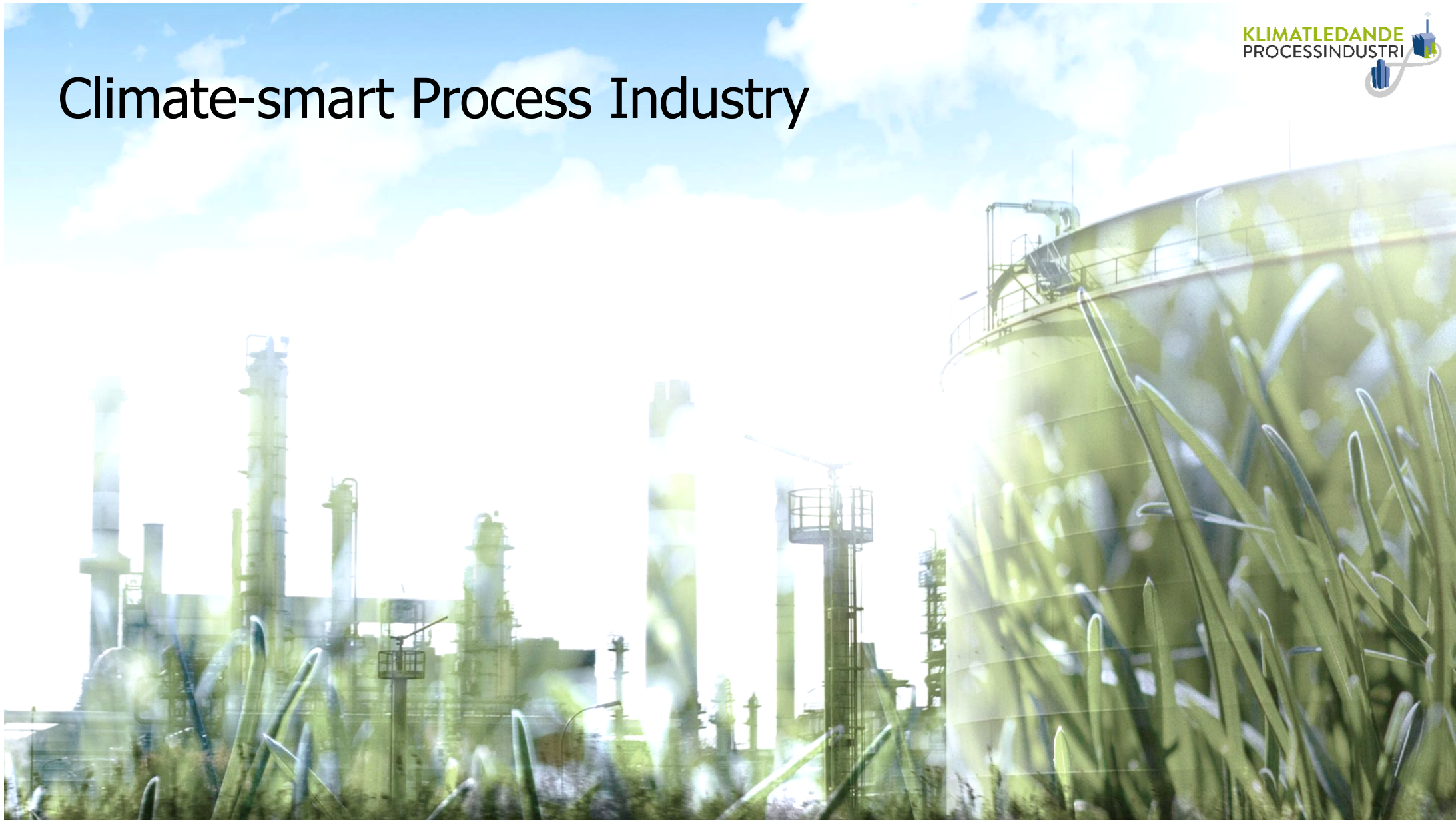
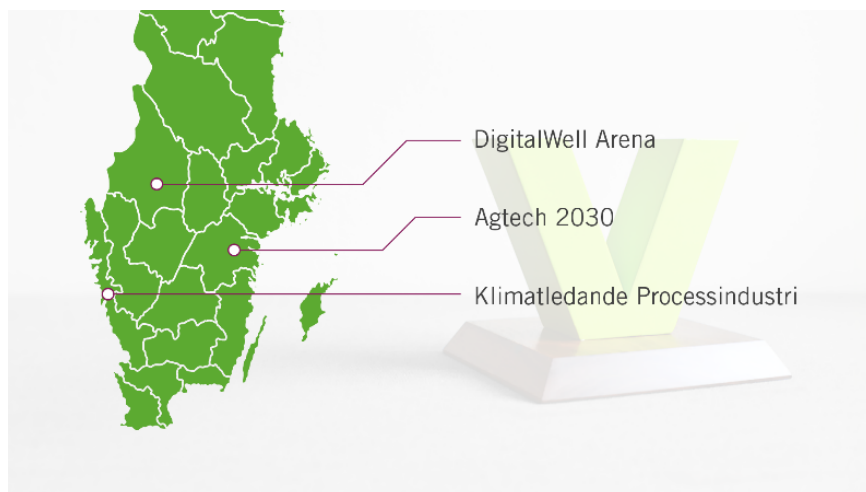


