

RNG Developments in the Netherlands

A development based on indirect gasification

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The Netherlands is built around gas



Imports via ports, cross-border pipelines and LNG terminals



Groningen production ended April 2024; imports fill the gap



Industry: high-temperature heat and chemical feedstock
~30% Greenhouses
~10%



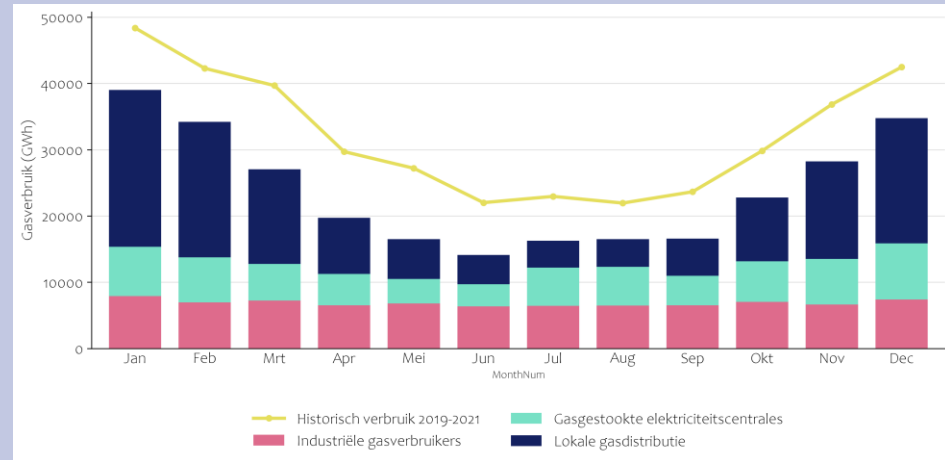
Homes: heating and cooking up to 20% of total consumption; Power production ~30%



Nationwide gas transport, distribution and storage



Planned supplier obligation; 2 bcm/yr 2030 ambition



Gas consumption in 2025, declined compared to previous years. Total consumption still ~30 bcm/y

Green gas policy & demand signals

NL TARGETS 2030

2 bcm/yr

Green-gas production ambition from biogas, biomass & waste

CO₂ reduction of 2,85 Mton/y (~ 0,84 bcm)

EU TARGETS 2030

35 bcm/yr

High priority sectors are industry (few alternatives) and high temperature heat applications.



DEMAND CHANNELS

Build environment

Networks enable substitution; policy and contracts create the pull.

Shipping

Compliant bio-LNG/e-LNG can lower FuelEU intensity.

Transport

Eligible biomethane and RFNBO e-methane support RED III.

Industry

No SNG quota: ETS and offtake contracts drive demand.

READ THE SIGNAL CORRECTLY

2030 targets ≠ guaranteed offtake

35 bcm (EU) and 2 bcm (NL) are policy scale ambitions.

RED III and FuelEU reward eligible fuels, but neither mandates SNG as a molecule.

DEFINITIONS MATTER

Biomethane / RNG / green gas

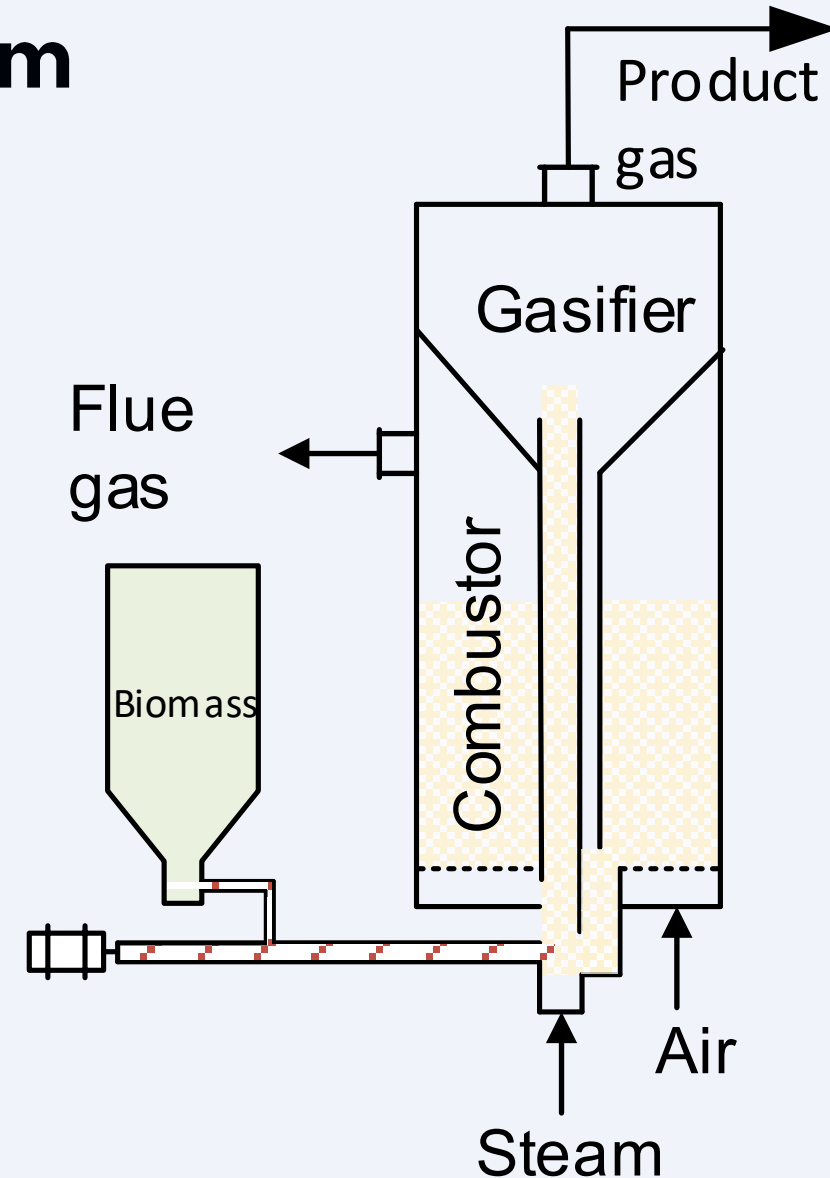
Upgraded biogas or gasification gas obtained from manure/biogenic residues

