



**We clean the air we all breathe,  
creating better places to live and work**



**AN OVERVIEW ON OUR BUSINESS**



# BREATHE YOUR LIFE

CREATING OPPORTUNITIES FOR AN HEALTHIER AND SAFER  
CLEAN AIR WORLD



## PROBLEM: AIR POLLUTION

OVER  
**92%**

**OF THE WORLD'S  
POPULATION BREATHS  
UNSAFE AIR**  
(indoor & outdoor)

**56%**

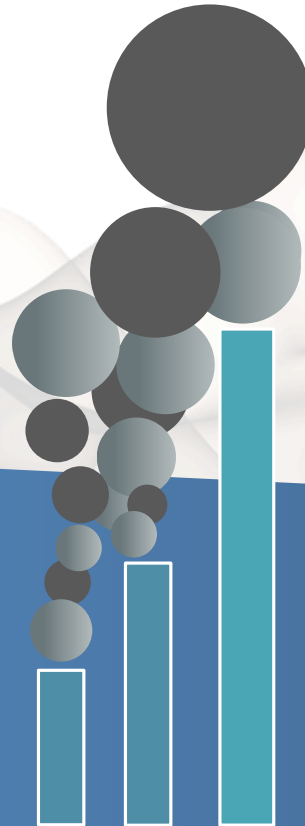
**LIVE IN URBAN AREAS**  
(projected 68 -70% by  
2050)

**80% to  
90%**

**TIME IS SPENT  
INDOOR**

**\$5  
Trillion**

**EQUIVALENT  
YEARLY COSTS**  
(For death, diseases,  
severe events and  
productivity losses)



Every year, around  
**9+ MILLION  
PREMATURE  
DEATHS**  
are due to exposure  
from both **OUTDOOR**  
and **INDOOR** air  
pollution



**EVERYONE OF US TAKES APPROX. 90.000 BREATHS A DAY, MAINLY INDOOR**



## DISTRIBUTED, FILTER-LESS AND WATER-BASED SOLUTIONS TO BE APPLIED EVERYWHERE



- **APA is designed to operate excellently at surface (ground) level**, where people live, work (and breathe), with extreme scalability and modularity, as it abates pollutants over time (through various «washing cycles»), in all the environments subject to poor air quality independently if pollution has been generated from the indoor or outdoor activities and / or source of emissions
- Within a target area, it is possible to integrate the **distributed approach** with the installation of **bespoke APA solutions and systems**, if specific emissions sources are present in production sites or working areas, to enable a greater reduction of the impact and improve the health and well-being of people and/or employees
- Moreover, in addition, it is possible to deploy APA solutions at the service of the **Air Treatment Units (ATUs) in buildings and many other sensitive sites and places**





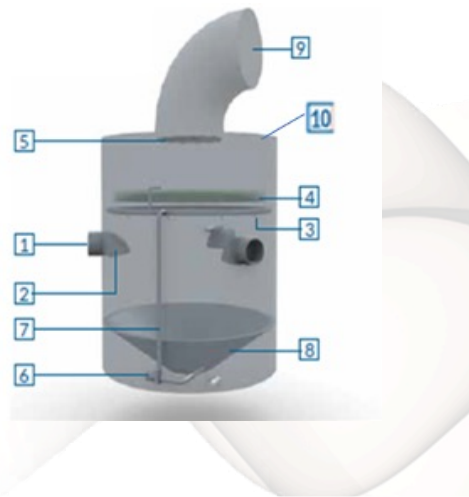
## APA SOLUTION

**We develop a patented, certified, intelligent, modular and flexible multiservice technology for safer and healthier places, a better quality of life and a more sustainable environment**



