BIOGAS - A CORNERSTONE OF THE ENERGY TRANSITION

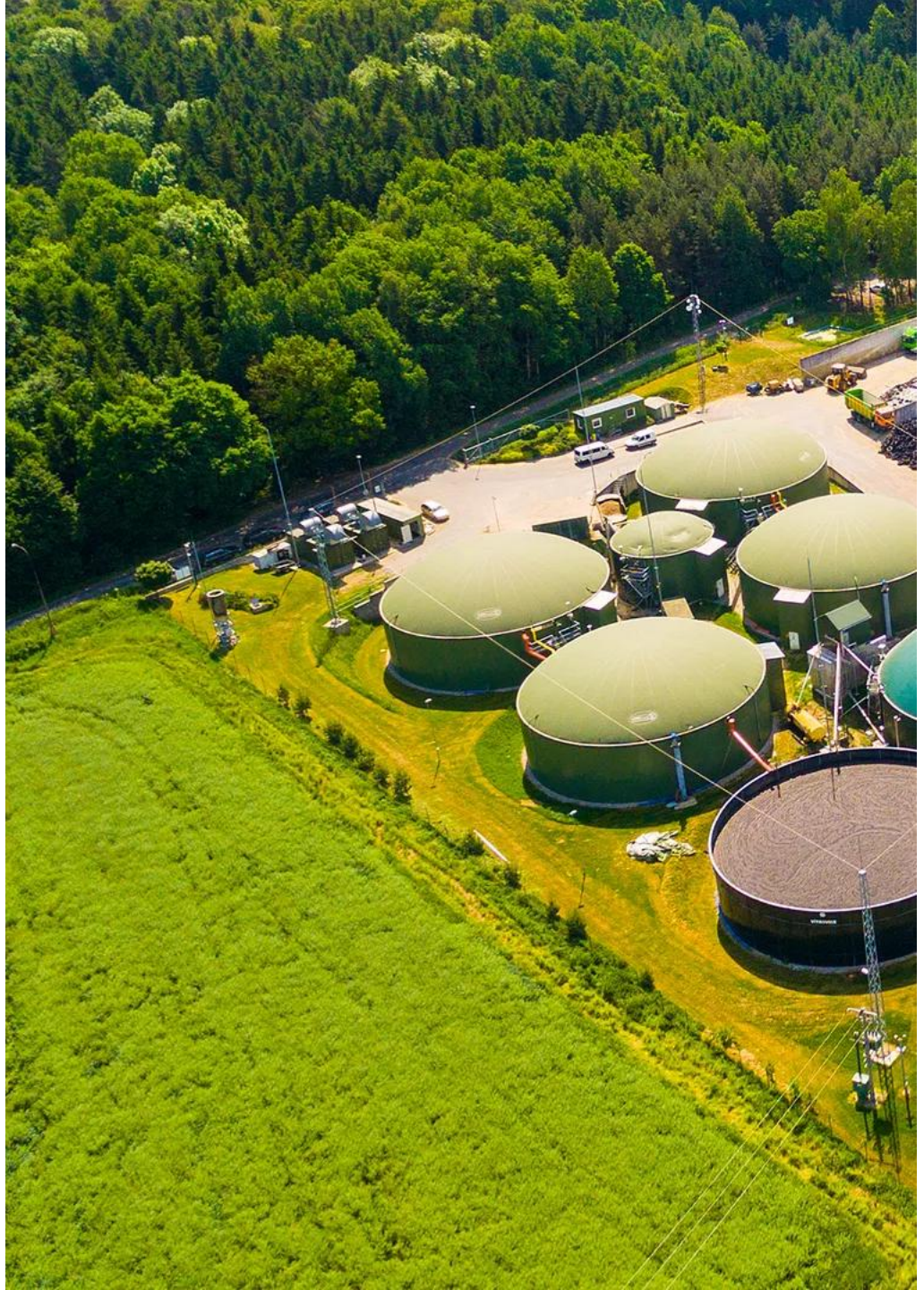
Budapest Biogas Summit

Presented by Anita Simon



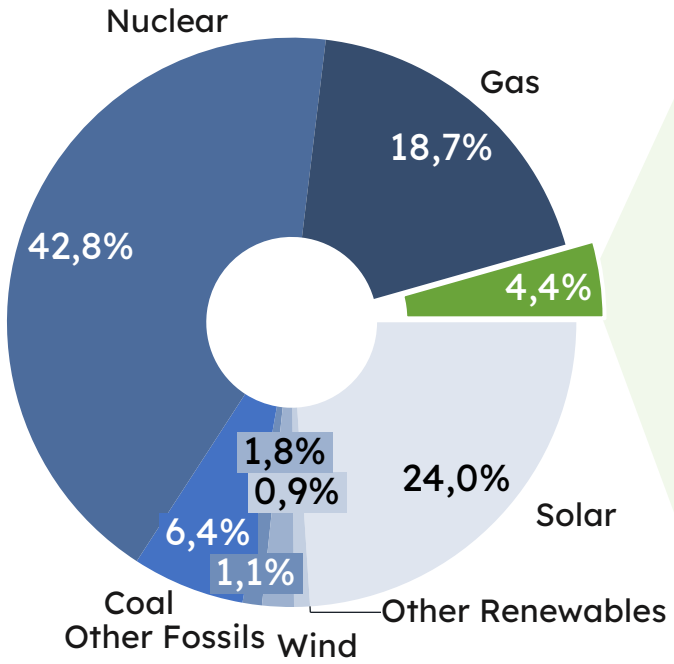
Agenda

1	**The role of Biogas in the Energy Mix** Biogas is uniquely positioned, yet its currently underutilized in Hungary
2	**From Acquisition to Circular Operation** ALTEO made fundamental restructuring to achieve a waste-driven circular operation in its biogas plant
3	**Challenges in operation and ALTEO’s solutions** How ALTEO built operational resilience across three fundamentally different problem spaces
4	**Circularity in Practice** ALTEO's plant converts expired food and by-products into green energy and fermented end products, that re-enter the supply chain
