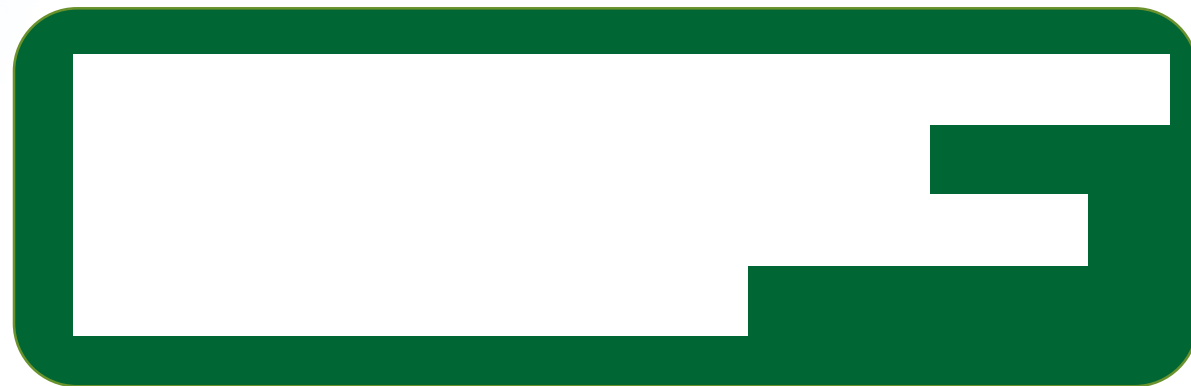


Sweetspot!

A saccharide agenda for the Northern Netherlands

Webinar Januari 28 - 2021







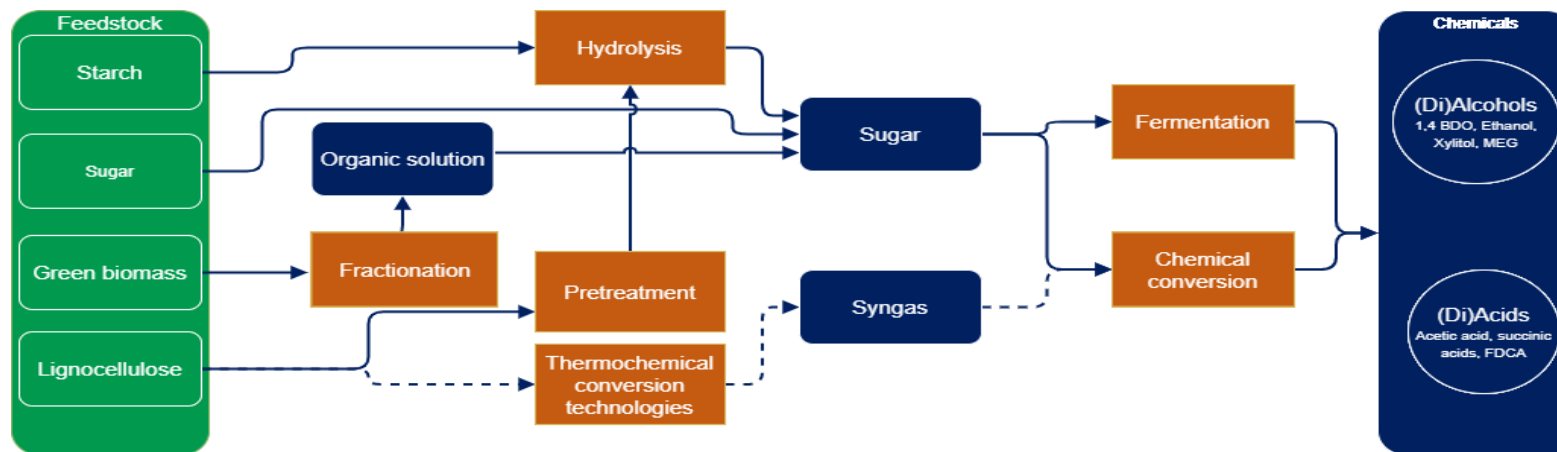
- Two complementary chemical clusters
- Green regional feedstock
- Seaports enabling imports
- Direct connection with offshore wind
- Sizeable knowledge cluster+ talent
- Circular polymers, focus on poly-condensation

The need for long term renewable carbon is clear

- Carbon is an essential buildingblock for everyday products
- Carbon from fossil resources is both limited and undesirable
- Renewable carbon is needed to secure welfare



















