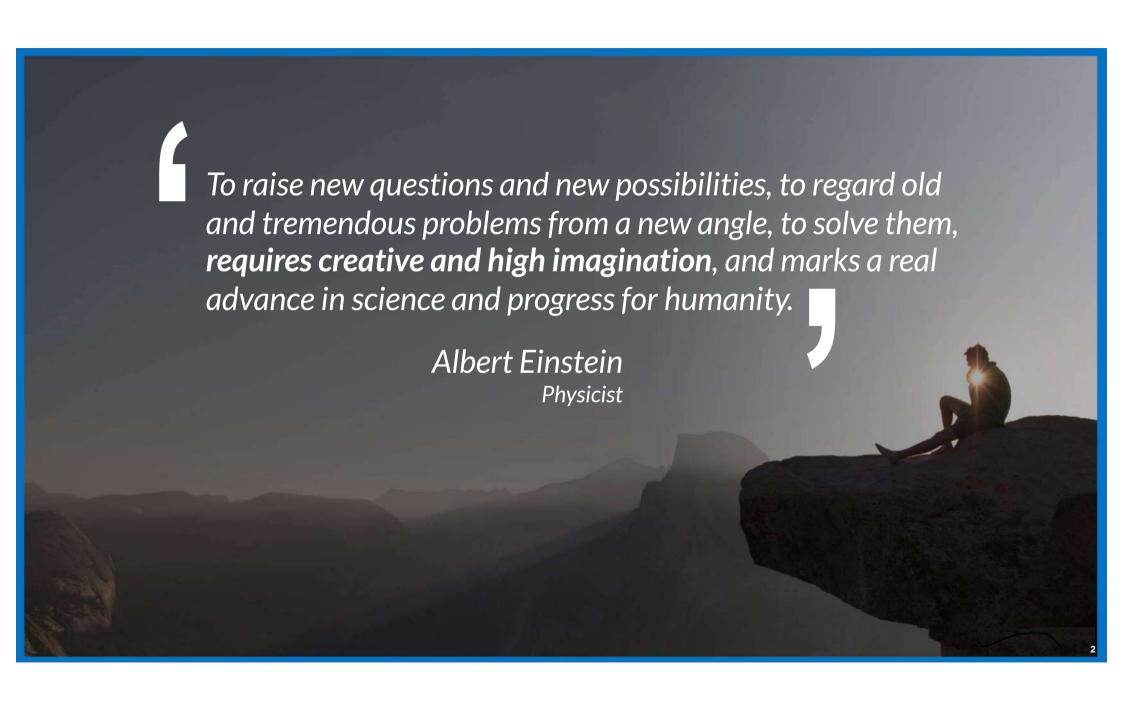








# AND BUSINESS INITIATIVE



# WE CLEAN THE AMBIENT AIR WE ALL BREATHE, CREATING HEALTHIER, SAFER, AND MORE ENERGY-EFFICIENT PLACES TO LIVE AND WORK. EVERYWHERE.







**QUESTIONS** 



CLEAN AIR FOR ALL,
AT THE SERVICE OF PEOPLE AND
THE ENVIRONMENT

#### EMISSIONS CREATE SIGNIFICANT AND WIDE IMPLICATIONS AND IMPACTS

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

(death, diseases, severe events implications and productivity losses)

8+ MILLION

PREMATURE DEATHS

are due to exposure to both OUTDOOR and INDOOR air pollution

> Source: OECD and WHO, 2015 - 2022



**EVERYONE OF US TAKES OVER THAN 20.000 BREATHS A DAY, MAINLY INDOOR** 





- APA technology received prominent recognition, many times, for its versatility and clear supremacy and leadership, within the ambient air cleaning/cleantech sector
- APA is designed to operate excellently at the surface (ground) level where people live, work and breathe,
   with extreme scalability and modularity
- The distributed strategy (patented) enables flexible installations of bespoke specific solutions and systems, in practice everywhere there are needs
- APA special solutions can also serve the Air Treatment Units (HVAC/ATUs) in buildings and similar spaces, and even on some sensitive points of emission, improving the site's performance and the related "Total Cost of Ownership" (TCO)









#### Air Purification Market \*

Clean Air Industries and Workplaces



Indoor Virus Detection Market \*\*

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

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

SOM A (= 1.4 - 2% of approx. \$ 400 million)

Clean Air Urban Spaces / Intelligent Cities



Clean Air Buildings and Indoors TAM of approx. (\$ 200 billion by 2023)

SAM of approx. (\$ 30 billion UK + EU mainly)

SOM B (= 3% of approx. \$ 900 million)

