



UniSieve

5M Seed Round

ZURICH, SWITZERLAND

www.unisieve.com



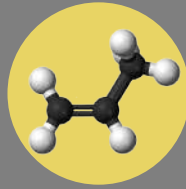
Vision

MAXIMIZING EFFICIENCY
AND SUSTAINABILITY
OF OUR WORLD'S MOST
ENERGY CONSUMING
INDUSTRIAL PROCESSES

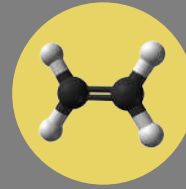
GAS SEPARATION IS USED FOR MAKING MOST PRODUCTS WE DAILY DEPEND ON



The world's most important
base chemicals are purified via
gas separation



116'000'000
Tons per year of
propylene



200'000'000
Ton per year of
ethylene





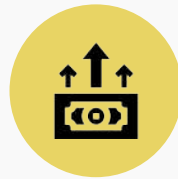
Problem

SEPARATION IS RESPONSIBLE FOR OVER 10% OF THE GLOBALLY CONSUMED ENERGY

100 meter-high distillation columns that are driven by heat from burning fossil fuels make today's gas separation:



Highly polluting



Cost and energy intensive



Huge and rigid



Wasteful

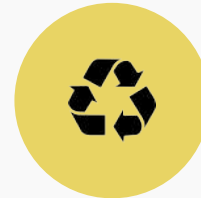
UNISIEVE'S MEMBRANE-BASED GAS SEPARATION TECHNOLOGY DRASTICALLY LOWERS ENERGY CONSUMPTION AND CO₂ EMISSIONS

Molecular sieving membranes don't need any heat and can separate molecules simply based on their size¹

