

Taking BECCS to the market - are you ready for Net Zero?

Erik Rylander, Head of Carbon Dioxide Removal

CO2 Capture, Storage and Reuse

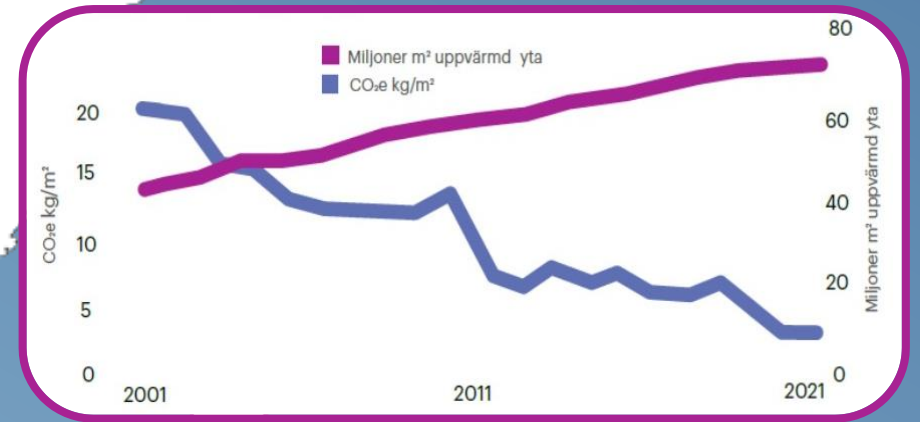
Copenhagen, May 16, 2023



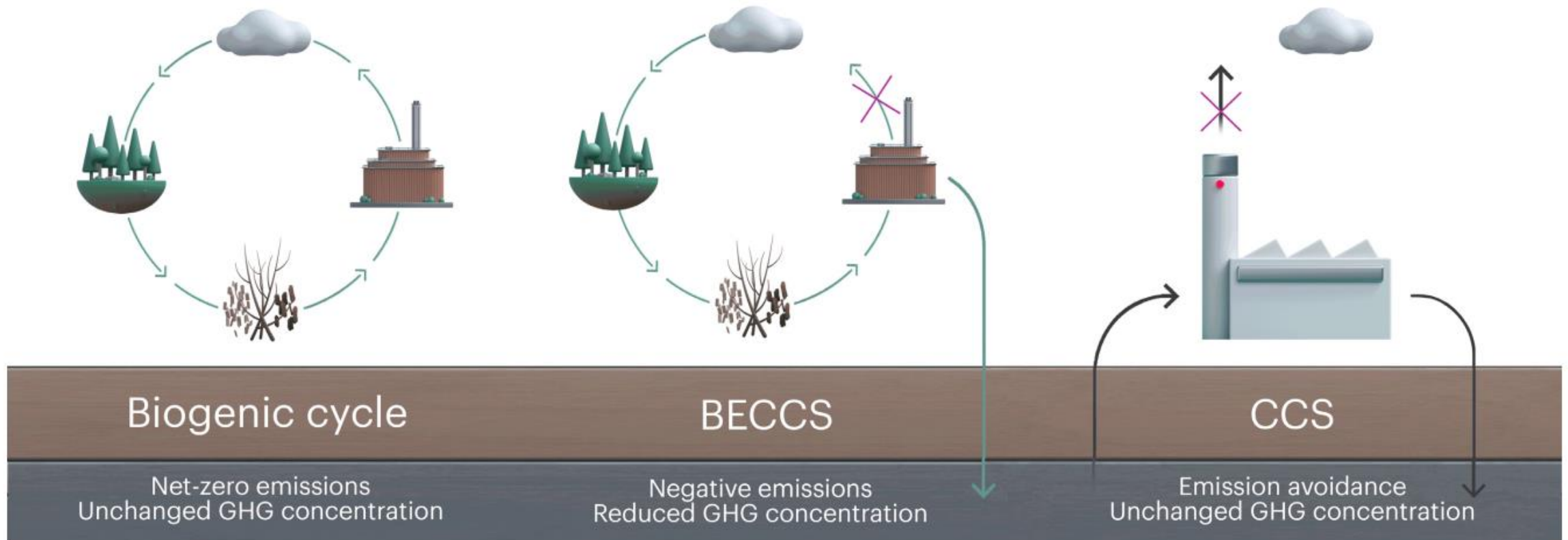
Stockholm Exergi

- District heating and cooling to 12 000 buildings and power to the electrical grid, totaling 10 TWh
- 50% owned by City of Stockholm
- €700 m turn-over
- Recent phase out of last coal-fired plant; now 99 per cent of production from recovered, reused and renewable sources
- Next step: Become EU's largest supplier of CO₂ removals with permanent storage