#### **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 proposed mainly as an integration, not a substitution

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



#### IN HIGH DEMAND

Post-COVID-19 restart, to build real healthier and safer places





Clean Air Interior Spaces



#### THE APA SOLUTIONS TO TRULY BREATHE PURIFIED AND HEALTHIER AIR

We created a strongly patented, certified, intelligent, modular and flexible multiservice technology to realize safer and healthier places where we live and work (and breathe), a better quality of life and a truly sustainable environment









√ 200+ NATURE-BASED **INSTALLATIONS** (simple water)

√ NO FILTERS

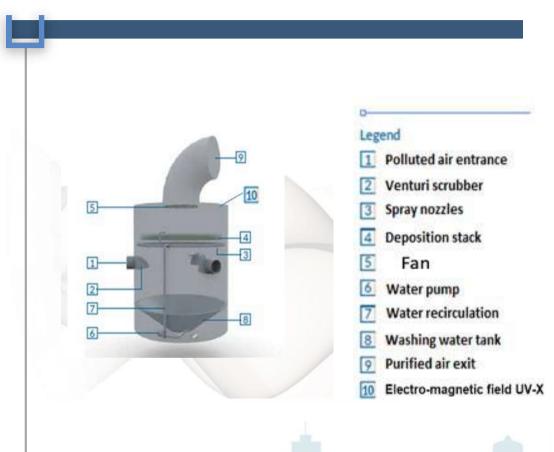
**√** GREAT EFFICACY DEMONSTRATED

✓ OPERATING at the SURFACE LEVEL, DISTRIBUTED, both INDOOR and OUTDOOR

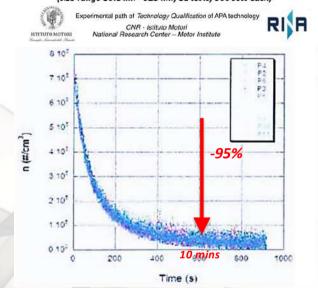
> ✓ CLEANER AIR FASTEST, in DAYS or WEEKS

✓ STRONGLY PATENTED and CERTIFIED. even as PPE (Protection and Prevention Equipments)

#### **APA TECHNOLOGY STRUCTURE**



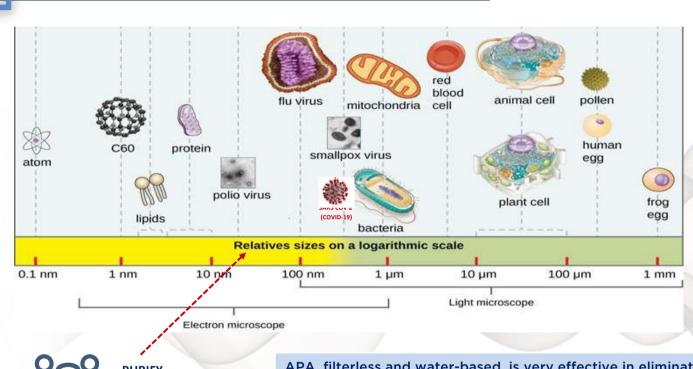
#### Performance with Ultra-fine particles (PM<sub>0.5</sub>) (size range 10.8 nm - 523 nm, 11 tests, 900 secs each)



APA effectively removes nano-particles, viruses and harmful microorganisms

#### CAPABILITIES TO TRAP AND DETECT VIRUSES IN APA WATER





Since APA is based on the use of simple water and mechanical and physical processes, in addition with the electromagnetic fields UV in the case of needs, it reduces significantly the risks of viruses and bacteria contamination spread (by abating effectively the nano-particles that transport the microorganisms responsible for the contamination, in practice the spread accelerator of risk of infections)

APA, filterless and water-based, is very effective in eliminating air pollutants, dangerous substances and elements and eliminates as low as 20nm PM size (PM <sub>0.02</sub>), in accordance with National Research Center – STEMS Institute and RINA Services certifications



AIR POLLUTION AT THIS LEVEL

We are working to certify specifically also the capabilities to detect viruses' presence in the space of implementations, systematically or in real-time



















Network of complex systems for the environmental purification and method for network control (WO 2014072921 A1) IT0001414214 - TECH 001

Method and system for the mix of gas and liquids to collect compounds (WO 2014072922 A1) IT0001414215 - TECH 002

Method and system for the collection-deposition and split of the chemical fluids (PCT/IB2014/064464) IT0001419728 - TECH 006







#### **OUR PATENTS ALREADY GRANTED**

- TECH 002 EP ITA, UK, GER, FR, SPAIN
   (January 2021)
- TECH 002 and TECH 006 **U.S.A.**

