

# CLEAN AIR, HIGH GAIN: THE SUSTAINABLE AIR TREATMENT FOR INDUSTRY



# Air Pollution is a major economic and public health issue

## HEALTH IMPACT

**2<sup>nd</sup>** death risk factor  
**8.1 M** deaths in 2021 (1)  
*i.e., the equivalent of Switzerland*

## ECONOMIC IMPACT

**+600 Bn €/yr**  
external costs in EU (2)  
*i.e., twice the cost to solve the yearly world hunger*

## ENVIRONMENTAL IMPACT

**40%**  
EU's greenhouse gas emissions  
*emitted by Industry (3)*

(1) Our World in Data. Air Pollution. <https://ourworldindata.org/air-pollution>

(2) EEA. The Costs to Health and the Environment from Industrial Air Pollution in Europe. <https://www.eea.europa.eu/publications/the-cost-to-health-and-the>

(3) European Commission – Questions and answers on revised EU rules on Industrial Emissions. [https://ec.europa.eu/commission/presscorner/api/files/document/print/en/qanda\\_22\\_2239/QANDA\\_22\\_2239\\_EN.pdf](https://ec.europa.eu/commission/presscorner/api/files/document/print/en/qanda_22_2239/QANDA_22_2239_EN.pdf)

# Leading regulators to significantly increase pressure on industrials



## Stricter regulations : *European Industrial Emissions Directive (IED) 2024*

### MOST INDUSTRIALS ARE CONCERNED

**50,000** industrial  
installations affected

### PENALTIES ARE SEVERE

**Up to 3%**  
of annual turnover

### EMISSION LIMIT VALUES (ELM) BECOME LOWER AND LOWER

Non conformity can lead to  
**Suspension** of activity

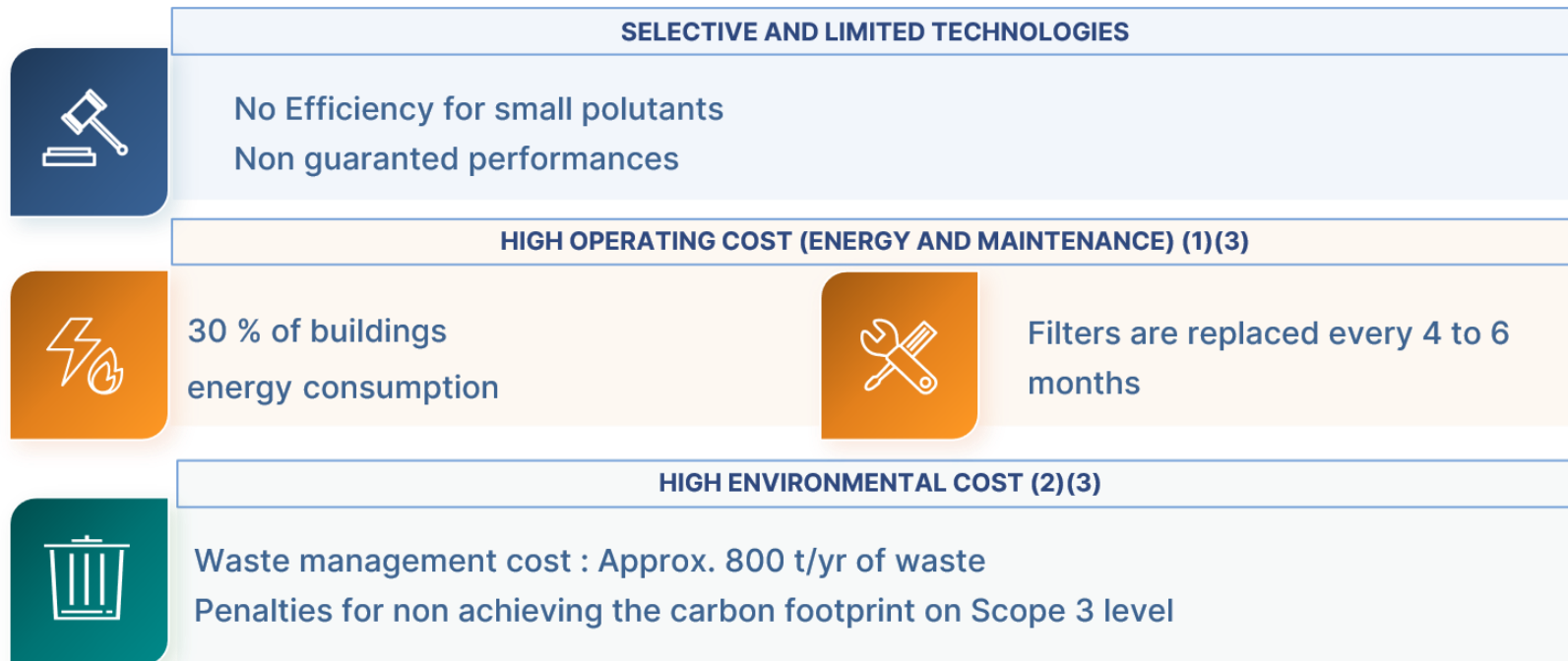
(1) Our World in Data. Air Pollution. <https://ourworldindata.org/air-pollution>