Stockholm's decoupling of growth and fossil emissions for heating



BECCS w. geological storage (Negative Emissions) remove carbon dioxide from the atmosphere permanently



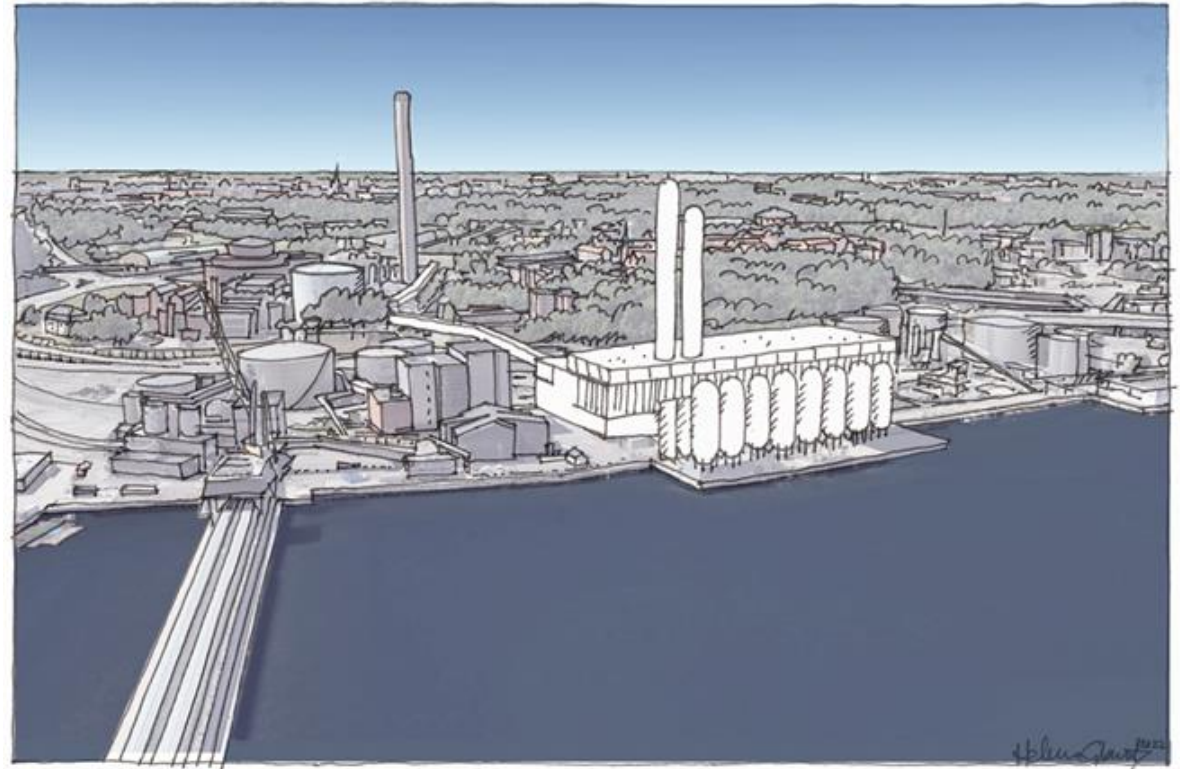
BECCS Stockholm in short

Key Benefits

- Removal of 800 000 tons CO₂ per year
- Heat recovery to district heating network – no energy loss
- Sustainable biomass. No additional outtake
- Proven and environmentally friendly capture technology
- High concentration of CO₂, around 19%.
- 90-95% capture
- Ownership of steam, electricity and harbor

Funding legs

- EU Innovation Fund (BECCS Stockholm)
- Swedish state aid – Reversed auction
- Sales of Carbon Removal Certificates (CRC) to Voluntary Carbon Market (VCM)