Synthetic methane / e-methane (SNG)

Made from H₂ + CO₂. It counts as an RFNBO only when renewable-electricity and carbon-source rules are met.

MILENA - a fuel flexible platform

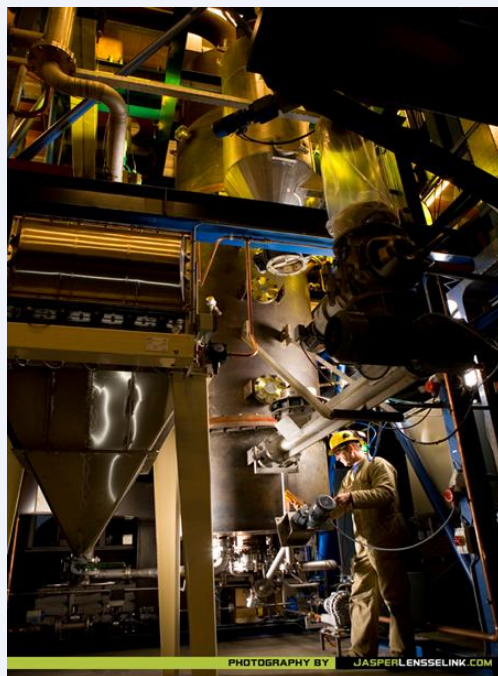
Wood	
Pomace (grape residue)	
Chicken litter	
Waste wood	
Soya stalk	
Waste (RDF)	



