future business opportunities

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Direct Air Capture will have an important role to reach climate goals

1

Mitigate climate change

2

Immediate actions

3

Business potential

How to make Direct Air Capture profitable for future business?

Various factors affect CO₂ capture price



Technology



Price
distribution



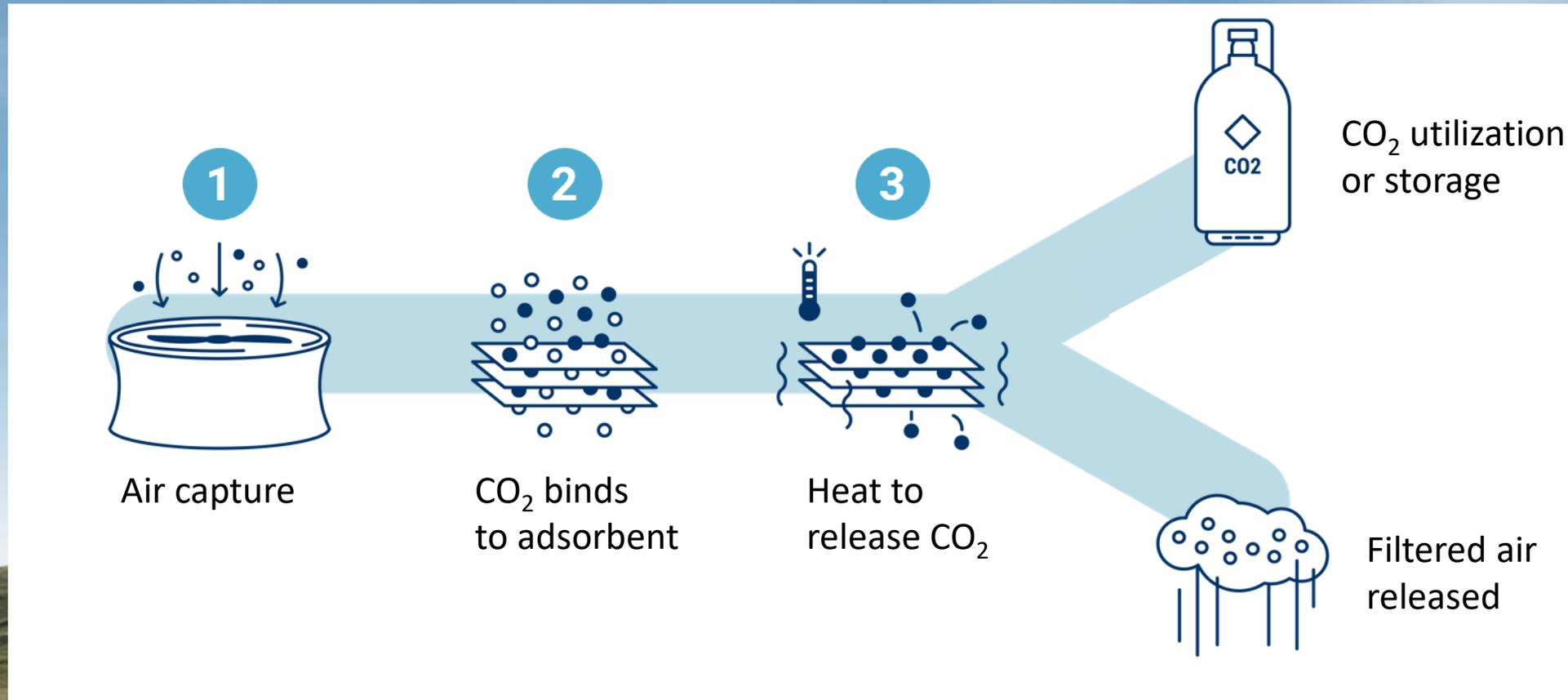
Synergies of
excess heat



Market
potential



Adsorbent technology captures CO₂

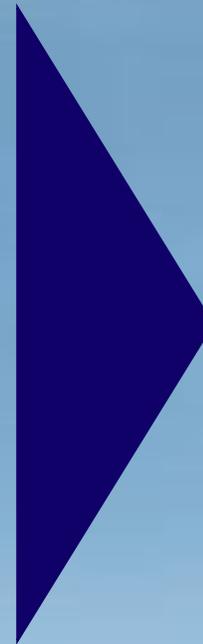




Moving towards 145 €/tCO₂ by 2030

$$LCOD = \frac{capex \cdot crf + opex_{fix}}{output_{DAC}} + opex_{var} + cost_{electricity} + cost_{heat} + cost_{sorbent}$$

