

**Fire and Emergency Services  
(Smoke Alarms) Amendment Bill  
2015**

and

**Fire and Emergency Services  
(Domestic Smoke Alarms)  
Amendment Bill 2016**

**Report No. 28, 55<sup>th</sup> Parliament  
Legal Affairs and Community Safety Committee  
May 2016**



## Legal Affairs and Community Safety Committee

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### Acknowledgements

The committee particularly acknowledges the assistance provided by the Department of Housing and Public Works, Queensland Fire and Emergency Services and the Public Safety Business Agency in relation to this Inquiry.



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## Abbreviations

2015 Bill	Fire and Emergency Services (Smoke Alarms) Amendment Bill 2015
2015 Bill Public Briefing	Public briefing held in relation to the 2015 Bill on 24 February 2016
2015 Bill Public Hearing	Public hearing held in relation to the 2015 Bill on 24 February 2016
2016 Bill	Fire and Emergency Services (Domestic Smoke Alarms) Amendment Bill 2016
2016 Bill Public Briefing	Public briefing held in relation to the 2016 Bill on 16 March 2016
2016 Bill Public Hearing	Public briefing held in relation to the 2016 Bill on 20 April 2016
ABCB	Australian Building Codes Board
BCA	Building Code of Australia
Bills	Fire and Emergency Services (Smoke Alarms) Amendment Bill 2015 and Fire and Emergency Services (Domestic Smoke Alarms) Amendment Bill 2016
department	Department of Housing and Public Works
FES Act	<i>Fire and Emergency Services Act 1990</i>
FRNSW	Fire and Rescue NSW
HIA	Housing Industry Association
IGA	The Inter-government Agreement signed by the Commonwealth, States and Territories. The original Inter-Government Agreement was signed on 1 March 1994 with the most recent IGA being signed with effect from 30 April 2012.
NCC	National Construction Code
PSBA	Public Safety Business Agency
QFES	Queensland Fire and Emergency Services
Slacks Creek House Fire	Slacks Creek house fire which claimed 11 lives, including eight children, in August 2011

Senate Inquiry	The Commonwealth Senate Legal and Constitutional Affairs Committee is currently conducting an inquiry into <i>“The Use of Smoke Alarms to Prevent Smoke and Fire-related Deaths”</i> .
Senate Report	The Commonwealth Senate Legal and Constitutional Affairs Committee’s report on its inquiry into <i>“The Use of Smoke Alarms to Prevent Smoke and Fire-related Deaths”</i> , which issued on 20 April 2016.
Tewantin House Fire	Tewantin house fire which claimed four lives, including three children, in December 2011
UFUQ	United Firefighters Union of Queensland



## Chair's foreword

This Report details the examination by the Legal Affairs and Community Safety Committee on two bills being the Fire and Emergency Services (Smoke Alarms) Amendment Bill 2015 and the Fire and Emergency Services (Domestic Smoke Alarms) Amendment Bill 2016 (the Bills).

In considering the Bills, the committee's task was to consider the policy outcomes to be achieved by the legislation, as well as the application of fundamental legislative principles – that is, to consider whether the Bills had sufficient regard to the rights and liberties of individuals, and to the institution of Parliament in accordance with section 4 of the *Legislative Standards Act 1991*.

On behalf of the committee, I thank those who lodged written submissions on these Bills and participated in the committee's hearings and meetings.

I would also like to thank the Committee Office staff for the support they have provided us.

I commend this report to the House.



**Mark Furner MP**  
Chair

## **Committee recommendations**

### **Recommendation 1**

The committee notes the overwhelming evidence supporting the installation of photoelectric alarms and endorses such.

### **Recommendation 2**

The committee recommends smoke alarms comply with AS 3786 – 2014 and AS 1670.6 – 1997.

## 1. Introduction

### 1.1 Role of the Committee

The Legal Affairs and Community Safety Committee (the committee) is a portfolio committee of the Legislative Assembly which commenced on 27 March 2015 under the *Parliament of Queensland Act 2001* and the Standing Rules and Orders of the Legislative Assembly.<sup>1</sup>

The committee's primary areas of responsibility include:

- Justice and Attorney-General
- Police Service
- Fire and Emergency Services
- Training and Skills.

Section 93(1) of the *Parliament of Queensland Act 2001* provides that a portfolio committee is responsible for examining each bill and item of subordinate legislation in its portfolio areas to consider:

- the policy to be given effect by the legislation
- the application of fundamental legislative principles
- for subordinate legislation – its lawfulness.

### 1.2 Referral and Inquiry Process

#### 1.2.1. Private Member's Bill (2015 Bill)

On 1 December 2015, Mr Jarrod Bleijie MP, Member for Kawana, introduced the Fire and Emergency Services (Smoke Alarms) Amendment Bill 2015 (2015 Bill) into the House. In accordance with Standing Order 131 of the Standing Rules and Orders of the Legislative Assembly, the 2015 Bill was referred to the committee for detailed consideration. By motion of the Legislative Assembly, the committee was initially required to report to the Queensland Parliament by 4 March 2016.

The committee invited written submissions from the public, and from identified stakeholders, to be received by 4.00 pm on Monday, 1 February 2016.

The committee received 15 submissions (see Appendix A, Part 1 for a list of submitters).

The committee received a public briefing on the 2015 Bill from Mr Bleijie MP on 24 February 2016 at Parliament House in Brisbane (2015 Bill Public Briefing).

The committee also invited witnesses to give evidence and respond to questions on the 2015 Bill at a public hearing on the same date (2015 Bill Public Hearing). See Appendix B, Part 1 for details of the 2015 Bill Public Hearing.

#### 1.2.2. Government Bill (2016 Bill)

On 23 February 2016, the Hon Bill Byrne MP, Minister for Police, Fire and Emergency Services and Minister for Corrective Services introduced the Fire and Emergency Services (Domestic Smoke Alarms) Amendment Bill 2016 (2016 Bill) into the House. By motion of the Legislative Assembly on 24 February 2016, the committee is required to consider and report to the Parliament on both Bills together. Under Standing Order 136, the committee is to report to the Parliament on both Bills by 23 May 2016.

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<sup>1</sup> *Parliament of Queensland Act 2001*, section 88 and Standing Order 194.

The committee invited written submissions from the public, and from identified stakeholders, to be received by 4.00 pm on Thursday 24 March 2016.

The committee received 16 submissions (see Appendix A, Part 2 for a list of submitters).

The committee received a public briefing on the 2016 Bill from representatives of the Department of Housing and Public Works (department), Queensland Fire and Emergency Services (QFES) and the Public Safety Business Agency (PSBA) on 16 March 2016 at Parliament House in Brisbane (2016 Bill Public Briefing). See Appendix B, Part 2 for details of the 2016 Bill Public Briefing.

The committee also invited witnesses to give evidence and respond to questions on the 2016 Bill at a public hearing on 20 April 2016 (2016 Bill Public Hearing). See Appendix B, Part 2 for details of the 2016 Bill Public Hearing.

