

ELASTIA

ELASTIA // BIOMETHANE UPGRADING

Improving biomethane upgrading economics using next-gen gas separating material technologies

OVERVIEW

CO_2 / CH_4

BIOMETHANE

We turn advanced materials science into industrial separation solutions

Elastia combines materials science, product engineering and manufacturing capabilities.

01 UK company based at UCL, London

We hold IP for gas-separation solutions developed by our UK-based materials science team at our UCL laboratory and workshop.

02 Product engineering and manufacturing

From membrane material to hollow fibre, cartridge, testing and qualification at our production site in Hangzhou, China.

03 Built for industrial collaboration

We specify and design products to evaluate around partner systems, with engineering and digital twin support.

RESEARCH SUPPORTED & FUNDED BY:

THE
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SOCIETY



Engineering and
Physical Sciences
Research Council

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COMMERCIAL FOCUS

Biomethane upgrading and selected industrial CO₂ separation applications

We improve gas separation economics by designing and developing the separation material, fibre and cartridge

FROM MATERIAL DESIGN TO MODULE DELIVERY

01 Proprietary membrane material IP

Designed for CO₂ / CH₄ separation and adjustable around the target stream.

02 Hollow-fibre and module engineering

Fibre, potting and module configuration can be adapted to the target application.

03 Product ready for testing

Membrane fibres and cartridges are available for evaluation and interface adaptation.

OUR SEPARATION SOLUTIONS

Membrane modules

- Proprietary polymeric materials, hollow fibres and cartridges.
- Producing 4", 6", 8" cartridges*

*Custom diameters also available (12"-16")

Membrane regenerative system

For on-site membrane cartridge recovery to extend durability

Sorbents

Low-temperature solid adsorption materials for difficult CO₂ separations.

PARTNER FIT

Elastia supplies differentiated membrane fibres, cartridges and application engineering. We work with upgrading companies and operators through controlled qualification against their requirements.

Our membrane modules offer three routes to improve biomethane-upgrading economics

Higher CO₂ separation capacity can give operators a choice: increase biomethane output or maintain output at lower compressor pressure and energy demand.

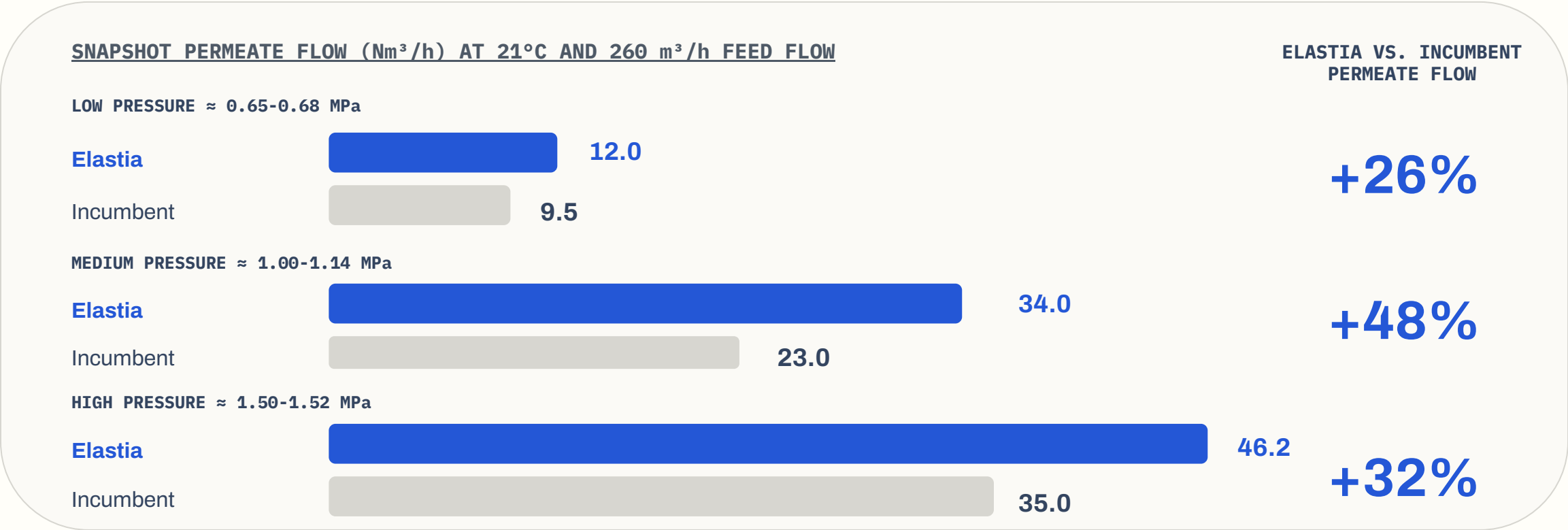
01	Improved CO₂ separation capacity	PERFORMANCE GAIN More CO ₂ removed per cartridge at lower or comparable operating pressure.	CUSTOMER VALUE Two operating choices: > HIGHER OUTPUT Increase feed throughput. > LOWER ENERGY Same output; lower pressure.
02	Improved membrane durability	MODULE EFFECT Laboratory testing indicates stable separation performance for more than 2,000 hours.	CUSTOMER VALUE Potentially lower maintenance, replacement cost and unplanned downtime.
03	Regeneration capability	MODULE EFFECT Potential to restore performance after ageing, plasticisation or contaminant exposure.	CUSTOMER VALUE Longer usable life and less membrane waste.

Our modules have been compared against the majority of market incumbents at live customer sites



Customer-site testing shows higher permeate flow across all conditions (pressures, temperatures)

We propose replicating the comparison on a target biomethane stream to measure product purity, methane recovery, energy demand and stability.



Customer-site module comparison in early commercial module deployment. Detailed reference identities and project scale can be discussed under NDA.

We are looking for biomethane / biogas operators to jointly test our membrane solutions against lab and real-life deployments to generate comparative data

Thereby generating objective data to measure our membrane module performance and value against market incumbents



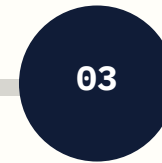
Define the envelope

Feed, flow, pressure, temperature, contaminants and variability.



Set acceptance criteria

Target biomethane purity, methane recovery, energy, duration and system boundary.



Run the comparison

Identified module, calibrated measurements and a complete material balance.



Decide

Discuss commercial options

OUR POSITION

Modules are available for evaluation. Scoping covers cartridge compatibility, stage configuration and polishing requirements.

CUSTOMER / PARTNER INPUTS

Feed and site data, interfaces, engineering input and test access.

Could one biomethane site be suitable for qualification?

We propose a 30-minute technical discussion, followed by a review of one representative feed stream and the required biomethane specification.

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