Plant size	100000 tCO ₂ /year
Target year	2030
Electricity price	50 €/MWh
Heat price	20 €/MWh
Sorbent price	50 €/kg sorbent

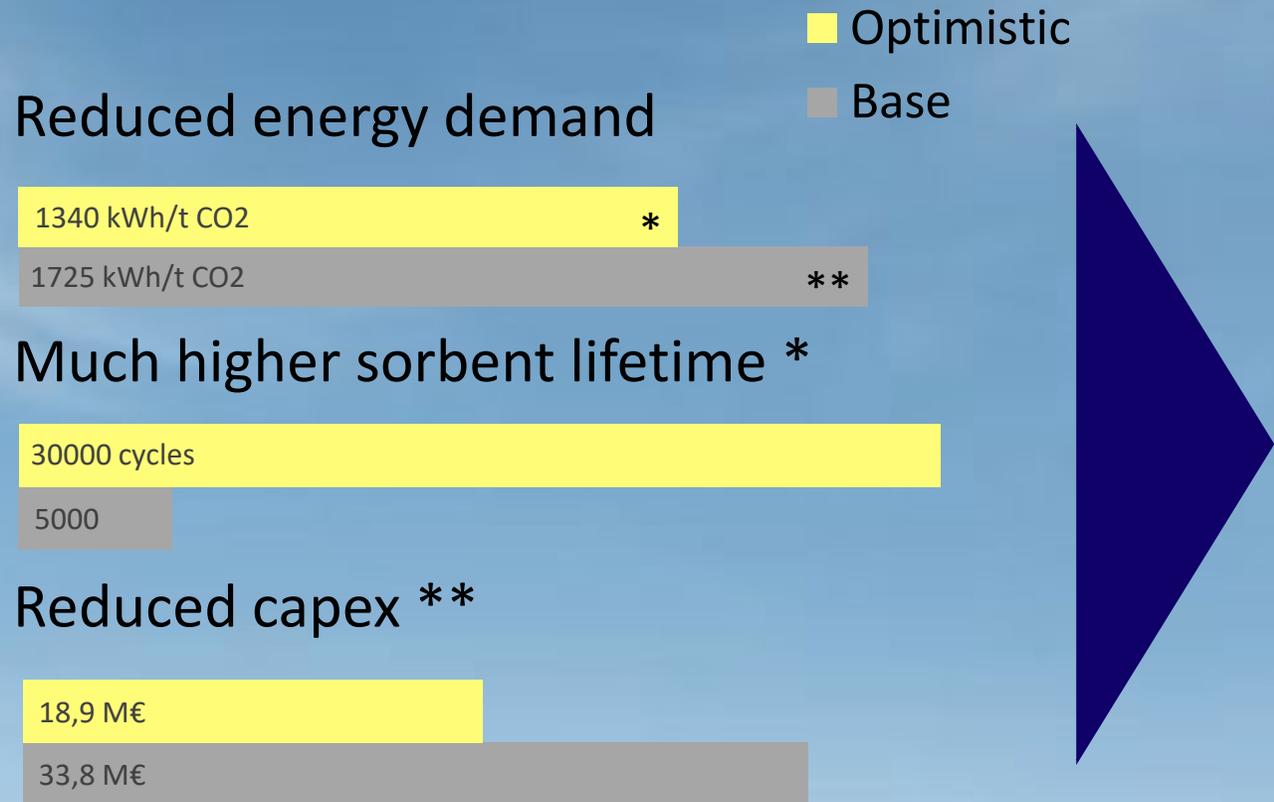


Price estimation

145 €/tCO₂