Climate-smart Process Industry



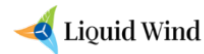
Climate-smart Process Industry



Part of a ten-year funding approach aiming to establish nationally and internationally strong and attractive innovation arenas



Initiative partners within the West Sweden Chemicals and Materials Cluster



Vision

This initiative will lead a transition from an industrial region based on fossil raw materials to a region where industry is world leading in the production of chemicals, materials and fuels based on renewable and recycled raw materials.



Climate-smart Process Industry

- 51 MSEK from Vinnova
- 34 MSEK from Region Västra Götaland
- Membership fees and in-kind as co-financing
- Total budget 116 MSEK
- 10 years starting from 2019-01-01



VINNOVA

VÄSTRA
GÖTALANDSREGIONEN
REGIONUTVECKLINGSNÄMNDEN

Desired long-term effects

Increased Innovation Capacity:

- Maintained competitiveness in the process industry
- Sustainable, long-term growth in the region
- New jobs in the process industry
- Increased, stable market for climate-leading products and fuels

Present total CO₂ emissions from the region:

- 9 Mton CO₂-eq/year
(17% of national emissions)

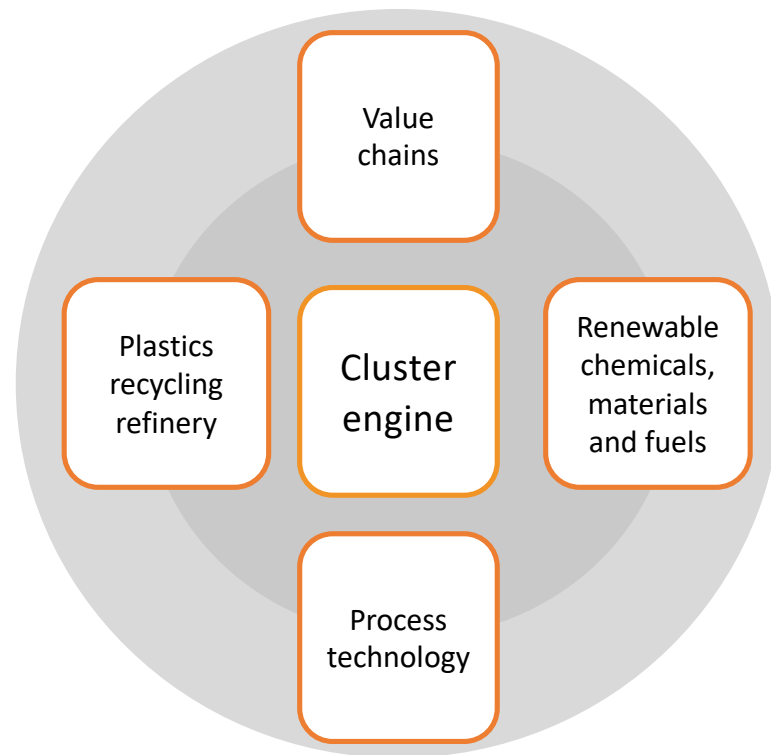
Estimated potential CO₂ reductions resulting from thematic areas in this initiative:

- Plastics recycling refinery:
1 Mton CO₂-eq/year
- Renewable chemicals, materials and fuels:
2,5-3,8 Mton CO₂-eq/year
- Process technology:
2,5 Mton CO₂-eq/year