5	**What the biogas sector needs for development** Structural gaps that still prevent the sector from scaling and what it would take to close them



Biogas provides stability, supply security and decarbonization for Hungary's energy-mix

Global context: 25% of global natural gas demand could be covered by biogas — yet the EU taps only ~40% of its potential. Hungary's 4.4% share reflects this opportunity gap.



Biogas

Uses and benefits

Heat and Electricity

- Energy Efficiency
- Balancing the electricity grid
- Clean, green energy

CNG & LNG

- Diesel matching capabilities
- Local source
- Decarbonization

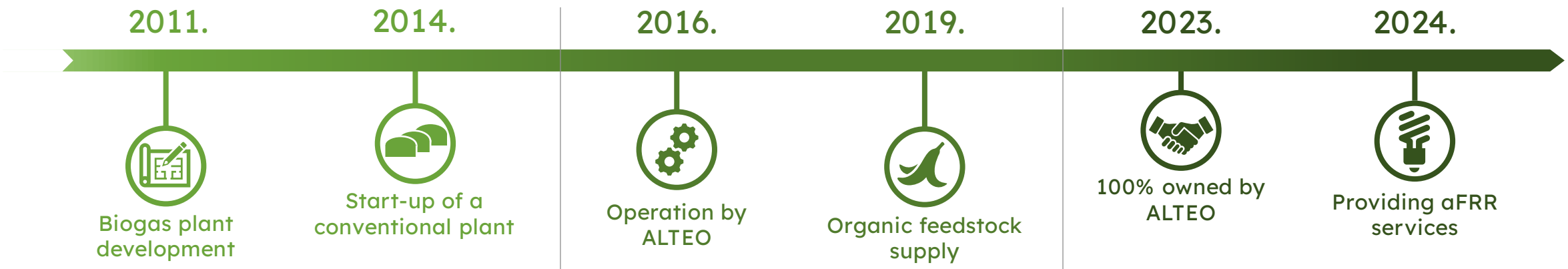
Biomethane

- Reducing dependance on natural gas
- Reaching MOL's 2030 goals
- Production from feedstock
- Connection points