Optimistic scenario results in extremely low price



Price estimation

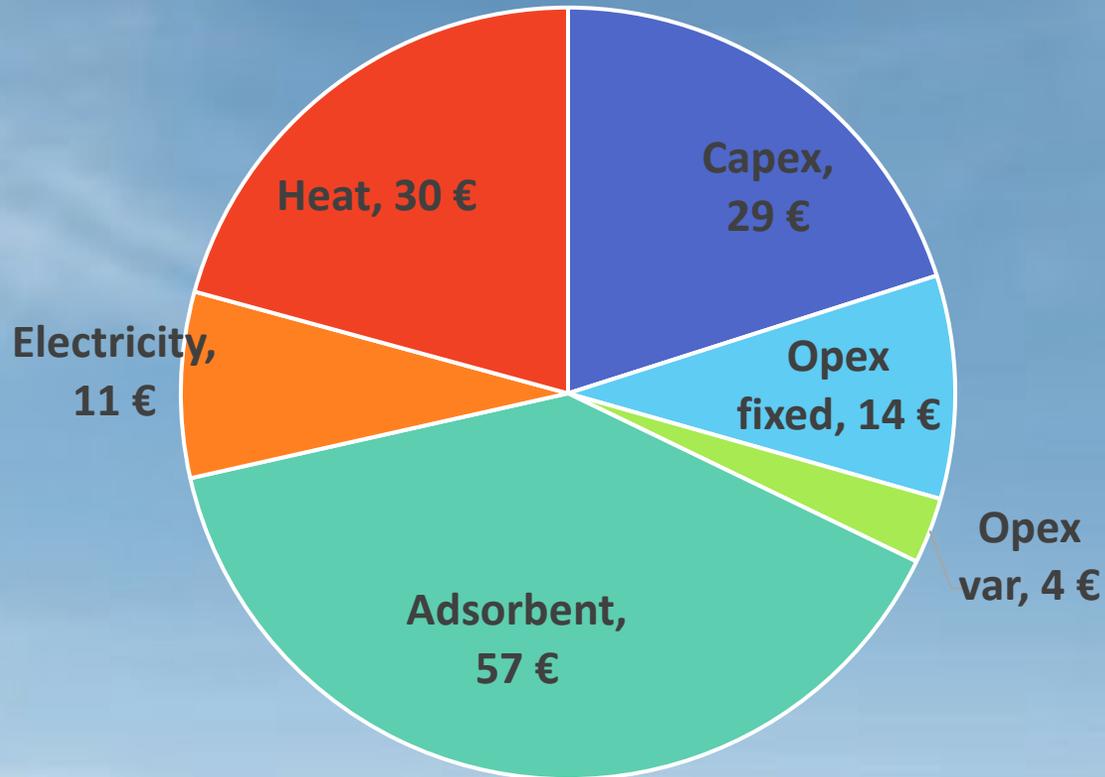
Base scenario	Optimistic scenario
145 €/tCO ₂	70 €/tCO ₂

* VTT (2022)
**Fasihi (2019)