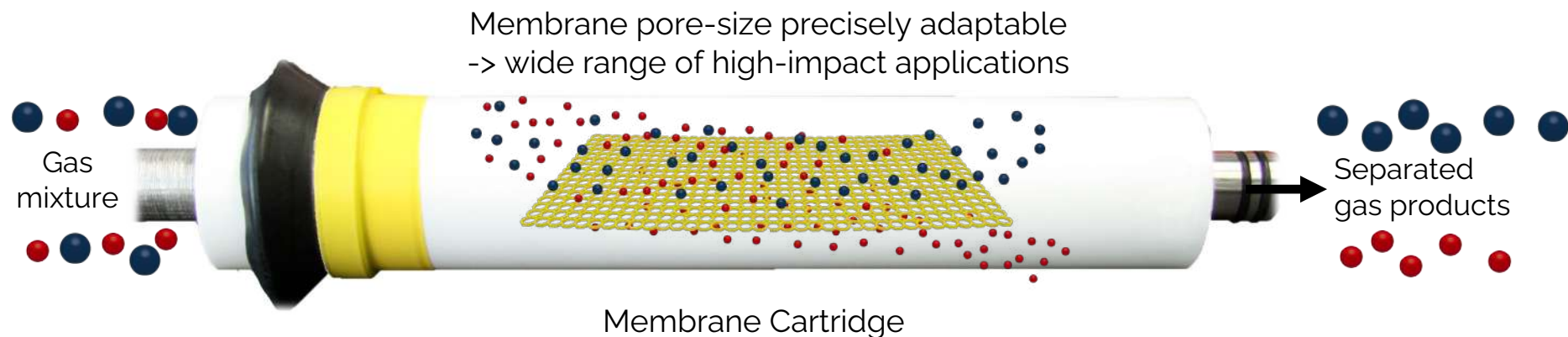
90% reduction
in process
energy²



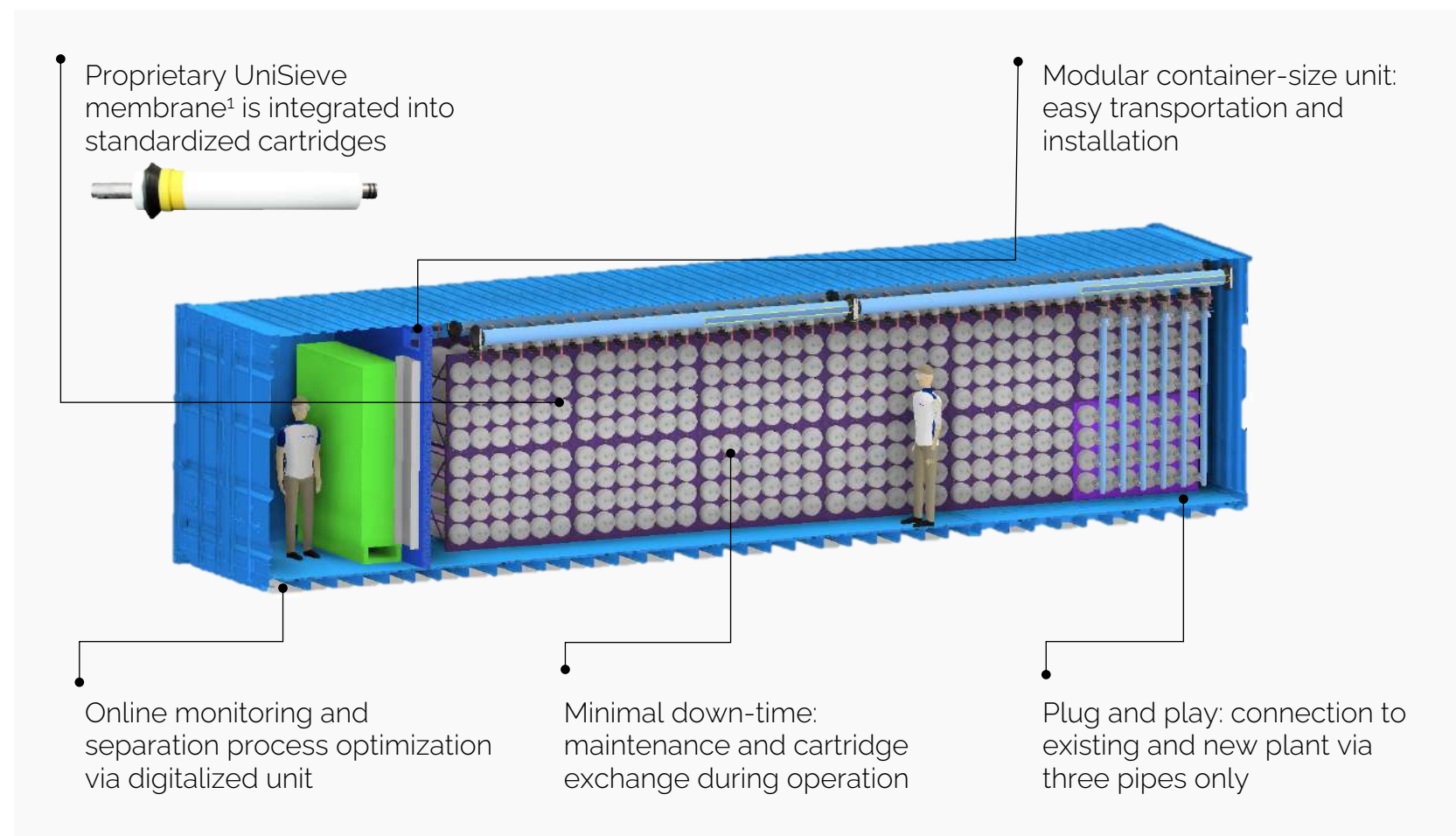
Reducing
waste²



90% reduction
of CO₂
emissions²



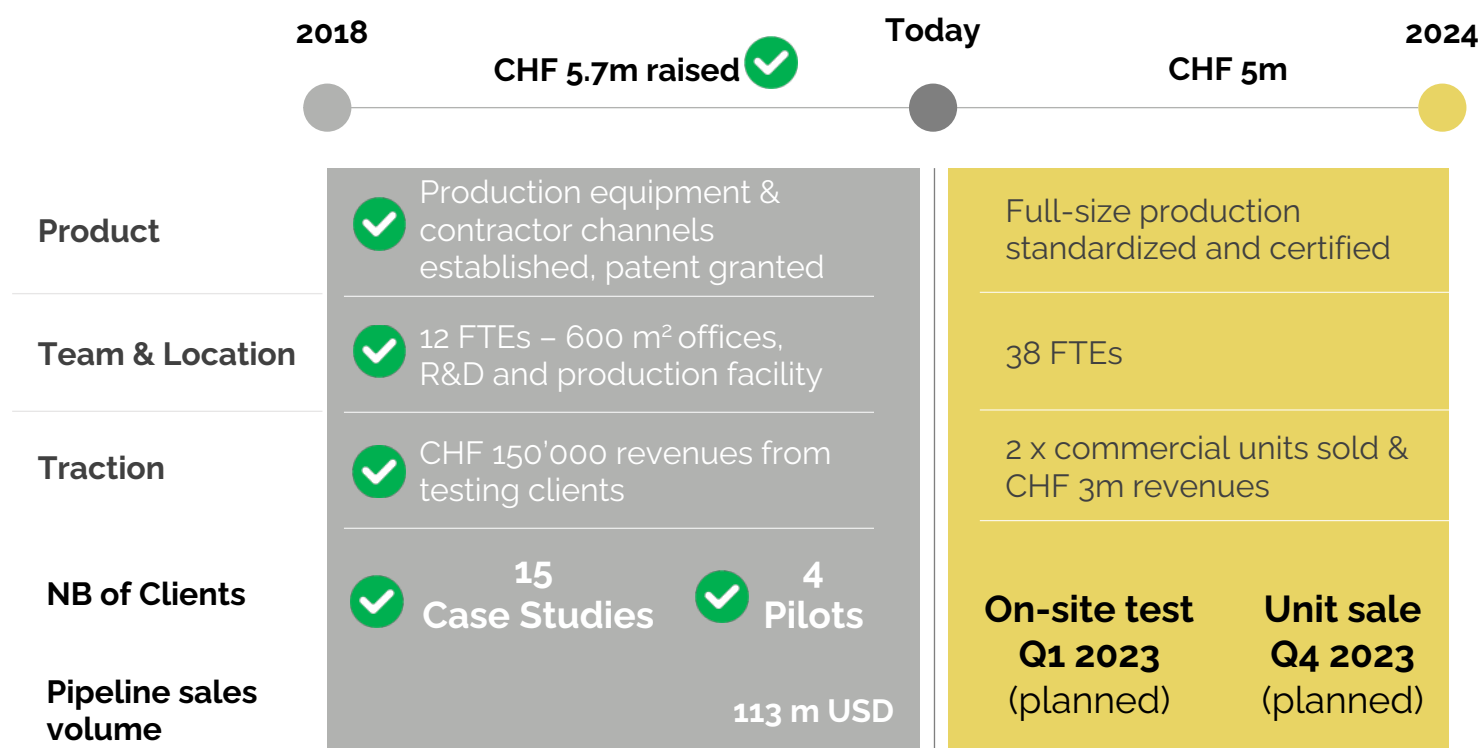
OUR SOLUTION: MODULAR, CONTAINERIZED MEMBRANE ADD-ON UNITS THAT CAN BE INTEGRATED IN EXISTING AND NEW PLANTS



Modular Pilot Unit In Operation



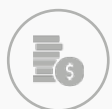
Proprietary Membrane Fabrication Scaled Up and Progressed Testing with Paying Clients: Roll-Out Completed and CHF 3m Revenues in 2024



OUR TARGET CLIENTS HAVE TO UNDERGO A DISRUPTIVE GREEN TRANSFORMATION



The drive to Carbon Neutrality and Net Zero is accelerating



Pledge signatories in total generate over \$1.8 trillion in global annual revenues



Energy, Oil&Gas, Chemical, and Materials companies are amongst those with ambitious targets