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(3) European Commission – Questions and answers on revised EU rules on Industrial Emissions. [https://ec.europa.eu/commission/presscorner/api/files/document/print/en/qanda\\_22\\_2239/QANDA\\_22\\_2239\\_EN.pdf](https://ec.europa.eu/commission/presscorner/api/files/document/print/en/qanda_22_2239/QANDA_22_2239_EN.pdf)

# Yet existing solutions are costly, inefficient and fail to meet regulatory standards

## The Hidden Costs of Industrial Air Pollution



(1) Yang, A. (2022). The cost of clean air: a price analysis of air filtration technology. arXiv preprint arXiv:2208.06041.

(2) Reports Insights. (2023) Europe, Asia, and U.S. Activated Carbon for Air Filtration System Market Forecast to 2030. (Value estimated through sold activated carbon and converted to waste)

(3) EPA (Environmental Protection Agency) in the United States: Data on energy and environmental costs related to industrial filtration systems..

# We created Purenat to provide industrials with the most efficient solutions in the market while reducing the global cost...



**Regulatory compliance**



**Cost effective**



**Light maintenance  
and low waste**



**Energy efficient**



**Low carbon impact**

**Up to 35x more pollutants shattered** (per day and per m<sup>2</sup> of filter)

**10-20% global cost reduction** compared to activated carbon filters

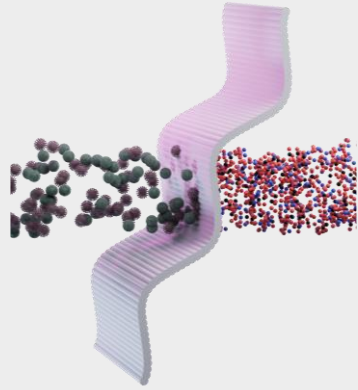
Lifespan **5x longer** = **0.88 €/ kg of pollutants vs 1 €/ kg with activated carbon filters**

Pressure drop **<10 Pa** = **Up to 20 GW / year saved (> 500 k€/ year)**

**No** raw materials obtained via carbonization : **meet criteria of the Scope 3** on carbon footprint calculation

...Thanks to our proprietary air purification technology, shattering pollution rather than storing it...

## PHOTOCATALYSIS: AN ARTIFICIAL PHOTOSYNTHESIS TO SHATTER POLLUTANTS



01  
Light absorption

- Organic compounds : VOCs, odors
- Inorganic compounds :  $\text{NH}_3$ ,  $\text{NO}_x$ ,  $\text{H}_2\text{S}$
- Biological pollutants : viruses and bacteria



02  
Generation of  
superoxides



03  
**Shattering** of  
harmful  
pollutants

- Harmless molecules, such as water ( $\text{H}_2\text{O}$ )

## BIOMIMICRY: A BOOST FOR PERFORMANCES

Inspired by the  
photosynthesis Champion:  
**Diatoms**

We mimic the hierarchical  
porosity of diatoms to  
enhance photocatalytic  
performances of our  
material



This is the first time that a fiber, then a filter,  
has been composed of such an active agent  
rather than simply being coated with it.