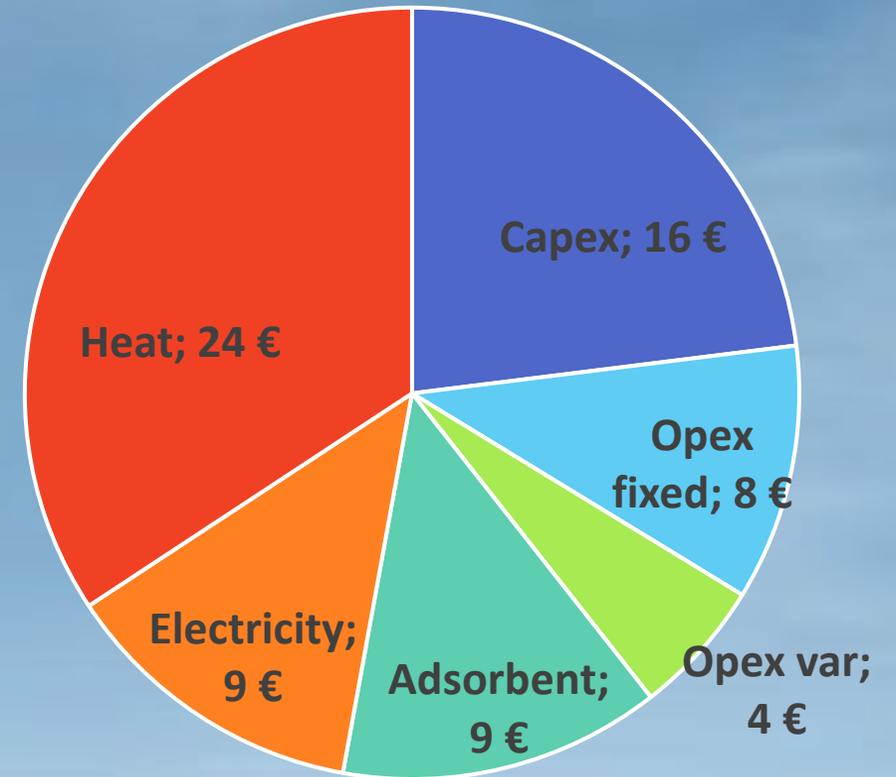


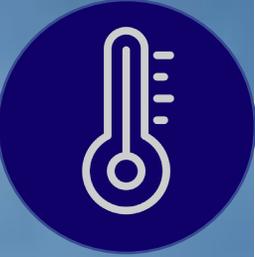
Adsorbent and heat dominate the price