Decarbonization projects receive enormous public and private funding



UniSieve contributes to SDGs Nr. 7, 9, 12 & 13 that are key for Carbon Neutrality



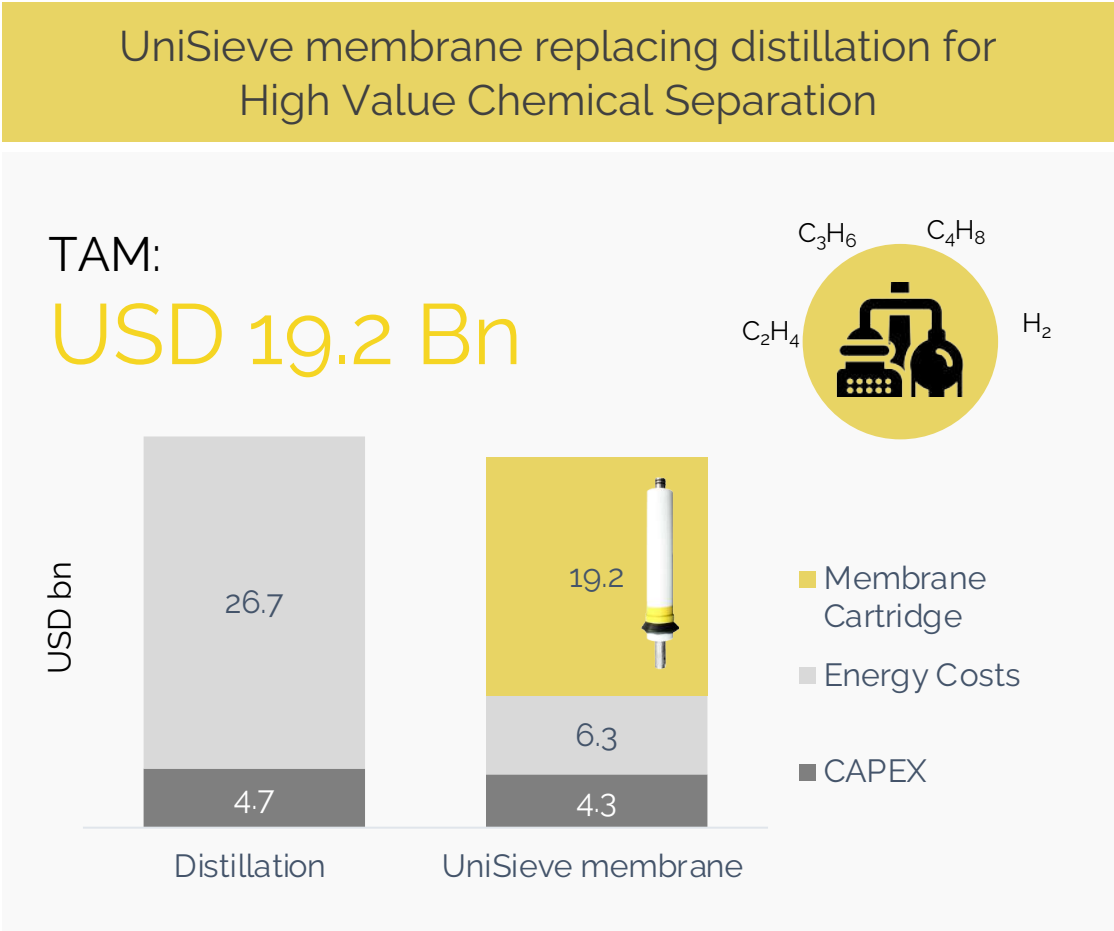
High Value Chemical Separation



Energy, CO₂ and Industrial Processes



WE'RE UNLOCKING THE BIGGEST OPPORTUNITY OF HIGH-VALUE SEPARATION ACCELERATED BY THE PUSH FOR GREEN SOLUTIONS



Follow-up markets

Energy	CO ₂ separation	Industrial Processes
Hydrogen Economy Europe's hydrogen vision: EUR 820 B market by 2050 TAM: 0.2 USD billion² Biogas Upgrading TAM: 0.5 USD billion³	Carbon Capture Need to capture 1150 MtCO₂ by 2030, the current project pipeline forecasts a CO₂ capturing capacity of 151 MtCO₂ by 2030. TAM: 10-15 USD billion⁴	Large field of industrial gas separation in various processes