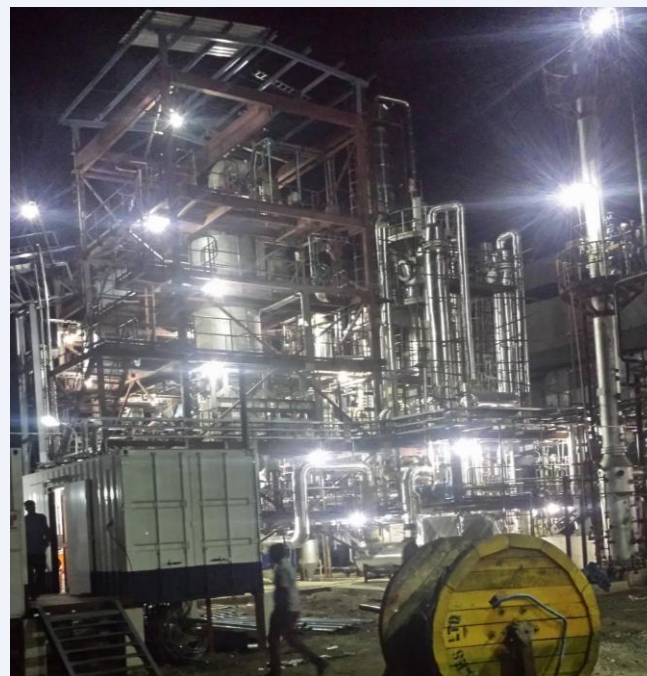
MILENA scale-up



Petten, lab
30kW / 8 kg/hr
fuel flexible



Petten, large Pilot