LCOD Distribution - Base Scenario

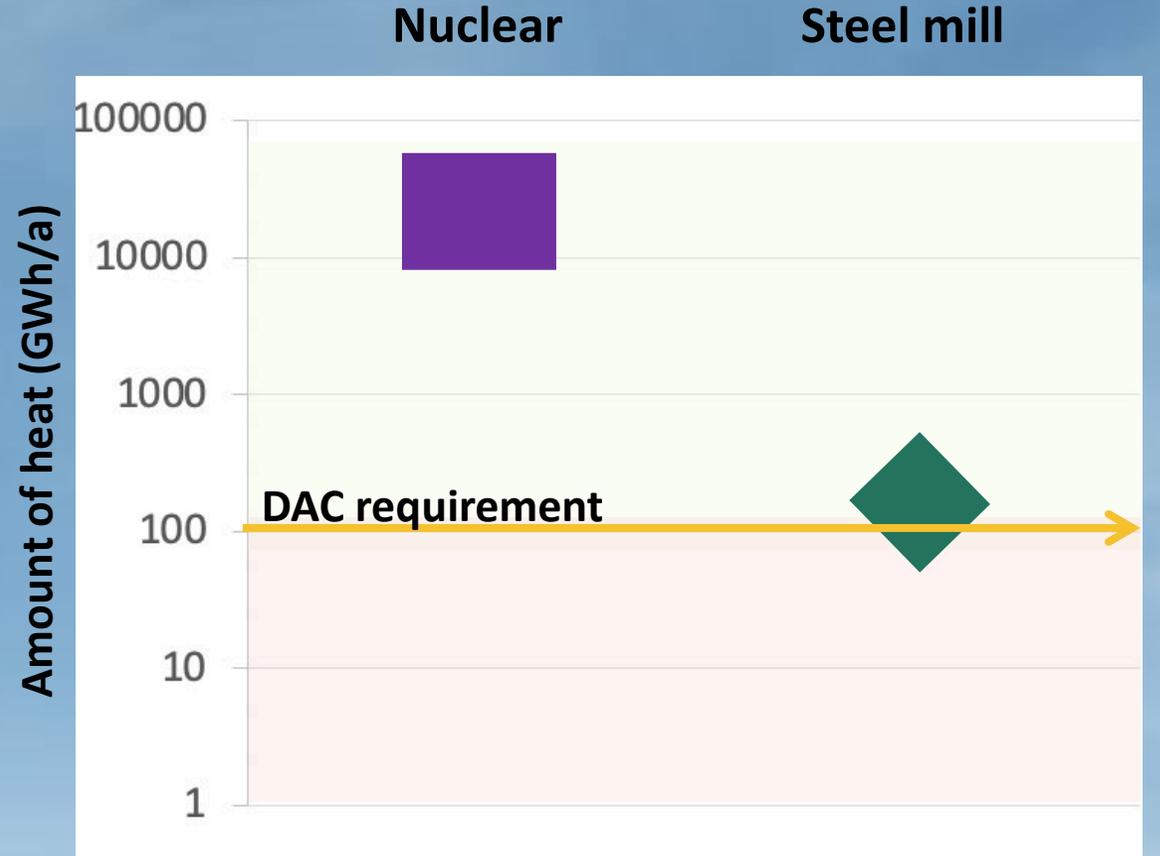
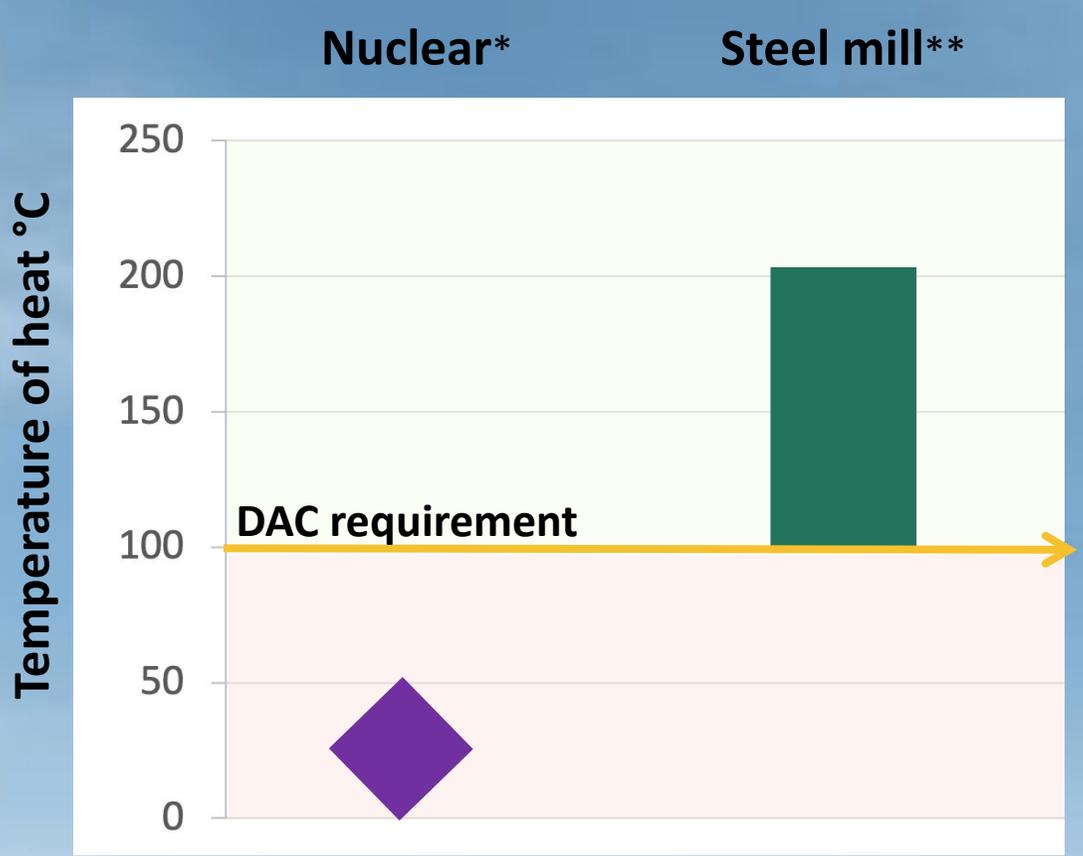


