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ASX Announcements
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SUPERIOR PERFORMANCE OF BLUEMIST™ AIR PURIFICATION SYSTEM VALIDATED

Independent laboratory testing proves outstanding kill rate of airborne bacteria, fungus and viruses whilst efficiently removing airborne submicron particulate matter

- Performance is superior to published competing product data
- Significantly improved submicron particle filtration relative to commonly used HEPA filters
- Total kill rates of biological contaminants in the entire room is extremely high, achieving 99.999% bacteria removal and 99.9999% virus removal in 90 minutes.

Somnio continues to progress product development and operational efficiency in the Version 2 (“V2”) prototype:

- Significantly higher efficiency;
- Smaller Footprint;
- Low noise output;
- Low operating cost parameters (power, maintenance); and
- Easily integrated into air treatment systems existing in the market.

Following final prototyping, testing, and product design the Company will be in a position to estimate a cost to market.

The superior test results achieved have positive implications for the Company’s commercialization strategy.

Discussions are ongoing for infectious disease laboratory work utilizing the V2 Prototype.

WRG Chairman, Mr. Steve Morris, said today that:

“Third Party testing has shown we have a technically superior product to that which is currently available in the market. We are not aware of any other product that comprehensively kills viruses, germs and bacteria, and also removes odors and submicron particulate matter.

Our core technology, test results and market research leads us to the belief that we will present the market with a superior product able to be integrated into the air treatment systems of a range of manufacturers at a very competitive price to the consumer.”

Water Resources Group (“WRG” or the “Company”) is pleased to report the test results of the Bluemist™ Air Purification system from independent laboratory Aerosol Research and Engineering Laboratories (“Aerosol”) in Kansas. The release of results has been delayed awaiting the final test report from Aerosol.

Aerosol was selected by the Company due to its capacity to trial the Bluemist™ system in accordance with the US Food and Drug Administration’s (FDA) Good Laboratory Practice Regulations (40 CFR Part 160) to ensure optimum quality assurance of the testing regime.

The in vitro study was sought to characterize Bluemist™ decontamination efficacy against a broad range of pathogenic bioaerosols. The Bluemist™ Air Purification system is designed to neutralize airborne bacteria, viruses, and fungal spores in order to decontaminate the air of occupied rooms. The efficacy of the system was assessed with four (4) aerosolized surrogate species for BSL3 pathogenic organisms as below:

1. *Bacillus subtilis* endospores - routinely used as a surrogate for weaponized anthrax, *Bacillus anthracis*;
2. *Erwinia herbicola* - a Gram-negative bacterium and surrogate for black plague, *Yersinia pestis*, and other pathogenic Gram-negative bacteria;
3. MS2 bacteriophage - a viral RNA bacteriophage that is commonly used as a surrogate for the influenza virus; and
4. *Aspergillus niger* endospores - used as a surrogate for several toxic black mold species such as *Stachybotrys chartarum*.

Further, polystyrene beads (sizes range from 0.5 to 16 microns) were independently aerosolized and tested to determine the particulate removal efficacy of the Bluemist™ system.

WRG’s objectives in conducting the trials were to:

- independently verify Somnio’s (WRG’s technical services provider) in-house performance results that have been achieved during their development program;
- to quantify the efficacy of the current Bluemist™ prototype against bioaerosols including bacteria, viruses and endospores; and
- to examine the system’s impact on particulate matter in the room environments.

The testing methodology is further detailed in Appendix 1.

The test protocol targeted the following objectives:

- Single pass kill rate, measuring the total decontamination rate achieved by the system in a single pass;
- Total reduction of contaminants over specified time periods in an entire room, referred to as the Volumetric reduction;
- Particulate removal efficacy in the size range of 0.5 to 16 microns, in the entire room.

Results

The performance of the Bluemist™ system exceeded expectations in all areas of performance, surpassing the highly encouraging observations during Somnio’s in-house testing phase.

