SUBMISSION TO THE SENATE INQUIRY INTO BUSHFIRES IN AUSTRALIA BY FIRE WATCH AUSTRALIA

The work being done by the Royal Commission on the Victorian Bushfires and the Senate Inquiry into Bushfires in Australia will be invaluable in ascertaining what happened on Saturday 7th February last year. It's vital that we know what went wrong and why. However the most important information that can come out of these inquiries is how we can prevent it happening again or if it does how we can reduce the number of lives lost and properties destroyed. There have been previous enquiries and Royal Commissions into numerous large bushfire disasters but they still keep happening.

Already many suggestions have been made by experienced fire-fighters and individuals who experienced the horror of Black Saturday and we expect that many of these suggestions will be adopted.

Because of the nature of the Australian bush and the highly inflammable vegetation that covers the bulk of it, it will never be possible to prevent bushfires but what we can do is utilise the latest, tried, tested and proven technology available in the world to detect fires at the earliest possible time. By that we mean hours earlier not minutes. The technology that FireWatch Australia has been able to source from Europe can detect fires early enough to ensure they do little damage. The highly sensitive computer sensor system can detect smoke when the fire has just commenced and it does this automatically day and night. Implementation of a national network of fire detection sensors would be a major step in mitigating the worst impacts of major bushfires in this country.

It is not our intention to comment on the evidence and recommendations of the Royal Commission except for 11.1 which recommends that *the "Commonwealth resources might be applied more rapidly and effectively during extremely dangerous bushfires including investigating the potential for these resources to be used for detecting, tracking and suppressing fires."*

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What we would like to put before your Committee is the technology available through FireWatch Australia that has been successfully utilised in Germany for the past 8-9 years reducing the area of forest burned by 80-90%.

Automatic Bushfire Detection – Time to move into the 21st Century

Founded on aerospace technology developed for the NASA Mars Pathfinder mission, the FireWatch system incorporates a patented optical sensor, which boasts enhanced spectral sensitivity with near-infrared sensing capabilities, without the range limitations of infra red, allowing it to operate day and night and covering comparatively long distances.

The system permits detection across a wide range of visible light wavelength day or night—far superior to that of the human eye. Furthermore, the sensor's extremely high grey-scale resolution enables it to distinguish between over 16,000 shades of grey—critical functionality for detecting the first signs of smoke and differentiating between smoke, cloud and dust under most weather conditions.

In operation, each FireWatch sensor rotates through 360 degrees every 4-8 minutes, detecting smoke at distances of up to 40-65km depending upon topography. This year in Germany where the system has been installed for the past eight years, a fire was detected at a distance of 72 kms from the tower. In the trials currently underway in the Otway Ranges in Victoria, Firewatch detected a fire some 65.5 kms from the tower.

Once smoke is detected, an alarm with a corresponding image is transmitted to the Control Room. Here, the image is rapidly assessed and the information sent to the fire agencies, allowing them to commence suppression activities. One controller in a Control Center, which can be located anywhere in the country, can monitor up to six towers at the same time, surveying a potential area of 3,000-5,000 square kilometers.

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FireWatch has been operating in Germany for over eight years and has lead to an 80-90% per cent reduction in the area of forest burned each year, whilst the number of fires has not changed. This incredible success is the result of the early detection information generated by the FireWatch early detection network which offers complete coverage and delivers accurate location information to the fully cooperative fire fighting forces that in turn are able to respond much quicker and to direct their fire fighting resources to the precise location of the fire.

If required to do so, the FireWatch system is able to interface with meteorological information sources to provide fire fighters with temperature, wind speed and direction, humidity and vegetation related information. FireWatch uses embedded GPS mapping data to pinpoint the location of the fire with phenomenal accuracy.

The Australian trial of the FireWatch system as announced by the Federal Attorney General earlier this year, has deployed sensors on four existing towers in the Victorian Otway Ranges (Mt. Porndon, Crowes Lookout, Peters Hill and Mt. Cowley), with information being fed back to a Control Room located at Deakin University's Burwood campus.

During this trial, Mr Raimund Engel, the National Coordinator, Forest Fire Surveillance in Germany, visited Australia from 22nd February to 10th March to share Germany's experience of the development of their bushfire early warning detection system. Mr. Engel is the person responsible for establishing and operating this network including 178 towers and 22 Control Rooms covering some 2.3 million hectares of forest.

Over the course of his visit, he presented information about the German experience of the FireWatch system in Melbourne, Sydney and Canberra.

FireWatch systems are now either installed or in the final stages of commissioning in the United States, Mexico, Portugal, France, Holland, Greece, Estonia and the Czech Republic. The Lithuanian Government has just announced that it will install a national network of 84 FireWatch sensors over the next 3-4 years.

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The tragic events in Victoria underscore the need to bring Australia's fire detection systems into the 21st century. It is incredible in this day and age that we still depend upon good Samaritans phoning in reports of fires, volunteers in fire towers with binoculars and random and infrequent aircraft surveillance.

FireWatch is the state-of-the-art automatic bushfire detection system and in today's ever more extreme climatic conditions we must embrace new ways of thinking and adapt to a new paradigm of climate in our country.

While the emphasis over many years has been on the reduction of bushfires and the concomitant loss of fire and property one of the major benefits of reduced bushfire impact will be the reduction in carbon emissions. It is estimated that one third of Australia's carbon emissions is caused by bushfires. Any significant reduction in our emissions could have a profound impact on our objective of minimising the impact of emissions and the effect that will have on global warming and climate change.

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