



New Business Models - BIR

TONJE LIVERØD, BIR BEDRIFT



Agenda

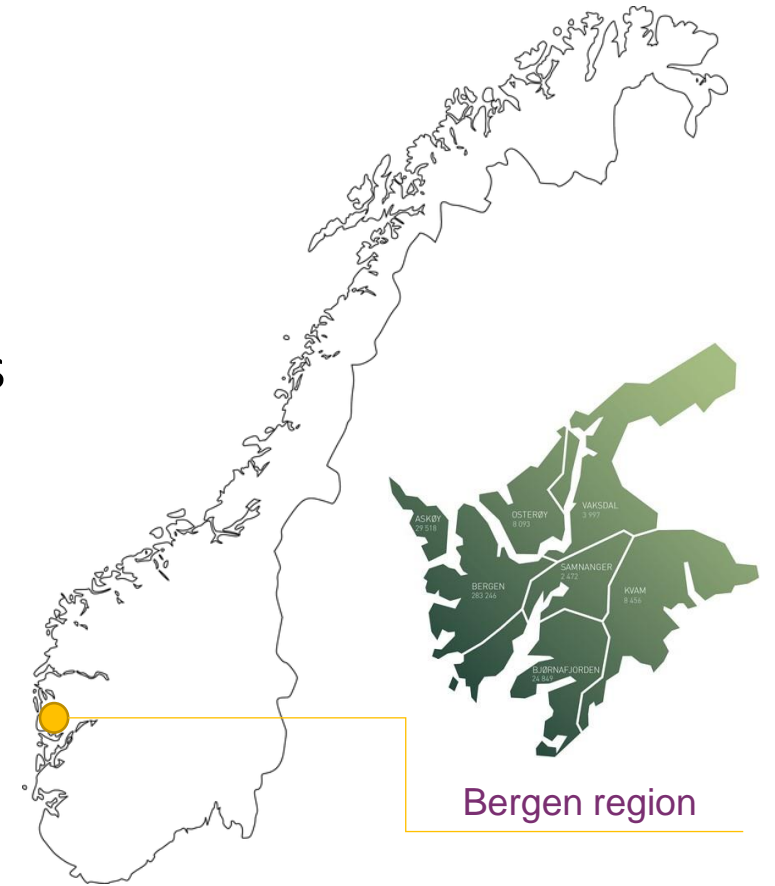
- The Bergen region
- The structure of the BIR group
- Briefly about BIR Bedrift
- Motivation for new solutions
- Research and development
- Long term goal
- Market situation
- Expectations for added value
- Concluding remarks



Bergen region



- Over 365 000 inhabitants
- Ca. 138 km²
- Both urban and rural areas
- Surrounded by mountains
- Known for rainy weather
- Main economic activity:
 - Oil and gas
 - Ocean technology
 - Seafood
 - Shipping