- Single Pass Kill rate for Bacteria (*Erwinia Herbicola*) at 3.91 Log – 99.9876%
- Single pass kill rate for Fungus (*A Niger*) – 4.28 Log – 99.9948%
- Single Pass kill rate for Virus (MS2 Bacteriophage) at 5.74 log – 99.9998%

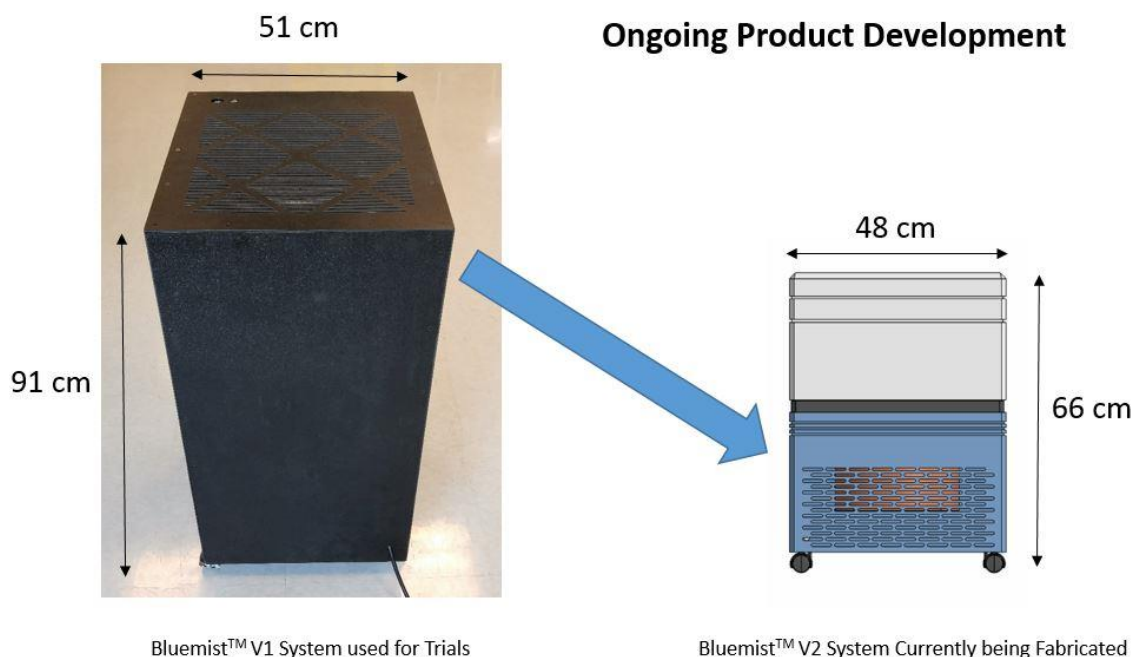
- Single Pass Kill rate for Bacterial Endospores (*Bacillus Globigii* Endospore)– 3.39 Log – 99.9598%
- Total kill rates of biological contaminants in the entire room is extremely high – achieving 99.999% bacteria removal (> 5 log) and 99.9999% virus removal (> 6 log) in 90 minutes
- The Bluemist™ system also demonstrated a unique capability to significantly improve the capture rate of submicron particulates (~0.5 microns) compared to the typical performance of an inline HEPA filter. The trials demonstrated that Bluemist achieved a 98% improvement over a standard HEPA filter for small particles. This is very significant in that many dangerous pathogens and toxic chemicals - e.g. smoke and soot - fall in this size range.

The Company is very pleased with the Aerosol results and is confident that the core Free Radical Generator (“FRG”) technology that powers the Bluemist™ V1 system provides a performance advantage that is clearly superior to all other residential systems. Appendix 2 shows a comparison as prepared and presented by Somnio to WRG, based on published data by competing products in this market.

Further, these results strengthen the Company’s assessment of the uniqueness of the FRG technology and the Intellectual Property that has been licensed to WRG, particularly given Somnio’s view that there remains a great deal of opportunity for improvement of the Bluemist™ system. The Company plans to develop and release a range of applications that are powered by the FRG technology and is therefore delighted that the first of these applications has shown such a powerful, independently validated performance.

