

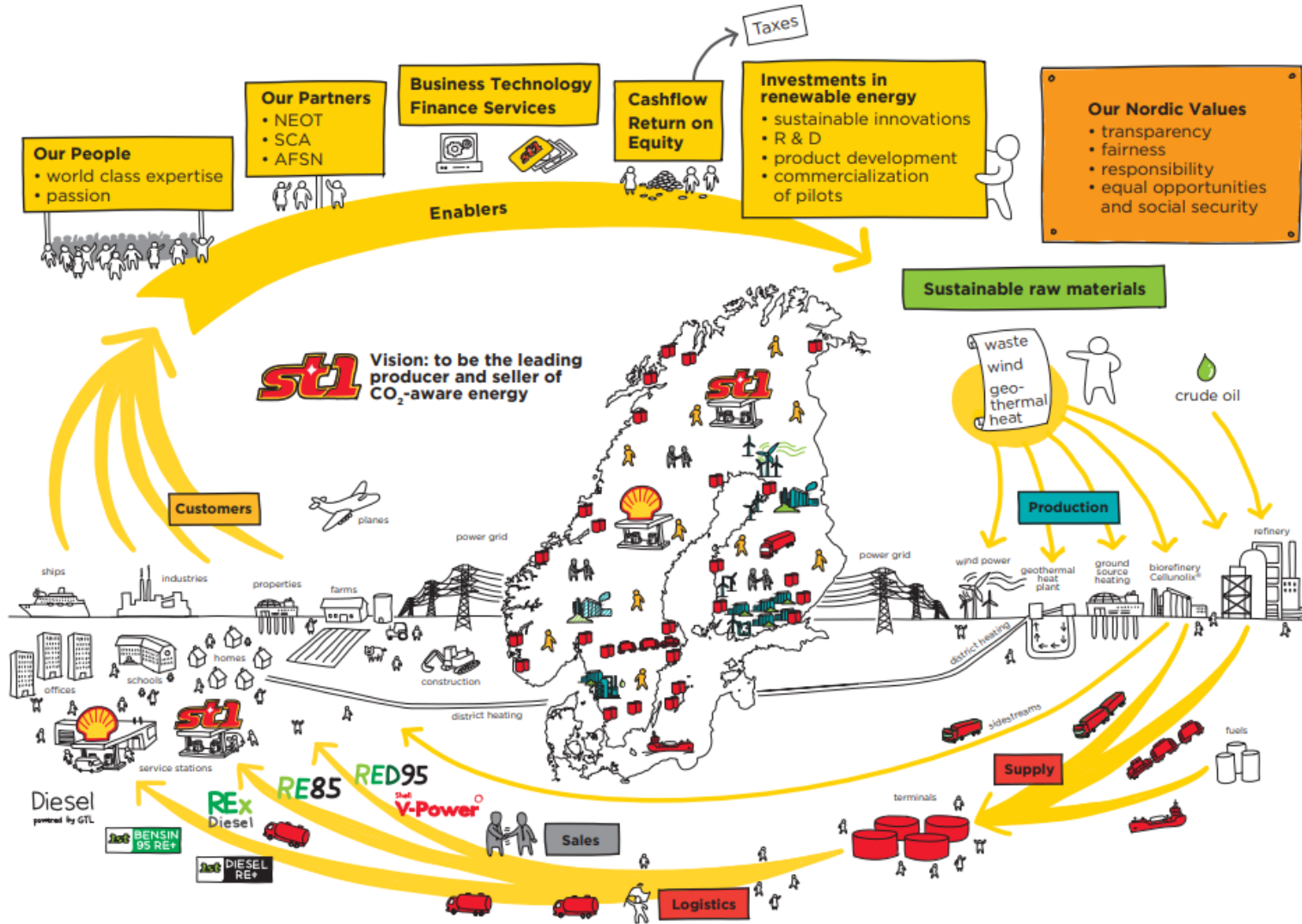


Growth in biogasproduction through partnerships

Staffan Lindberg, St1 Nordic Oy

Biogas PowerON 2023, 27-28th September 2023

GROUP STRATEGY: **ST1** VALUE CHAIN



[Watch the video](#)