800kW / 200 kg/hr
fuel flexible

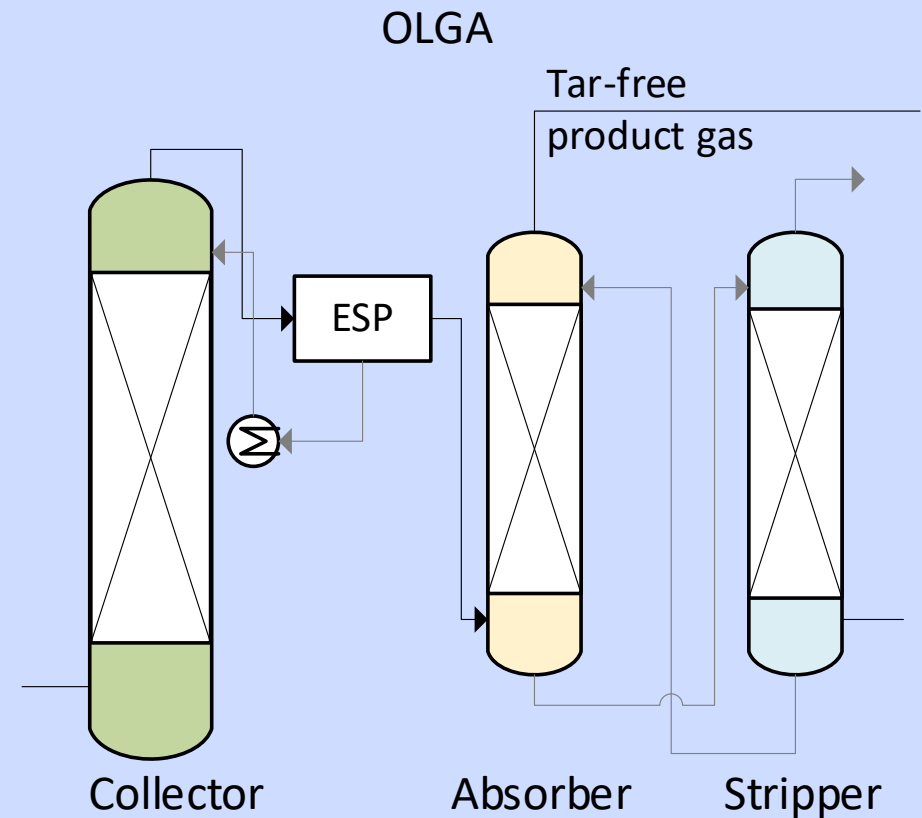
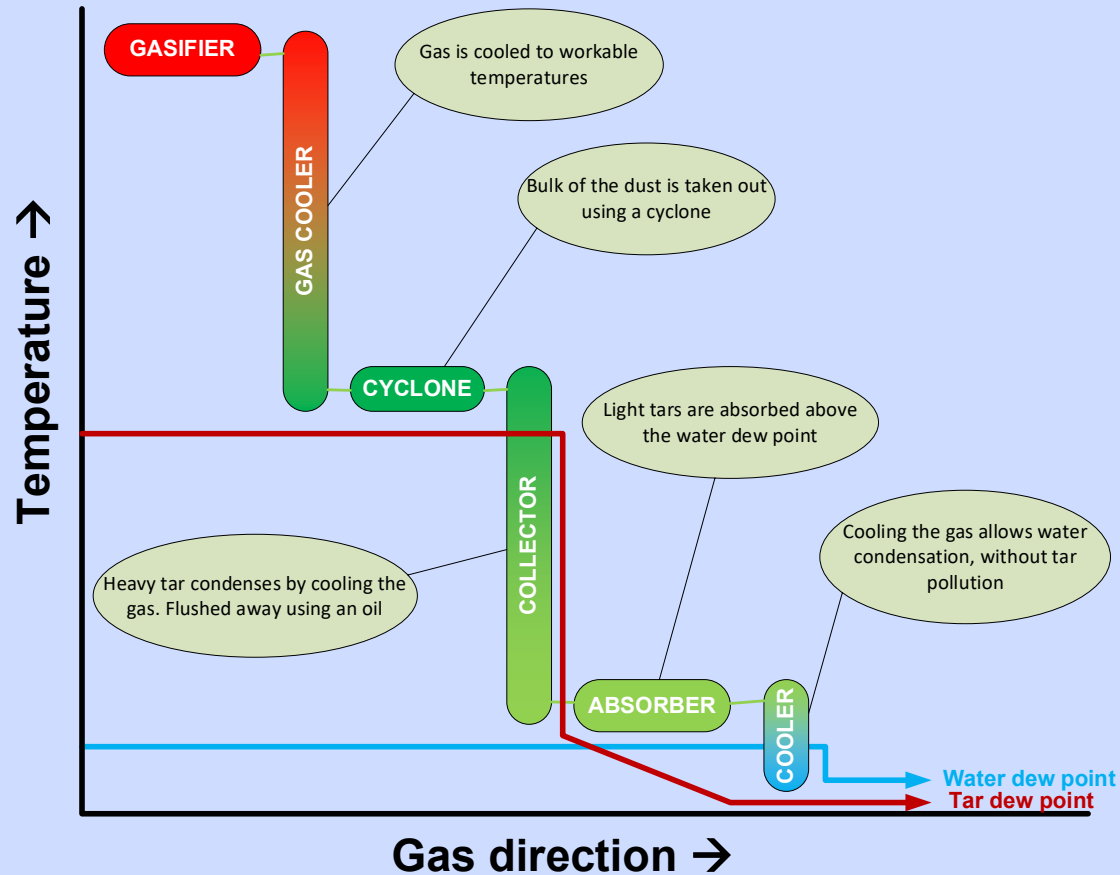