Ongoing design work is focused on improving the system flow rate and effectiveness while at the same time, reducing the size, noise and manufactured cost of the product. Early results from the Bluemist™ V2 prototype under development are already showing further improvements and the product should be superior in performance to much larger commercial systems in the market.

Once the Company has completed testwork to its satisfaction on V2, final product design will then commence. Final design will include incorporation of smart technologies that are currently available – air monitoring, smart applications, self-diagnosis, etc.



The final product will be:

- Comprehensive in its' capability to eliminate airborne bacteria, spores, virus's, odors, mold, VOC's and chemicals, while providing Smart connectivity and environmental diagnosis;
- Developed in both portable and in-duct product configurations;
- Capable of substantially improving the performance of existing HEPA filter technology;
- Quiet in operation;
- Easily integrated into existing air handling infrastructure;
- Competitively priced; and
- Easily and cheaply operated and maintained.

In anticipation of a suitable V2 and ultimate final design, the Company is about to commence its search for potential partners for the manufacturing and distribution of final products.

Appendix Three discusses the market segments and opportunity for the product WRG aims to deliver.

End

For further information:

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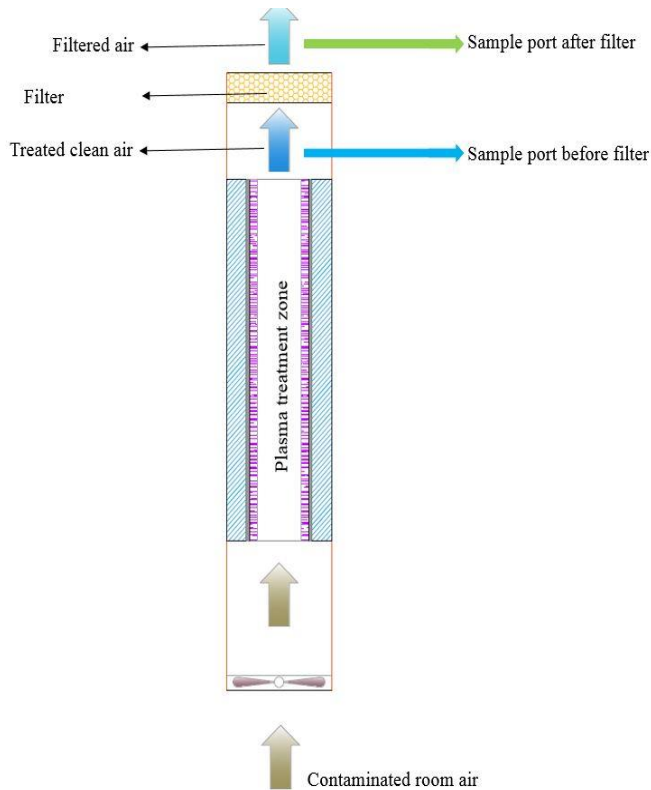
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Appendix One – Aerosol Testing Methodology

The test plan incorporated challenging the Bluemist™ device in a closed environmental chamber to determine the destruction rate of the Bluemist™ device against various airborne



microorganisms. The core technology of Bluemist™ is a unique single-stage cold plasma channel that destroys microbes, VOCs and other airborne contaminants. Operating in closed loop mode the contaminated air from an occupied room is pulled into the device that passes through the cold plasma wherein the chemicals and microbes are destroyed. Additionally, submicron particles are charged within the plasma chamber enabling the filter to trap them with great efficiency. A system diagram of the Bluemist™ device is shown in **Figure 1**

A large sealed aerosol test chamber was used to replicate a potentially contaminated room environment and to contain any potential release of aerosols into the surrounding environment. The aerosol test chamber is constructed of 304 stainless steel and is equipped with three viewing windows and an airtight lockable chamber door for system setup and general ingress

Figure 1: Somnio Global Mobile Disinfection Unit Flow Diagram (Bluemist™)

and egress. The test chamber internal dimensions are 9.1ft x 9.1ft x 6.8ft, with a displacement volume of 563 cubic feet, or 15,933 liters. The chamber is equipped with filtered HEPA inlets, digital internal temperature and humidity monitor, external humidifiers (for humidity control), lighting system, multiple sampling ports, aerosol mixing fans, and an HEPA filtered exhaust system that are operated with wireless remote control. For testing, the chamber was equipped with four 3/8 inch diameter stainless steel probes for aerosol sampling, a 1 inch diameter port for bio-aerosol dissemination into the chamber using a Collison 24-jet nebulizer for the bacteriophages and vegetative cells, or a dry powder eductor for the fungal and bacterial spores.