(November 2017 and January 2019)

TECH 002 and TECH 006 – CHINA

(June 2018 and May 2019)

TECH 002 and TECH 006 – INDIA

(October 2019 and January 2021)

TECH 001 and TECH 002 – MEXICO

(April 2018 and July 2019)

TECH 001, TECH 002, and TECH 006 – RUSSIA

(July 2019, March 2018, and July 2019)

■ TECH 006 - ITA

(WO May 2014 and EPO October 2020)

TECH 007 (utility model «Flower pot») - ITA
 (July 2020)









#### **GREAT INTERNATIONAL QUALIFICATIONS (MAIN)**





G7 2017



Сколково

engie

European EASME

















EU IPCC 2008 /1/CE



tipik







REGIONE >





















COESIONE ITALIA 21-27















**TOGETHER IN ACTION** 

**GLOBAL CHALLENGE 2020** 







FAGOR =

ARRASATE

















pollutec



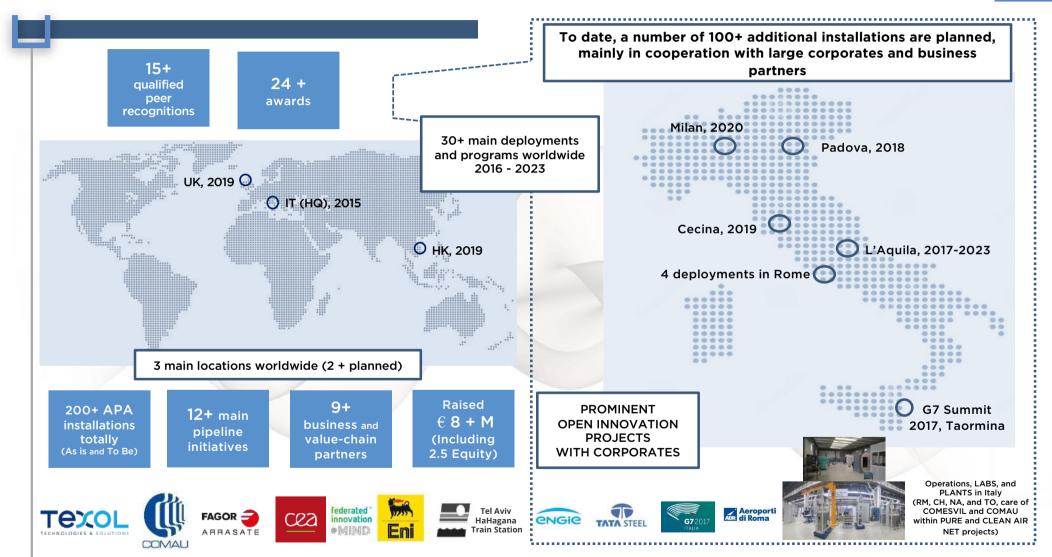
COMAU





C22

#### **MILESTONES AND TRACTION**





## MANY DISRUPTIVE INSTALLATIONS AT THE SURFACE LEVEL, IN REAL-WORLD ENVIRONMENTS

#### DEMONSTRATED PURIFICATION CAPABILITIES TO SUPPORT ALL DEVELOPMENT MODELS



Milan - Urban Area



(indoor and outdoor



INCINERATOR - PADOVA



WASTE TREATMENT - CECINA France - Industrial



site



Rome - Urban Park



G7 Summit 2017



CLEAN AIR MALL - ROME



POLLUTION FREE SCHOOL - ROME



200 + Installations so far for workplaces, industrial sites and urban spaces, both indoor and outdoor

Israel - Rail Station

#### SOME REAL-WORLD DEPLOYMENTS: SIGNIFICANT MEASURED RESULTS



APA efficacy is	based on
air-cleaning cycle	s over time

## URBAN AREA (1st case)

#### URBAN AREA (2<sup>nd</sup> case)

#### AIRPORT SPACES

#### POLLUTION-FREE SCHOOL

### POLLUTION-FREE TRAIN STATION

BIOMASS CO-GENERATION

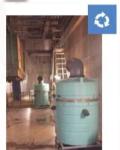
#### INCINIRATOR

MILLING - PAINTING

Number of	Abatement	Initial Co	Measurement	
APA systems	rate verified	PM	NOx	time
3	>70% >45%	42µg/m <sup>3</sup> (average)	70μg/m <sup>3</sup> (average)	1 year
2	>40%	confidential	confidential	1 month
2	>70% gate area >60% baggage	confidential	confidential	7 weeks
3	>55% (PM) >48% (NOx)	45μg/m3 (average)	85µg/m3 (average)	6 weeks
2	>50% (PM) >35% (NOx)	33μg/m <sup>3</sup> (average)	400μg/m <sup>3</sup> (average)	4 weeks
1	>99% (CO) >95% (PM) >90% (SOx)	confidential	confidential	6 months
3	>65% (PM)	confidential	confidential	4 months
5	>50% (PM) 40-60% (VOC) >60% (CH2O)	confidential	confidential	6 weeks