### **1.3 Policy objectives of the Bills**

#### **1.3.1. Objectives of the 2015 Bill**

The key objective of the 2015 Bill is to implement recommendations from the Coronial Inquest into the Slacks Creek house fire that occurred in August 2011, claiming the lives of 11 people including eight children (Slacks Creek House Fire).

In introducing the 2015 Bill, Mr Bleijie explained that the 2015 Bill is in response to the Coroner's recommendations from the 2011 Slacks Creek House Fire delivered in November 2014, based on testimony from QFES and other key industry witnesses that photoelectric smoke alarms should be the only type of smoke alarm that is the approved alarm for the purposes of residential homes.<sup>2</sup>

The Explanatory Notes for the 2015 Bill provide:

*The Bill provides for a staged transition process to the implementation of photoelectric smoke alarms in residential premises in Queensland. It stipulates that only photoelectric, as opposed to ionised smoke alarms are the approved smoke alarms to be used and also provides for the location of where these alarms should be installed.*<sup>3</sup>

Some key outcomes of the 2015 Bill, once passed, include:

- Photoelectric smoke alarms would be required in residential premises in Queensland
- These smoke alarms would be required to be in specified locations within residential premises.

#### **1.3.2. Objectives of the 2016 Bill**

The key objective of the 2016 Bill is to improve personal safety in domestic dwellings by requiring the installation of photoelectric smoke alarms in all dwellings thereby reducing the loss of life or injury. The Explanatory Notes for the 2016 Bill also refer to the following two broad recommendations made by the State Coroner on 28 November 2014 during his investigation of the Slacks Creek House Fire:

- That legislative amendments be made to mandate the installation of photoelectric and interconnected smoke alarms in every bedroom, between areas containing bedrooms and the rest of the dwelling, in any hallway servicing bedrooms and in any other storey of a domestic dwelling. For new residences, the Coroner recommended that the smoke alarms be hard-wired, while in existing residences, smoke alarms may be hard-wired or powered by a 10 year lithium battery

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<sup>2</sup> Record of Proceedings (Hansard), 2 December 2015, p 3078.

<sup>3</sup> *Explanatory Notes for the 2015 Bill*, Fire and Emergency Services (Smoke Alarms) Amendment Bill 2015, p 1.

- That QFES conduct enhanced awareness campaigns including promoting the development of practised escape plans<sup>4</sup>

The key outcomes of the 2016 Bill, once passed, are similar but not identical to those of the 2015 Bill, and include requiring:

- photoelectric and interconnected smoke alarms, powered by an enduring power source (hard-wired or 10 year lithium battery) in residential premises in Queensland
- these smoke alarms in specified locations within residential premises.

#### **1.4 Background to the Bills**

The Bills are largely in response to the findings of a Coronial Inquest into the Slacks Creek House Fire which claimed 11 lives and the findings of a Coronial Investigation into the Tewantin house fire which claimed four lives, including three children, in December 2011 (Tewantin House Fire). The findings by the Coroner after investigations into each of these fires concluded, in essence, that all residential accommodation should be fitted with photoelectric smoke alarms instead of ionised smoke alarms.

##### **1.4.1. Slacks Creek House Fire**

In the case of the Slacks Creek House Fire, while there were two smoke alarms in the upstairs section of the house, neither were working. Evidence from one of the survivors, Mr Taukinukufili Taufa, had been provided to the inquest that the smoke alarm in the hallway had been turned off more than 10 years previously. Similarly, the smoke alarm in the kitchen was not in working condition. The Coroner stated in his report:

*I find also that had the smoke alarms been working there was a reasonable prospect that some or all of the victims could have escaped. Any working alarm, be it Ionisation or Photoelectric would most probably have saved lives.<sup>5</sup>*

The Coroner went further, however, and summarised the comments provided by Chief Superintendent, Mr Neil Reid:

*Mr Reid described the difference between an Ionisation and a Photoelectric smoke alarm and explained why the QFES is of the view the Photoelectric smoke alarm is superior. Photoelectric smoke alarms are compulsory in commercial premises. In essence, the photoelectric alarm responds more quickly to a broader range of fires and is less likely to cause false alarms (meaning people are less likely to interfere with them).*

*Mr Reid also emphasised the importance of smoke alarms being interconnected, preferably hard wired. The interconnection of smoke alarms means when one alarm operates they all trigger. This provides a loud warning to more parts of the home than would be possible with a single alarm. Mr Reid explained it was important to consider the placement of alarms. In particular, the need for smoke alarms in the bedrooms due to a closed bedroom door limiting the occupant hearing an alarm.*

*Mr Reid set out QFES suggestions in relation to possible changes to the smoke alarm requirements in domestic dwellings. A domestic house fire occurs in*

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<sup>4</sup> Explanatory Notes to the 2016 Bill, p 1.

<sup>5</sup> Findings of the Inquest in the Slacks Creek House Fire by James McDougall, Office of the State Coroner, 28 November 2014, p 28.

*Queensland every 4.7 hours. Every effort should be made by government to prevent such a tragedy occurring again. The recommendations suggested by QFES and made by me as part of this inquest will lead directly to lives being saved if they are implemented. The measures recommended are easily put in place at little cost when compared to other household luxuries that are now considered normal household expenses such as flat screen televisions and the like.<sup>6</sup>*

In conclusion, the Coroner made the following recommendations:

*Legislation should be put in place as soon as possible the effect of which is such that all places where people sleep should be provided with early warning of a fire occurring at a sound level capable of waking them. That is a minimum of 75 Decibels at the bed head. To enable this to be achieved the legislation should provide:-*

- *That as a minimum in all areas of a building where people sleep, **approved smoke alarms** are installed:-*
  - (a) *in any storey containing bedrooms*
    - i. *between each part of the dwelling containing bedrooms and the remainder of the dwelling and in every bedroom; and*
    - ii. *where bedrooms are served by a hallway, in that hallway, and*
  - (b) *in any other storey not containing bedrooms, and*
  - (c) *in the case where there is more than one alarm required they shall be interconnected by hard wiring where possible and by wireless signal where hard wiring is impractical.*

*The above implementation should take a staged approach to allow homeowners to prepare for the changes. After the commencement of the legislation, homeowners are required to ensure the new legislative requirements are met in the following circumstances:*

- *If a dwelling does not have smoke alarms, or does not have smoke alarms that comply with the current legislation, the new legislative requirements must be met immediately [or alternatively, within a stipulated period of grace of, say, 6 or 12 months];*
- *When smoke alarms cease to operate when tested or are at the end of their useful life (10 years from manufactured date);*
- *If the owner enters into a contract to sell the dwelling, the day before the date of settlement;*

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<sup>6</sup> Findings of the Inquest in the Slacks Creek House Fire by James McDougall, Office of the State Coroner, 28 November 2014, p 28.