Our approach

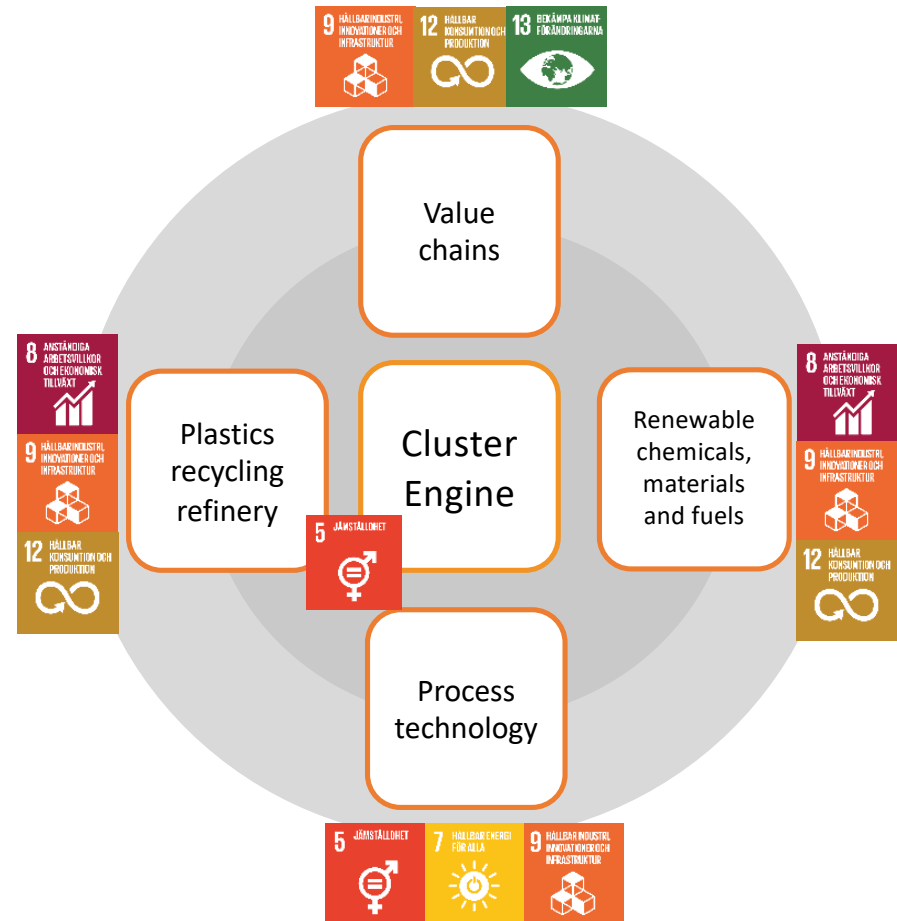
Strategy and approach to achieve our vision

- **Concentrate efforts** and run projects that generates results
- **Catalyze** feasibility studies and test ideas
- **Create** conditions for new investments and initiatives



Strategy and approach to achieve our vision

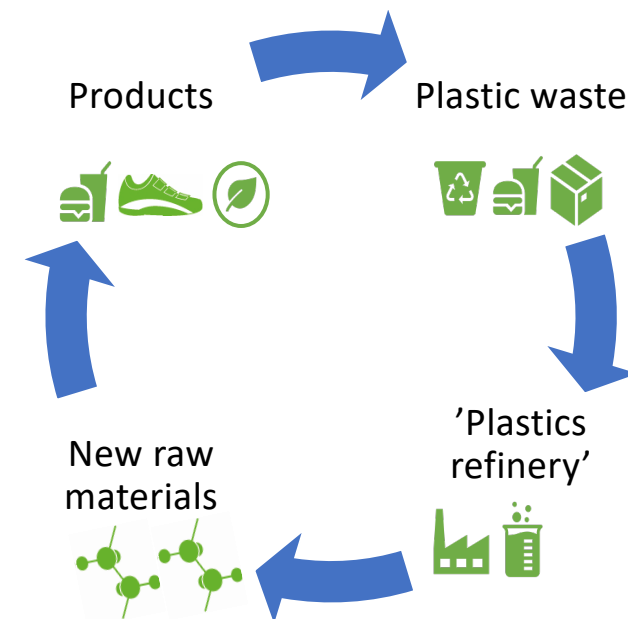
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Ongoing projects

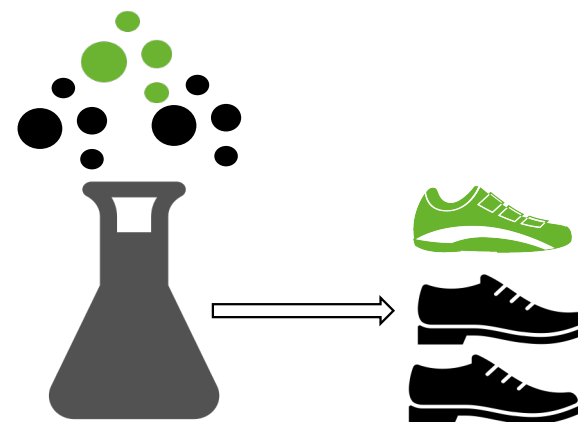
Project theme: Developing a 'plastics refinery'

- Goal is to recycle plastic waste that is currently challenging to recycle mechanically. To **close the loop** for plastics and create circularity.
- **Complements** mechanical recycling
- Generated raw materials are of **high quality**
- Less fossil resource utilization → **decreased** CO₂-emissions



Project theme: Establishing mass balance concepts allowing for a gradual transition

- Mass balance approaches allow use of existing production facilities and a **gradual transition**
- Can accomodate both fossil, **renewable and recycled** feedstocks