#### STRATEGIC POSITIONING





#### A SENIOR EXPERIENCED AND ENTHUSIASTIC TEAM





# MAIN EXECUTIVES





GIUSEPPE SPANTO Founder -Managing Director



FABIO GALATIOTO
CTO and Technology Management
Environment and Energy Expert



PIETRO CALO President



SANDRO DESIDERI
Commercial Partner and
Business Developer
Environment and Energy Expert



CHIARA VERDERESE
Tech support and
Business Development



An AGILE TEAM

of over 21 ENGINEERS

"at work" globally (as 15 FTE),

passionate and committed in actions,

jointly with

QUALIFIED SENIOR EXECUTIVES AND

ADVISORS



#### TECHNOLOGY COMPARISONS: ANOTHER VIEW (UNIQUE SOLUTIONS, CLEARLY SUPERIOR TO ALL COMPETITORS)

Types of technology	No filter	PM and chemicals (1)	Running costs	Indoor and Outdoor	Size	Purification power overtime
AIR POLLUTION ABATEMENT	V	Simultaneously	\$	V	S	Constant (never clog)
HEPA filters		Only PM	\$\$\$		M	50% in 1.000 hrs
Activated carbon		Only some chemicals	<b>\$\$</b> \$		S/M	
HVAC		Only PM	\$\$\$\$		XL	< 50% in 1 year
Standard water showers	<b>√</b>	Mainly PM	\$\$		M/L	Constant

Compared to alternative solutions our water-based APA (Air Pollution Abatement) technology is unique, completely filterless, and simultaneously removes a wide range of pollutants, at a fraction of the cost of filters (a few euros for the water compared to hundreds if not thousands per year of filters replacement, has a small size footprint (per volume of air treated) and maintains over time the same Purification power.

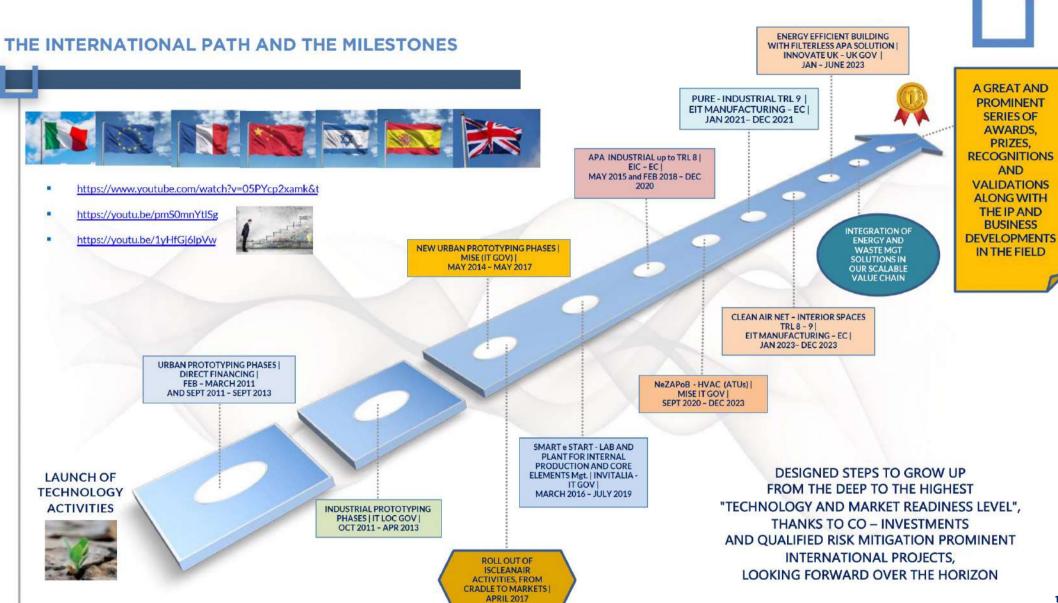
(1) The widest range of chemicals (NOx, SOx, VOCs, CO, ...)