- *With respect to rental properties, before any new tenancy commences, and within 12 months of the commencement of the legislation in the case of existing tenancies.*
- *The current legislative requirements continue to apply until the new requirements are met in accordance with this staged approach.*

**An approved smoke alarm for these purposes means a photoelectric type smoke alarm that complies with Australian Standard AS 3786 (Smoke Alarms) and:**

- (a) *If installed in a newly constructed domestic dwelling, is a 240 volt hard wired smoke alarm, or*
- (b) *If installed in an existing domestic dwelling in addition to, or replacing existing smoke alarms, a 240 volt hard wired smoke alarm where access is available to the ceiling space or, otherwise, a 10 year lithium battery smoke alarm which is interconnected wirelessly, to all other required smoke alarms in the dwelling. It is important that all smoke alarms are interconnected so that if one alarm is triggered all the remaining alarms also operate. This will only be possible if all alarms are the same type and are compatible with each other.*

*It is also important to say that smoke alarms are only part of the process to ensure people escape to a point of safety from their burning home. A practiced Escape Plan is the other critical component of safe evacuation. It is also recommended that the importance of smoke alarms and other safety requirements such as an Escape Plan be well publicised by QFES and Government. It is hoped that by the full implementation of these recommendations a tragedy such as this will never again occur.<sup>7</sup>*

#### **1.4.2. Tewanin House Fire**

In the Coronial Investigation into the Tewanin House Fire, the Coroner found that the family had received no warning from the two ionisation type smoke alarms which were installed at the home. The evidence from Mr Matt Golinski, the only occupant of the home to survive the fire, was that the alarms were in working order. The Coroner considered the findings and recommendations from the Slacks Creek House Fire and stated:

*Having regard to the 2014 recommendations from the Slacks Creek House Fire inquest and the current Senate inquiry, there does not appear to be any prospect of making additional recommendations that would reduce the likelihood of similar deaths occurring in the future or otherwise contributing to public health and safety.<sup>8</sup>*

#### **1.5 Senate Inquiry**

The Commonwealth Senate Legal and Constitutional Affairs Committee has recently conducted an inquiry into “The Use of Smoke Alarms to Prevent Smoke and Fire-related Deaths” (Senate Inquiry).

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<sup>7</sup> Findings of the Inquest in the Slacks Creek House Fire by James McDougall, Office of the State Coroner, 28 November 2014, pp 28-31.

<sup>8</sup> Findings of the Investigation into the Tewanin House Fire by Terry Ryan, Office of the State Coroner, 23 November 2015, p 7.

The Senate Inquiry was referred to the Legal and Constitutional Affairs Committee on 25 June 2015, which issued its report on 20 April 2016 (Senate Report).

The terms of reference for the Senate Inquiry were to inquire and report on the use of smoke alarms to prevent smoke and fire related deaths, with particular reference to:

- (a) the incidence of smoke and fire related injuries and deaths and associated damage to property;
- (b) the immediate and long term effects of such injuries and deaths;
- (c) how the use, type and installation set-ups of smoke alarms could affect such injuries and deaths;
- (d) what smoke alarms are in use in owner-occupied and rented dwellings and the installation set-ups;
- (e) how the provisions of the Australian Building Code relating to smoke alarm type, installation and use can be improved;
- (f) whether there are any other legislative or regulatory measures which would minimise such injuries and deaths; and
- (g) any related matter.

The Senate Inquiry received 31 submissions, two of which were confidential, and held three public hearings. The first was held in Brisbane on 26 October 2015, the second in Canberra on 4 December 2015 and the third in Canberra on 22 February 2016.

In its report, the Commonwealth Senate Legal and Constitutional Affairs Committee made the following 7 recommendations:

*Recommendation 1*

*2.33 The committee recommends that Australian governments collaboratively establish a national database of residential fire incidents and that state and territory fire and emergency services are adequately resourced to collect and report data to that national database.*

*Recommendation 2*

*2.36 The committee recommends that Australian governments consider establishing a national residential fire reporting and recording mechanism to capture statistics of currently unreported residential fire incidents.*

*Recommendation 3*

*3.40 The committee recommends that the National Construction Code is amended to require the installation of interconnected, and preferably mains powered, photoelectric smoke alarms, supplemented where appropriate by ionisation smoke alarms, in every residential property and specify the type of smoke alarm to be used at different locations within each residential property, taking into account the different smoke detection properties of photoelectric and ionisation smoke alarms.*

*Recommendation 4*

*3.41 The committee recommends, to give effect to Recommendation 3, that all state and territory governments adopt the amended National Construction Code and agree to apply it to all residential properties, irrespective of the age of a property.*

*Recommendation 5*

*3.43 The committee recommends that all states and territories implement mandatory compliance checks of smoke alarms in residential properties whenever a property is sold, tenanted or hired.*



### *Recommendation 6*

*3.50 The committee recommends that the Commonwealth, state and territory governments develop and implement a package of measures, including but not limited to a website and resources for key stakeholders, to educate Australians about:*

- *different types of smoke alarms;*
- *the benefits associated with installing smoke alarms with different smoke detection properties in particular locations within a property;*
- *the smoke alarm requirements that apply to residential properties in each jurisdiction;*
- *the importance of regular smoke alarm testing and maintenance;*
- *who has responsibility for installing and maintaining smoke alarms, and advice about how to do this or seek assistance to do so; and*
- *the triggers for compliance checking of smoke alarms (for example at time of sale, tenancy or hire).*

### *Recommendation 7*

*3.53 In the event Australian governments are unwilling to amend the National Construction Code and apply it to all building stock irrespective of classification and age, the committee recommends that they consider implementing a nationwide smoke alarm household installation scheme that includes consultation with:*

- *fire and emergency services, housing providers and the real estate agency industry; and*
- *individuals and organisations working with vulnerable members of the community.*<sup>9</sup>

## **1.6 Consultation on the Bills**

### **1.6.1. Private Member's Bill (2015 Bill)**

The Explanatory Notes for the 2015 Bill state:

*There had been no formal public consultation undertaken on the Bill, there had been discussion with the Logan House Fire Support Network. Furthermore, the Coroner undertook significant consultation with Queensland Fire and Emergency Services officials as part of his Inquest and the development of recommendations.*<sup>10</sup>

### **1.6.2. Government Bill (2016 Bill)**

The Explanatory Notes for the 2016 Bill provides that consultation was undertaken with the following government departments during development of the 2016 Bill:

- Department of the Premier and Cabinet
- Queensland Treasury
- Department of Justice and the Attorney-General
- Department of Communities, Child Safety and Disability Services

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<sup>9</sup> Commonwealth Senate Legal and Constitutional Affairs Committee, *The Use of Smoke Alarms to Prevent Smoke and Fire-related Deaths*, 20 April 2016, pp ix–x.

<sup>10</sup> Explanatory Notes for the 2015 Bill, p 2.

- Department of Infrastructure, Local Government and Planning
- The Office of Best Practice Regulation.<sup>11</sup>

### **1.7 Outcome of committee considerations**

Standing Order 132(1)(a) requires that the committee after examining the Bills determine whether to recommend that the Bills be passed.

In this instance, the committee was not able to reach a majority decision on whether to recommend that either Bill be passed.

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<sup>11</sup> Explanatory Notes for the 2016 Bill, p 2.