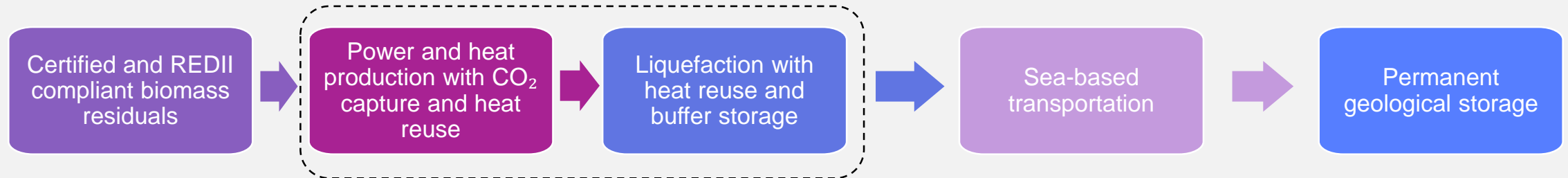


A platform for climate mitigation in the center of Stockholm

KVV8 – One of Europe's largest biomass CHPs
375 MW, with max 140 MW electricity



CHP + Carbon Capture + Temporary Storage by Stockholm Exergi



Will we make it until 2026?



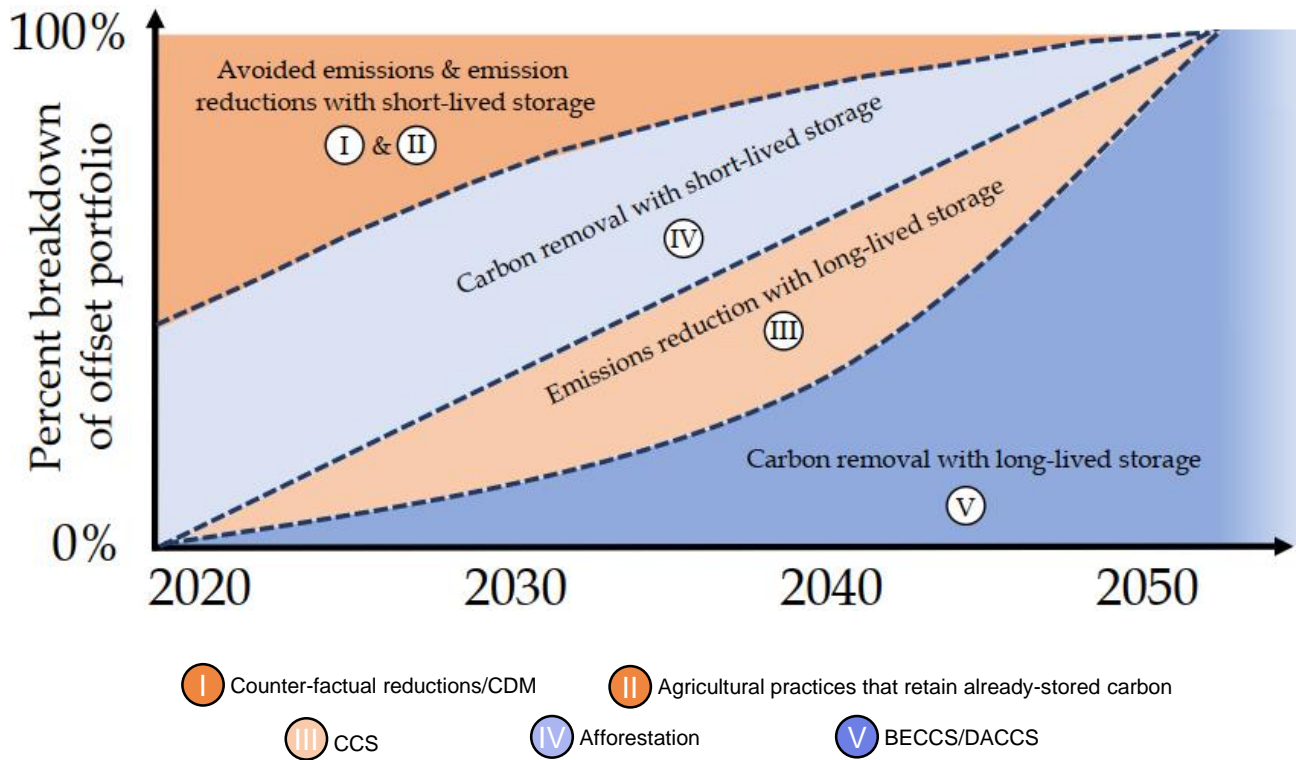
Transport & Storage

Funding

Allocation of risk along the
value chain

Climate Strategy for Net-zero – Portfolio of Climate mitigation instruments

The Oxford Principles for Net Zero Aligned Carbon Offsetting, Oxford University, September 2020

