



3 August 2015

Our Ref: 15/541

Ms. Sophie Dunstone  
Committee Secretary  
Senate Legal and Constitutional Affairs References Committee  
PO Box 6100  
Parliament House  
CANBERRA ACT 2600

Dear Ms. Dunstone

Thank you for your letter of 9 July 2015 to Dr Larry Marshall inviting CSIRO to make a submission to the Senate Legal and Constitutional Affairs Committee's Inquiry into the use of smoke alarms to prevent smoke and fire related deaths. Dr Marshall has asked that I respond on his behalf.

As Australia's national science agency, CSIRO has a longstanding involvement with building research and technology. The organisation provides Australia's only facility for the evaluation of smoke alarms to the requirements of Australian Standard AS 3786. This standard is referenced by the National Construction Code and State/Territory regulation when requiring the installation of smoke alarms.

This submission seeks to respond to parts c, d, e, f and g of the Inquiry's terms of reference. Content draws on CSIRO's activities in the evaluation, testing and certification of smoke alarms and our role in Australia's current standard setting and conformance infrastructure.

Type, installation set-up and use of smoke alarms (Term of reference - c and d)

CSIRO is aware of a longstanding industry debate around smoke detection technologies used in alarms, usually categorised as photoelectric or ionisation types. CSIRO provides testing in accordance with the current Australian Standard (AS 3786) which permits both technologies and provides a test regime for each type. CSIRO's review of the results of Australian and International research indicates a number of viewpoints on the merits of each detection technology. CSIRO has not undertaken research against this specific question and accordingly, does not provide advice on the selection of technologies.

CSIRO believes however, that much of the existing research is not reflective of the new materials used in modern housing construction and furnishings. Similarly, earlier research does not always reflect room configurations and open plan living areas found in contemporary Australian homes. On this basis, CSIRO would suggest Australia considers a review of existing research, addressing gaps in understanding of modern materials and construction techniques. New research should address detection technologies and the requirements for installation, including the quantity and location through the building.

How provisions of the Australian Building Code relating to smoke alarm type, installation and use can be improved (Term of reference - e)

Improvements to current practice may be identified by the research described above.

CSIRO's commercial testing of smoke alarms has identified a concern regarding compatibility of the interconnection facility between brands. The 2015 National Construction Code introduced a requirement for interconnection of smoke alarms in a dwelling. This interconnection requirement, nor the Australian Standard, specifies connectivity requirements for this facility. Accordingly, interconnection between brands and types of alarm is uncontrolled, and may lead to a failure to operate or potential false alarms.

Whether there are any other legislative or regulatory measures which would minimise such injuries and deaths (Term of reference - f)

CSIRO's ActivFire product certification scheme provides a publicly available listing of smoke alarms that meet the requirements of AS 3786. Currently, smoke alarms that do not comply with Australian Standards can be legally imported and sold in Australia, only being recognised as non-compliant when purchased and installed in an application where smoke alarms are required by the National Construction Code or related State/territory regulation. CSIRO believes that given the high level of 'self installation', where the consumer purchases and installs their own alarms, the AS 3786 standard should be nominated as a Commonwealth mandatory standard, making it illegal to import or sell non-conforming products.

A parallel Senate Inquiry into Non-Conforming Building Products includes a term of reference on product surveillance. Noting community sensitivity to instances where smoke alarms fail to activate, and current regulations allowing homes with a single alarm, CSIRO believes that surveillance testing of smoke alarms at point of distribution should be explored by this inquiry.

Any Related Matter (Term of Reference - g)

CSIRO's laboratories in Highett, Victoria are the only facility accredited for testing smoke alarms to the requirements of the Australian smoke alarm standard AS 3786. Each alarm is subjected to tests covering smoke sensitivity, false alarm resistance, sounder output, power supply, durability, packaging, labelling and documentation. The knowledge and experience generated through provision of this testing is provided back to government and industry through CSIRO's participation on technical, advisory and standard setting committees. In support of this Senate Committee's inquiry, we would be open to CSIRO's participation in establishing the scope of this issue, the performance of research, and development of solutions.

Yours sincerely

**Anita J. Hill** PhD FTSE  
*Executive Director, Manufacturing, Digital Productivity and Services*  
CSIRO