## 2. Examination of the Bills

This section examines the current law in Queensland and the key amendments proposed in the Bills to amend the *Fire and Emergency Services Act 1990* (FES Act).

### 2.1 Current Law

#### 2.1.1. Queensland Legislation

Currently in Queensland, Division 5A of the FES Act deals with “Smoke alarms for domestic dwellings”. In essence, this division requires, among other things, that:

- The owner of a domestic dwelling must install smoke alarms in the dwelling in compliance with this section (regardless of when it was built)
- Each smoke alarm must comply with AS 3786-1993 and must be installed in accordance with the relevant sections of the Building Code of Australia (BCA) depending on the type of dwelling involved
- An owner of a sole-occupancy unit may install a heat alarm or an alarm in accordance with specification E 2.2a, clause 3(b) of the BCA
- If it is impracticable for an owner of a domestic dwelling to put a smoke alarm at the location required then the owner may put the alarm at another location that will provide a warning to occupants of the dwelling.<sup>12</sup>

Neither the FES Act nor the BCA currently specify the type of alarm required to be installed so either ionisation or photoelectric smoke alarms may be used. However, the installation requirements for smoke alarms are set out in more recent versions of the BCA and depend on when the dwelling was built:

- Homes built prior to 1 July 1997 must have at least one 9-volt battery-operated smoke alarm<sup>13</sup>
- Homes built or significantly renovated after 1 July 1997 must have a 240-volt (hard-wired) smoke alarm<sup>14</sup>
- Buildings submitted for approval after 1 May 2014 must have hard-wired and interconnected smoke alarms (meaning that if one smoke detector is activated, all interconnected smoke detectors are activated).<sup>15</sup>

#### 2.1.2. National Code Requirements

Under the Australian Constitution, governance of the built environment is the responsibility of State and Territory governments. However, under the Inter-government Agreement (IGA) signed by the Commonwealth, States and Territories<sup>16</sup>, Queensland agreed to accept the National Construction Code (NCC) as the minimum mandatory national technical standard for the design and construction of buildings. The NCC was established to set out the minimum standards necessary to efficiently address

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<sup>12</sup> See section 104RB of the *Fire and Emergency Services Act 1990* (Qld).

<sup>13</sup> Queensland Government, [Smoke alarms](#), 25 February 2015.

<sup>14</sup> Queensland Government, [Smoke alarms](#), 25 February 2015.

<sup>15</sup> Queensland Government, [Smoke alarms](#), 25 February 2015; Department of Community Safety, Queensland Fire and Rescue Service, [Information Sheet: Smoke Alarm Legislation](#), 2015, p 1.

<sup>16</sup> The original Inter-Government Agreement was signed on 1 March 1994 with the most recent IGA being signed with effect from 30 April 2012. For additional background information, see also the Housing Industry Association, 2015 Bill Submission No 6, Attachment, p 5 and the Australian Building Codes Board (ABCB), Submission No. 21 to the Senate Inquiry, pp 1-5.)

issues of safety and health, amenity and sustainability in the design, construction and performance of buildings. New domestic dwellings in Queensland are required to comply with the NCC, which includes requirements for smoke alarms.<sup>17</sup> The NCC is comprised of the BCA and the Plumbing Code of Australia.<sup>18</sup> The National Construction Code 2016 was adopted by state and territories on 1 May 2016 and is currently in force.<sup>19</sup>

The installation requirements for smoke alarms under the Act, adopt those set out for new buildings in the BCA. These require that, at a minimum, there be one alarm outside sleeping areas and one alarm on each level of the home.<sup>20</sup> Further details are set out in **Appendix C**.

## 2.2 Proposal under the 2015 Bill

Among other things, the 2015 Bill would ensure that, from 1 July 2016 (subject to the transitional requirements set out in Clause 9 of the 2015 Bill discussed further below):

- A smoke alarm must be installed on or near the ceiling:
  - (a) for each storey of a domestic dwelling containing a bedroom:
    - (i) between each part of the dwelling containing a bedroom and the rest of the dwelling
    - (ii) in each hallway that has an entrance to a bedroom
  - (b) for each storey of the domestic dwelling that does not contain a bedroom – in an exit path for the storey.
- Each smoke alarm must:
  - (a) Be a photoelectric smoke alarm
  - (b) Comply with AS 3786-1993
  - (c) Have been manufactured less than 10 years before the smoke alarm is installed
  - (d) Operate when tested.
- Each smoke alarm must be:
  - (a) A 240V smoke alarm that is hard-wired to the domestic dwelling's electricity supply; or
  - (b) Powered by a battery that is:
    - (i) A 9V lithium battery
    - (ii) Manufactured to have a battery life of at least 10 years.

The 2015 Bill also includes transitional provisions which provide that:

- In the event that a domestic dwelling has smoke alarms in compliance with the FES Act prior to the amendments proposed in the 2015 Bill then the owner has three years to replace the existing smoke alarms with those that comply with the requirements in the 2015 Bill<sup>21</sup>

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<sup>17</sup> Australian Building Codes Board, [NCC: About](#), (accessed on 19 February 2016).

<sup>18</sup> Australian Building Codes Board, [NCC: About](#), (accessed on 19 February 2016).

<sup>19</sup> Australian Building Codes Board, [NCC 2016, Complete Series](#), (accessed on 19 February 2016).

<sup>20</sup> Department of Community Safety, Queensland Fire and Rescue Service, [Information Sheet: Smoke Alarm Legislation](#), 2015, p 1.

<sup>21</sup> See proposed new section 206 in Clause 9 of the Bill.

- In the event that a domestic dwelling does not have smoke alarms then the owner must install smoke alarms compliant with the requirements in the 2015 Bill before the first of the following:
  - (a) Any transfer date for the dwelling
  - (b) The end date of any existing tenancy or rooming accommodation agreement
  - (c) The start date of any new tenancy or rooming accommodation agreement
  - (d) Within 1 year of the commencement of the 2015 Bill provisions.<sup>22</sup>

A staged transition process was a recommendation of the Coroner in the Slacks Creek House Fire Coronial Inquest.<sup>23</sup> While the Coroner's proposal is not exactly the same as that set out in the 2015 Bill, it is along similar lines. The proposal set out in the 2015 Bill is supported by REIQ in its submission on the 2015 Bill.<sup>24</sup> A number of witnesses, for example Mr Louie Naumovski of the Logan Fire Support Network, at the 2015 Bill Public Hearing also confirmed their support for the staged transition process as outlined in the 2015 Bill.<sup>25</sup>

### **2.3 Proposal under the 2016 Bill**

To fully understand the intent of the 2016 Bill, it must be read in conjunction with the proposed new draft Building Fire Safety (Domestic Smoke Alarms) Legislation Amendment Regulation (No. 1) 2016 (2016 Draft Regulation). Together the 2016 Bill and 2016 Draft Regulation propose to:

- require photoelectric and interconnected smoke alarms in all residential premises in Queensland by 31 December 2026
- which must be powered by an enduring power source either hard-wired or by a 10 year lithium battery
- in specified locations dependent on whether they are new or existing residences (discussed further below)
- with a staged transition of either 1 year, 5 years or 10 years as follows:
  - after 1 year all new dwellings or substantially renovated existing dwellings must comply
  - after 5 years all dwellings that are sold or leased must comply
  - within 5 years all government-owned housing must comply
  - within 10 years all domestic dwellings must comply.

