

# Biogas Utilization Opportunities in Ostrobothnia Region

## Aim

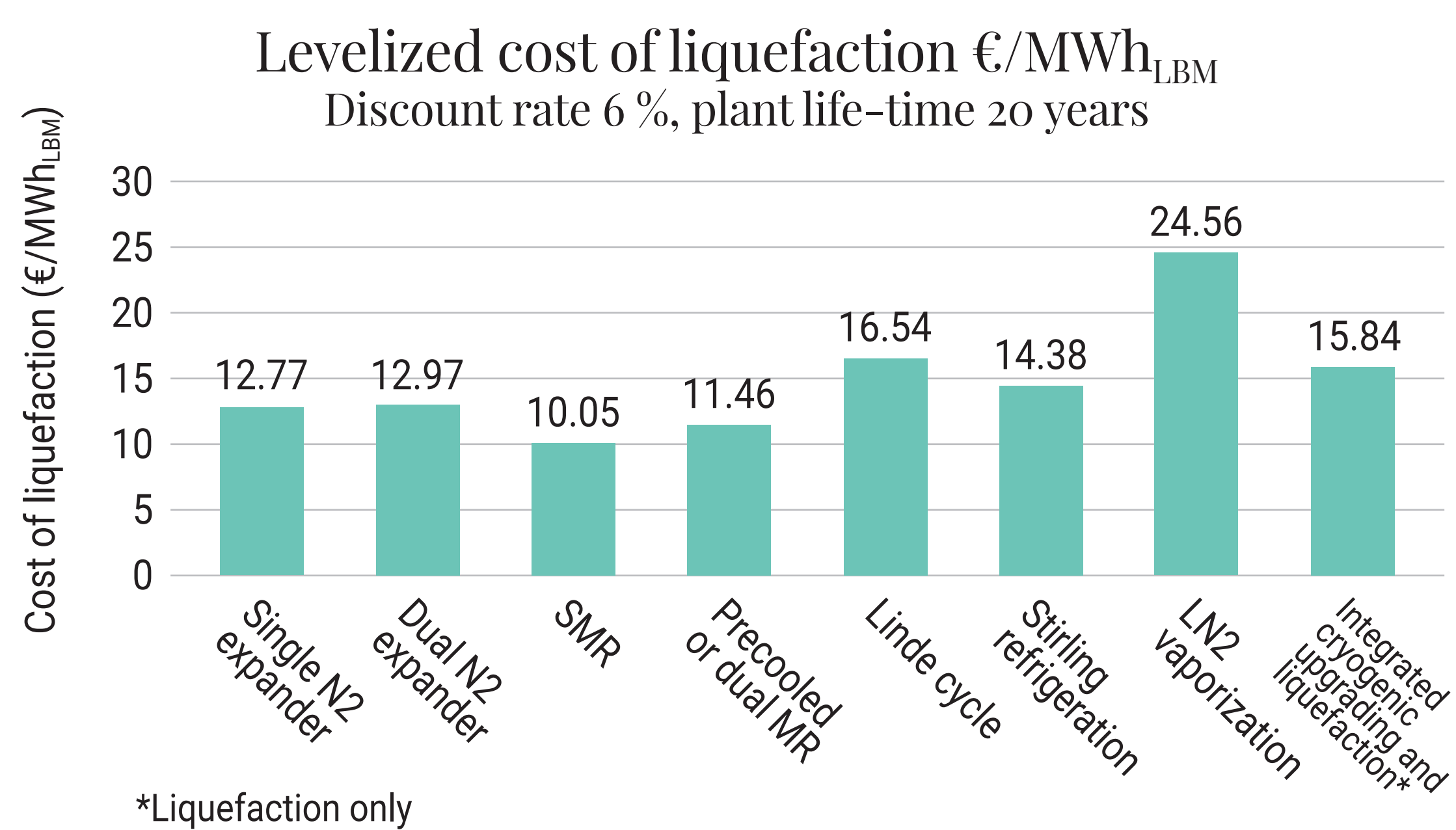
The project's overall goal is to build new knowledge and create favorable conditions for biogas business and biogas use in the Ostrobothnia region through feasibility studies, measurements, and common operation models.