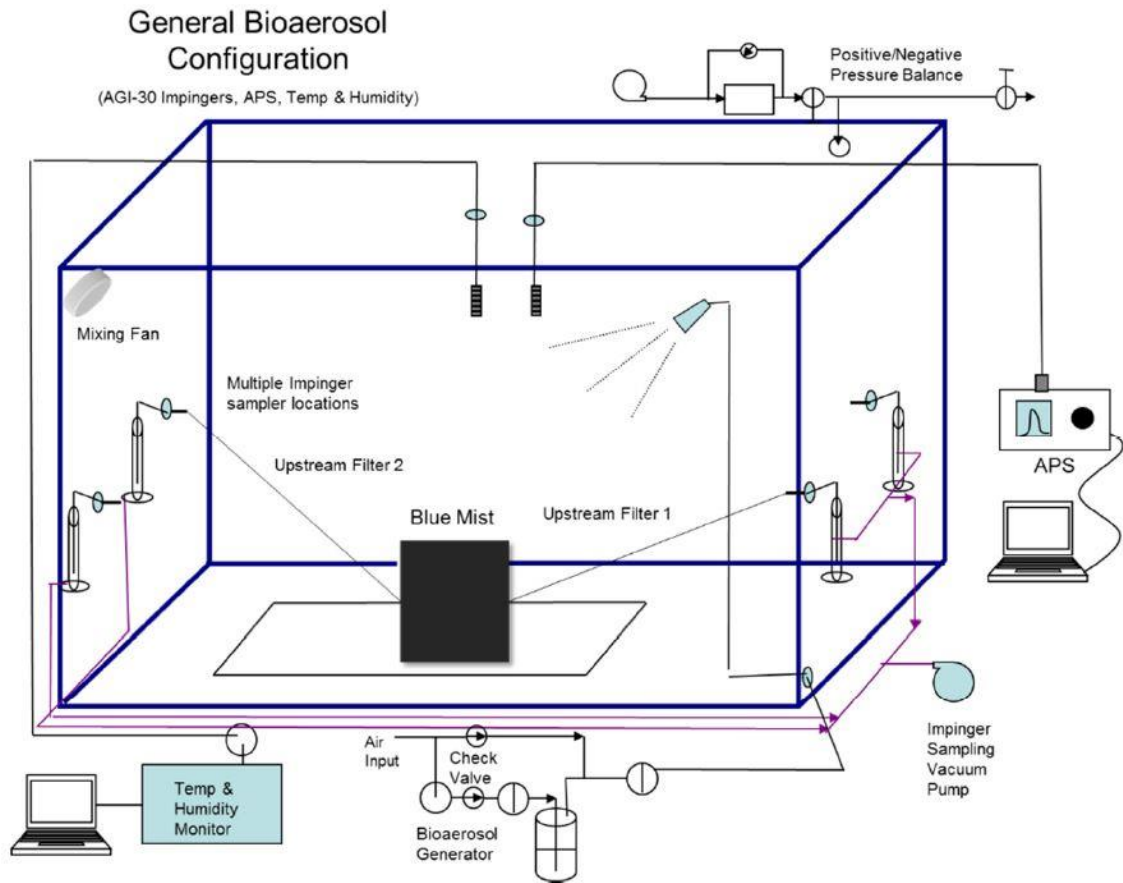