The location of smoke alarms in domestic dwellings is more specifically set out in the proposed 2016 Draft Regulation which proposes to amend:

- (1) the Building Fire Safety Regulation 2008 for existing domestic dwellings (Part 2 of the 2016 Draft Regulation)
- (2) the Building Regulation 2006 for new dwellings (Part 3 of the 2016 Draft Regulation).

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<sup>22</sup> See proposed new section 207 in Clause 9 of the Bill.

<sup>23</sup> Findings of the Inquest in the Slacks Creek House Fire by James McDougall, Office of the State Coroner, 28 November 2014, pp 29-30.

<sup>24</sup> REIQ, 2015 Bill Submission No. 2, p 2.

<sup>25</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 14.

### ***Existing domestic dwellings***

For existing domestic dwellings, the amendments set out in Part 2 of the 2016 Draft Regulation apply to amend the Building Fire Safety Regulation 2008 as follows:

- A smoke alarm must be installed on or near the ceiling:
  - (a) for each storey of a domestic dwelling containing one or more bedrooms:
    - (i) in each bedroom
    - (ii) if 1 or more bedrooms are connected by door to a hallway – in the hallway
    - (iii) if a bedroom is not connected by door to a hallway – in a part of the storey that is between the bedroom and the rest of the dwelling.
  - (b) for each storey of the domestic dwelling that does not contain a bedroom:
    - (i) if the storey is connected by a stairway to another storey of the dwelling or an exit to outside the building – inside the building in the area of the stairway; or
    - (ii) otherwise – inside the building, on a path of travel from any place in the storey to an exit to outside the building.
- Each smoke alarm must:
  - (a) comply with AS 3786-2014
  - (b) contain a photoelectric sensor
  - (c) not also contain an ionisation sensor.<sup>26</sup>
- Each smoke alarm must be powered by:
  - (a) being hardwired to the domestic dwelling's electricity supply; or
  - (b) a battery that is:
    - (i) built into the smoke alarm in a way that prevents the battery being removed
    - (ii) manufactured to power the smoke alarm for at least 10 years without being recharged.<sup>27</sup>

### ***New domestic dwellings***

For domestic dwellings constructed under a building development approval (i.e. new domestic dwellings) or where part of an existing domestic dwelling is altered under a building development approval (i.e. renovations of domestic dwellings which require building development approval), the amendments set out in Part 3 of the 2016 Draft Regulation apply to amend the Building Regulation 2006:

- A smoke alarm must be installed on or near the ceiling in each bedroom of the dwelling or part of the dwelling
- Each smoke alarm must:
  - (a) comply with AS 3786-2014
  - (b) contain a photoelectric sensor

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<sup>26</sup> See proposed new section 55E in Clause 4 of the 2016 Draft Regulation.

<sup>27</sup> See proposed new section 55D in Clause 4 of the 2016 Draft Regulation.

- (c) not also contain an ionisation sensor
- (d) be hardwired to the domestic dwelling's electricity supply
- (e) be interconnected to every other smoke alarm installed in the dwelling or part of the dwelling.<sup>28</sup>

### **2.3.1. Situation in Other Jurisdictions**

#### *Australian Jurisdictions*

Each state and territory in Australia has different arrangements regarding smoke alarms.

The Senate Report identifies that the current residential smoke alarm regulatory scheme in Australia is "complex".<sup>29</sup> The smoke alarm regulations that apply to a dwelling vary depending on when the property was constructed, in which state or territory it is located and how the building is classified under the NCC.<sup>30</sup> A detailed summary of the current requirements for smoke alarms is set out in Appendix 4 of the Senate Report.<sup>31</sup>

Currently, the Northern Territory is the only jurisdiction to specify the use of photoelectric smoke alarms in its legislation for existing residential buildings.<sup>32</sup> In November 2011, the Northern Territory enacted Australia's first residential photoelectric legislation mandating the use of photoelectric smoke alarms in all new Northern Territory homes.<sup>33</sup>

In regard to the situation in NSW and Victoria, the Explanatory Notes for the 2015 Bill provide as follows:

*Each state and territory have varied arrangements regarding smoke alarms. In New South Wales, the legislation provides for a minimum level of protection however Fire and Rescue NSW (FRNSW) recommends that a higher level of protection be considered such as a hard wired, interconnected smoke alarm system containing a combination of photoelectric and ionisation type detectors. FRNSW recommends where possible that photoelectric smoke alarms are installed in paths of travel between sleeping areas and exits to the open air or to common corridors.*

*In Victoria, since 1 August 1997, the legislation stipulates that smoke alarms (complying with AS 3786) must be installed in all homes, units, flats and townhouses. Residential homes constructed before 1 August 1997 require a 9 volt battery powered smoke alarm. Residential homes constructed after 1 August 1997 must have smoke alarms connected to 240 volt mains power. In addition a backup battery must be installed in the smoke alarm.*

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<sup>28</sup> See proposed new section 13AB in Clause 6 of the 2016 Regulation.

<sup>29</sup> Commonwealth Senate Legal and Constitutional Affairs Committee, *The Use of Smoke Alarms to Prevent Smoke and Fire-related Deaths*, 20 April 2016, p 3.

<sup>30</sup> Commonwealth Senate Legal and Constitutional Affairs Committee, *The Use of Smoke Alarms to Prevent Smoke and Fire-related Deaths*, 20 April 2016, p 3.

<sup>31</sup> Commonwealth Senate Legal and Constitutional Affairs Committee, *The Use of Smoke Alarms to Prevent Smoke and Fire-related Deaths*, 20 April 2016, p 8 and Appendix 4.

<sup>32</sup> Fire and Safety Technologies Pty Ltd, 2015 Bill Submission No. 10, p 13.

<sup>33</sup> Northern Territory Government Fact Sheet on Smoke Alarms, and Explanatory Notes for the 2015 Bill, p 2.

*The Metropolitan Fire Brigade (Victoria) website provides the following advice:*

*All fire services in Australia recommend photoelectric smoke alarms when installing or replacing existing smoke alarms. Smoke alarms need to be maintained in accordance with the manufacturers specifications.<sup>34</sup>*

### **United States**

There has been a push towards photoelectric-only legislation since 2010 in the United States. In June 2010 the City of Albany, California enacted photoelectric-only legislation after a unanimous decision by the Albany City Council. Several other Californian and Ohioan cities enacted similar legislation shortly afterwards.<sup>35</sup> On 1 January 2016, Ohio became the largest US state to enact photoelectric-only legislation.<sup>36</sup>

### **2.4 Key Issues arising under both Bills**

The committee identified the following key issues arising out the 2015 Bill and the 2016 Bill:

1. Whether smoke alarms should be prescribed to be photoelectric or ionisation smoke alarms?
2. Whether the smoke alarms should be interconnected?
3. Whether smoke alarms need to comply with an Australian Standard, and, if so, which Australian Standard?
4. Whether smoke alarms should be specified to be hard-wired or powered by 9v battery?
5. Where smoke alarms should be located?
6. What is the timeframe for implementation of the recommended changes?
7. Various issues raised by real property industry representatives.