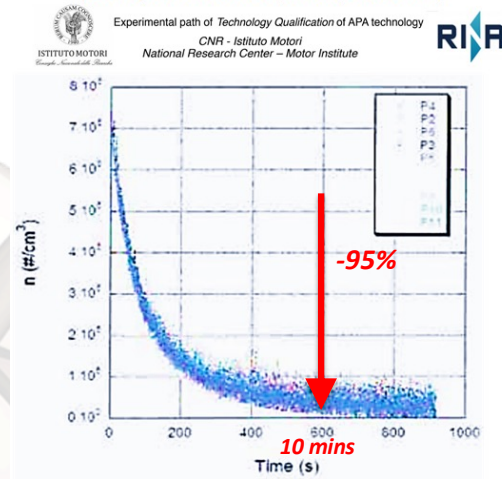
- ✓ *WATER-BASED*
- ✓ *NO FILTERS*
- ✓ *OPERATING AT SURFACE LEVEL DISTRIBUTED (mainly)*
- ✓ *INDOOR & OUTDOOR*
- ✓ *CLEANER AIR IN DAYS OR WEEKS*
- ✓ *MEDICAL DEVICE*

# APA TECHNOLOGY



- Legend**
- 1 Polluted air entrance
  - 2 Venturi scrubber
  - 3 Spray nozzles
  - 4 Deposition stack
  - 5 Fan
  - 6 Water pump
  - 7 Water recirculation
  - 8 Washing water tank
  - 9 Purified air exit
  - 10 Electro-magnetic field UV-X

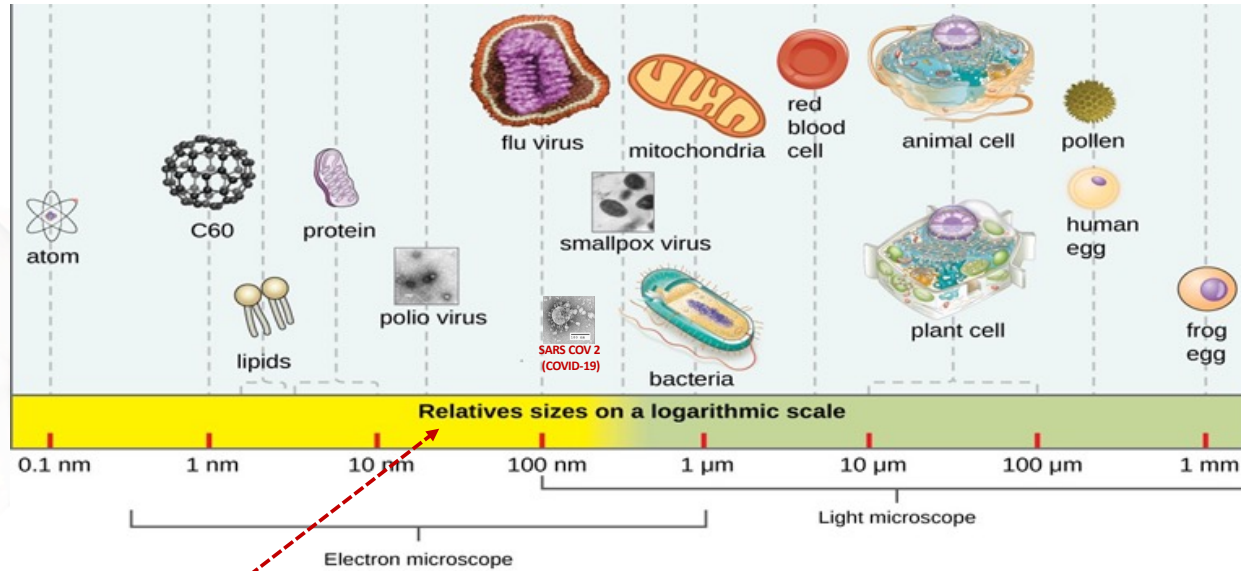
**Performance with Ultra-fine particles (PM<sub>0.5</sub>)**  
 (size range 10.8 nm - 523 nm, 11 tests, 900 secs each)



**APA Technology effectively removes nano-particles, viruses & bacteria**



## CAPABILITIES TO TRAP AND DETECT VIRUSES IN APA WATER



Since APA is based on the use of simple water and mechanical-physical processes, with addition of electromagnetic fields UV in case of needs, it reduces significantly the risks of viruses and bacteria contamination by abating effectively the nanoparticles who are responsible for the spread accelerator of the risk of infections