Le Point

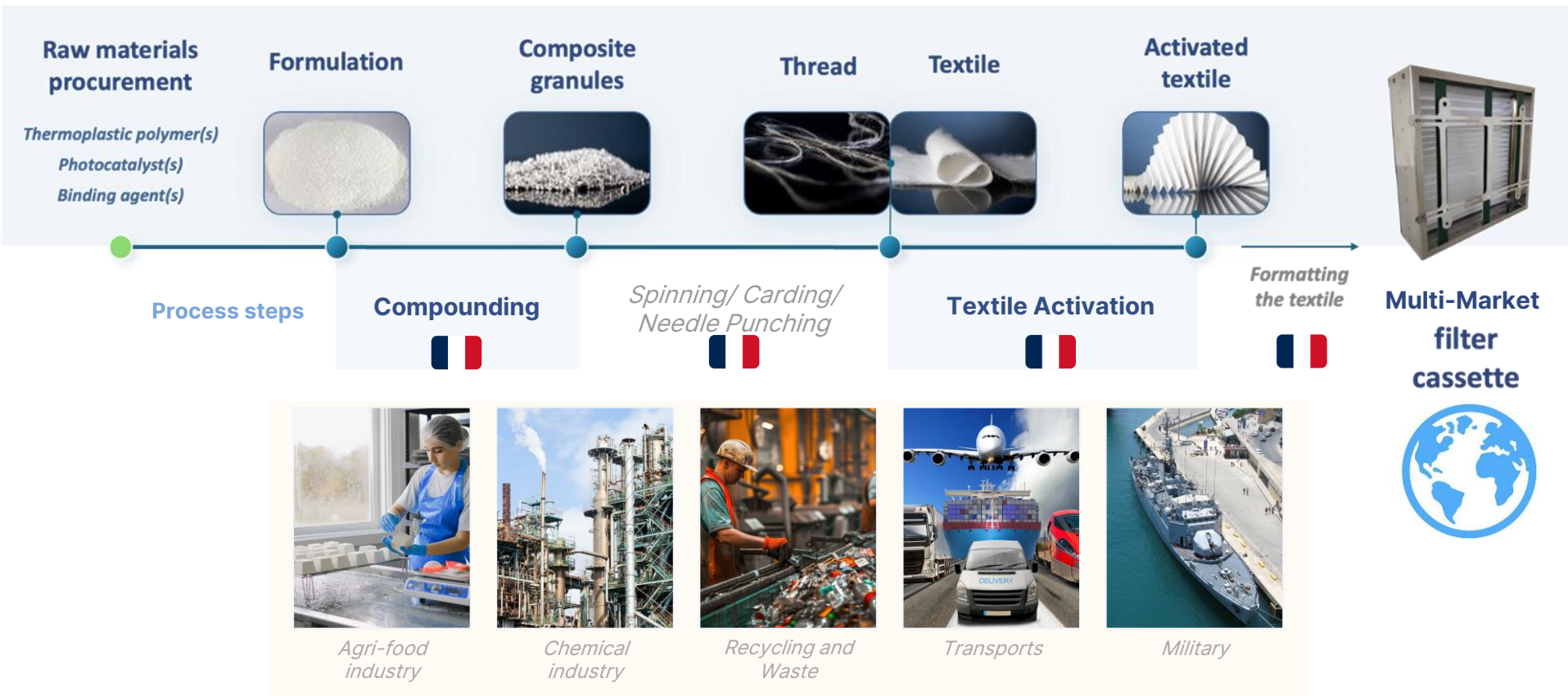


**NATACHA KINADJIAN CAPLAT**

CEO and Founder

- PhD in Materials Physics & Chemistry
- Indoor Air Quality Expert (exp +14 years)
- Top 100 Inventors of 2024

# ...Obtained with a single process to address multiple markets...



# ... And protected by 7 patents

**7**  
PENDING PATENTS

**11**  
CONFIDENTIAL  
TRADE SECRETS

## Patent family 1 – Main markets coverage (EP, US, CA, MX, JP, CN)

### Filtration Material Preparation

Formulation

Compounding

Spinning process

Fabric shaping

Activation

### Material Shaping & Packaging

Cassette composition

Pleating process

Lighting optimisation

Filter design and assembly

## Patent family 2 – to be filed

### Test benches design, Purification System Design & Manufacturing

Prototypes for recirculation performance qualification (indoor performances)