Saccharides are an attractive source for renewable carbon that fit the region

- Sacharides are versatile platform molecules
- A variety of renewable sources is available
- Multiple conversion routes have already been developed

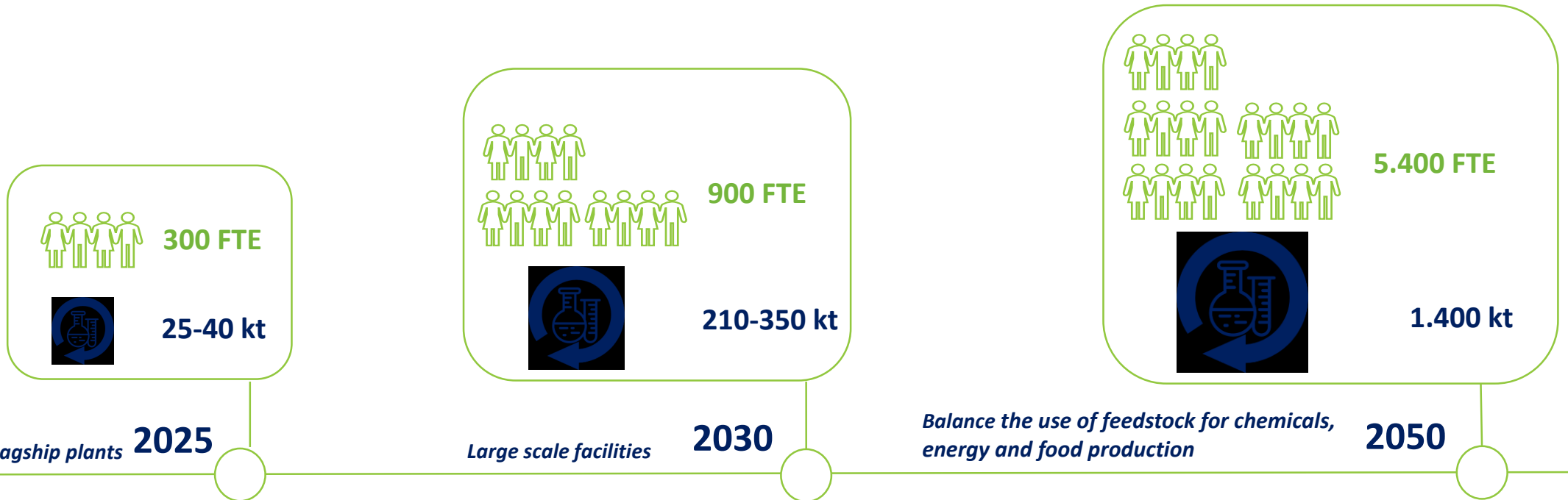


Carbon from saccharides

- Examples of typical intermediate chemicals that are within reach include

1,4 BDO	FDCA	MEG	PHA	Acetic acid	Xylitol
 20 – 30 kt	 5 – 10 kt	 150 – 200 kt	 5 – 10 kt	 20 – 50 kt	 10 – 50 kt
€ 120 mln	€ 150 mln	€ 100 – 150 mln	€ 60 – 82 mln	€ 150 – 200 mln	€ 20 – 80 mln
 2– 3 years	 2 – 3 years	 4 – 5 years	 4 – 5 years	 5 – 10 years	 5 – 10 years
 100 kt	 10 kt	 250 kt	 20 – 40 kt	 350 – 650 kt	 40 - 200 kt

The opportunities of Saccharides are clear and substantial



- Use strong agricultural sector
- Use ports and existing industrial ecosystem
- Replace existing value chains by saccharide based chains

- Strengthen and expand feedstock production
- Develop markets and technology
- Regulate and stimulate
- Develop the ecosystem

Joint action is needed to shape the future



- Development of markets and technology
- Strengthening and expanding feedstock production



- Incentives and regulation
- An integrated approach and development of the knowledge base



Challenges for the Chemport partners

Development of markets and technology

- Attract companies
- Foster innovation
- Engage downstream users
- Support with adoption of saccharide-based products

Incentives and regulation

- Stimulate and regulate the use of saccharides
- Raise CO2 prices
- Support innovative applications

Strengthening and expanding feedstock production

- Develop additional saccharide sources
- Develop integrated facilities
- Increase logistic efficiency
- Develop low-cost saccharide raw materials

An integrated approach and development of the knowledge base

- Develop cross-sectoral partnerships with Weser-Ems
- Develop integrated businessmodels
- Improve utilities
- Develop research programs
- Support and stimulate education



Introducing Cosun and Avantium