



Auris as company biogas service development and Virtual pipeline + Bio-CO₂

22.10.2024

auris

ENERGY

CLEANER. ENERGY. EFFICIENCY.

Founded in 1860

Revenue over 100 M€

Balance sheet 200 M€

auris
ENERGY

ENERGY
SERVICES

Your energy partner delivering optimized, independent solutions tailored to each customer's needs.

auris
ENERGY

GAS
ENERGY

Finland's largest gas retailer and expert in gas markets, energy efficiency, and emission reduction.

auris
ENERGY

GAS
DISTRIBUTION

The leading gas distributor with the largest network, serving 22 cities in Southern Finland.

20,000 customers
120 GWh produced
steam and heat

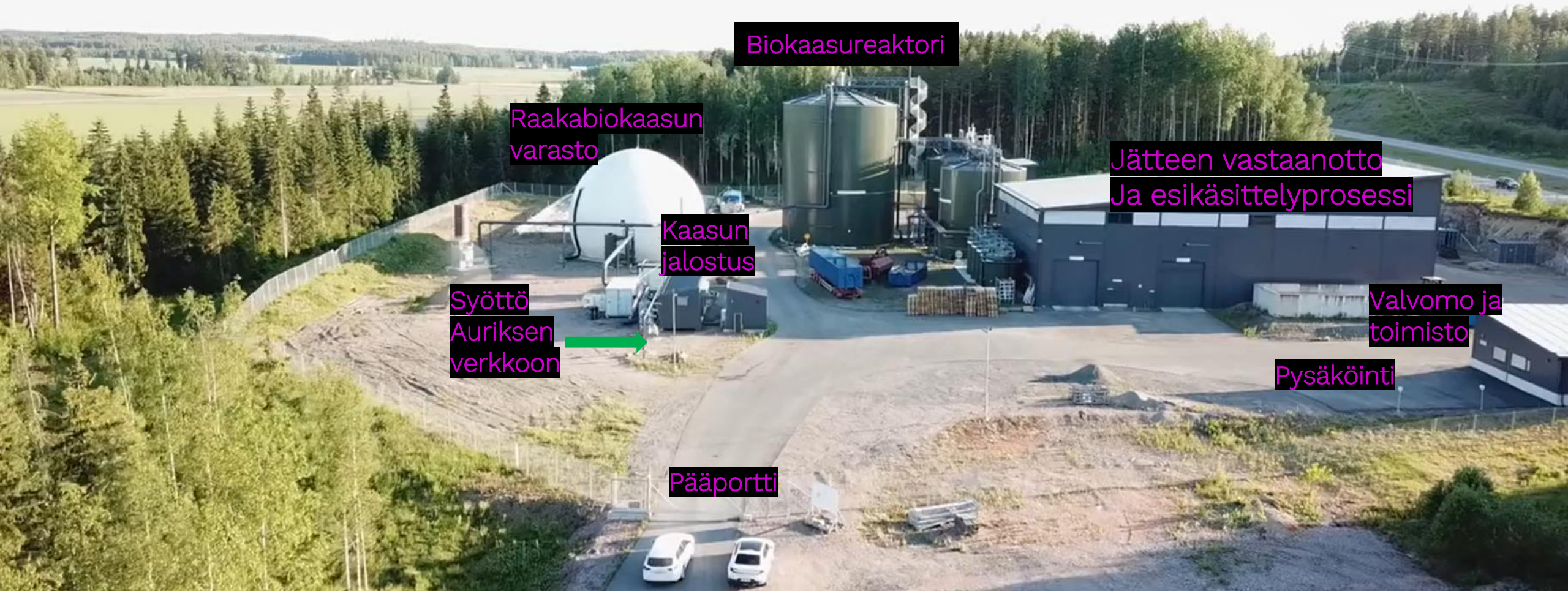
1 TWh of sold
and distributed
natural and biogas