## WP1

### WP1: Biogas infrastructure development options in Ostrobothnia

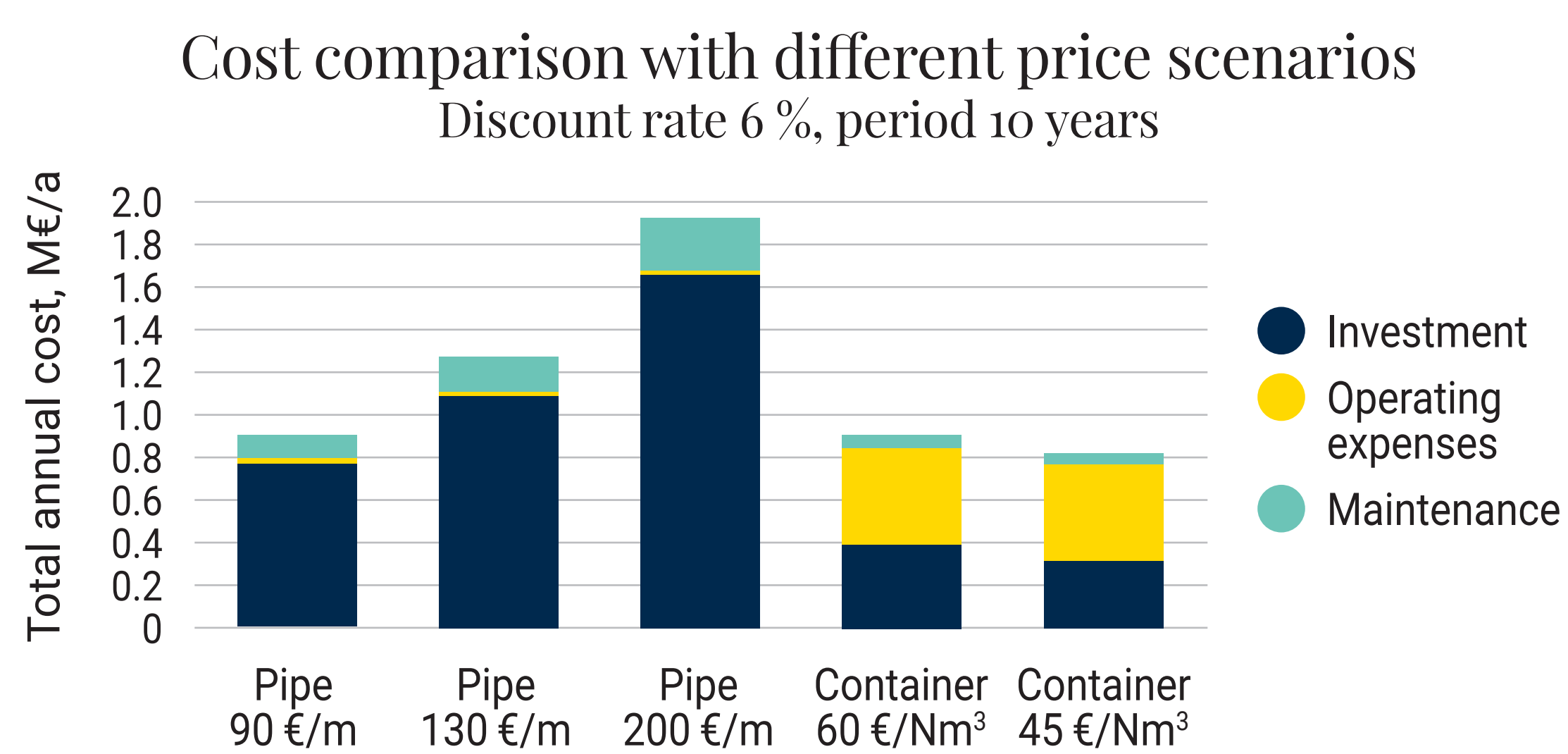
#### Techno-economic analysis of biomethane liquefaction processes

- ▶ technical descriptions of liquefaction processes suitable for small-scale production and an overview of commercially available solutions for each technology
- ▶ life-cycle cost analysis



### Gas pipeline to Ostrobothnia – feasibility and cost assessment

A proposal for the gas pipeline route and a comparison of the investment and operating costs for pipeline transmission versus CBG transportation.