Planned projects 2019-2021

Thematic area

Projects

Plastics recycling refinery

- Mapping Raw Material Assets – plastics 2019
- Mapping Raw Material Assets – forest 2019
- Chemical recycling – technology 2019-2021
- Mechanical recycling 2019 - 2021

Renewable chemicals, materials and fuels

- Prestudy: Potential target molecules from the sugar platform - 2019
- Bioethylene – concept development - 2019
- Chemicals from the sugar platform via direct chemical processes 2020-2021
- Catalytic hydrodeoxygenation of lignin to chemicals 2019-2021
- Industrial adaption of lignin value chains 2020-2021

Value Chains

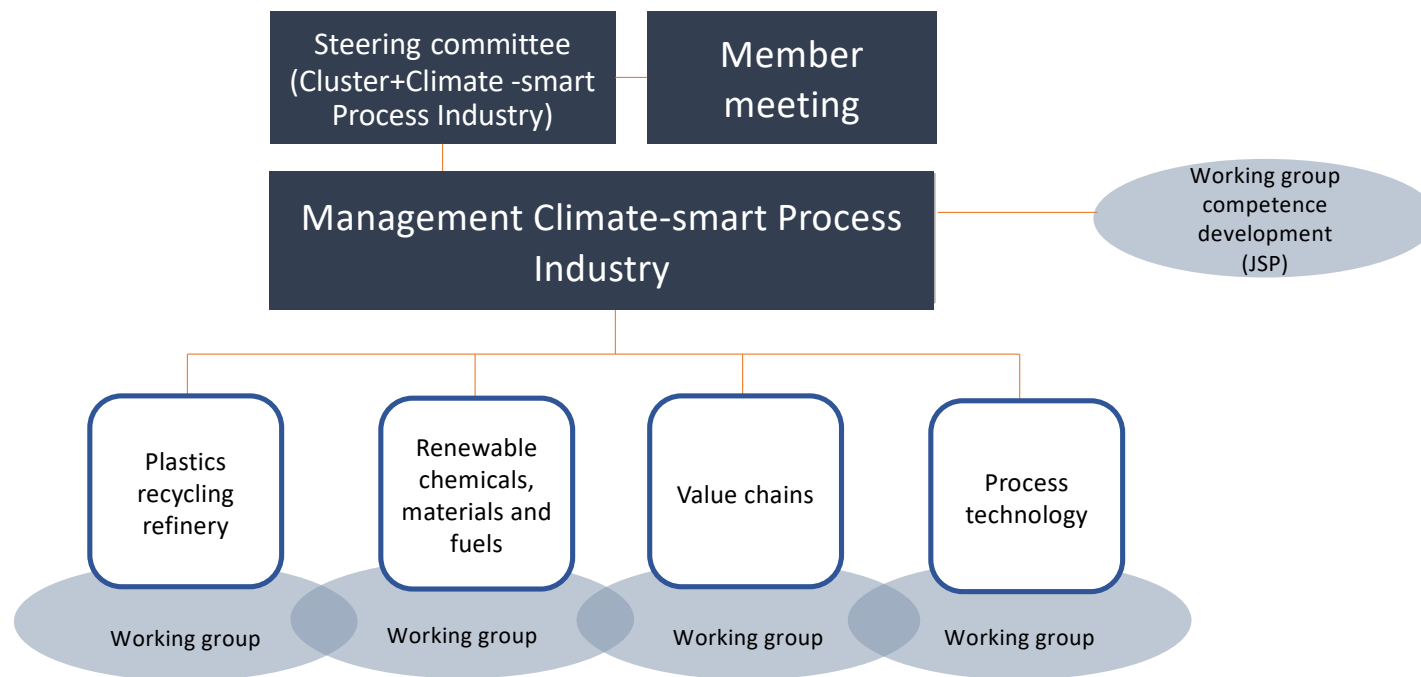
- Value chain projects, e.g. renewable paint and adhesives 2019-2021
- New and adapted business models 2019-2021
- Policy lab 2019-2021
- Mass balance standard 2019-2020

Process technology

- Testbed for electrolysis and hydrogen storage 2019-2021
- Industrial electrification 2019-2021
- Chemical processes, parameters and simulation 2019
- Real time optimization model (RTO) 2020-2021
- Drone support for inspection and maintenance 2020-2021
- Sequel study on municipal surplus district heating 2019-2020

Organization

Organization



Organization

Management Climate-smart Process Industry

- Process management by Johanneberg Science Park and RISE
- Manages the four thematic areas

Working groups

- Gather four times annually per thematic area
- Facilitate networking and discussions on activities within the thematic areas

Activities supporting increased innovation

- Targeted workshops aimed at initiating collaborative projects
- Matchmaking events between SME and enterprises

Competence development

Communication, administration, networking activities

Thank you for your attention!

<https://www.johannebergsciencepark.com/klimatledande>