Hydrogen

- Synthetic fuels
- Gas supply decarbonization
- Modernization

ALTEO biogas: 12 years of evolution from subsidised generation to integrated circular operation



	FEEDSTOCK	OPERATIONS	MARKET ACCESS
Feature	At launch in 2014, feedstock composition was predominantly conventional: ▪ 85% traditional inputs (manure, agricultural by-products) ▪ 15% waste-derived sources	Through targeted operational and technological improvements, this ratio has now fully reversed: ▪ 85% waste-derived feedstock ▪ 15% conventional inputs	The 2 MW plant operates as a combined heat and power (CHP) unit: ▪ Processes 50,000–55,000 tonnes of input material annually ▪ Produces approximately 7 million m³ of biogas per year
Take-away	Strong circular vision – not market circumstance – drove this transformation. ALTEO's strategic commitment to organic waste supply has been the primary enabler of its evolution over the years.	While most biogas plants rely on conventional inputs, ALTEO has structurally shifted to organic waste supply – maximising circular impact.	With aFRR services and CHP output, ALTEO captures value far beyond simple energy production.

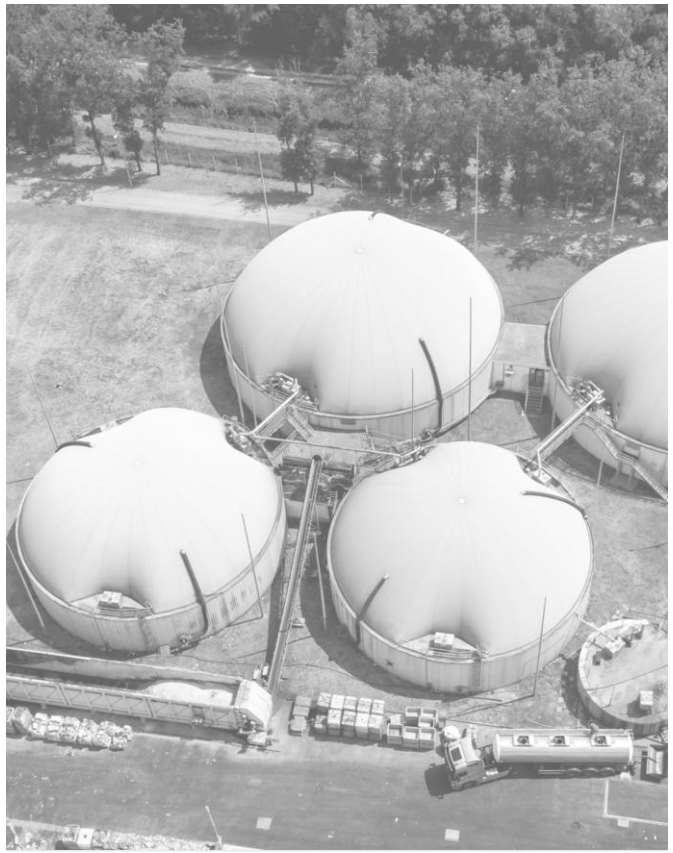
Achieving ALTEO biogas plant's current state was not without challenges

2016 2019 2025

	Technological and technical conditions	Raw material supply	Dispensing the final product
Challenge			
ALTEO Solution			