Each of the above seven issues is discussed in turn below.

#### **2.4.1. Type of Smoke Alarm: Photoelectric vs. Ionisation**

One of the key issues that arises under both Bills is whether the law should prescribe that photoelectric smoke alarms, rather than ionisation smoke alarms, must be installed from the relevant date as prescribed under each Bill.

Each of these two types of smoke alarms are described in Part 3.7.2 of the BCA (NCC 2015) as follows:

- **Photoelectric smoke alarms:** This type of smoke alarm uses a light source and photocell. As the smoke enters the detection chamber it interferes with the light beam which in turn causes the alarm to sound.
- **Ionisation smoke alarms:** A small amount of radioactive material is used to create an electrical current which travels through ionised air. When smoke enters the detection chamber it impedes the flow of current and causes the alarm to sound.<sup>37</sup>

Based on the submissions made in respect of the Bills, the main schools of thought appear to be that:

1. only photoelectric smoke alarms should be permitted (as per both Bills)

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<sup>34</sup> *Explanatory Notes for the 2015 Bill*, Fire and Emergency Services (Smoke Alarms) Amendment Bill 2015, p 2.

<sup>35</sup> Albany, California Ordinance 2010-06 Photoelectric Specific Requirements, The Albany City Council, Albany, California, USA.

<sup>36</sup> World Fire Safety Foundation, 2015 Bill Submission No. 7, p 3.

<sup>37</sup> NCC 2015 Building Code of Australia, Volume Two, pp 264-5.



2. a hybrid approach of photoelectric smoke alarms together with heat type alarms should be permitted
3. a hybrid approach of photoelectric smoke alarms together with ionisation smoke alarms should be permitted; or
4. the current requirements of permitting either ionisation or photoelectric smoke alarms, in line with the NCC, should be retained.

Each of these approaches is discussed below.

#### *Photoelectric smoke alarms only*

A majority of the submissions supported the provisions in both Bills that only photoelectric smoke alarms should be permitted. For example, in its submission on the 2016 Bill, the United Firefighters Union of Australia (UFUQ) supported photoelectric over ionisation smoke alarms:

*Currently, in Queensland, the smoke alarm market is dominated by two technical models, photoelectric and ionisation. Photoelectric smoke alarms are designed to detect and respond to the early, smouldering stage of a fire, as opposed to ionisation alarms which are only suitable for detecting fast flaming flares.*

*A typical residential, night-time fire tends to begin in a smouldering stage, where the smoke produced is visible, but cooler and less dense than the smoke produced from a flaming fire. Ionisation alarms take significantly longer, even up to an hour more, to detect fire at the smouldering stage. By the time a fire of this type is in the flaming stage, the level of smoke in the air makes escape considerably more difficult.*

*In addition to this, ionisation devices are five times more likely to give off a false alarm. In practice, this means that residents are significantly more likely to disconnect their device to avoid the annoyance and inconvenience of a false alarm. This is clearly contrary to the public interest because it leaves residents with no protection whatsoever against night-time fires.*

It is the UFUQ's position that photoelectric smoke alarms are superior for the early detection of residential fires.<sup>38</sup>

In this context, the committee notes the story on smoke alarms called "[The Alarming Truth](#)" prepared by the Channel 9 program 60 Minutes which was submitted to the federal Senate Inquiry into smoke alarms.<sup>39</sup> This story featured the Slacks Creek House Fire and involved a test of photoelectric and ionisation smoke alarms overseen by Mr David Isaac of Fire & Safety Technologies Pty Ltd (a witness at the 2015 Bill hearing). During the simulated fire test, the first and only smoke alarm to respond was a photoelectric smoke alarm.

Additionally, the REIQ, in its submission on the 2016 Bill, commented that:

*There is a large volume of evidence that photoelectric smoke alarms offer the best detection across a range of fires. Our research also indicates they will enhance protection against fire and reduce the risk of injury and fatality in the event of fire.<sup>40</sup>*

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<sup>38</sup> United Firefighters Union of Australia, 2016 Bill Submission No. 8, p 3.

<sup>39</sup> Senate Inquiry into Smoke Alarms, Submission No. 29.

<sup>40</sup> REIQ, 2016 Bill Submission No. 18, p 2.

As a further example, Brooks, a provider of domestic and residential alarm systems, commercial and industrial fire systems stated:

*There is general consensus that if you are putting in a smoke alarm in to meet the minimum regulatory requirement then it must be photoelectric. This is the position of FPAA, NFIA and ACA. The Commissioner of Fire and Rescue NSW is on record in the senate enquiry and in the media as seeking to ban ionisation devices altogether.*<sup>41</sup>

Additionally, the Logan House Fire Support Network which made submissions on both the 2015 Bill and the 2016 Bill, supports the outright ban on ionisation smoke alarm products:

*We as a society need to keep up with technology. Photoelectric smoke alarm technology has proven that it will work over a broader range of fires. Since 1972 our furnishings have changed, time until flashover (when a fire has totally involved a building) has reduced from a 20 minutes average to a 2.5 minutes average. It is time to update the same way we updated from black and white Televisions, video players to blu-ray players, technology and our environment changes, it's time for the talk to stop, action needs to be taken before more tragedies occur.*<sup>42</sup>

*Photoelectric Smoke Alarms will give you ample warning on a broader range of fires within the home and time to escape. The evidence is there; Ionisation Alarms are ornaments on the ceiling that tell you when your toast is ready. Photoelectric Smoke Alarms will notify you if there is a fire hazard in your home.*<sup>43</sup>

The World Fire Safety Foundation highlighted that this is not a new discovery:

*In September 1980, the International Association of Fire Chiefs warned lives were at risk due to the ionisation type of smoke alarms liability to detect visible smoke in the early, smouldering stage of most fatal fires. Tragically their warning went unheeded and thousands of people have died in homes supposedly protected with ionisation alarms. The WFSF has been working on this since March 2000.*<sup>44</sup>

The World Fire Safety Foundation also lists the following issues which arise with ionisation alarms:

- they have a significantly high rate of failure to activate
- they have a significantly high false alarm and disconnection rate
- they are unsafe for firefighters
- disposal is an environmental issue as all ionisation alarms contain radioactive material.<sup>45</sup>

A number of submissions also referred to ionisation alarms as not being fit for their purpose because they do not activate to smoke from a smouldering fire in a timely manner due to their activation at

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<sup>41</sup> Brooks, 2015 Bill Submission No. 8, p 1. Smoke Alarm Solutions (2015 Bill Submission No, 9, pp 1-2) also supports photoelectric alarms over ionisation alarms. See also, Queensland Family and Child Commission, 2016 Bill Submission No. 1, p 2; Plumbers Union Queensland, 2016 Bill Submission, p 1; Safety Watch Australia Pty Ltd, 2016 Bill Submission No. 4, p 1; United Firefighters Union of Australia (Qld), 2016 Bill Submission, p 1 and Smoke Alarms Solutions, 2016 Bill Submission No. 10, p 2.