ITALIAN MINISTRY OF HEALTH

DOSSIER n.1967999 / 2020

APA, filterless and water-based, is very effective in eliminating pollutants, dangerous substances and elements and abates as low as 20nm PM size (PM<sub>0.02</sub>), in accordance with CNR - IM and RINA Services certifications

We are working to certify also these new features, to detect viruses presence in real-time



## PATENTED DISTRIBUTED STRATEGY

✓ **Scalable and Flexible**

✓ **24 Patents granted**

(utility models, trademarks and wide know-how to support the IPRs STRATEGIES, worldwide)

✓ **Extremely cheap**

(up to 13 times more cost effective)

✓ **At least 50 times more efficient use of urban space**

✓ **5 to 10 times lower costs for running and maintenance**

(staff time, energy, no filters, etc.)

✓ **Helps fight COVID-19 spread and minimize the infection transmission**

(certified even as a first-class EC Medical Device)



**A cluster of pollution absorbers, multi-shapes and multi-functions, to apply solutions everywhere**

### MAIN CERTIFICATIONS

- **BAT - BEST AVAILABLE TECHNOLOGY**
- **Certified under the requirements of the Machinery Directive 2006/42/EC**
- **Environmental Authorities**
- **Medical Device - Class 1 EC (n. 1967999/2020)**
- **Solar Impulse Foundation - 1.000 Efficient and Profitable Solutions**







## OUTLOOK ON THE APA COMPETITIVE ADVANTAGES

- ✓ The only one filter-less solution, water-based, no waste, low running costs and financial savings
- ✓ Abate simultaneously the widest range of pollutants and harmful elements
- ✓ Multi - design and multi-function
- ✓ Ambient air cleaning at surface level, distributed
- ✓ Strongly patented, certified, intelligent, modular and flexible multiservice platform
- ✓ Monitoring and remote controls features
- ✓ Embeds IoT, AI, Energy Efficiency, Climate Change, Sustainable Development, Human Health and Circular Economy enabler
- ✓ A wide set of air cleaning solutions already realized and installed in many environments
- ✓ Contamination detections on APA water, timely or in real time



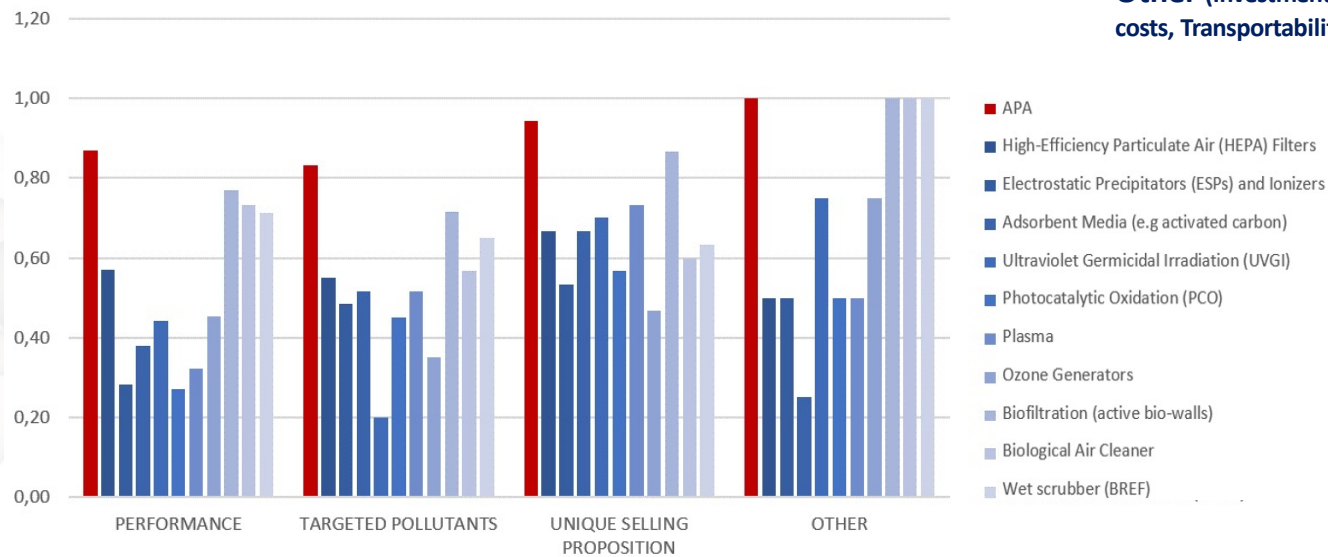
## APA VERSUS AIR PURIFICATION TECHNOLOGIES