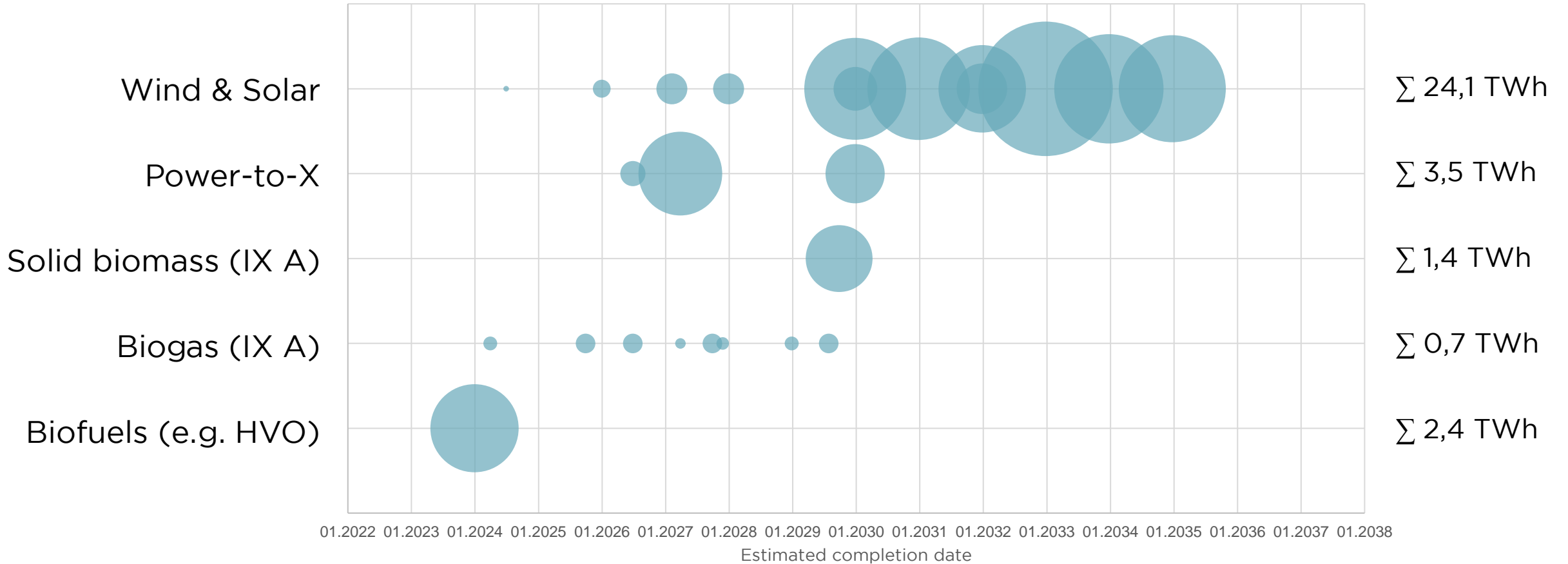
St1 solving global energy challenges

St1 Vision is to be the leading producer and seller of CO₂-aware energy

In the spirit of our vision, we research, develop, produce and invest to be able to provide our customers with CO₂-aware energy while creating positive societal impact

Our operations are strengthened by strategic long-term partnerships in various areas

Sustainable energy project outlook





St1 Renewable gas business

St1 renewable gas business – current status

- In Sweden we are a leading biogas player in CBG business with c. 30% (600 GWh) market share in traffic segment
 - Six biogas production and upgrading units
 - Long term collaboration with local Swedish biogas producers
 - Rest of supply is covered by importing biomethane via gas grid to Sweden from Europe
 - More than 50 public stations, about 20 bus depots
 - Active in all parts of the compressed biogas value chain



St1 renewable gas business – growth

- St1 heavily entering and expanding renewable gas business in the Nordics
- Building up value chain in Finland, Sweden and Norway for liquefied biomethane (LBG) to cover all parts of the value chain from supply to sales
 - Start LBG sales during year 2023
- First own LBG production in beginning of 2024
- Partnership building with companies sharing a same vision crucial to build up the business based on long term collaboration






Suomen Lantakaasu Oy
(=*“Manuregas of Finland”*)

A joint-venture of St1 and Valio



FOUNDED IN
1905



OWNED BY
3,700
DAIRY FARMS



13
COOPERATIVES



12+2
PLANTS IN
FINLAND AND
ESTONIA



3,600 + 570
EMPLOYEES IN
FINLAND AND
OTHER COUNTRIES



1.9 BN
TURNOVER

EXPORTS TO
50
COUNTRIES





**MARKET
LEADER**
IN DAIRY PRODUCTS
IN FINLAND



1.7 BN
LITRES OF MILK
FROM FARMS
PER YEAR



PROFITS TO
FARMS
THROUGH
MILK PRICE



NOBEL PRIZE
1945



5-10
PATENTS OR
INVENTIONS
PER YEAR

ODDLYGOOD®
AND
GOLD & GREEN®
**PLANT-BASED
PRODUCTS**

VALIO
Aimo
WHOLESALE

**BIOGAS FROM
MANURE**
SUOMEN
LANTAKAASU OY
JOINT VENTURE

TOWARDS
**CARBON-
NEUTRAL**
milk 2035

Valio & St1

towards large scale biogas production



Feedstock

The joint venture is aiming at production of biogas from **agricultural feedstocks** (e.g. manure & grass) and **dairy- and beverage industry feedstocks**