India, demo
4MW / 1000 kg/hr
soya stalk to CHP

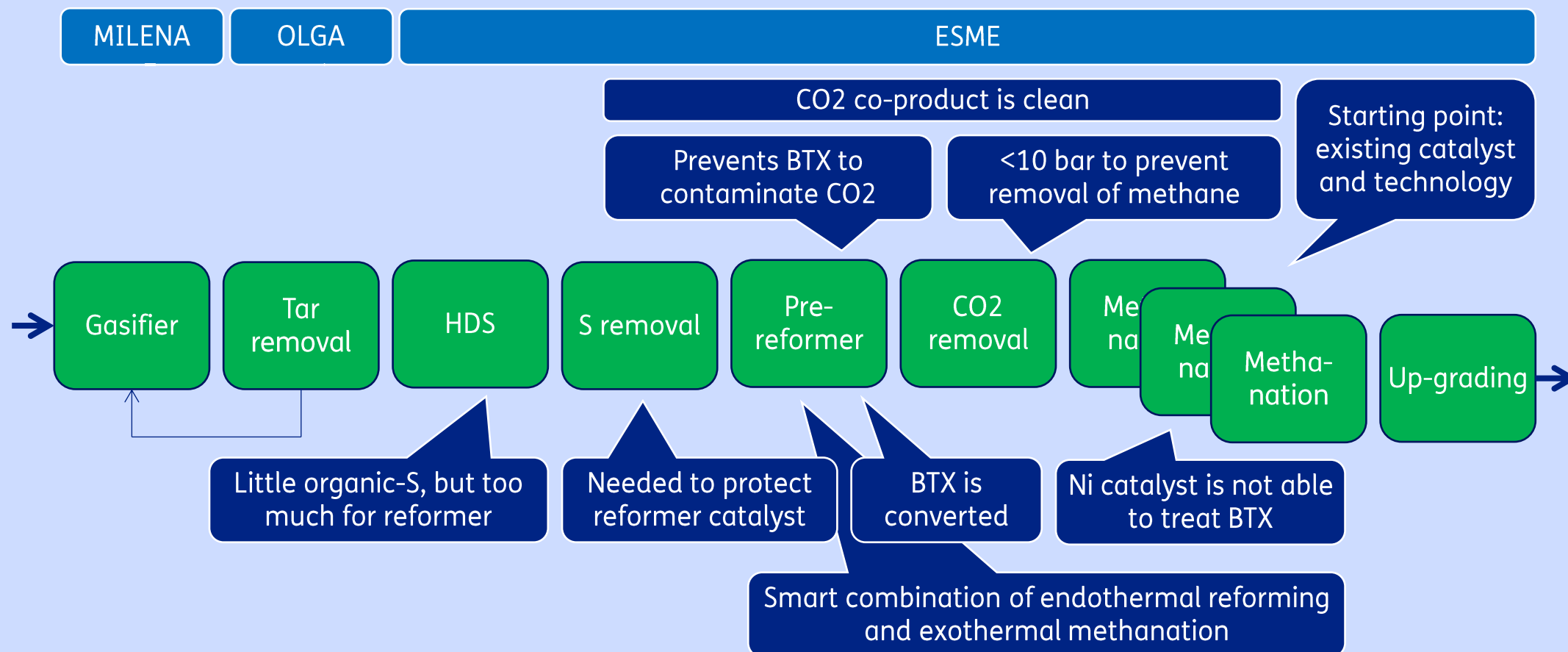


Netherlands FOAK
30MW / 7800 kg/hr
waste wood to green gas

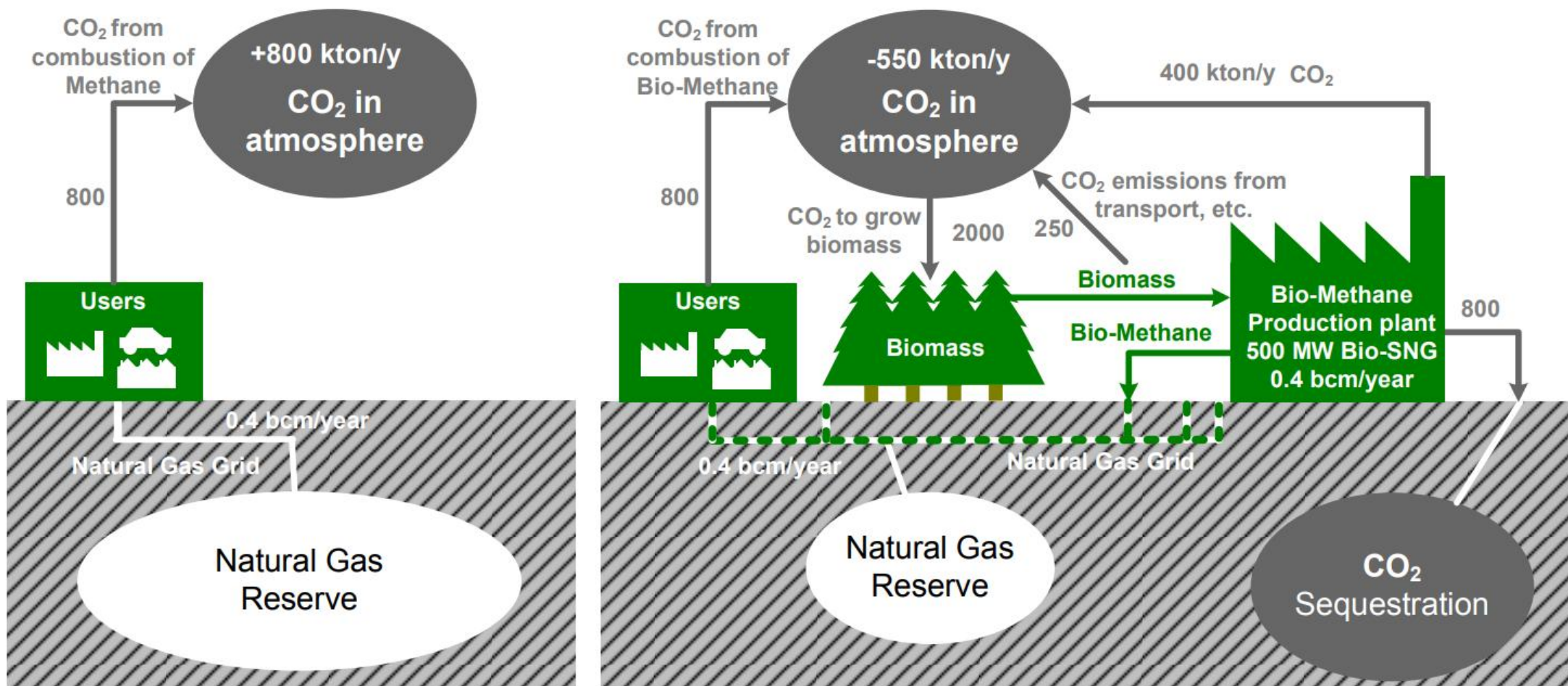
OLGA the enabler



ESME – The finisher



Unique opportunity with CCS



Carbon Intensity (CI score)

- Carbon Intensity is a metric which explains how much GHG emissions are avoided by using a sustainable alternative
- CI for methane in transport is 94 gram/MJ
- CI for methane in ETS2 sector is 80 gram/MJ