Test benches for one-pass performance qualification (point source performances)

**1**  
FREEDOM TO  
OPERATE STUDY  
FOCUSED ON MAIN  
COMPETITORS

**2**  
MARKS PROTECTED IN  
MAIN MARKETS

**>55**  
IP-RELATED  
CONTRACTS



# Our product had already received significant traction from potential clients...

## STRATEGIC PARTNERSHIP

**1** strategic business partnership  
with an international integrator  
Q3 2024



**274 Sales representatives**  
**100 countries**  
**€ 580 M revenue**

“Purenat’s competitiveness in the industrial air treatment market could breathe new life into a sector lacking of innovative and effective solutions.”

## CLIENTS CONTRACTS

**4** signed contracts = **€134k**  
**9** quotes under negotiation



## LOIs AND LOSs

**5** clients  
**5** air quality experts / **3** politicians



# ...Ready to sign contracts with a Win-Win Business Model

## REVENUE STREAMS



**Activated textile : 150 €/m<sup>2</sup>**  
(16,500 k€ in 2028)  
**+ License : 15 €/m<sup>2</sup>**  
(1,650 k€ in 2028)



**Filter : 2,000 € / filter**  
(1,600 k€ in 2028)

## CLIENTS SEGMENTS

### Filters Manufacturers

clauger



### Air Treatment Systems Manufacturers



## END USERS



## KEY BENEFITS

### Global Cost Effective

#### Versatile

Any configuration  
Broad spectrum of pollutants

#### Compact & Efficient

5x smaller installation

#### Retrofit-Friendly

Extend system lifespan  
No infrastructure work

#### Plug-and-Play

Avoid infrastructure changes

#### Long-life

Less downtime  
Less maintenance

### Sustainable & Safe

### Low-Carbon

# We are after a massive market opportunity

Industrial air filter  
media market  
worldwide

**TAM**

CAGR  
6.5%  
(2024-2030)