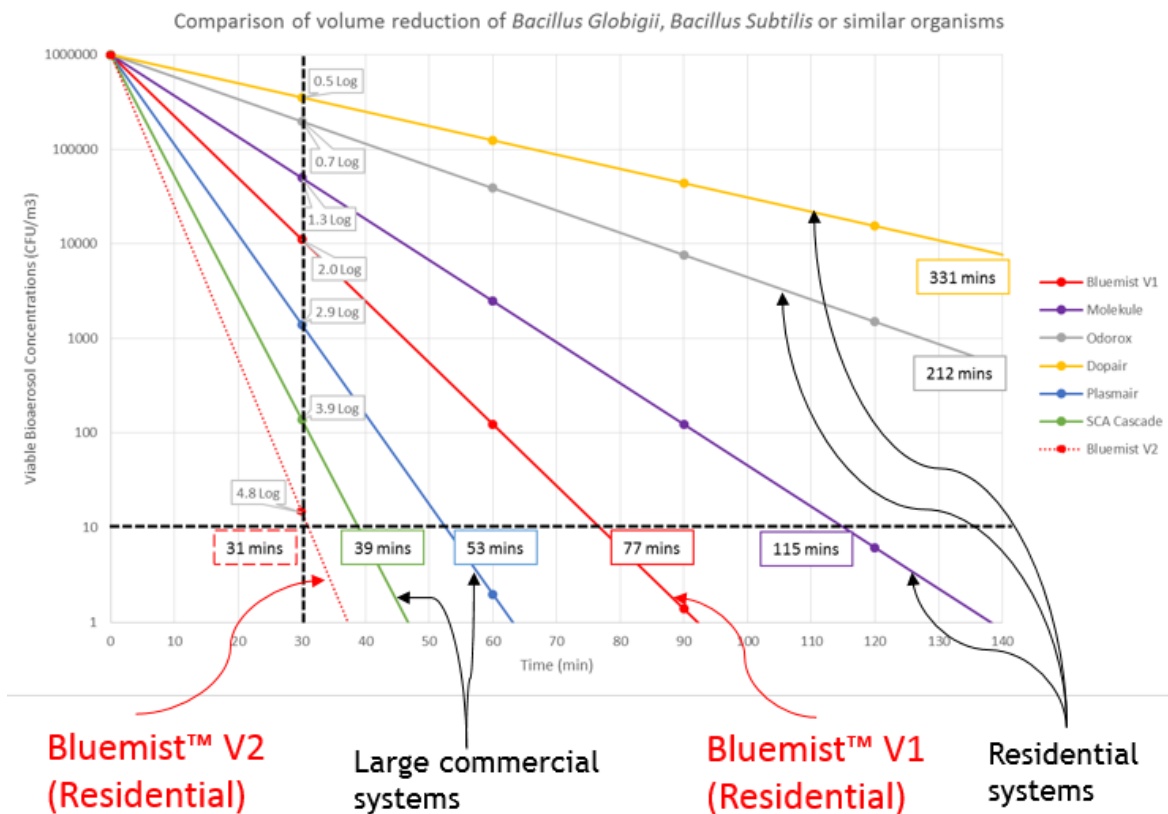