Excluding CO2 sequestration

- CI for Green Gas from indirect gasification 7 gram/MJ

Including CO2 sequestration

- CI for Green Gas from indirect gasification -84 gram/MJ



New
Energy
Coalition

Drivers of Change

**Biomassa-
vergassing
als snelweg om
klimaatdoelen
te halen**

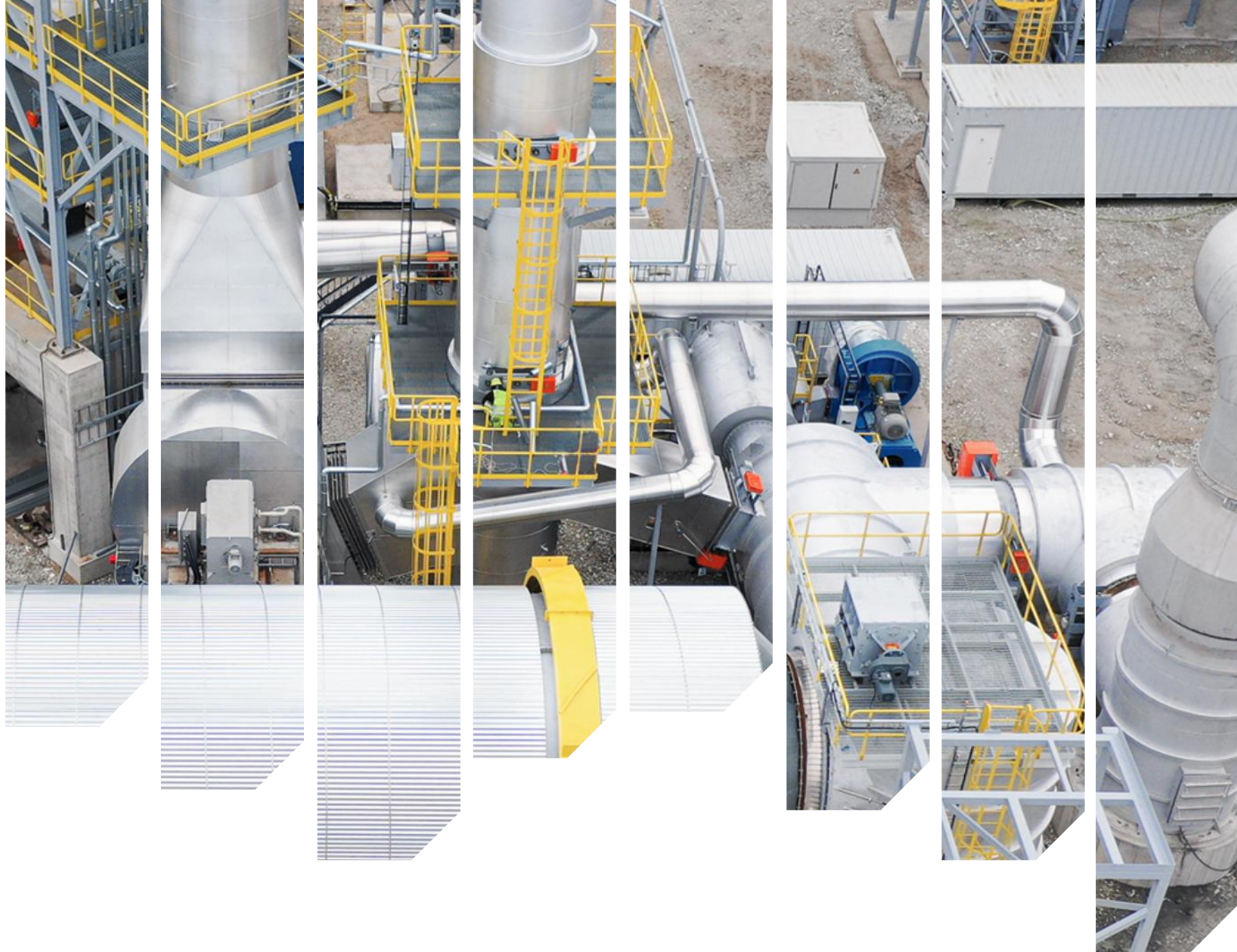
1 JUL
GRONINGEN
2025

Auteurs

Ruud Paap (New Energy Coalition) en Berend Vreugdenhil (TNO)



Producing green gas from demolition wood



Eemsgas initiative key data

Goal	Demonstration of industrial scale application
Technology	MILENA-OLGA-ESME by licensor TNO
Location	Farmsum, Delfzijl, The Netherlands
Scale	30 MWth gasifier load
Feedstock	65.000 ton/a demolition wood
Product	18.000.000 Nm3 SNG to GTS-RTL grid
Schedule	Commencement January 1st, 2026 - Start of Production July 30th, 2029
Participants	Perpetual Next, Gasunie
Partners	T.B.A
Project budget	€ 100.054.196
Subsidy program	DEI+ Vergassing van reststromen





Belanghebbenden

Nederland

Samenwerking tussen belastingbetalende Nederlandse bedrijven en kennisinstellingen, gericht op het bundelen van expertise en innovatie ten gunste van de Nederlandse samenleving.