22 cities and
municipalities
1,200 km of pipeline

Further developing Mäntsälän Biovoima as its majority owner

- Plant operational since November 2020
- Capacity to handle 20 ktons of biowaste
- Produces 16 GWh of biomethane annually
- Capacity expansion to handle 45 ktons/year of sewage sludge, manure, and biowaste
- Will produce 34 GWh of biomethane annually once the expansion is completed by the end of 2025
- At the beginning of 2025, the plant will connect to the Gasgrid Finland's transmission grid (currently connected to the Auris distribution grid)





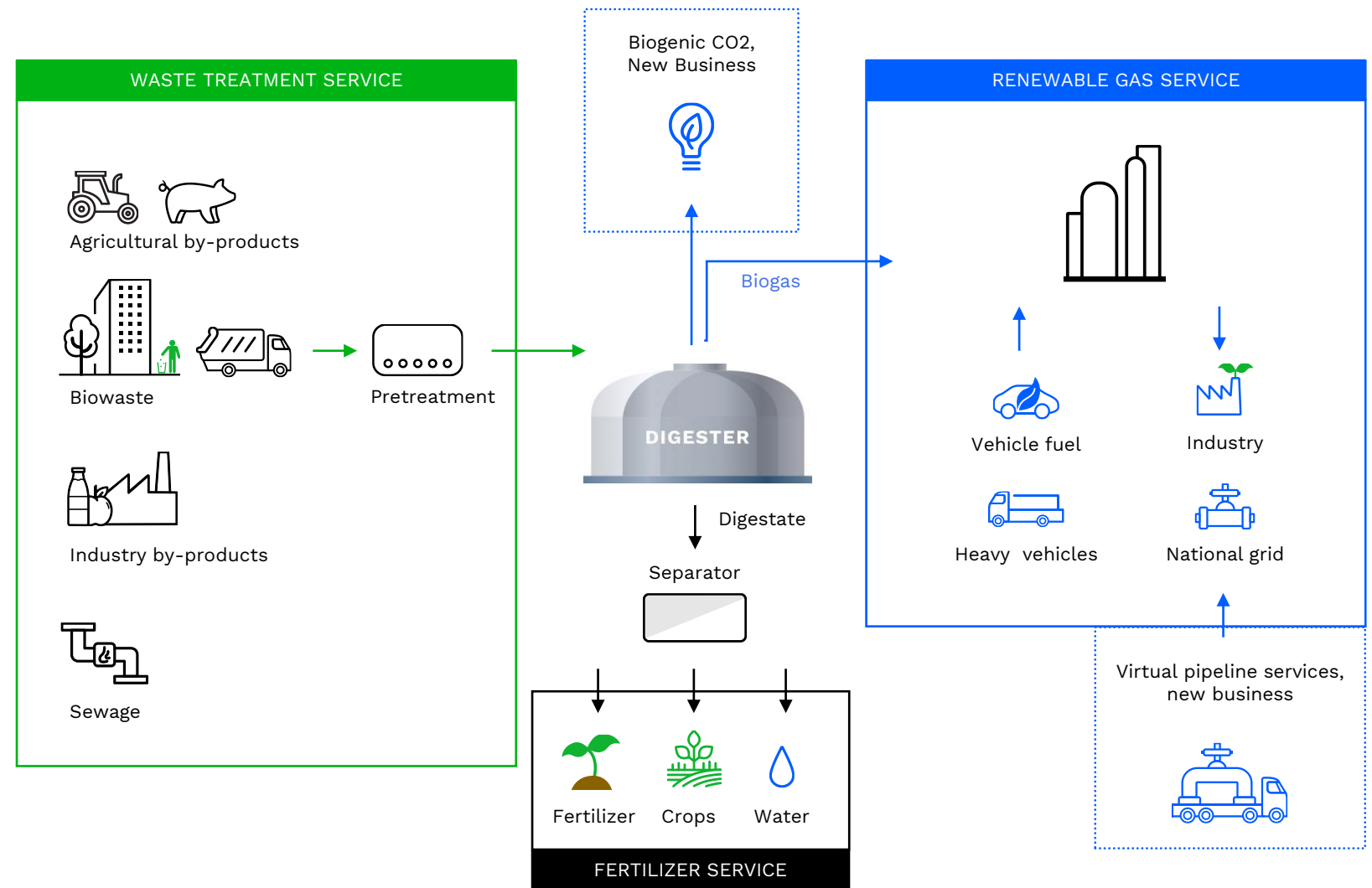
Biogas Factory Powering Circular Economy