Figure 2: Bio-Aerosol Test Chamber Flow Diagram.

Appendix Two – Competitive Analysis

Bluemist™ Comparison to Competitors

- Third party testing demonstrates superior performance for Bluemist™ over residential competitors.
- Current system (V2) demonstrated superior performance even to larger commercial competitors.
- This graphs shows the time taken to achieve a 5 log kill rate of bacteria (99.999%) for each system.

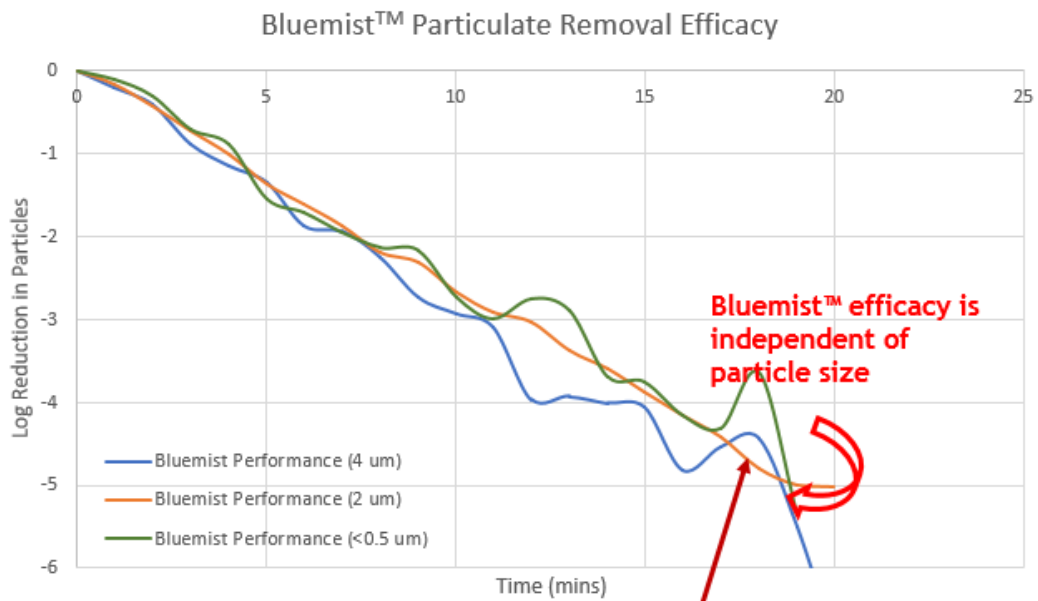
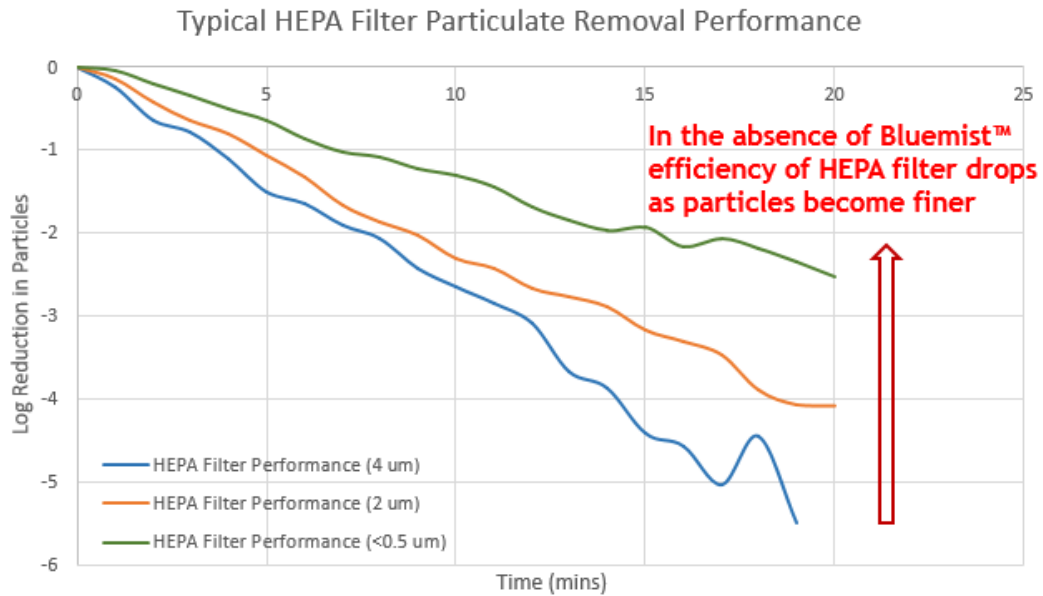


- All competitor test data based on third party lab trials released by manufacturers
- Bluemist™ V1 test data from ARE Labs
- Bluemist™ V2 test data from Somnio's internal testing



IMPROVED PARTICULATE REMOVAL

Bluemist™ enhanced particulate removal efficiency, particularly very small particles which are not well captured by standard HEPA filters



Represents a 198% improvement in the rate of capture of particles <0.5 microns in size



Appendix Three - Market Significance

WRG and Somnio aim to complete the development of a product as outlined above and consequently be in a strong position to fully engage with existing major companies within the global A\$26 Billion (2021 Estimated) Air Purification industry and will initially seek commercial partnerships to enter that market. The Company is at the moment undertaking market intelligence to confirm the exact performance and product features required for success in the market.