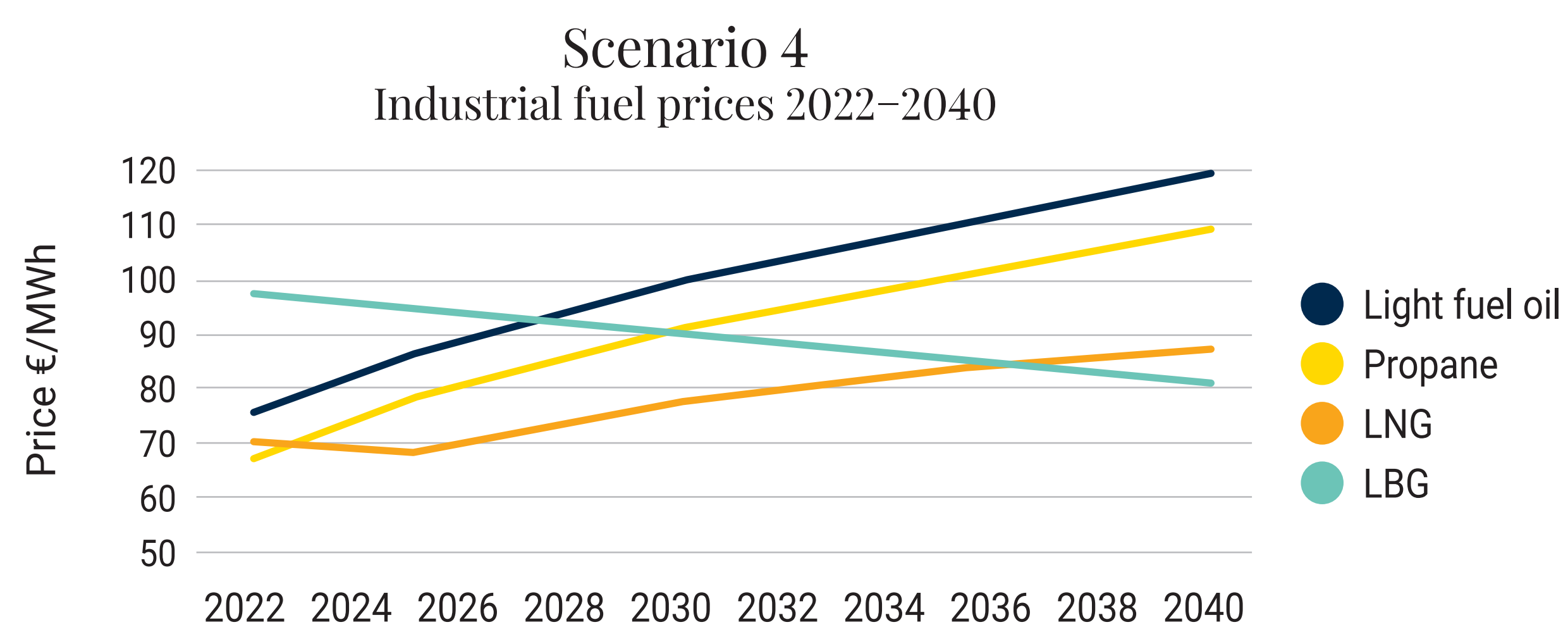


- ▶ pipeline cost may be competitive to CBG transportation in easy installation environments and with higher transmission volumes
- ▶ despite the potentially higher costs, pipeline investment may be supported by transmission reliability, long service life, and low and stable operating costs
- ▶ **In the future, the Ostrobothnian gas pipeline could be part of the hydrogen energy transition**

## WP3

### WP3: Biogas utilization opportunities in different contexts: industry, waste-to-energy sector, and greenhouses

Integrating biomethane into industrial energy systems requires a predictable operating environment. WP3 focused, e.g., on the prospects of biogas availability, especially LBG, and on industrial fuel price forecasts.



**With rising fossil fuel prices and taxation, renewable energy sources are expected to become increasingly competitive with fossil fuels.**

## WP4

### WP4: Common operating models

Current state analysis 2021 of the state of the EU, Finnish and Ostrobothnia biogas sector through literature and interview findings.

3 Workshops with participants from BGS sector and outside to

- ▶ create new connections and networks between different actors in the region
- ▶ develop common collaboration models to boost biogas business