Biogas is the direct product of a methanisation unit

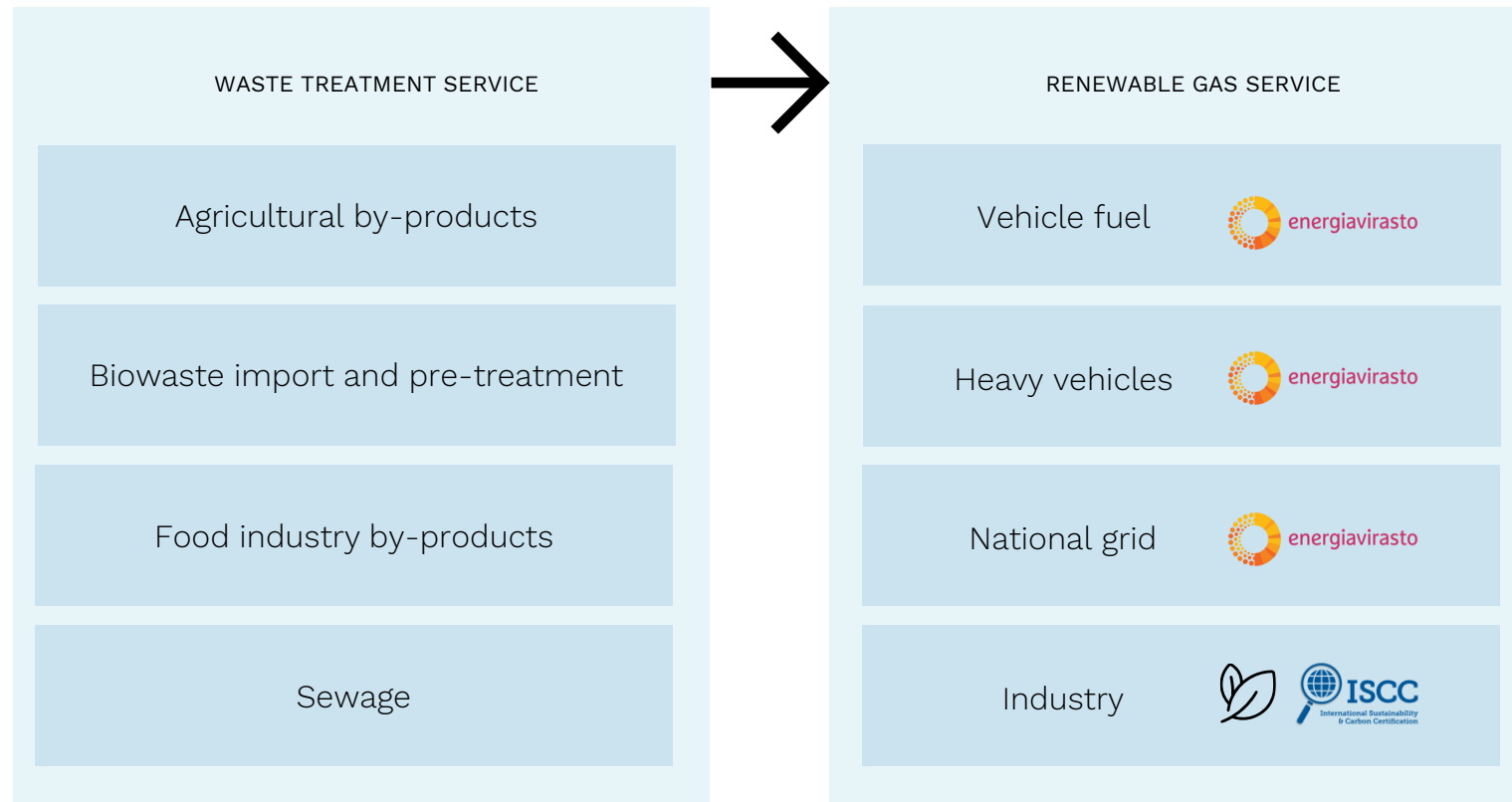
Produced by the fermentation of organic matter in the digester

Biomethane is purified biogas from which the carbon dioxide, hydrogen sulphide and water have been removed.