Industrie

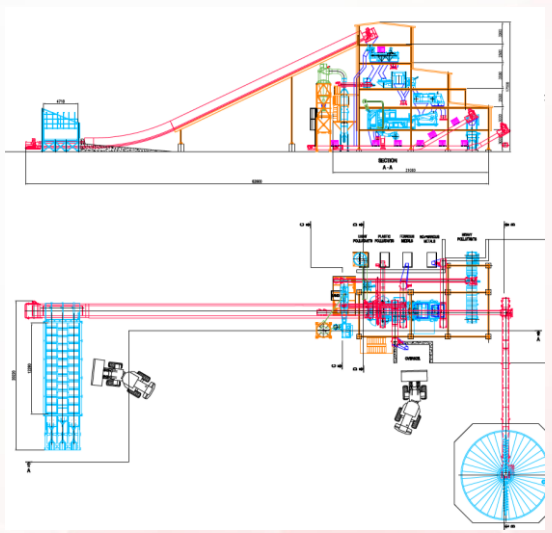
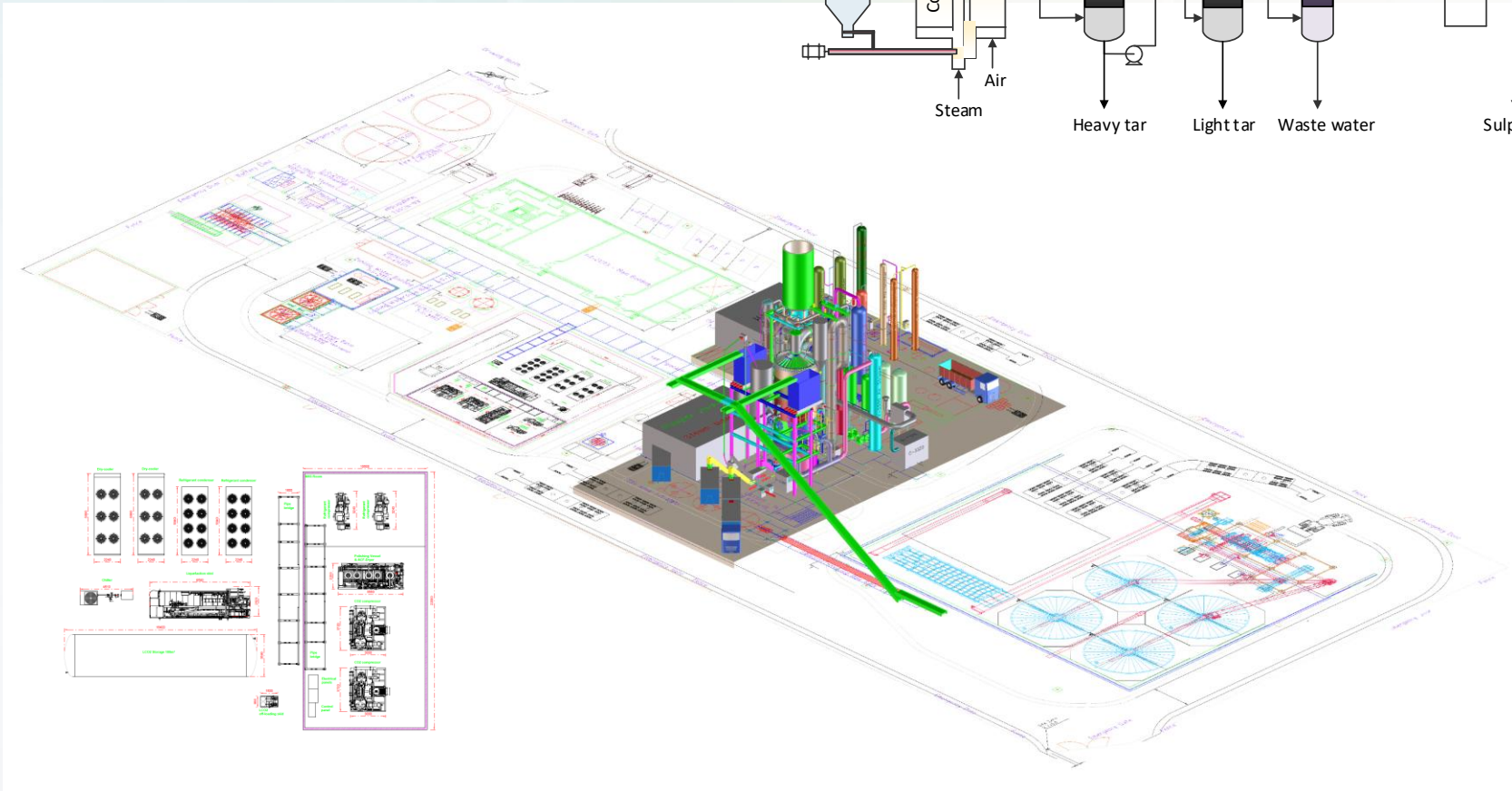
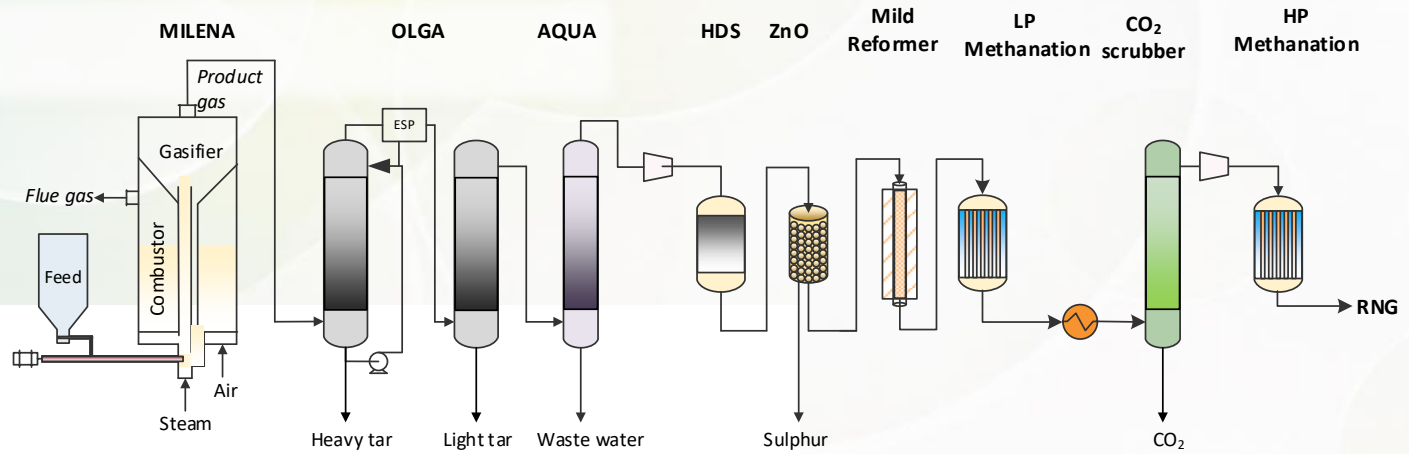
Biogas geïnjecteerd in de Nederlandse infrastructuur, zodat het direct inzetbaar is voor transport, industrie maar ook huishoudens.