<sup>42</sup> Logan House Fire Support Network, 2015 Bill Submission No. 5, p 5.

<sup>43</sup> Logan House Fire Support Network, 2015 Bill Submission No. 5, p 3. See also, Logan House Fire Support Network, 2016 Bill Submission No. 11, p 3.

<sup>44</sup> World Fire Safety Foundation, 2015 Bill Submission No. 7, p 3.

<sup>45</sup> World Fire Safety Foundation, 2015 Bill Submission No. 7, pp 11-12.

too high smoke obscuration levels. In this context, Fire and Safety Technologies Pty Limited commented as follows:

*There are two principle types of smoke alarm technology, ionisation and photoelectric. Ionisation smoke alarms predominantly detect the presence of extremely small sub-micron sized particles of combustion (invisible to the human eye) whilst photoelectric smoke alarms predominantly detect visible smoke.*

*Both types are tested to separate and distinct pass criteria in the Australian Standard. The public and most of the fire industry are not aware that in Australian Standard 2362.17 – ‘Smoke sensitivity testing’ (a required test for approval to AS 3786), the typical photoelectric smoke alarm activates at around 8% to 12% light obscuration per lineal metre. These tests have been conducted by the CSIRO and formerly Scientific Services Laboratories (SSL) since 1993. What is not readily known is that under the same AS 2362.17 smoke sensitivity test, ionisation alarms are not required to meet light obscuration (visible smoke) pass criteria; they are measured on sub-micron particle density pass criteria. This is designated at a maximum of 0.6 MIC (Measuring Ionisation Chamber) level. When typical ionisation alarms are tested at the CSIRO and activate within the approved MIC-X range, the actual light obscuration level measured and recorded in the test room at the time of alarm activation is typically in the range of 48% to 62% light obscuration per metre (up to 5 times the maximum safe level allowed for photoelectric smoke alarms under the light obscuration pass criteria). This very high level is recorded on the test certificate of every manufacturer’s ionisation smoke alarms. To put those obscuration levels in perspective, the average person would have difficulty in seeing and breathing in a room at 12% obscuration per metre and would be running for the exit. It can be reasonably argued that smoke alarms that do not activate till up to four times the safe smoke obscuration level set for photoelectric type smoke alarms are NOT fit for purpose.<sup>46</sup>*

Mr Keith Golinski, father of Mr. Matt Golinski, the sole survivor from the horrific Tewanin House Fire made the following observation in his submission on the 2016 Bill:

*One [photoelectric] alarm now I believe is better than 7 ionisations now and better than 7 [photoelectric alarms] in ten years time.<sup>47</sup>*

#### ***Hybrid approach of photoelectric alarms together with heat alarms***

Currently, under the FES Act, an owner of a sole-occupancy unit complies with s 104RB if the owner installs a heat alarm or an alarm acknowledgement facility in accordance with specification E 2.2a, clause 3(b) of the BCA.<sup>48</sup> This section of the BCA applies in kitchens and other areas where the use of the area is likely to result in smoke alarms causing spurious signals.

In the submissions on the 2015 Bill, there was some support for heat type alarms combined with photoelectric alarms.<sup>49</sup> However, there did not appear to be support for heat alarms on their own. In fact, heat alarms were declared as “not acceptable” by Smoke Alarm Solutions.<sup>50</sup>

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<sup>46</sup> Fire and Safety Technologies Pty Ltd, 2015 Bill Submission No. 10, pp 2-4.

<sup>47</sup> Keith Golinski, 2016 Bill Submission No. 15, p 1.

<sup>48</sup> *Fire and Emergency Services Act 1990* (Qld), s 104RB (3).

<sup>49</sup> Fire and Safety Technologies Pty Ltd, 2015 Bill Submission No. 10, pp 2-4.

<sup>50</sup> Smoke Alarm Solutions, 2015 Bill Submission No. 9, p 2.

### *Hybrid approach of photoelectric together with ionisation type smoke alarms*

A number of submitters supported a hybrid approach involving a combination of photoelectric and ionisation type smoke alarms. It is noted that this is the approach also recommended in the Senate Report (see Recommendation 3 of the Senate Report).

In this context, the submission on the 2015 Bill from Masters Electricians Australia is instructive as it does not recommend mandating the use of one specific alarm type in the 2015 Bill:

*We recommend a combination of both photoelectric and ionisation smoke alarms to ensure thorough fire detection in a home. Photoelectric alarms can detect visible particles of combustion, for example, smouldering cigarette smoke, and respond to a wide range of fires. They are particularly responsive to smouldering fires and the dense smoke given off by foam filled furnishings or overheated PVC wiring. Ionisation smoke alarms detect invisible particles of combustion, for example from burning toast, and activate more quickly for fast, flaming fires with less visible smoke. Each alarm type has different features suited to the fire risks in particular areas of a home and only with a combination of photoelectric and ionisation alarms will residents have the highest level of fire protection.*

*For these reasons, legislating for the installation of both alarm types, or a combination alarm that offers both kinds of detection, is the preferred approach. This would ensure a higher level of protection for residents in domestic dwellings in line with the recommendation of Fire and Rescue NSW.<sup>51</sup>*

Orr Partners, in its written submission on the 2015 Bill, also did not support the outright ban on the sale of ionisation based products:

*Much has been made of the debate between ionization and photoelectric smoke alarm technology. There have been calls for outright bans on the sale of ionization based products. Such calls whilst well-meaning fail to understand the issues and oversimplify the problem. Do they suggest simply changing from one technology to another will stop fatalities in residential accommodation, it will not. What do we tell a community when having changed technology we still have residential fatalities. If we present this simplistic message are we in danger of providing a false sense of security to a population that has no understanding of the issues involved. If I change the device that's all I need to do, then issues such as good housekeeping, fire prevention and understanding of the nature of fire and planning to escape will be lost or seen as unnecessary*

*Residential fire protection is multifaceted if the outcomes we all aspire to are to be achieved; detection technology is only one aspect. Ionization smoke alarms do work, they detect the byproducts of a fire be it at a flaming stage. Over the years they have been used and they have reduced the death toll from fire in residential and domestic accommodation. So what is the issue today that makes this technology inappropriate?*

*Times have changed, our homes are now filled with synthetic materials which burn hotter and faster than natural materials, melt and provide a much greater heat*

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<sup>51</sup> Master Electricians Australia, 2015 Bill Submission no. 2, pp 1-2.