#### **OUTLOOK ON THE COMPETITIVE ADVANTAGES**

- √ The only one filter-less solution, water-based, no waste, low running costs and financial savings (nature-based)
- ✓ Abate simultaneously the widest range of pollutants and harmful elements
- √ Multi design and multi-function
- √ Ambient air cleaning at surface level, distributed
- $\checkmark$  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



OLD SYSTEMS WITH PAPER FILTERS (still in use)



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





# EXTRAORDINARY EXPANSION OPPORTUNITIES

#### **GO-TO-MARKET STRATEGIES**

JOINT VENTURES

PUBLIC PRIVATE PARTNERSHIPS

AD HOC PROJECTS

APA SYSTEM SALES

#### LARGE TARGET GROUPS

WORKPLACES and INDUSTRIAL PLANTS

COMMERCIAL, REAL ESTATE and BUILDINGS PUBLIC SPACES (indoor and outdoor)















INTERIORS SPACES, as OFFICES, LOCALS and DOMESTIC AREAS

#### PLANNED INVESTMENTS

Enhance and improve the organization, plant and labs and start direct scale up phases globally

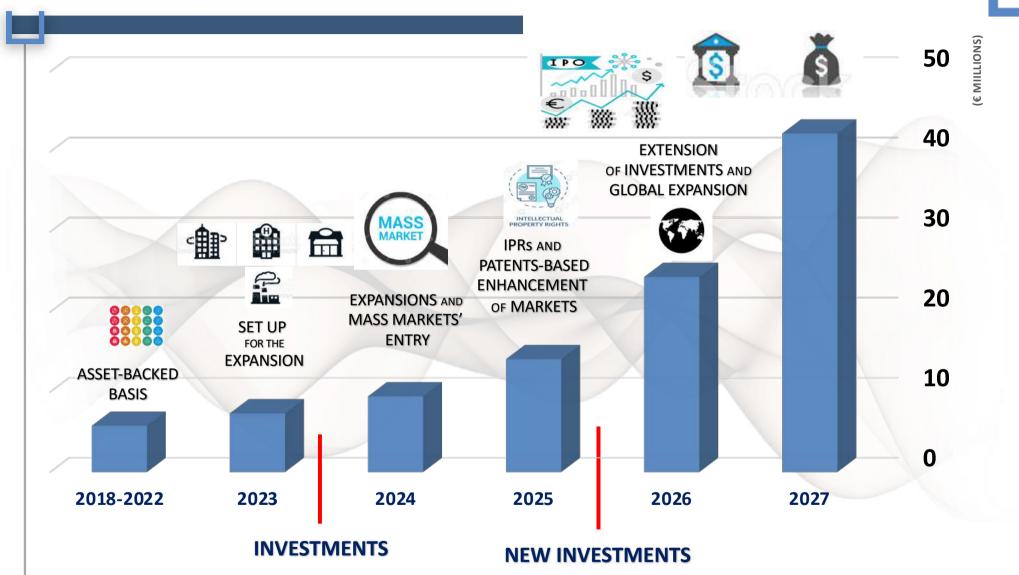
Support commercial activities and working capital