1: Add-on unit hardware and installation 2: Hydrogen Roadmap Europe team, 3: Annual sale of membrane cartridges into the biogas market for both initial investments and replacement 4: value of membrane units from 2030 (Source IAE, Hydrogen Council, McKinsey, UniSieve)

WE FOCUS ON PROPYLENE PURIFICATION TO RELIEVE CLIENTS FROM HUGE SOCIAL AND MARGIN PRESSURE

High-value chemicals (HVC)s are the building blocks of most goods that we daily use: polymers, pharmaceuticals, etc.

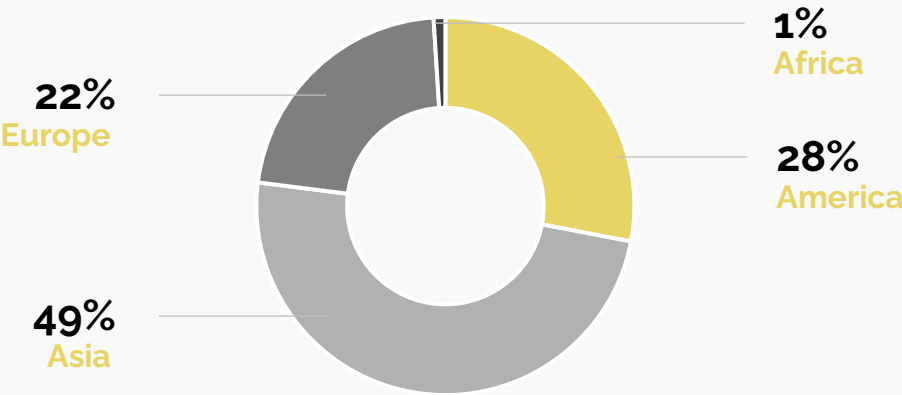
Propylene is the world's second largest high-value chemical feedstock: **116 Mio tons per year (120 USD billion) produced**



TAM: **USD 2.1 bn** for propylene separation cartridges



Our current market segment focus: **Europe & America**



USPs of UniSieve's propylene purification membrane solution:



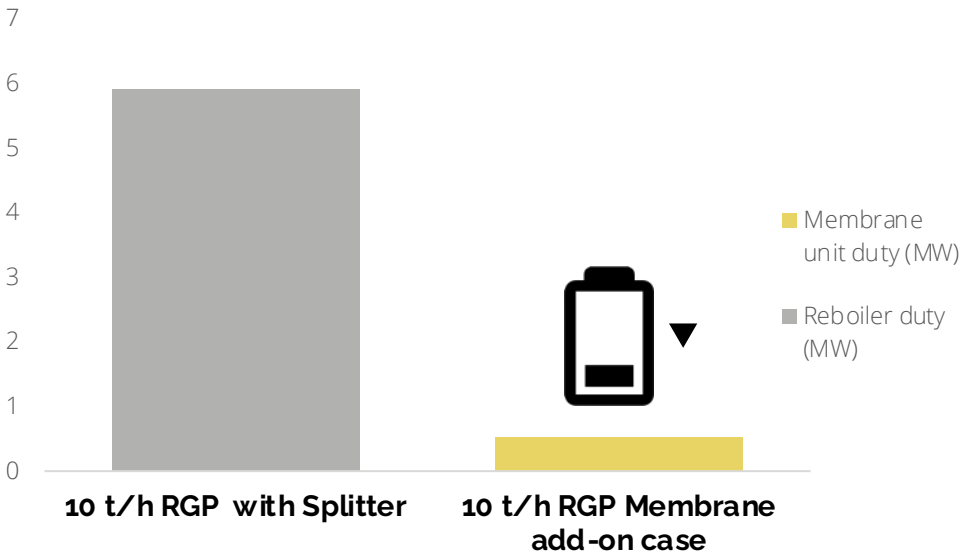
Energy reduction: **> 90%**



CO2 reduction **per unit: up to 30'000 t/a**



Capacity increase and waste reduction



UNISIEVE'S MOLECULAR SIEVING TECHNOLOGY IS UNIQUELY POSITIONED TO REPLACE DISTILLATION IN PROPYLENE VALUE CHAIN

	Molecular sieving membrane	Distillation	Facilitated transport membrane	Polymeric membrane ²	
	UniSieve				 UniSieve's membranes have clear operational and ecological advantages over distillation
Low-energy demand	✓		✓		
Plug & play with simple operation	✓				
Stability against impurities ¹	✓	✓			 Facilitated transport membranes can separate propylene from propane but their operation is complicated, and durability is limited as they are highly sensitive against impurities common in propylene gas streams
Maintenance during operation	✓		✓		
Broad applicability	✓	✓			
Low-footprint	✓		✓		

1: impurities occurring in refining streams are methylacetylene, hydrogen etc., 2:Conventional polymeric membranes can't be used to separate propylene and propane as they lack sensitivity for these molecules

OUR BUSINESS IS RECURRING, SCALABLE AND WITH A STRONG LOCK-IN EFFECT



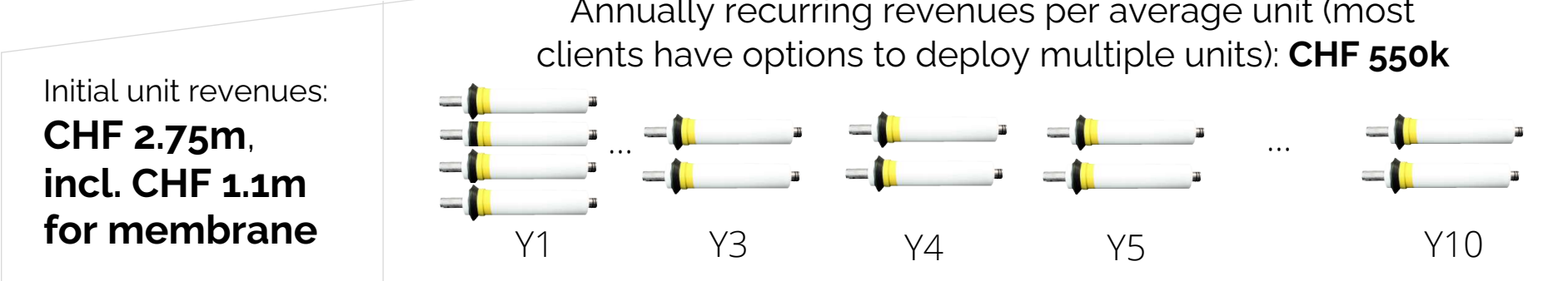
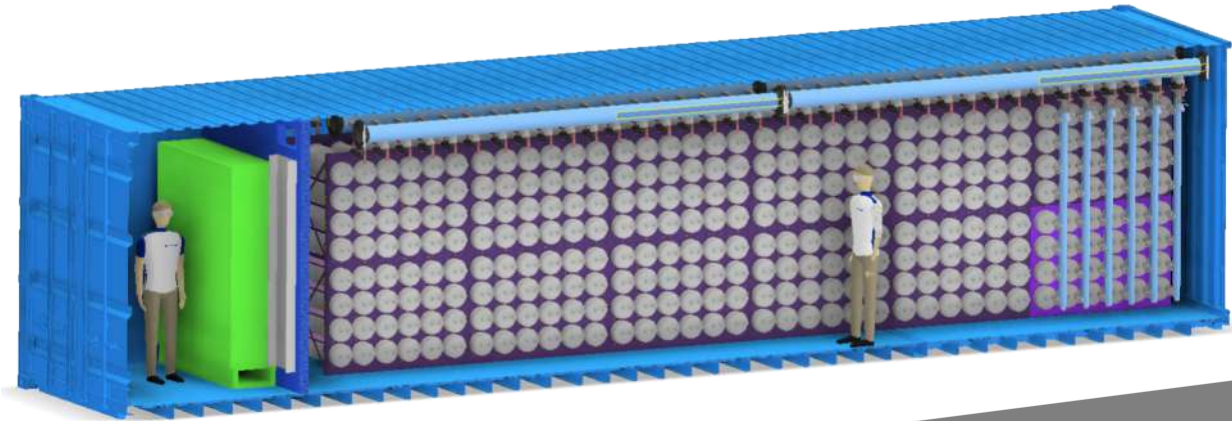
Excellent scalability:

the modular membrane unit design allows for small to large units containing hundreds of cartridges



Lock-in:

our proprietary membrane technology is the sole of its kind available for many applications



Cumulated revenues from cartridges after 10 years per average customer:

CHF 5.5m

OUR DEDICATED UNISIEVE TEAM COMBINES EXCELLENT TECHNICAL AND COMMERCIAL EXPERTISE



Samuel Hess

CEO,
co-founder, PhD in
chemical engineering ETH
Zürich, Co-author of IP

ETHzürich



Elia Schneider

CTO,
co-founder,
PhD in chemical
engineering ETH Zürich

ETHzürich



Stephen Haller

COO,
former Group-Executive and Board
Member, 30 years+ experience in
chemical industry

SI Group



**Claudia Solá
Gutiérrez**

Development Engineer

UC



Hanspeter Ott

Head of Engineering
30 years+ experience in
development and construction
of special devices

hugengineering.



**Mostapha
Dakhchoune**

Development
Engineer

EPFL



**Brenda
Serafim Haak**

Lab Manager &
Technician

syngenta



**Jessica
Marbach**

Development
Engineer

ETHzürich



**Robin
Studer**

Development
Engineer

ETHzürich



**Laura Pinto
Perea**

Executive Assistant

ETHzürich



**Jens
Ammann**

Testing and
Application
Engineer

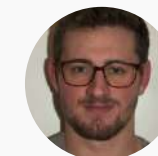
IBM



**Karin
Müller**

Technician

EMS



**Robin
Deller**

Development
Engineer

ETHzürich

WE ARE RAISING OUR CHF 5M SEED ROUND TO ENTER THE GROWTH PHASE WITH THE WOLD'S FIRST MEMBRANE PLATFORM TECHNOLOGY



Key deliverables:

- Production standardized
- Entering growth phase with CHF 3m revenues



Impact investment:

reduces emissions of
1 Mio t CO2 until 2026

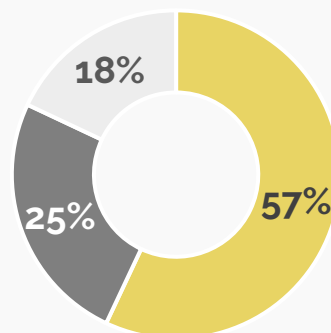


Open amount:

CHF 3.5m

Ticket size:

CHF 0.5 – 3.5m



■ Personel Costs ■ General Expenses ■ CAPEX



MAXIMIZING EFFICIENCY AND SUSTAINABILITY OF OUR WORLD'S MOST ENERGY CONSUMING INDUSTRIAL PROCESSES

UniSieve



www.unisieve.com



Samuel Hess, co-founder & CEO
samuel.hess@unisieve.com



+41 78 822 48 03

UniSieve



DISCLAIMER

This document is provided for informational purposes only and does not constitute investment advice or a recommendation to make an investment in relation to UniSieve (the Company). The Company does not warrant the accuracy or exhaustiveness of this document, and disclaim all liability for losses that could arise from using the information herein. This document reflects the opinions of the Company. Investors are advised to examine the content hereof with a financial adviser to ascertain whether an investment in the Company is appropriate in view of investor's investment objectives, risk profile, financial, regulatory and tax situation. Any reproduction of this document, in whole or in part, is prohibited without the Company's prior consent in writing.