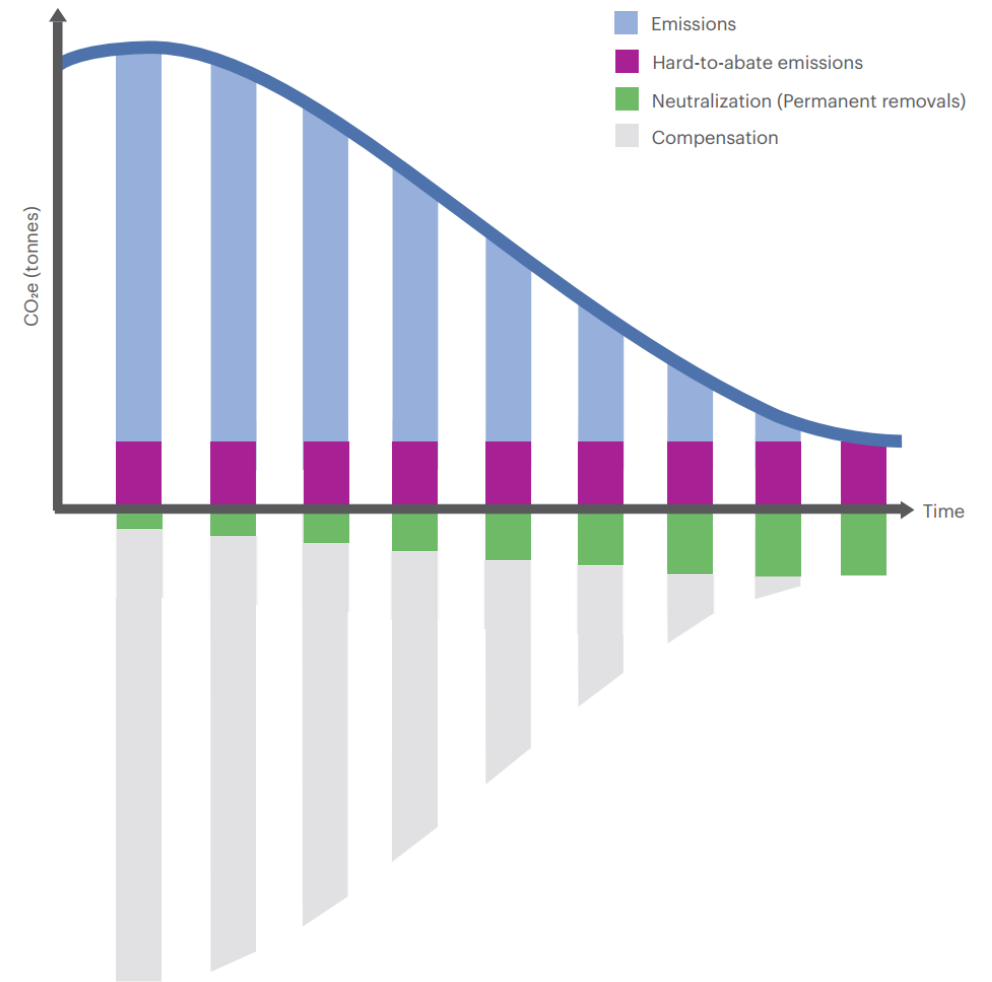


- We need all mitigation tools available. Traditional off-sets and permanent removals will co-exist, with the latter being phased in as early as possible
- As the 1.5 °C emission budget is consumed, only removals will work as off-sets
- At net-zero, only permanent removals will be able to neutralize residual emissions