### Comparable Clusters:

- Performance
- Targeted Pollutants
- USP
- Other (Investment costs, Operating costs, Transportability and Handlings)

### COMPARATIVE INDEX



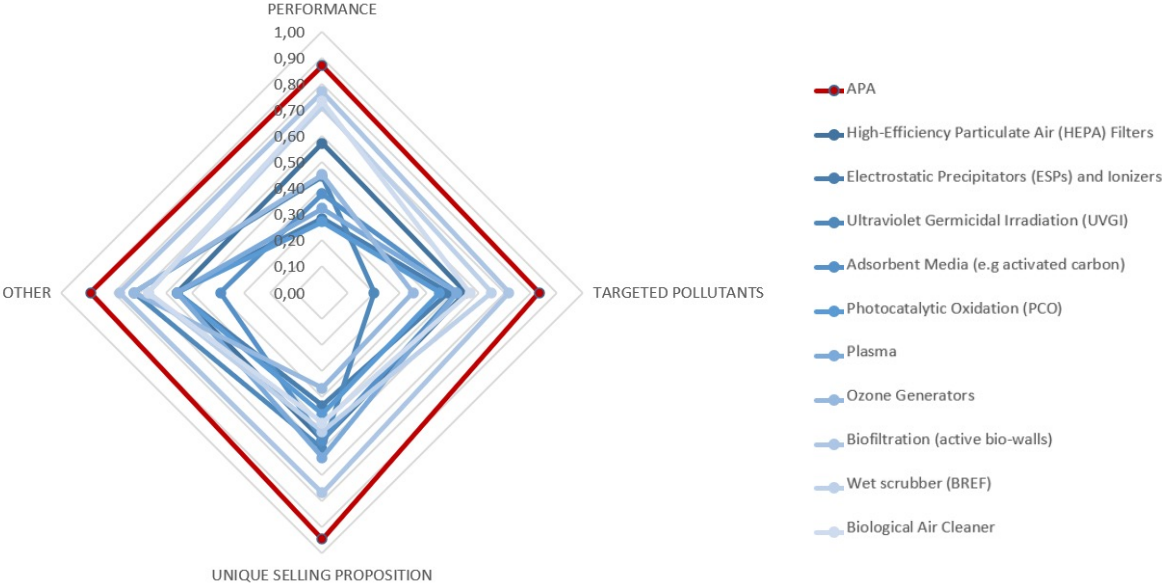
**APA has demonstrated to be superior for performance, targeted pollutants and USP to all competitors, and in “Others” at the top with three other technologies (bio-based and BREF)**

Source: TECHNOLOGY DUE DILIGENCE





# APA VERSUS COMPETITIVE TECHNOLOGIES



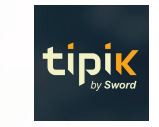
- APA
- High-Efficiency Particulate Air (HEPA) Filters
- Electrostatic Precipitators (ESPs) and Ionizers
- Ultraviolet Germicidal Irradiation (UVGI)
- Adsorbent Media (e.g. activated carbon)
- Photocatalytic Oxidation (PCO)
- Plasma
- Ozone Generators
- Biofiltration (active bio-walls)
- Wet scrubber (BREF)
- Biological Air Cleaner