Production

The joint venture is aiming for **1 TWh/a production by 2030**, corresponding to roughly 5-7 large scale plants and fulfillment of 25% of Finland's national biogas production target



Utilisation

The JV will produce **liquified biomethane (LBG)**. Biomethane will be distributed mainly from St1 filling stations

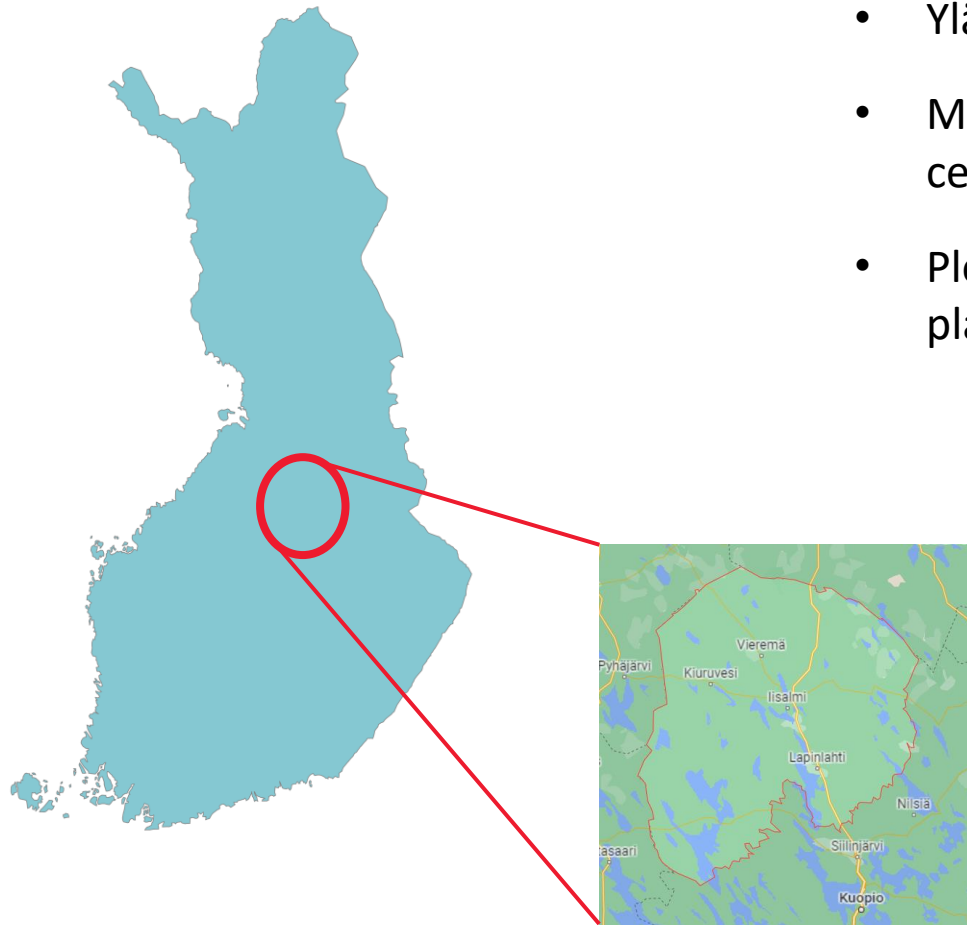


Project background

- The purpose of the first investment is to demonstrate **manure-based LBG** production in **industrial scale** (100-125 GWh/a) for the **first time in Finland**. The investment SLK#1 will be ready for operation in July 2026.
- The concept consists of a large central plant and smaller satellite plants
- The plant will utilize 300-400 kt/a manure
- The plant will provide digestate as fertilizer to the farmers