Biomethane has the same characteristics as natural gas



From Waste to Biogas: One Process, Three Biogas Options



Biomethane as part of Finnish energy agency sustainability system



Non-certified biogas with guarantee of origin



*soon available

Biomethane under ISCC Proof of Sustainability + Finnish energy agency system approved



Upcoming Services

Virtual pipeline services

Biomethane in the grid


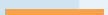

- High value appr. **90€-100€/MWh**
- Manure based in Germany appr. **120-140€/MWh**

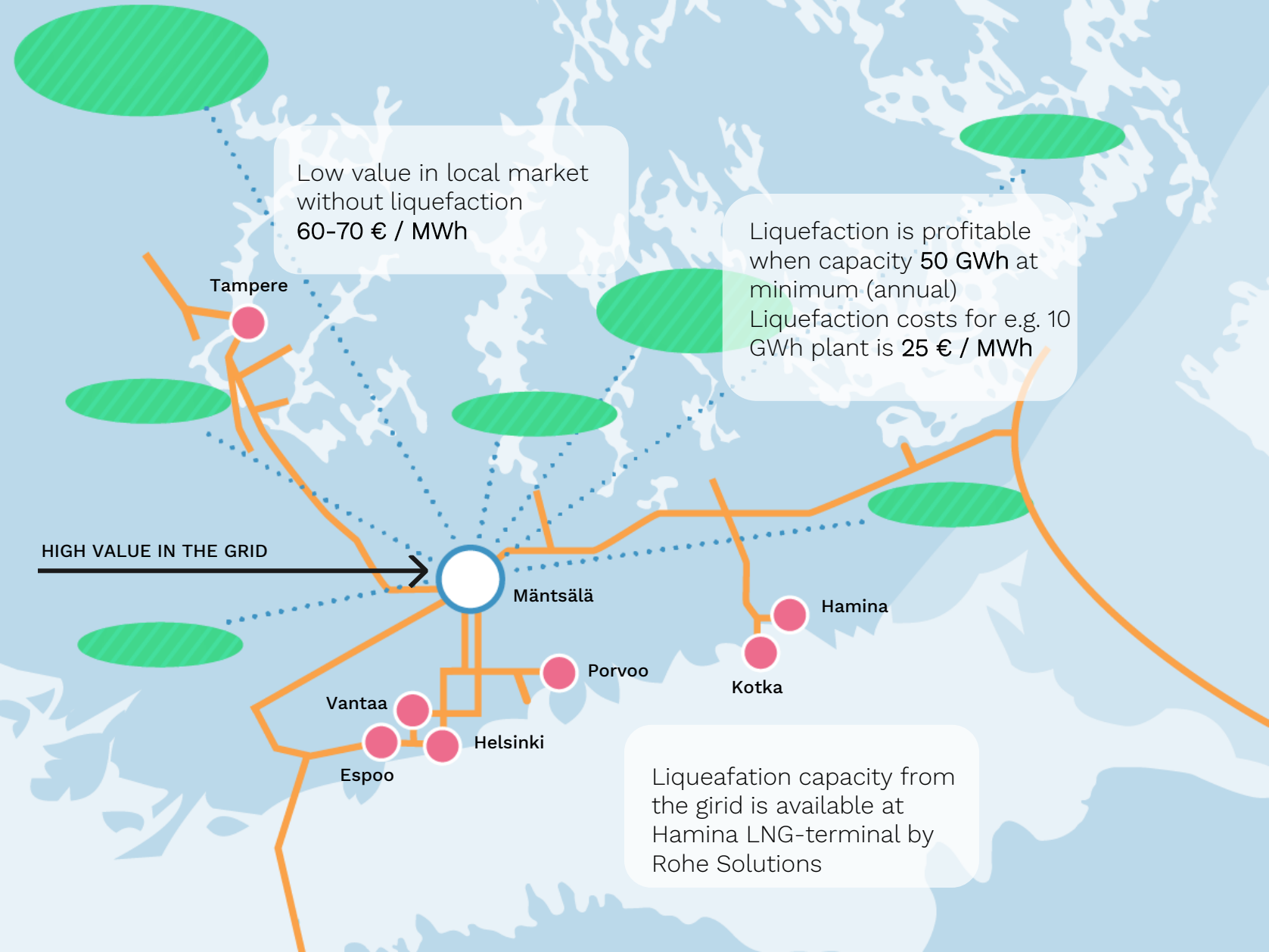
Local Biomethane

- Challenges to create value in local level without liquefaction

Raw biogas

- Low value (natural gas price, tax benefit) market is moving towards clean biomethane

-  Existing and upcoming biogas production
-  Grid
-  Virtual pipeline



Virtual Pipeline hyödyt biokaasulaitokselle

Kaikelle tuotetulle kaasulle ostaja

Auris Energiapalvelut tarjoaa Mäntsälän biokaasulaitoksella verkkosyöttöä **7 €/MWh**.

Biokaasulaitos voi myydä verkkoon syötetyn biokaasun **haluamalleen ostajalle Suomessa tai ulkomaille spot-hintaan tai pitkällä sopimuksella**.

Markkinat tarjoavat **biokaasulle parhaan hintatason ja kysynnän kaikelle tuotetulle kaasulle**.

Vaihtoehtoisesti **Auris Kaasuenergia** voi ostaa kaiken tai osan verkkoon syötetystä kaasusta, jos biokaasulaitos ei itse halua käydä kaasukauppaa

Palveluvalikoima laajenee tulevaisuudessa

Vaihe 1: Verkkoon syöttö (syksy 2025 alkaen)

- Auris tarjoaa vain verkkoon syötön ja pääsyn kaasumarkkinoille; syöttöpiste Mäntsälässä
- Biokaasulaitos vastaa kaasun konttitoimituksista Mäntsälään
- Logistiikan suhteen teemme mielellämme yhteistyötä