Source: TECHNOLOGY DUE DILIGENCE



# GREAT QUALIFICATIONS AND VALIDATIONS

איגוד ערים אזור מפרץ חיפה - הגנת הסביבה  
Haifa Bay Municipal Association for Environmental Protection



<https://www.ft.com/content/691390ca-53d9-11ea-90ad-25e377c0ee1f>



International Journal of Environmental Science and Technology - Accepted May 29, 2018



## SOME INSTALLATIONS IN REAL-WORLD ENVIRONMENTS

### DEMONSTRATED PURIFICATION CAPABILITIES TO SUPPORT ALL DEVELOPMENT MODELS



**135+ installations on workplaces, industrial sites and urban spaces, both indoor and outdoor**



## SOME REAL-WORLD DEPLOYMENTS: SIGNIFICANT MEASURED RESULTS

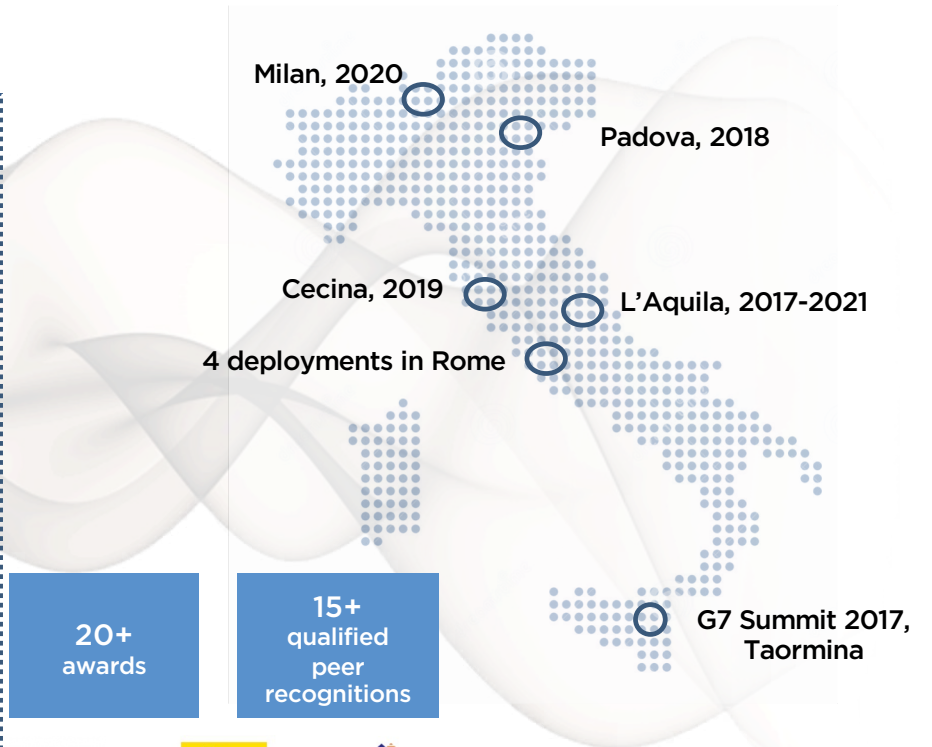
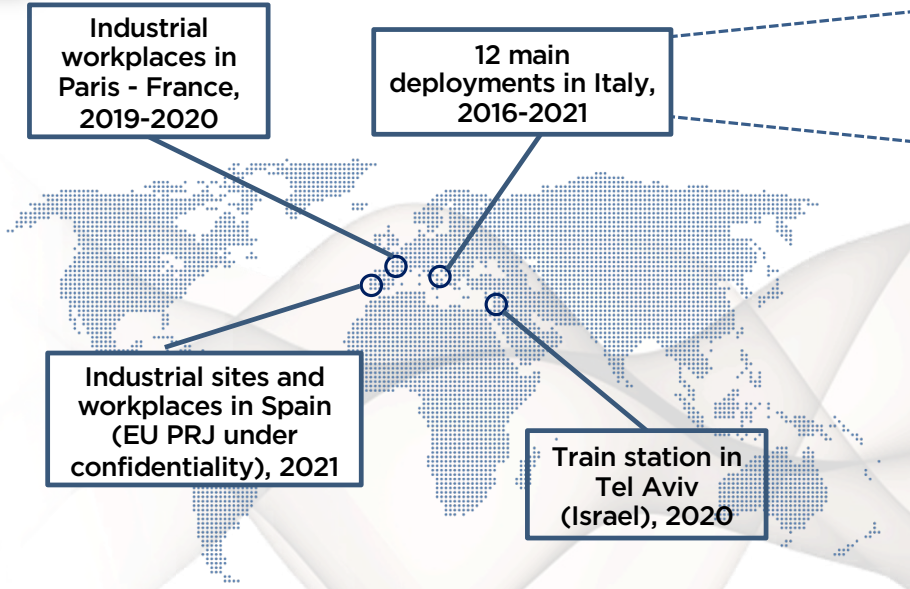
	Number of APA	Abatement rate verified	Initial Concentration		Measurement time
			PM	NOx	
URBAN AREA (1 <sup>st</sup> case)	3	>70% >45%	42µg/m <sup>3</sup> (average)	70µg/m <sup>3</sup> (average)	1 year
URBAN AREA (2 <sup>nd</sup> case)	2	>40%	confidential	confidential	1 month
AIRPORT SPACES	2	>70% gate area >60% baggage	confidential	confidential	7 weeks
POLLUTION FREE SCHOOL	3	>55% (PM) >48% (NOx)	45µg/m <sup>3</sup> (average)	85µg/m <sup>3</sup> (average)	6 weeks
POLLUTION FREE TRAIN STATION	2	>50% (PM) >35% (NOx)	33µg/m <sup>3</sup> (average)	400µg/m <sup>3</sup> (average)	4 weeks
BIOMASS CO-GENERATION	1	>99% (CO) >95% (PM) >90% (SOx)	confidential	confidential	6 months
INCINIRATOR	3	>65%	confidential	confidential	4 months