**€6.6 Bn in  
2030**  
*€4.4 Bn in 2024*

**Chemical industry  
(including surface treatment)  
& agri-food industry  
worldwide**

**SAM 1 – Chemical industry**  
**€1.4 Bn**

**SAM 2 – Agri-food industry**  
**€1.0 Bn**

**Products sales foreseen**

**5,000 filters**  
300 HVAC systems

**100 sites**  
equiped

**490,000 m<sup>2</sup>**  
textile

clauger 

  
CLEAN AIR SOLUTIONS

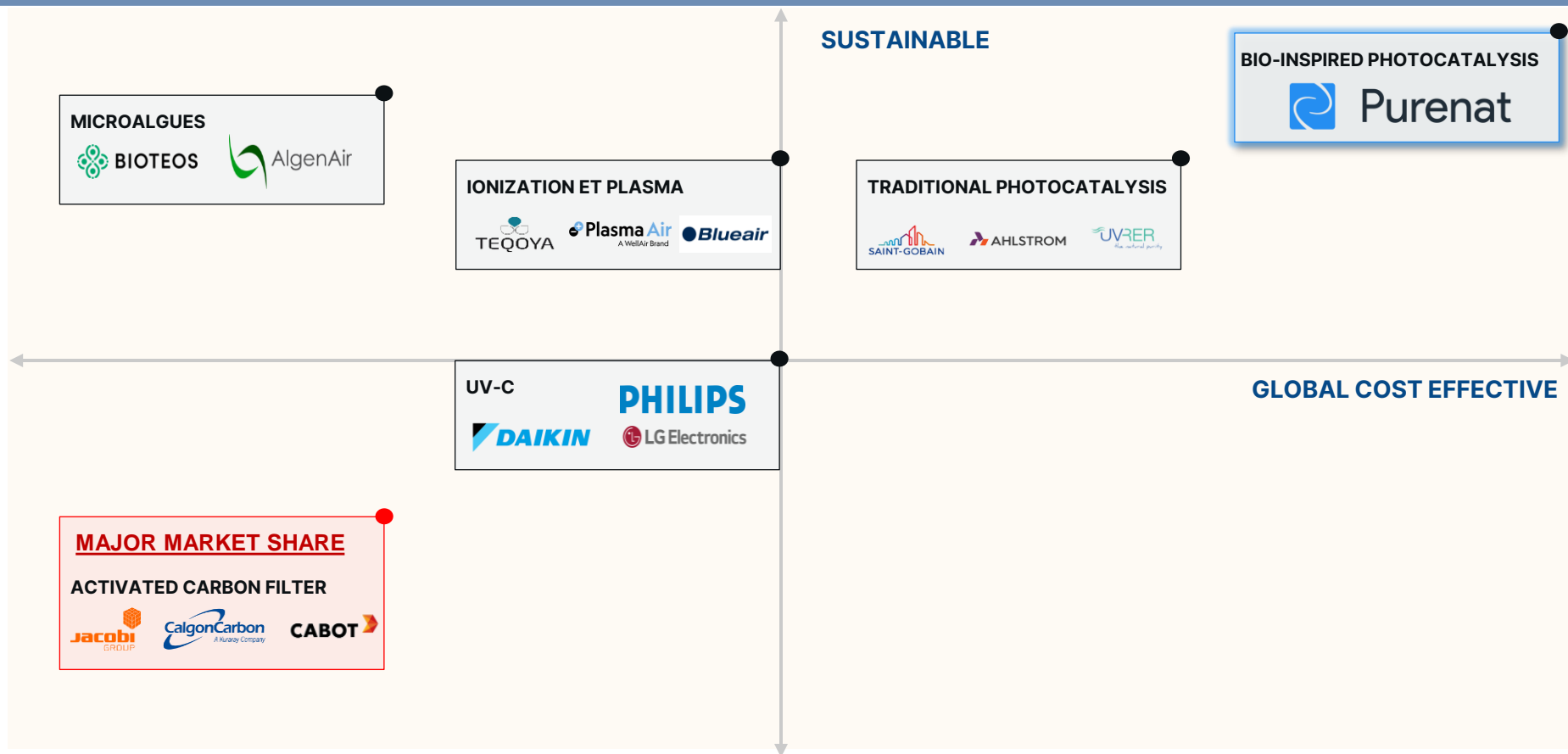
**MANN+  
HUMMEL**

**SOM**  
**€82.6 M**

**7 % Clauger's** revenue *(estimated from LOI)*  
**3 % Camfil's** revenue *(estimated from discussions)*  
**1 % Mann&Hummel's** revenue or equivalent prospect

Source: Reports Insights. (2023) Asia Pacific, Europe and US Industrial Air Filtration Media Market

# With the ambition to replace incumbents with a more sustainable and less costly solution



# Meet the visionary team building a new category leader

## R&D



**Natacha CAPLAT**  
Founder / CEO



**Juliette KARPIEL**  
Post-doc



**Douglas BERTIN**  
Engineer

**+3,5 FTE**  
*by 2028*

## Industrial



**Christophe SAINT MARTIN**  
CTO



**Sandro LAUBIES**  
Production Technician

**+6,5 FTE**  
*by 2028*

## Business



**Manon VAILLANT**  
Partner CMO / CSO



**Camille TEIXEIRA**  
Marketing Executive



**Alban CHAMPETIER**  
Project Manager



**IN PROGRESS**  
Revenue Operation  
Manager

**+ 6 FTE**  
*by 2028*

## Advisors



## Our Investors



## Our Partners



**From a team of 8  
skilled experts now  
to 25 in 2028**

# With a clear roadmap and go-to-market strategy



# On its way to reach 82M€ revenue by 2030

## SEED FINANCIAL NEED (2025-2026) :

4 M€

EQUITY RAISING (2 M€) T1 2025

DEBT / GRANT (2 M€) 2025-2026



We seek 4 M€ that will be used to :

- **R&D** : demonstrate and optimization
- **Production** : scale
- **Strategic commercial partnership** : drive market exploitation

From TRL 5 to TRL 8

Pilot sites at small then full scale revenue (k€)

101

850

2,850

2024

2025

2026



## SERIES A FUNDING SOURCE FORESEEN (2027-2029) : 21 M€

EQUITY RAISING (11 M€) – 2027

DEBT / GRANT (10 M€) - 2027



Annual recurring revenue (k€) (ARR)

39,900

19,795

10,210

2027

2028

2029

2030



82,600

Seize the  
Opportunity  
to Revolutionize  
the Industry !

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