Location

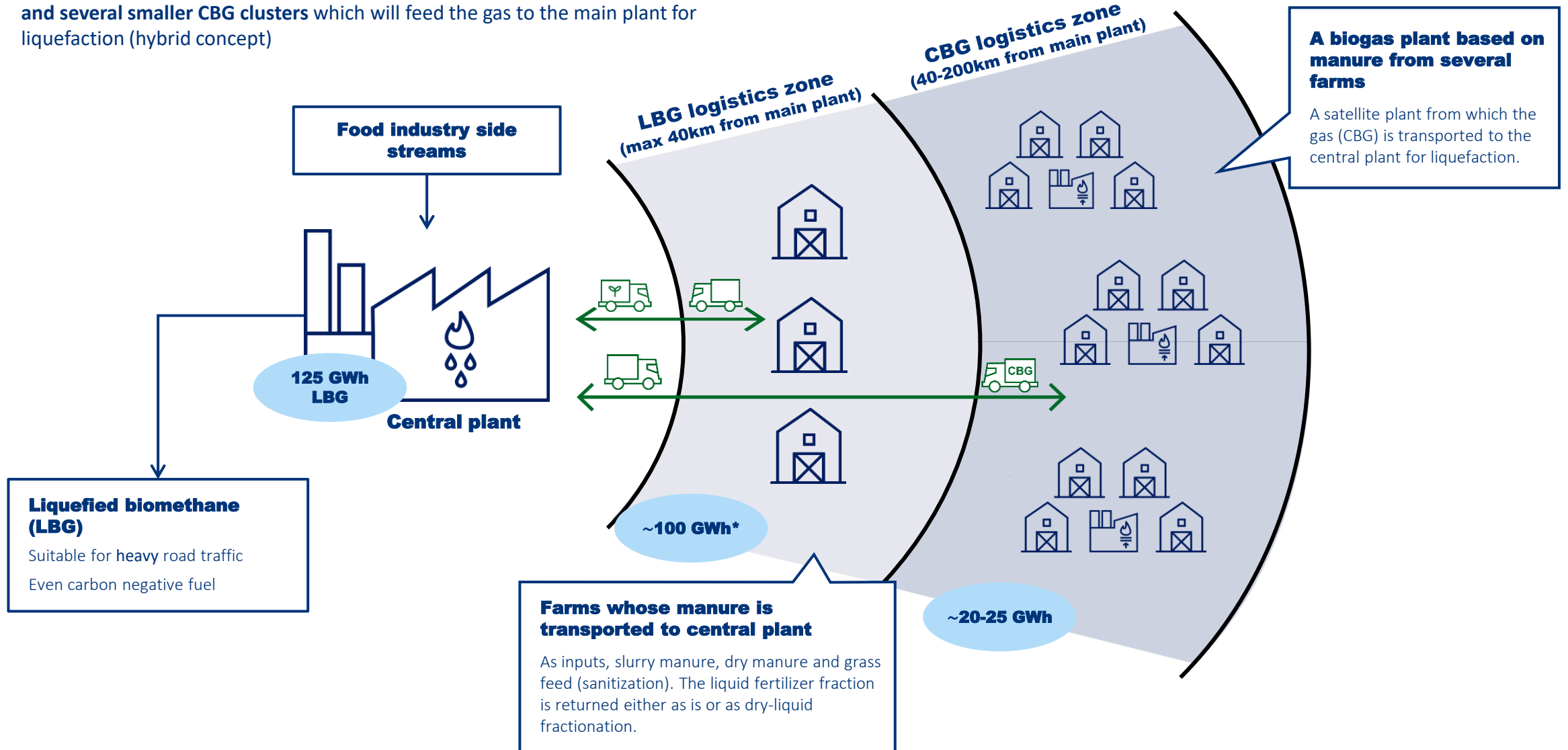


- Ylä-Savo area was chosen for first investment
- More than 20 plots were analyzed in the area for the central plant
- Plot for central plant was chosen in Kiuruvesi, Satellites plants will be in the towns nearby

The hybrid production concept



The concept consists of a **large central plant with liquefactions** (mother LBG plant) and **several smaller CBG clusters** which will feed the gas to the main plant for liquefaction (hybrid concept)



St1 and Valio, the perfect match



From substrate to distribution

The background of the slide is an aerial photograph of a lush green forest. A river winds through the center of the image, forming a large loop. The forest is dense and vibrant green, with some areas appearing slightly more open or grassy near the riverbanks.

What are the needed actions to scale up renewable methane business in the Nordics?

Keys for success and next steps

- Importance of renewable methane even higher than ever due to the European current geopolitical situation
- Legislation environment need to enable investments and business growth
 - Uncertainty of investment environment
 - Sub-optimization and lack of value chain thinking
 - different targets drives different parts of value chain: CO2 standards for HD vs. RED II targets
- Decision making & energy system building without sub-optimization
 - Where we find the highest value (economic, social and environmental) for biogas and e-methane?
- Partnering and strong collaboration between companies needed



Thank you!

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