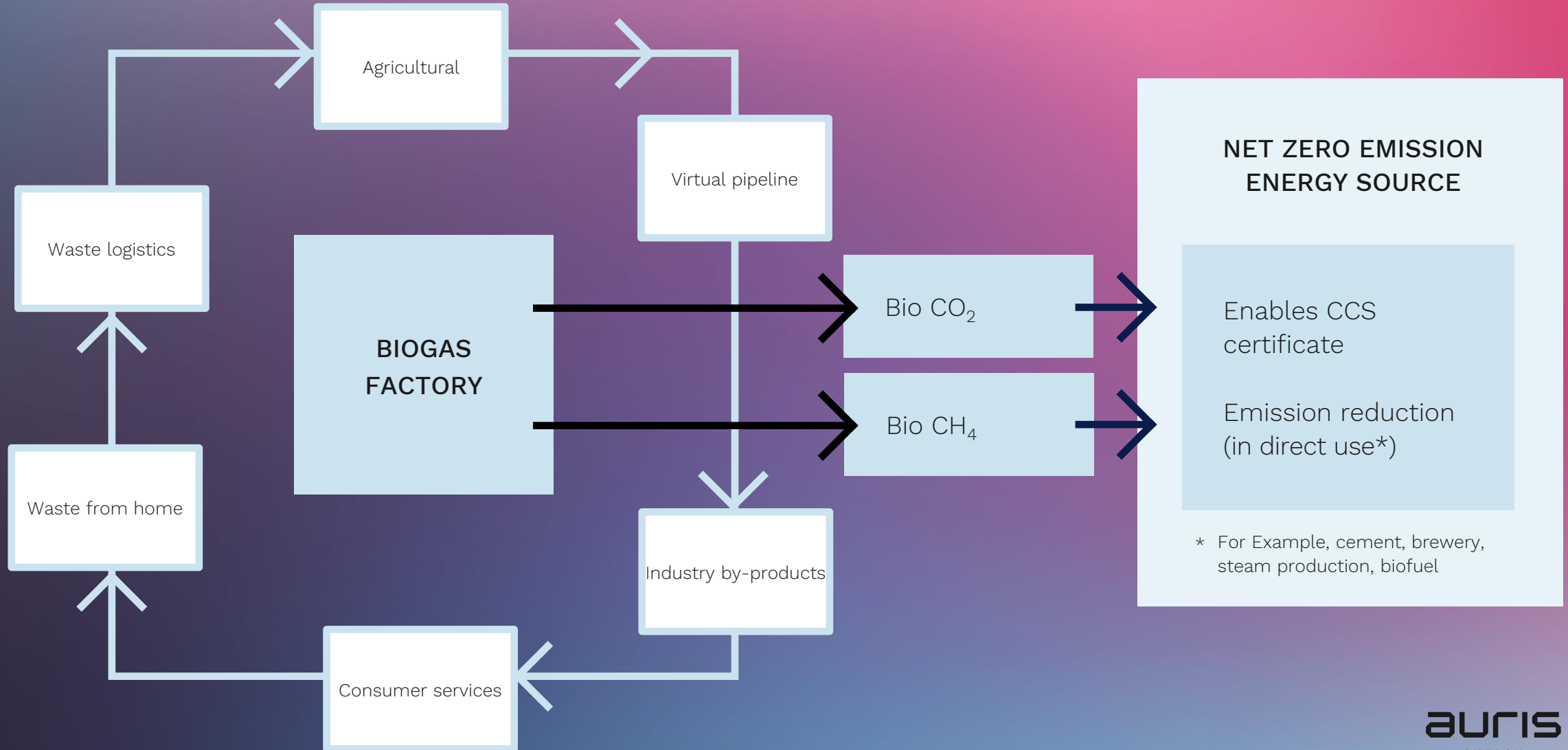
Vaihe 2: Off-take biokaasulaitokselta (vuodesta 2026)

- Auris tarjoaa Virtual Pipeline logistiikan; tällöin voimme ottaa biometaanin ”putkeen” jo tuotantopisteellä jolloin hinta koostuu logistiikasta + 7€/MWh syötöstä kiinteään verkkoon Mäntsälässä
- Mahdollista valita myös pelkkä verkkoon syöttö, jos biokaasulaitos haluaa toimittaa kaasun itse Mäntsälään

Vaihe 3: Syöttöpisteiden laajentaminen (vuodesta 2026)

- Uusia syöttöpisteitä Auriksen verkkoon myös muualle kuin Mäntsälään
- Otamme mielellämme jo tässä vaiheessa tietoja vastaan missä olisi hyvä seuraava paikka syöttöpuolelle

Carbon Management Service



Biogenic CO₂, significant opportunity for Biogas sector

“Biogenic CO₂ from biogas factories is appr. 120 000 tons per produced 1 TWh biomethane”

Our Bio-CO₂ production is planned to start at the Mäntsälä factory 2025/2026

- Estimated volumes **2026 over 2000 tons** and it will grow over **3500 tons** per year
- Price indication for Bio-CO₂ based on market evaluation and production cost is **appr. 150€/ton**

Large scale production is planned to start at 2028 outside of Mäntsälä and planned volume is **15 000 tons**

There are several options to find synergies with virtual pipeline and hydrogen / biogas integration

- Bio-CO₂ and Bio-CNG logistics synergies
- Biogas factory and Hydrogen factory synergies related to methanation and CO₂ capture



The background image shows a large industrial facility, likely a biogas plant, with several tall, cylindrical green metal tanks and a large white dome-shaped structure. The scene is framed by green trees and foliage, suggesting a natural or semi-natural setting. The Auris Energy logo is centered in the upper half of the image.

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BIOGAS FACTORY – CREATING VALUE FROM WASTE