#### Current state Ostrobothnia

3 biogas producers  
4 gas filling stations

#### Opportunities for BGS Markets:

sustainability & legislation

**Raw-materials:** agricultural sector

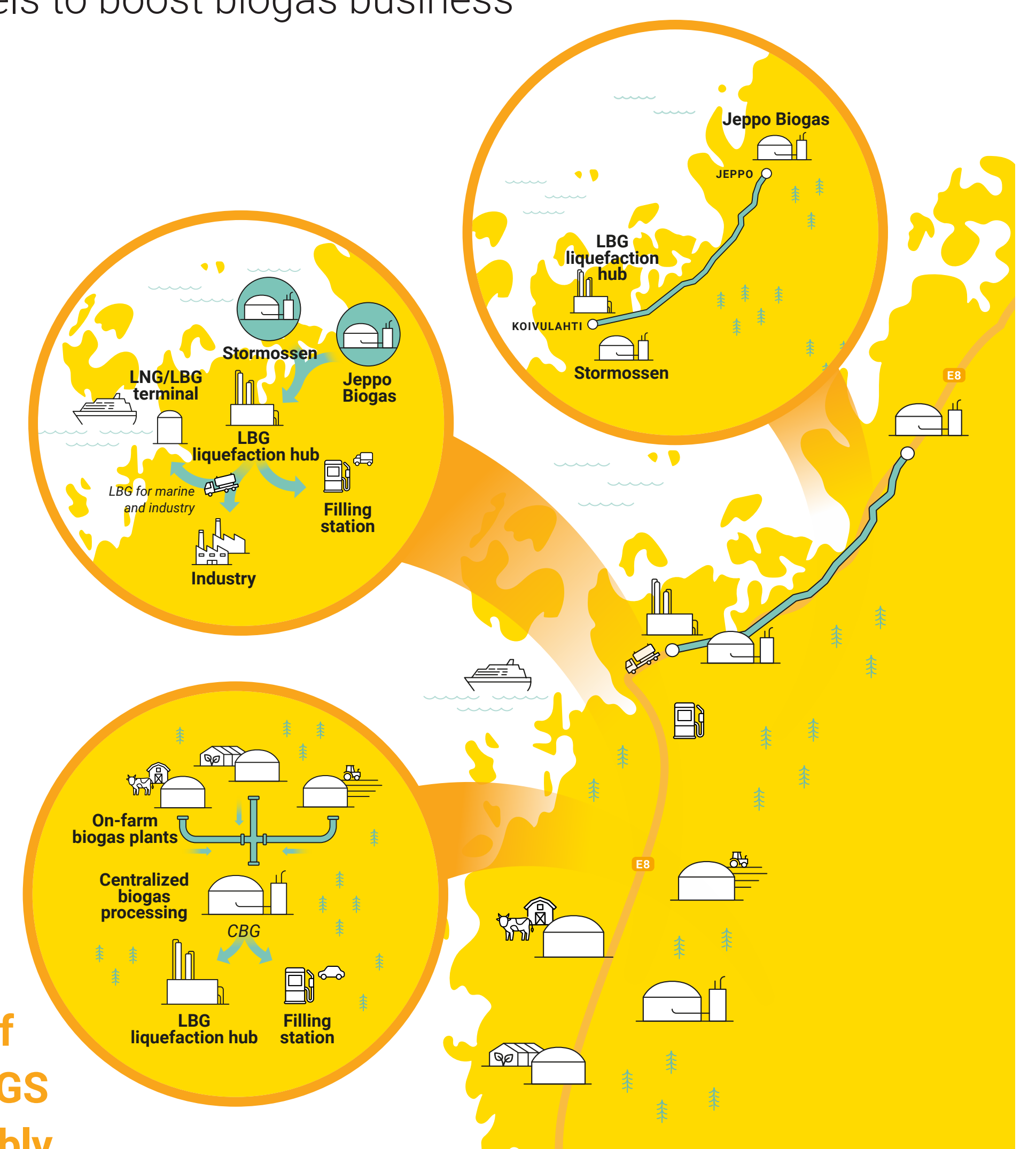
**Producers:** know-how

**Logistics:** biogas vehicles, building gas pipe

**Users:** maritime, agriculture, transport

**General:** growing interest in BGS development

**Future direction of biogas solutions in Ostrobothnia still unclear due to legislative issues, investment costs and lack of knowledge. With sufficient support the BGS sector can be expected to grow considerably.**



Central findings regarding cooperation models for sustainable utilization of biogas, need to:

1. Active communication & collaboration between public and private sectors
2. Form a multi-stakeholder group with local actors (City of Vaasa & other municipalities, VASEK, Merinova, Dynamo, ÖSP & ProAgria) to start the planning process
3. Use the Jeppo corporative model
4. Combine with sector coupling & hydrogen
5. Collaborate with municipal infrastructure planning
6. Need to act now!

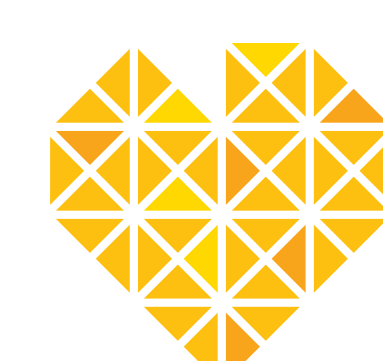
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