Eco-system Biobased Delta

- Based on strengths of the region with Agro and Chemical industry
- Focus: Green feedstock, building blocks, Sustainable process industry
- Excellent geographic position and infrastructure
- Agenda secured via Triple Helix
- Open Innovation
- Strong knowledge axis
- Raw material position
- International orientation
Economy Biobased Delta

Companies & Raws Biobased Transition: Sugar, Lignin and C1 chemistry

Companies in the lead with Knowledge Institutes and supported by local and regional government
Regional Agenda: Sugar Beets, Algae, Plant Ingredients, Fibers

Sugar Delta in Province Zeeland: From “Beetstock” to Chemicals via DSD technology
An assessment of the economic and technical feasibility to convert lignocellulose into chemical building blocks
Why this REDFINERY initiative?

- Large scale biorefineries for corn and wheat are reality
- A refinery for lignocellulose to fermentable sugars and lignin is technically feasible
- **Wood** is an attractive sustainable and stable lignocellulosic feedstock in terms of availability and low volatility
- Clustering creates scale advantages and reduces risks.
BioRef is the heart of REDEFINERY

**BioRef:**
- Converts lignocellulose to sugars and lignin
- Delivers utilities: steam, electricity and (waste) water (treatment)
- Supplies logistics and procurement of raw materials

**BioRef owned by:**
- Investors
- Corporations
- Public sector

**Wood pellets**
>1 to 4 Mtpa

Author: Jan van Breugel (BBI)
BioRef costs based on NREL model

Sugar cost - NREL model

- Blue line: Sugar Lo [€/t]
- Green line: Sugar Hi [€/t]
- Purple line: London 5 [€/t]

Biomass input [Mtpa]
Pre-feasibility studies with aim to realise bio refinery

Technology Providers like DSM, Clariant, Wärtsilä.

Support to national and regional initiatives

- Value chain optimization
- Consortium building
- Integrated cluster development & Financing

- Societal acceptance
- Political support
- Identify & optimise stakeholder benefits
Thank you for your attention