LCOD Distribution - Optimistic Scenario



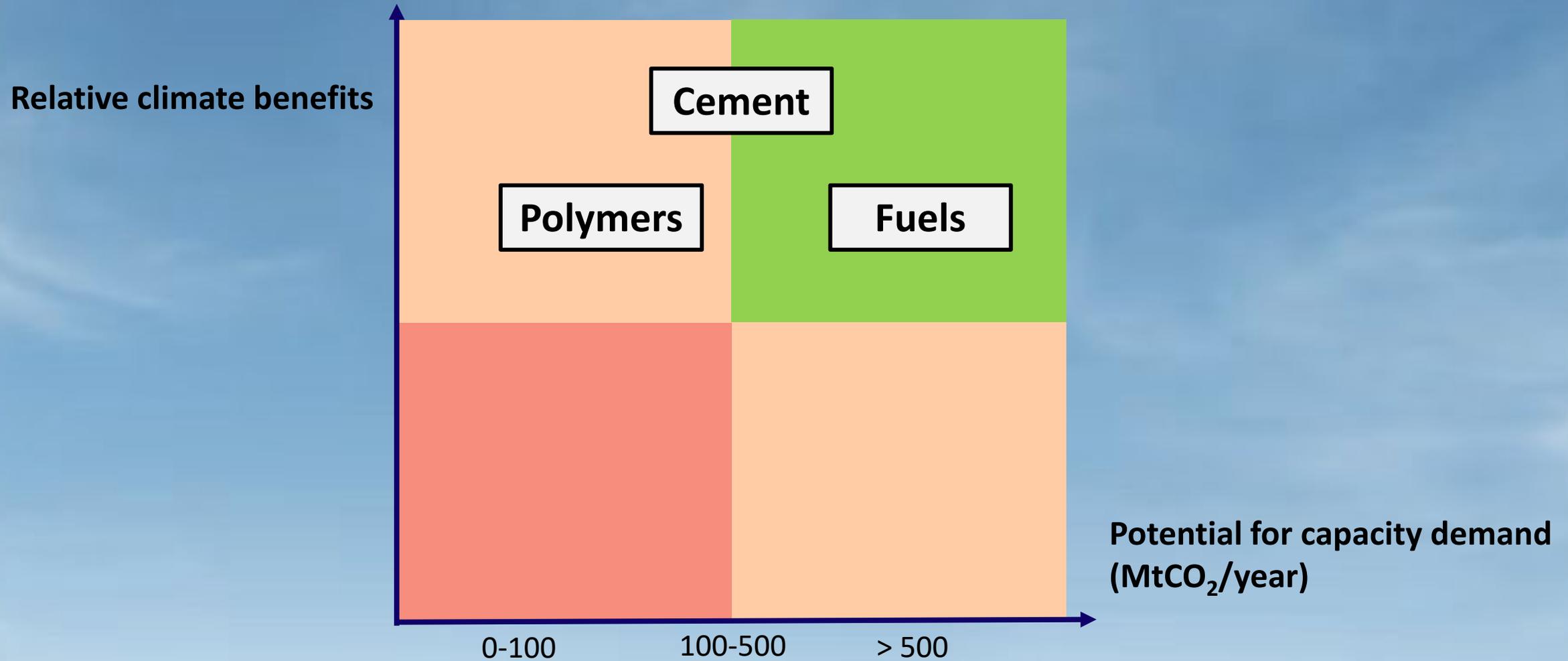


Industrial excess heat is a good heat source for DAC





DAC demand potential for industries



DAC x Helen

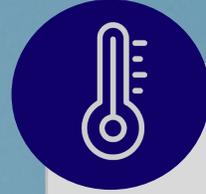
How to make Direct Air Capture profitable for future business?



Low temperature technology has advantages



Adsorbents need to become more feasible



Industrial excess heat meets the requirements



Synthetic fuels production most appealing