# OUR TRACTION AND MILESTONES

To date 50+ new installations planned, mainly in cooperation with large corporates and partners



200 APA installations totally

15+ main pipeline initiatives

10+ business & value-chain partners

Raised € 7,5+ M (Including 2.5 Equity)

20+ awards

15+ qualified peer recognitions



PLANT AND LABS IN ROME AND L'AQUILA (IT)



## MARKET SIZE AND ENORMOUS OPPORTUNITIES

### Air Purification Market \*

**TAM of approx. (\$400 billion by 2027)**

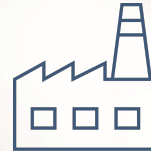
**SAM of approx. (\$40bn UK + EU mainly)**

**SOM 1 (1.4 - 2% of approx. \$400 m)**

Clean air cities



Clean air workplaces



Clean air buildings



### Indoor Virus Detection Market \*\*

**TAM of approx. (\$200bn by 2023)**

**SAM of approx. (\$30bn / UK+EU)**

**SOM 2 (3% - of approx. \$900 m)**

### EXPECTED MARKET GROWTH

**32.4% Annual Growth Rate (2019 - 2027)**

\* Commercial actions combined, under vertical strategies and scalable and flexible models

\*\* NOTE: in many places, APA technology is mainly an integration, not a substitution

Sensitivity analysis and estimations are originally expressed in £/GBP  
(Source: CPC - London and other research entities)

### IN HIGH DEMAND

Post COVID - 19 restart, on the real safer and healthier places



Clean air Interior spaces







## AN ASSET-BACKED INITIATIVE TO ATTACK THE ENORMOUS SERVICEABLE MARKETS

### EXTRAORDINARY EXPANSION OPPORTUNITIES

JOINT VENTURES

PUBLIC PRIVATE PARTNERSHIPS

AD HOC PROJECTS

APA DEVICE SALES

WORKPLACES & INDUSTRIAL PLANTS

COMMERCIAL, REAL ESTATE & BUILDINGS

PUBLIC SPACES (indoor and outdoor)