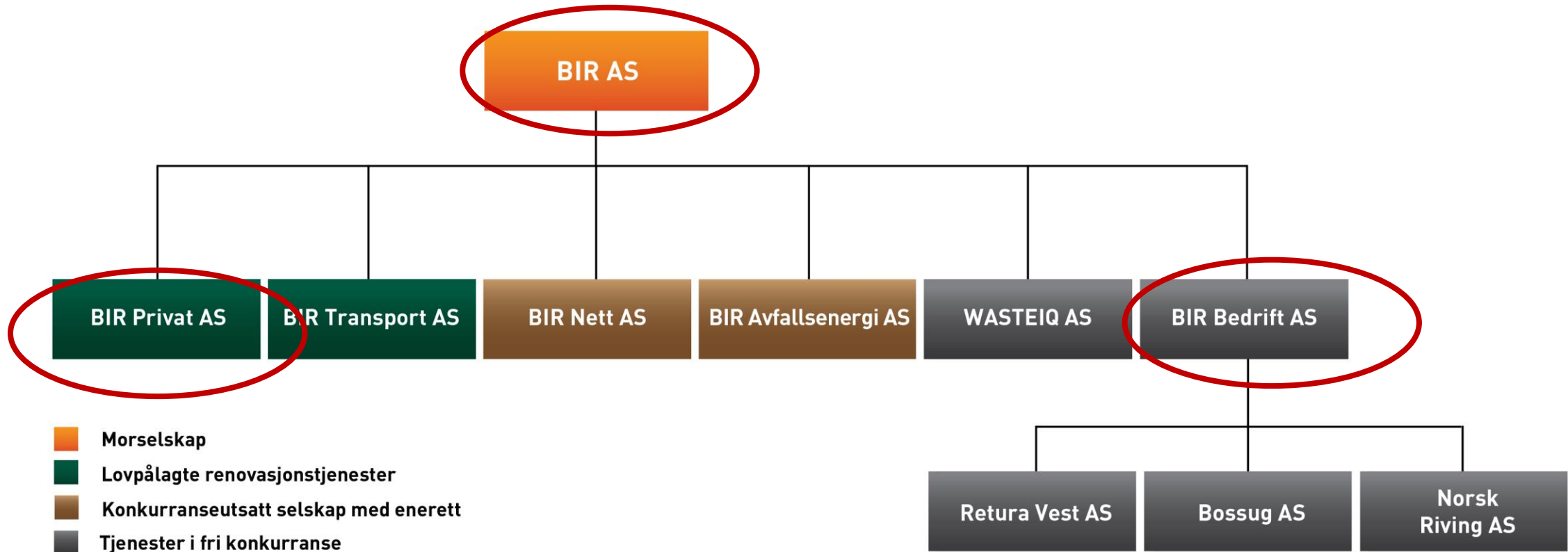


Bergen region

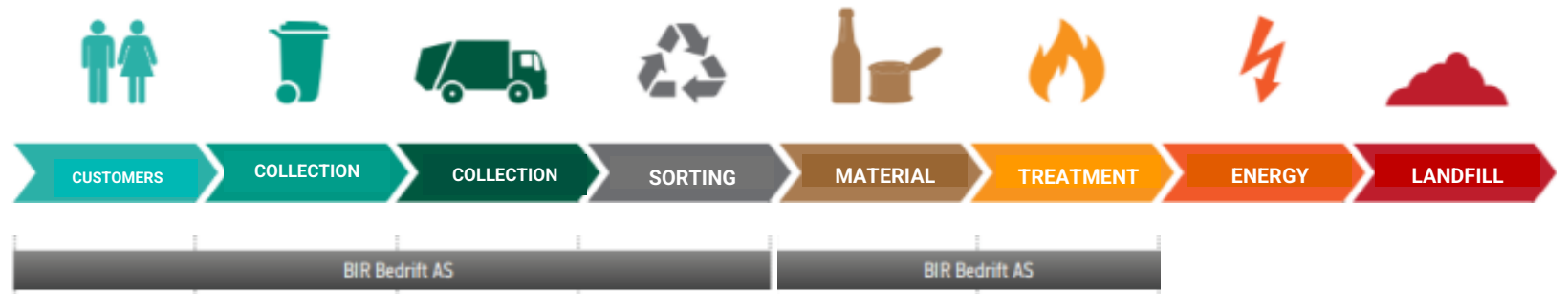


The structure of the BIR group

Beneficiary/LTP
in HOOP



Briefly about BIR Bedrift



- Waste handling/pre treatment solutions for both household* and commercial waste
 - Paper, cardboard, plastic, wood, park, food, metal, hazardous waste etc
 - Handles approx. 70.000 tons/year (25 % of local marked)
 - 100 employees, 60 collection cars
 - Sale/rental of collection equipment/infrastructure for waste handling
- Pilot plant – Feed production insect/algae from food waste