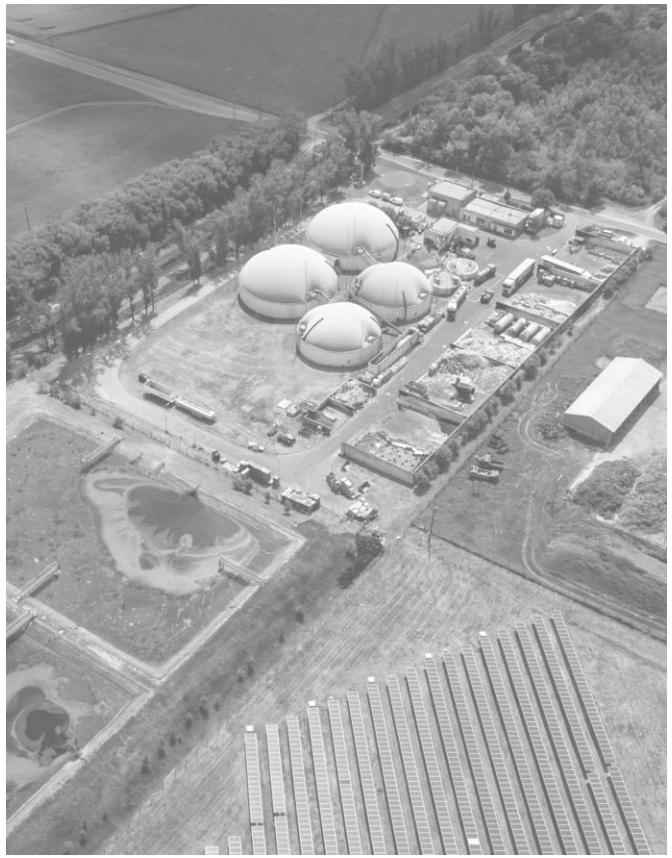
Achieving ALTEO biogas plant's current state was not without challenges

2016 2019 2025

	Technological and technical conditions	Raw material supply	Dispensing the final product
Challenge	▪ At the time of the acquisition, the power plant had already been operating continuously, for nearly 10 years, so ALTEO acquired near obsolete equipment		
ALTEO Solution	To tackle the problems ALTEO introduced these steps: 1. Qualified professionals on every shift 2. Regular digester cleaning and equipment condition monitoring 3. In-house gas engine maintenance team and specialized biogas engine technicians on standby 4. Remote continuous plant monitoring 5. Disaster response team conducts regular on-site drills		

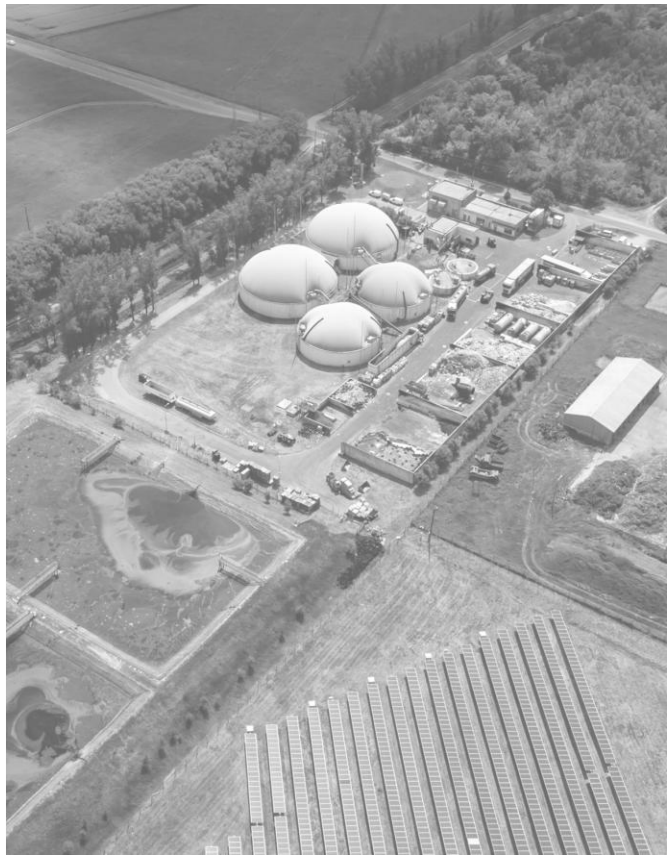
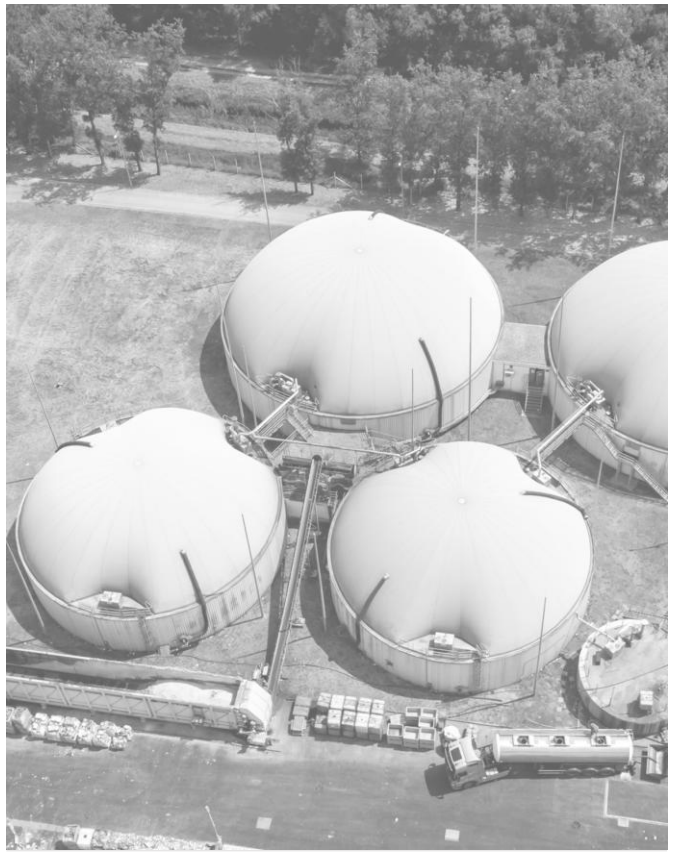
Achieving ALTEO biogas plant's current state was not without challenges