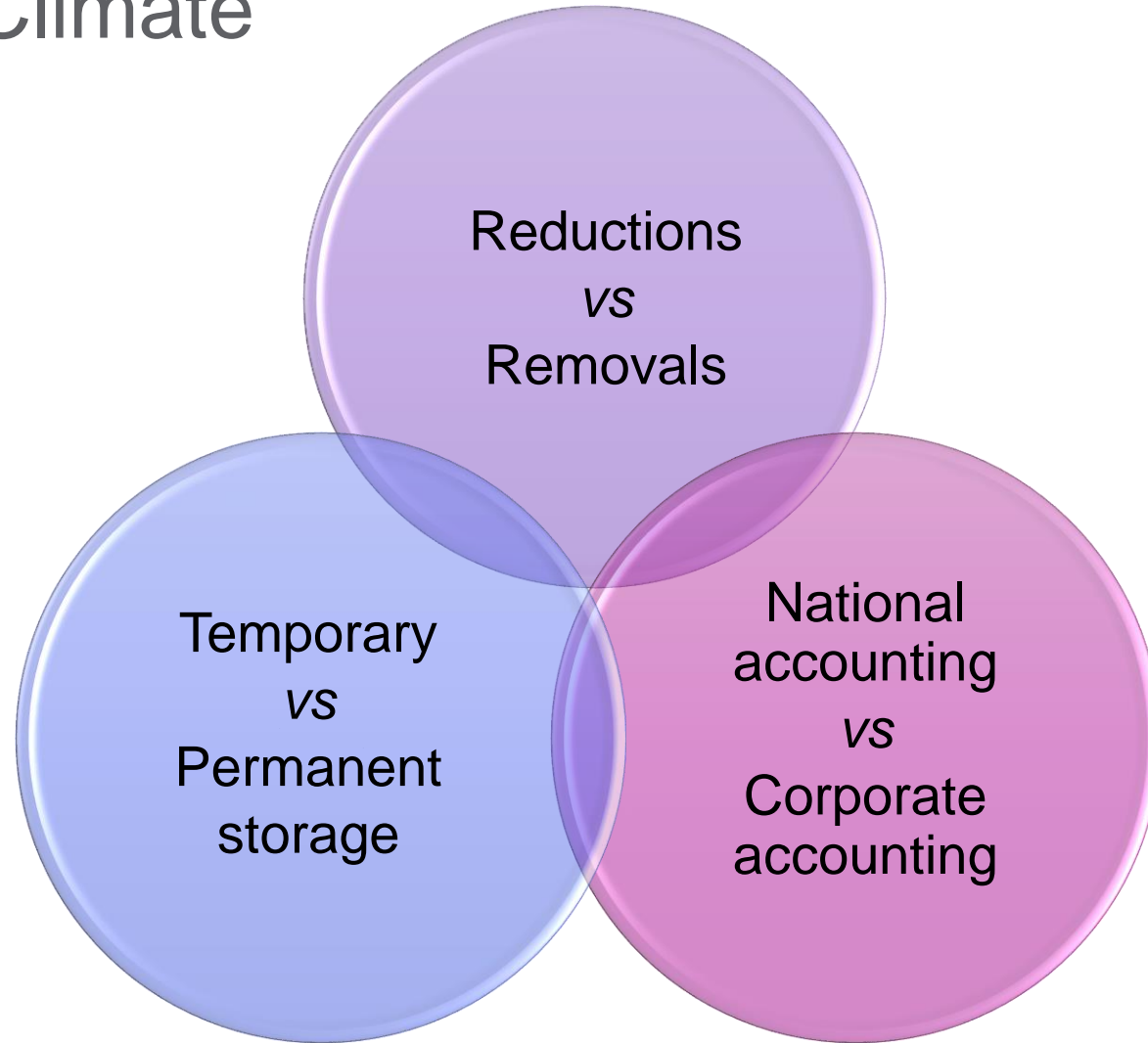
Strategy for Net-Zero forerunners

- no BECCS without market demand

- Commit to a Paris Agreement aligned emission reduction path, Scopes 1 to 3
- Start phasing in permanent removals towards Net-zero target year
 - Unless specific data available, assume residuals are 10%
- Use traditional instruments to off-set the remaining unabated emissions



The Trinity of Climate Confusion



Are you ready for Net Zero?

Stockholm Exergi is now engaging to conclude BECCS off-take agreements during 2023

The offering is open to all companies with a net-zero target, and thus in need of permanent removals

Set-up

- Enter off-take agreement 2023
- Certification methodology will comply with outcome of CRC-F, or better
- Contract runs for 10 years, with delivery starting 2026/2027
- Payment at delivery over the ten years

Beccs Stockholm

NEGATIVE EMISSIONS BY STOCKHOLM EXERGI

2023-05-19



This project is co-funded by the
European Union's Innovation Fund
under grant agreement no 101051202