Innovatie

Nederland als kennisland en innovatielider, dat via groene technologieën en duurzame oplossingen een internationaal voorbeeld stelt voor een toekomstbestendige economie.



Process focus



From TNO IP to a Dutch FOAK

Technology, deployment and carbon advantage reinforce one another.

01 TECHNOLOGY

TNO develops renewable technologies from ideation through market implementation.

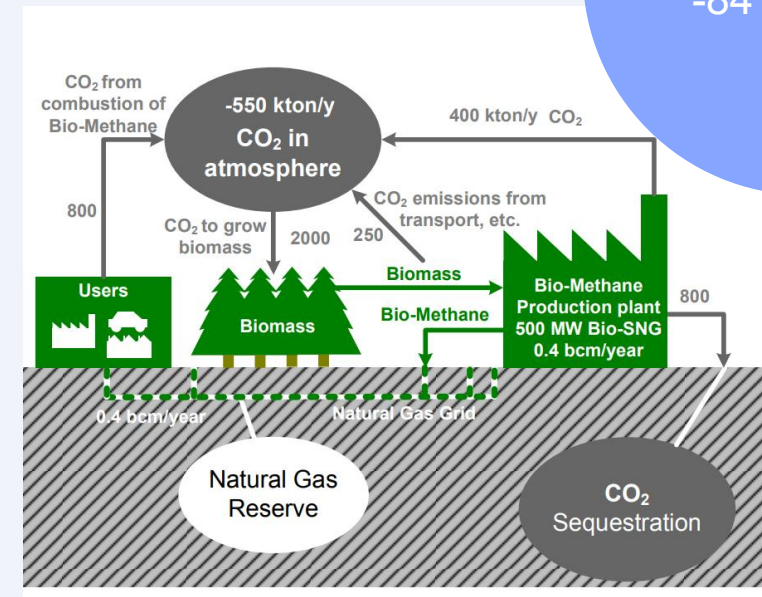
02 DEPLOYMENT

EemsGas will build the FOAK RNG facility in the Netherlands, based on TNO IP. Process Design Package available for new projects

03 CARBON ADVANTAGE

Indirect gasification combined with CCS has an excellent CI score, relevant for US RNG developments.

WHY CCS CHANGES THE CASE



Indirect gasification + CCS strengthens the carbon-intensity proposition.

THE MESSAGE TO
REMEMBER

TNO technology → Dutch FOAK → carbon advantage

Thank you for your attention

Innovation for life

📍 TNO Energy & Materials Transition

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