*commercial contracts/ not delegated



Motivation for new solutions



The Bergen region lacks local solutions for food waste



Local demand for more environmentally sustainable solutions



New EU/national sorting requirements for biowaste





GreenTech
INNOVATORS



 **invertapro**

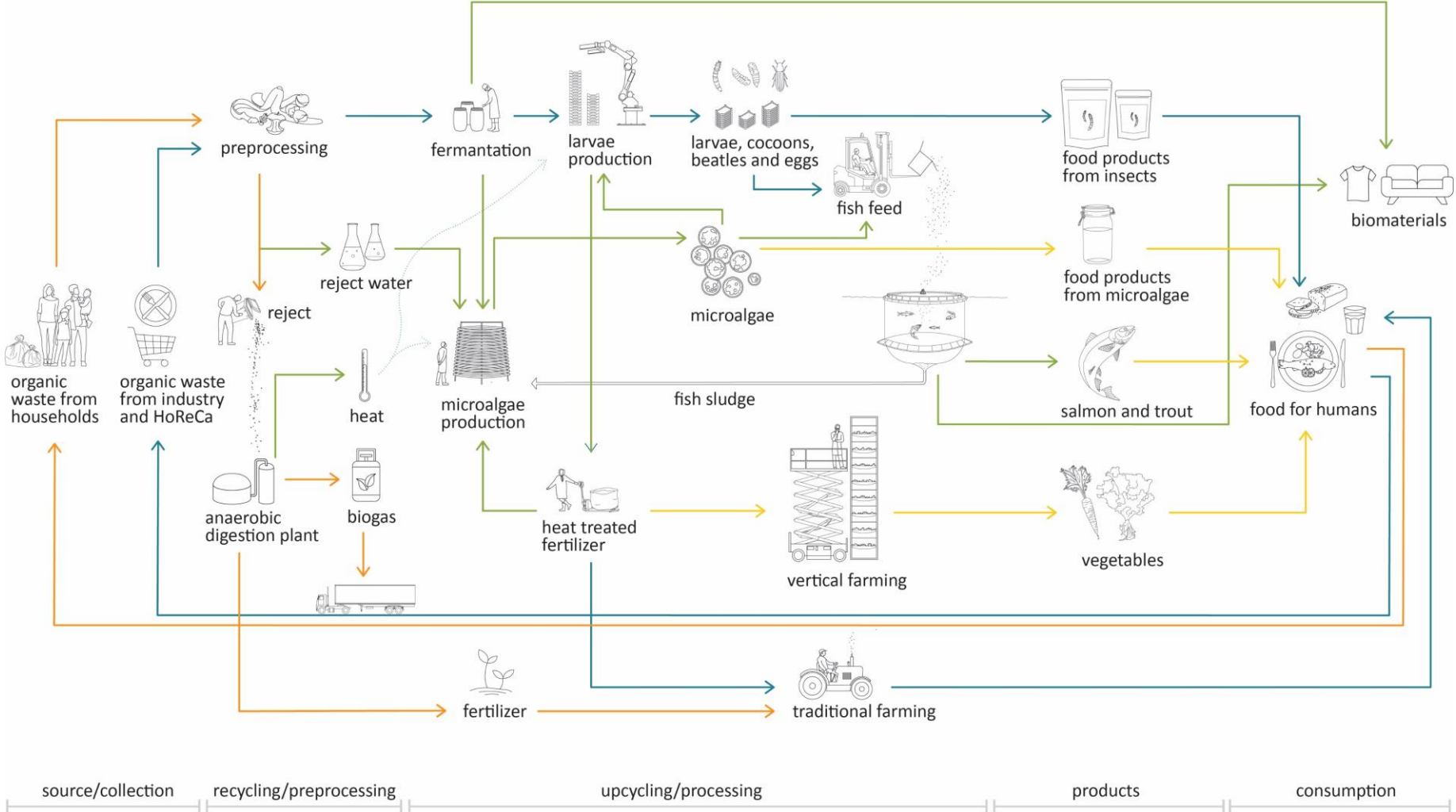
Research and development

- Collaboration and innovation with start-up companies
- Pilot plant for feed production
- Processing vegetal pre-consumer food waste from the commercial market
- Make feed for:
 - Insect production
 - Single cell proteins (SCP) and microalgae production
- Create value chain «food to food»
 - Insects, SCP and microalgae can be used as fish feed or for human consumption