INTERIORS, as OFFICES, LOCAL and DOMESTIC SPACES

### PLANNED INVESTMENTS

Enhance and improve the organization, plant and labs and the value-chain

Support commercial activities and working capital

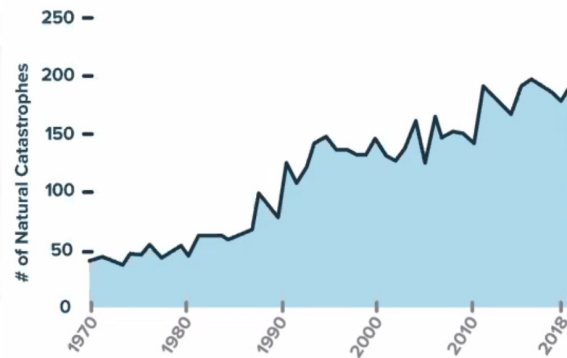
New intellectual properties and further extension of the strong certifications' framework owned, globally

Support new extensive growth opportunities on new solutions and products, segments, verticals and territories, worldwide

M&A to drastically increase the company growth opportunities in the mid-term

## EXPLOSION OF CLIMATE ON INVESTORS' RADAR

### Growth in Severe Climate Events



The number of natural disasters annually has nearly **quadrupled since 1970**.

Source: Swiss Re

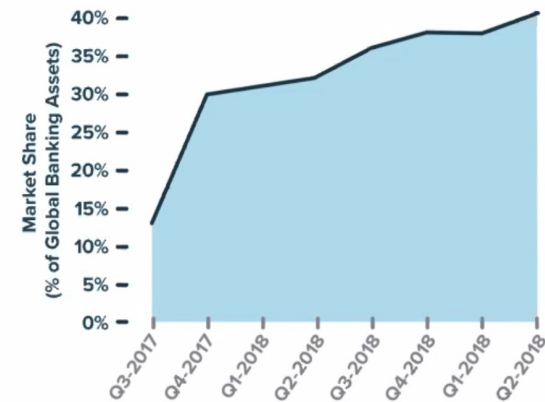
### Growth in ESG Investing



Global assets invested sustainably have nearly **quadrupled since 2005**.

Source: US SIF

### Growth in Climate Risk Regulation and Disclosure



The share of global banking assets supporting climate risk disclosure has **quintupled since 2017**.

Source: BCS Consulting

## A CLEAR DYNAMIC TOWARDS THE NEEDS



## SOLUTIONS AND SERVICES TO SERVE THE SCALING-UP PHASES

*Solutions for working spaces and offices*

**Improve Energy Efficiency and cost savings (Sustainable and healthy Building)**

*Solutions for Power generators and production plants*

**Reduce Pollution from power/heating plants (Sustainable Plants)**

*Medical Devices and PPE*

**Sustainable medical device reduce virus spread using simple water (APA-MED)**

5

TRL

9

ISCLEANAIR RECEIVED 1° LEVEL CERTIFICATION AS MEDICAL DEVICE FROM MINISTRY OF HEALTH AUTH. N. 1967999/ 2020

APA is very effective in abating as low as 20nm Particles Matter size (PM<sub>0.02</sub>) as per CNR – IM and RINA Services certifications

**APA - Air Pollution Abatement innovative solutions**



## A SENIOR EXPERIENCED TEAM



### MAIN EXECUTIVES



**GIUSEPPE SPANTO**  
Founder -  
Managing Director



**PAOLO TRIPODI**  
Founder - Chief Innovation  
and Technology Officer



**PIETRO CALO**  
President



**CHIARA VERDERESE**  
Commercial Services &  
Business Development

An AGILE TEAM of 21 ENGINEERS "at work" globally (as 12 FTE), in action jointly with QUALIFIED SENIOR EXECUTIVES AND ADVISORS



**SANDRO DESIDERI**  
Commercial Advisor



**NICCOLO CADERNI**  
Strategic Advisor



**FABIO GALATIOTO**  
Advisor & Technology Manager



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**THANK YOU VERY  
MUCH**



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CONTACTS

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