Indications are that the Indoor Air Quality (IAQ) treatment industry is showing increasing demand for systems that are able to purify air beyond traditional filtration capability – Freedonia Focus Report – 2015.

The current market leading filtration technology is the HEPA filter which is effective for the removal of particulates down to 0.3 microns in size. These filters cannot destroy chemical and biological contaminants, fueling demand for advanced air purification systems that can achieve both outcomes – filtration of airborne particles and also health threatening germs, bacteria and viruses.

Global demand is being driven by several factors including increasing urbanization, more stringent government regulations, increasing incidence of health problems related to IAQ and the behavior of the consumer towards these issues. Ultimately, the consumer’s increasing awareness of the problems of poor IAQ is fundamental to the demand for higher standards of indoor air quality. For instance, the US Environmental Agency estimates that US citizens spend 90% of their time indoors and that indoor air pollutants can be 2-5 times higher than outdoors and up to 100 times worse. Further, the EPA estimates that 50% of US schools have IAQ issues and consistently ranks indoor air pollution among the top 5 environmental risks to public health. An example of the deadliness of indoor air pollution is the high-profile legionella bacteria which contributed to over 6000 cases of severe infection in the US alone (Centers for Disease Control – 2015) with an astonishing 10% fatality rate.

Ratings are regularly presented to show whether the local air is considered clean with the USA Environmental Protection Agency publishing Air Quality Indices indicating how clean or unhealthy the air is, and what associated health effects might be a concern.

Air Quality Index (AQI) Values	Levels of Health Concern	Colors
<i>When the AQI is in this range:</i>	<i>...air quality conditions are:</i>	<i>...as symbolized by this color:</i>
0 to 50	Good	Green
51 to 100	Moderate	Yellow
101 to 150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

The AQI is:

- calculated for four major air pollutants regulated by the Clean Air Act:
 - Ground Level Ozone
 - Particle Pollution

- Carbon monoxide
- Sulfur dioxide
- focussed on health affects you may experience within a few hours or days after breathing unhealthy air.

Appendix Three provides a link indicating real time global AQI which highlights the Asian region as having an unhealthy AQI. The Asian region is consequently a major existing consumer of HEPA filtration systems and consequently a potential significant consumer of Bluemist™.

Market demand for cleaner and safer indoor air has seen the emergence of new systems and technologies including products based on Ultra Violet light (UV), Photo Chemical Oxidation (PCO), Photo Electrochemical Oxidation (PECO), Ion generators and Electrostatic based systems. To varying degrees, these advanced air treatment technologies offer a step change in air purification outcomes and to which the FRG technology within Bluemist™ has now demonstrated superior performance.

The Bluemist system can be adapted and incorporated in any system that treats indoor air or act as its own stand-alone unit. This flexibility provides access to many market segments including:

- Residential Consumers
- Medical Facilities and Hospitals
- Schools and daycare centers
- Hotels
- Transportation – Air, Rail, Marine and Road
- Office and Commercial Buildings
- Manufacturing Facilities
- Laboratories
- Any internal environment where harmful airborne substances provide poor air quality.

The technology will power both portable and fixed systems which can be developed across all of these market segments and at this time our focus is on the completion of portable systems designed for two initial market segments – Residential Consumers and Medical Facilities & Hospitals.

Despite rising demand and awareness, less than 2% of the 142 million households and 390,000 medical facilities in the US and Australia have air purification systems at all. These markets are demand driven and where innovation and increasing product features are seen as key to success. The entry of advanced purification technologies, such as Bluemist, into these markets is fairly recent with these high-end products holding less than 10% market share. The initial target markets for the Company have been selected as our starting point due to their attractiveness in demonstrating;

- Increasing consumer awareness is driving demand for high end air purification
- Target markets are not price sensitive, high performance and features are valued
- Low barriers to entry
- Products can be easily extended to other geography's and market segments
- Bluemist's effectiveness holds a strong competitive advantage