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

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

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

#### **SCALING STRATEGIES, MODULAR**

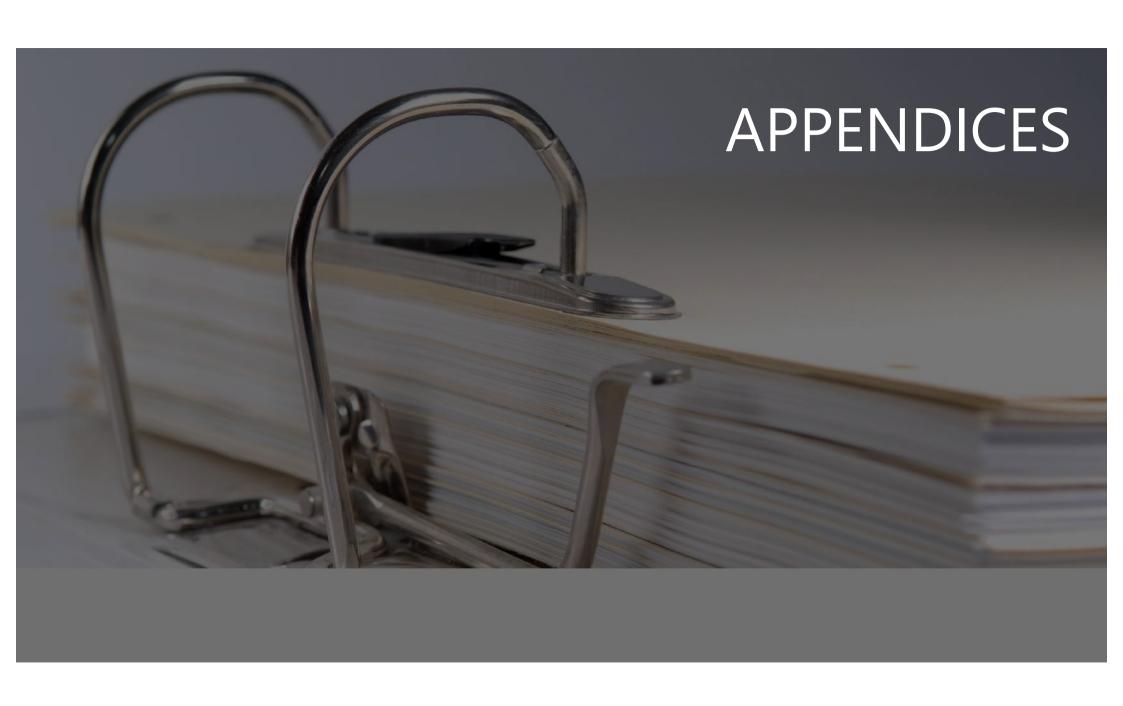


# THANK YOU VERY MUCH



• info@iscleanair.com

■ gspanto@iscleanair.com





WE ARE PART OF THE EFFICIENT SOLUTIONS
TO PROTECT
TO THE ENVIRONMENT
IN A PROFITABLE WAY











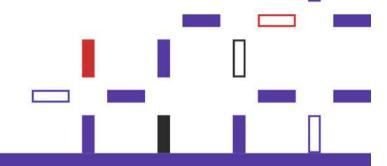


# **EIC Greenhouse Gas Programme**

at the EIC SUMMIT 2022

WINNER 2021 - 2022

7 December 2022



Co-creation peer-to-peer



#EUeic









European Innovation Council

Wember access

ESTON : NC Community & Blance & Break benevation, EC Availed in...

Green Innovations: EIC-funded company IsCleanAir is combining sustainability with air purification



https://www.radio24.ilsole24ore.com/pro grammi/paese-migliore/puntata/si-puofare-l-aria-083530-AEPr2FaB

https://www.linkedin.com/posts/agrop edromiranda\_ghgsummit22carbonneutrality-corporates-activity-7006291381597954048fbbB?utm\_source=share&utm\_medium =member\_ios

- https://open.spotify.com/episode/6FSDMphypHpAAIAIYU3ku5
  In the podcast TIPIK / CORDIS, EU researchers tackle pollution
- https://cordis.europa.eu/article/id/429950-helping-heavy-industry-clear-the-air
- https://community-smei.easme-web.eu/articles/green-innovations-eic-funded-company-iscleanair-combining-sustainability-air-purification
- https://cordis.europa.eu/project/id/672051
- https://cordis.europa.eu/article/id/429867-new-filter-less-water-based-cleaning-system-reduces-air-pollution-by-up-to-99
- https://www.comau.com/en/2021/10/20/comau-joins-the-pure-european-project-as-a-partner-for-the-industrialization-of-an-innovative-air-purification-system-within-manufacturing-environments/
- https://www.comau.com/en/2021/12/03/at-the-eit-manufacturing-summit-comau-shares-insights-about-the-pure-air-project/
- https://greenretail.news/innovazione-ricerca/comau-stellantis-contribuisce-al-progetto-europeo-pure-dandovita-ad-una-nuova-tecnologia-di-purificazione-dellaria.html
- https://www.linkedin.com/posts/easy-engineering-magazine interview-with-iscleanair-activity-6983065392537563136-83\_4?utm\_source=share&utm\_medium=member\_desktop
- https://www.linkedin.com/feed/update/urn:li:activity:6996052546469400577
- https://www.linkedin.com/posts/iscleanair\_peasengo-peasengo-agenda2030-activity-7000752328723042304-3yel?utm\_source=share&utm\_medium=member\_desktop

#### 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)





APA PRODUCTS (MAIN)



APA SOLUTIONS, value propositions of new AIR CLEANING ADVANCED SYSTEMS to be implemented everywhere, in all the spaces of life and work



ISCLEANAIR listed in the Leader of growth 2020 for Italian and EU SMEs

APA deep tech: main solutions up to date for industrial sites, urban spaces, industries and workplaces (private and public)

Flexible, modular and scalable design, easy to install «as is», manage and integrate to pre-existing infrastructures



APA Bus Stop

Lamppost



# The best in comparison with other



#### Best performances

Widest range of targeted and abated pollutants

competitive technologies:

- **Unique Selling Proposition**
- Other differentiating qualities (Investment costs, Operating costs, Transportability and Handling)