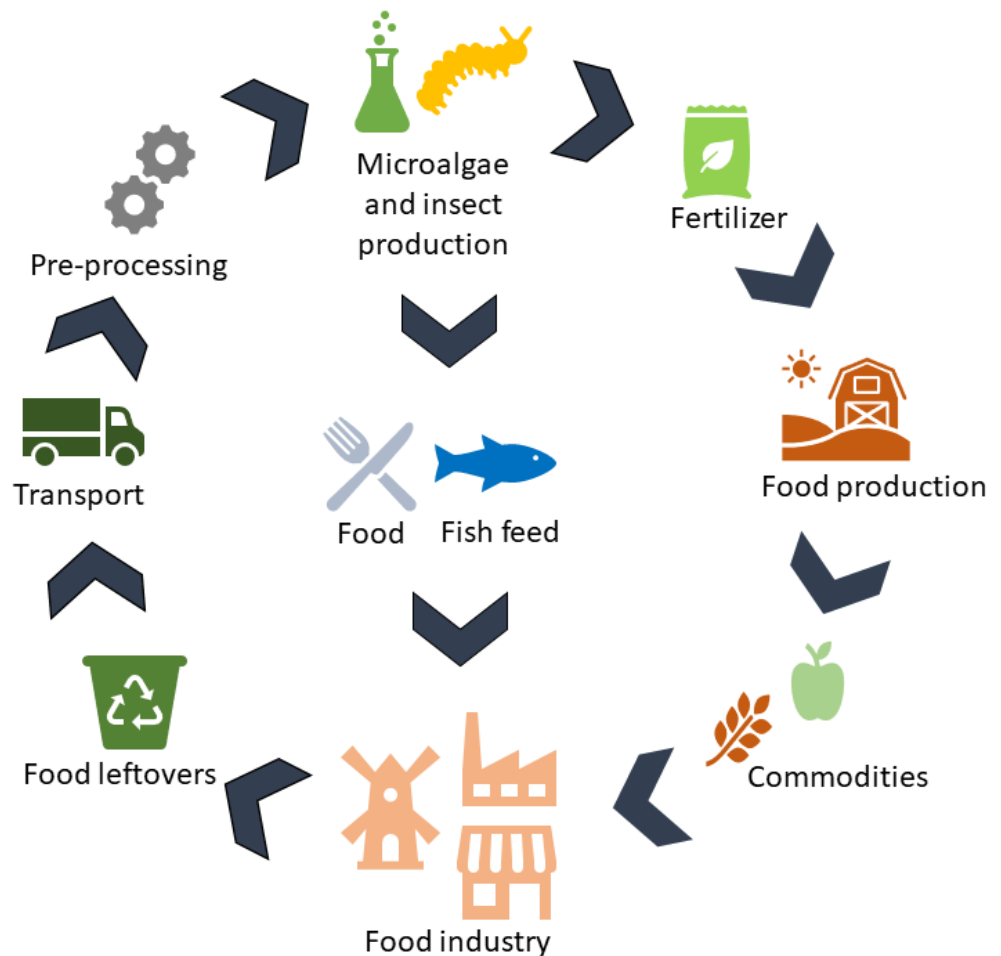
Long term goal: large-scale industrial symbiosis

- Value chain that exists today for industry and HoReCa
- Value chain developed through WasteNOmore
- Value chain that exists today for household waste
- Value chain to be developed beyond project period



Market situation

- Large interest in new technology and circular value chains
 - Sustainable and local processing of food waste
- Less interest in facilitating new technology and value chains
 - Prices, collection equipment, sorting practices, product acceptance etc.



LINEAR ECONOMY

Materials in a **Linear Economy** create waste after use.



VS.

CIRCULAR ECONOMY

Materials in a **Circular Economy** are collected and reused after each use.



Who should profit from developing new technology and value chains?



Expectations for added value

- Waste possessors expect to get paid for «resource»
- Downstream processor expect to get paid to do a waste treatment service and for the final product(s)
- It is a common effort throughout the value chain to establish new technology with an associated market for products and services
- Added value of circulating the resources is to some extent distorted by additional processing steps and associated costs

Concluding remarks



Technology is largely ready for implementation



Barriers are market readiness (both upstream and downstream), holistic business models and laws and regulations



Establishing new treatment technologies and value chains takes **time**



Must involve and coordinate many different actors – **timing** is key



Early adoption is important to divide risks and motivate investment



Success is dependent on upscaling and access to large volumes





**SAMMEN
FOR EN GOD SAK**

Thank you for
your attention!