2016 2019 2025

	Technological and technical conditions	Raw material supply	Dispensing the final product
Challenge		▪ A supply of 55,000 tons of organic feedstock is required to ensure continuous operation. ▪ The power plant's location does not allow for the use of local feedstock in large quantities	
ALTEO Solution		▪ Continuous partner and subcontractor network expansion since 2019 ▪ Approximately 20 unique raw material blends developed with biologist oversight ▪ Weekly laboratory monitoring and gas yield assessment for all incoming materials	

Achieving ALTEO biogas plant's current state was not without challenges

2016 2019 2025

	Technological and technical conditions	Raw material supply	Dispensing the final product
Challenge			▪ The end product generated (50,000 m^3/year) must be removed to ensure the continuity of operations ▪ Scheduled removal is required, which is subject to an official permit and a soil protection plan
ALTEO Solution			▪ Annual discharge plan prepared in advance ▪ In 2025, regulatory approval process initiated to classify liquid and solid end products as commercial products ▪ Laboratory test results were within limits, but application was rejected ▪ A legislative proposal has been drafted to regulate final product application

ALTEO's unique operations aim to enhance Hungary's circular economy

Agriculture and byproduct processors



- EU fertilisation limits compliance (N/P)
- Offtake channel for agricultural by-products

Fermented end product

Byproducts of agricultural processes

ALTEO's biogas plant



- Securing continuous, diversified feedstock supply
- Closing the circular loop – driving the process

Expired products

Green energy

Retail chains and food manufacturers



- Guaranteed brand protection – recalled products verifiably destroyed
- Compliant diversion of waste from landfill

There is still room for development in Hungary's biogas industry



Establish a stable, guaranteed-price procurement market to unlock the significant potential of agricultural and food industry waste

Improving stability and utilization

Reducing exposure to natural gas

Beyond targeted feed-in support, transmission (FGSZ) and distribution operators must have a direct stake in biomethane grid integration

Expand the list of waste materials eligible for biomethane production, and simplify the approval of digestate as a soil conditioner

Rethinking the Legal Background

ALTEO

POWERING
TOMORROW