#### **COMPARATIVE INDEX: APA versus other AIR PURIFICATION TECHNOLOGIES**



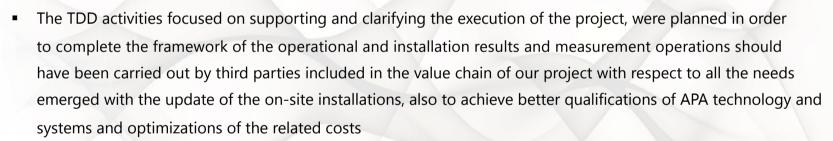
- APA has demonstrated its supremacy for performances, targeted pollutants, and Unique Selling Propositions with respect to all the identified competitors, and in the category "Others" is positioned at the top with other three technologies
- Additional prominent certifications and qualifications have been released in 2022 and are on going



#### A TECHNOLOGY DUE DILIGENCE (April 2021) PUT INTO EVIDENCE OUR DIFFERENTIATIONS (1/2)



The mentioned technological due diligence (TDD) was requested (End of 2020 – Early 2021) as an independent specialized service to a qualified third party of experts, with the aim of carrying out a 360° assessment of the contents and characteristics of the APA technology in comparison with its performance, the market needs, and the presence of other technologies as an actual existing competition (actions on ambient air, abatement capacity, environmental trade-offs, applications distributed and ground level, selling propositions, etc.)



- The aforementioned TDD, further, permitted us to verify the absence of risks or technical or technological problems concerning the activities carried out with the use of APA technology
- This was and is, an integral part of the structure of the initiative as a whole, and they are very functional to the future industrialization of the systems
- The analysis, also referring to important commercial factors, comforted the company even with respect to the planning of future investments for the industrialization of the technology, planned to be carried out with territorial locations and in business partnerships with important technical-industrial and commercial actors and subjects







#### A TECHNOLOGY DUE DILIGENCE (April 2021) PUT INTO EVIDENCE OUR DIFFERENTIATIONS (2/2)



- The in-depth assessment of the APA technology proved to be fundamental to contextualizing the project activities and positively opening up to the initiative's next expected evolutions, in advanced execution
- In particular, in the light of the significant guidelines for future development, expected for the next few years and in profound transformation regarding the interventions to combat climate change (since all pollutants are climate-altering) and the economic-social trends emerging, also at the institutional and regulatory level within the world and European panorama (ESG Environmental, Social and Governance, Circular Economy, Green Deal, Zero Pollution Ambition Plan and Green House Gas Program, Agenda 2030 and other)





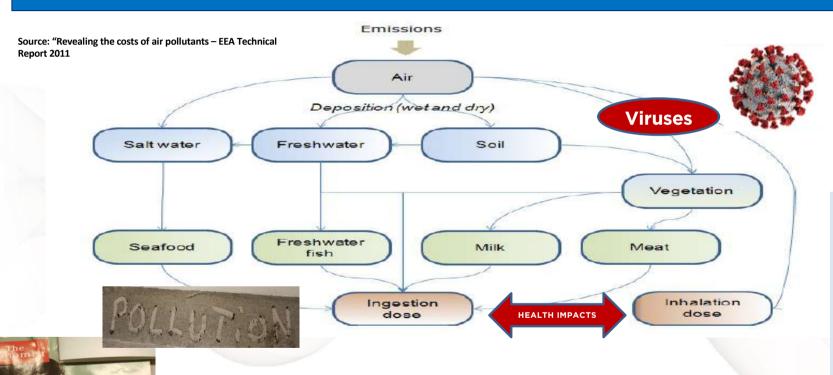
- In this regard, we underline that all the official information available (internally and externally on the websites, databank, publications, qualifications, commercial agreements, technology magazines, patent offices, etc.) and the main and most consolidated information in the cleantech sector have been collected and analyzed within the TDD exercise
- This is also, to well understand its functionality, performance and effective competition concerning the APA technology and system's potentiality, with clear attention to the distinctive and differentiating elements, also in terms of real positive effects and benefits to the limitation and mitigation of environmental impacts
- The positive externalities of APA as a cross-innovation and in compliance with the opportunity to concretely answer to many precise goals of the UN 17th SDGs, and the added value recently emerged for the possible applications even within the medical sectors (in June 2020 APA we became eligible also under a Horizon 2020 specific projects), clearly enrich the conclusions and results of the mentioned deep Technology Due Diligence



#### EVIDENT AND INDISPUTABLE HEALTH IMPLICATIONS OF AIR POLLUTION WE ALL BREATHE



#### TOXIC AIR POLLUTANTS AND HARMFUL MICROORGANISMS ALWAYS ARRIVE IN OUR ORGANISM



Air pollutants spread the viruses and are always climate - alterant and harmful to human health and the environment

WHAT THEY DON'T TELL YOU ABOUT CLIMATE CHANGE ...

STOPPING THE FLOW OF CARBON DIOXIDE (CO<sub>2</sub>) INTO THE ATMOSPHERE IS NOT ENOUGH! IT HAS TO BE SUCKED OUT, TOO.

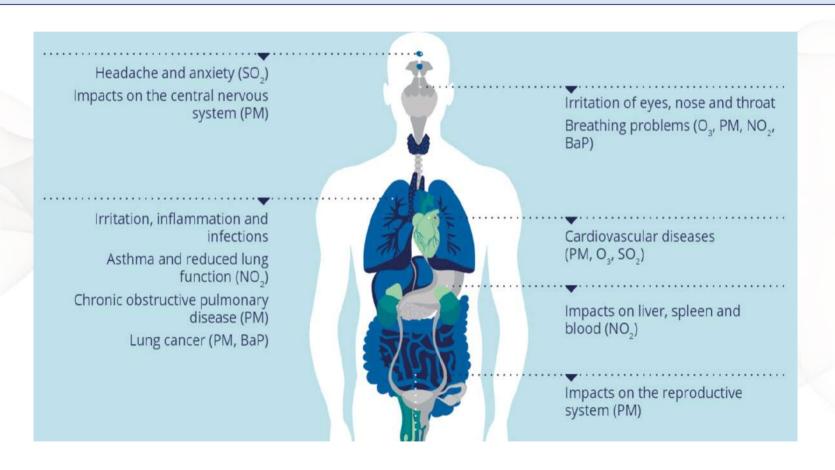
APA SUCKS IN FROM AIR ALL POLLUTANTS AND HARMFUL ELEMENTS





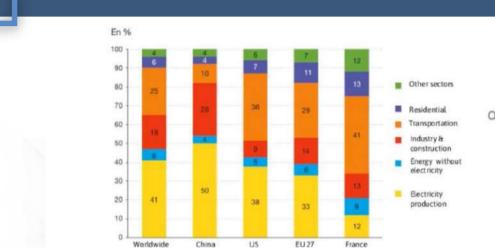


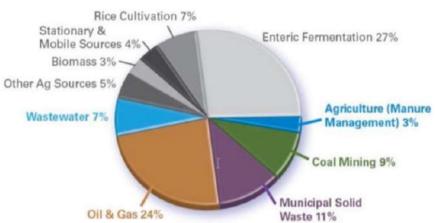
#### **POLLUTANTS ARE VECTORS AND CONTAMINATION RISK FACTORS**



#### WHERE DO GREENHOUSE GASSES COME FROM?







#### Carbon Dioxide (CO2)

Source : AIE, 2020

Comes mostly from burning fossil fuels (oil, gas, coal) to produce electricity, or from transports and the industry

#### Methane (CH<sub>4</sub>)

Methane comes mostly from fossil fuels extraction and agriculture (cattle, rice cultivation & manure)

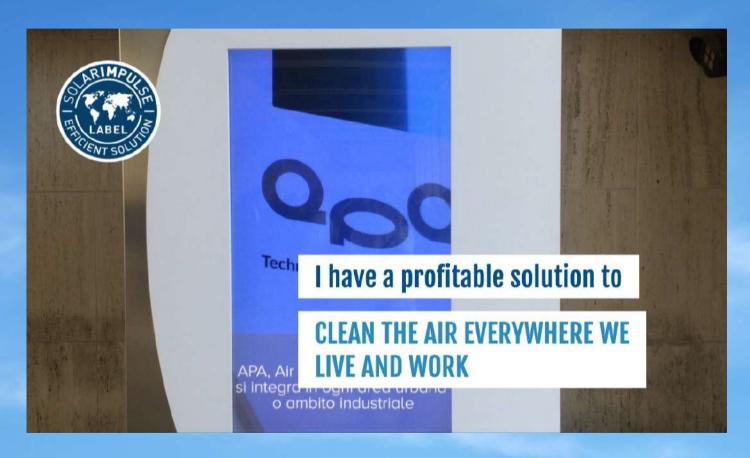


APA SUCKS IN AND TRAPS POLLUTANTS AND HARMFUL MICROORGANISMS, UTILIZING ONLY SIMPLE WATER (NATURE-BASED) AND MECHANICAL FORCE



# WE ARE PART OF THE #1000SOLUTIONS TO CHANGE THE WORLD

# **BREATHE YOUR LIFE**



WORKING TOGETHER FOR A HEALTHIER AND SAFER

**CLEAN AIR WORLD**