*release. They also give off toxic and debilitating fumes. The impact of these factors, particularly with detection at the flaming stage, results in a reduced available safe evacuation time. Today estimated at less than 3 minutes from first flame. Australian Standard AS1670.1 mandates the installation of photoelectric detection in sleeping areas and paths of travel to an exit, it did not ban ionization detectors. This was for two fundamental reasons:*

- 1. The most likely design fire in a sleeping area is a smouldering fire. As photoelectric detection is more suited to this type of fire development, it is the technology of choice.*
- 2. The issue with the egress paths is one of visibility. Even when fire development is adequately detected if the exits are not clearly visible they are unlikely to be used, reducing the evacuation options and potentially trapping the occupant. As the photoelectric technology is based on obscuration levels i.e. a developing lack of visibility, it again is the most appropriate detection technology.*

*The issue is therefore not whether one technology is faulty and another not, the issue is one of fitness for purpose. In residential accommodation today we do not see single fuel type fire, residential fire involve multiple fuel types and therefore, as a generalization, residential fires will always contain elements of the visible smoke suited to photoelectric technology. As such photoelectric smoke alarms cover a greater range of residential fires and should be the technology of first choice. If the minimum is being installed to meet the regulatory requirement that minimum should be photoelectric. This is not to say ionization smoke alarms could not be used to supplement the regulatory minimum where appropriate.*

*Mandating the most fit for purpose technology is however only one element of residential fire safety. Consideration of installation location to avoid nuisance alarms and therefore possible disablement, installation covering all levels of the building, interconnection of all devices to simultaneously raise the alarm throughout the residence, adequate sound level to awake a sleeping occupant and an education program for residents to understand the nature of fire and how fast a structural fire can develop. The tragic Slacks Creek house fire is an example of a failure in each of these elements, let us not have another one.<sup>52</sup>*

Similarly, Quickcheck submitted that:

*The optimum installation is not photoelectric alarms alone, as different types of smoke alarms are more effective in different types of fires. False activation occurs with both photoelectric smoke alarms and ionisation smoke alarms. ... In our professional opinion, all residential properties should be fitted with at least one photoelectric and one ionisation smoke alarm on each level. ....We believe that there are inherent risks involved with government endorsing one type of smoke alarm over another.<sup>53</sup>*

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<sup>52</sup> Orr Partners, 2015 Bill Submission No. 4, p 1.

<sup>53</sup> Quickcheck, 2016 Bill Submission No 5, pp 1-3.

However during the 2015 Bill Public Hearing, the Committee heard evidence from Mr Isaac of Fire and Safety Technologies Pty Ltd that the problem with this hybrid approach involving photoelectric and ionisation smoke alarms is that in the event of repeated false alarms occurring, as is often the case with ionisation smoke alarms, then the whole alarm is disconnected which renders the product useless and the residents unprotected.<sup>54</sup>

#### *Retention of the current requirements in line with the NCC*

There was one submission from the Housing Industry Association (HIA) in respect of the 2015 Bill that recommended that the current requirements, at least in relation to siting requirements and restrictions on the types of smoke detectors, be maintained.<sup>55</sup> The HIA also attached a copy of its submission to the Senate Inquiry and an Information Sheet that it has prepared for its members on “Smoke Alarm Requirements”. The HIA is Australia’s only national industry association representing the interests of the residential building industry, including new home builders, renovators, trade contractors, land developers, related building professionals, and suppliers and manufacturers of building products.<sup>56</sup>

The main thrust of the HIA submission is that instead of the Queensland Government developing its own provisions, it recommended that a more consistent approach be adopted by referencing part 3.7.2 of the BCA in the 2015 Bill. While the HIA supported the objective of the 2015 Bill in relation to the retrofitting of established homes with hard-wired smoke detectors, it is concerned that:

*...the [2015] Bill has the potential to confuse the electricians installing the alarms and their customers by introducing siting requirements and restrictions on types of detectors that do not align with the National Construction Code (NCC).<sup>57</sup>*

The HIA further explains:

*The NCC provides a national and consistent approach to smoke detectors in Volume 2 of the Building Code of Australia, (BCA). The current mandatory requirements for smoke alarms are specified in part 3.7.2 of the BCA. The BCA also calls up the Australia Standard AS 3786 “Smoke Alarms”, which also provides an avenue to meet compliance under part 3.7.2 of the BCA.*

*These NCC mandatory requirements, other [than] the interconnection of smoke alarms, are an appropriate measure to be adopted in the [2015] Bill for the established housing market. The NCC has resources to undertake thorough research of issues surrounding the selection and installation of alarms and the capacity to update the NCC nationally.*

*As the NCC evolves there is potential for its requirements to diverge from those contained in the [2015] Bill, leading to confusion in the industry.*

*HIA would recommend to the “Legal Affairs and Community Safety Committee” the maintenance of a consistent approach by adopting by referencing part 3.7.2 of the BCA in the [2015] Bill rather than develop its own provisions.<sup>58</sup>*

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<sup>54</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 4.

<sup>55</sup> Housing Industry Association, 2015 Bill Submission No. 6, p 1

<sup>56</sup> Housing Industry Association, 2015 Bill Submission No. 6, Attachment, p 3.

<sup>57</sup> Housing Industry Association, 2015 Bill Submission No. 6, p 1.

<sup>58</sup> Housing Industry Association, 2015 Bill Submission No. 6, p 1.

### **2.4.2. Interconnected or not?**

#### **Current Requirements**

Currently in Queensland, existing homes do not require that smoke alarms be interconnected. However, since 2014, interconnectivity of smoke alarms has been mandated for new homes.<sup>59</sup> Additionally it is noted that the QFES recommends on its website that “*all smoke alarms should be interconnected*”.<sup>60</sup>

#### **2015 Bill Requirements**

The 2015 Bill does not require that smoke alarms be interconnected in existing residential dwellings. In this regard, Mr Bleijie, in his Introductory Speech noted that the QFES recommended that smoke alarms should be interconnected and provided the following explanation for why the 2015 Bill does not include the requirement that smoke alarms be interconnected:

*I support the advice and believe that the first priority is getting all homes protected by photoelectric alarms. A process of further encouraging interconnectivity between alarms may be something worth considering in future years.*<sup>61</sup>

#### **2016 Bill Requirements**

The 2016 Bill, on the other hand, does require that smoke alarms be interconnected in existing residential dwellings. In his Introductory Speech, the Hon Bill Byrne MP noted:

*In addition to the installation of photoelectric smoke alarms and to give families the best chance to escape their burning home, smoke alarms need to be interconnected and either hardwired or powered by a 10-year lithium battery. Smoke alarms can be installed as independent, standalone units, or interconnected. Interconnection involves the connection of all alarms so that when one is triggered, all will be activated. Interconnection of smoke alarms ensures residents are alerted even when the fire has commenced in another area of the building. This ensures maximum time is provided for escape before the fire and smoke spread within the dwelling. Interconnection of smoke alarms may be achieved by hardwiring into the building’s electrical system, or interconnected wirelessly through the use of battery operated, wireless devices. A University of Victoria study of house fire fatalities between 1998 and 2006 found that it is possible to dramatically reduce fatalities in house fires by enhancing smoke alarm provisions. It was found that installing smoke alarms in every room would reduce the fatality rate by 17 to 30 per cent. However, this rate would increase to 50 per cent if the smoke alarms were interconnected. This is particularly important if people are sleeping with doors shut or for the elderly or children who may sleep through an alarm sounding at a different location in the residence. Interconnection involves the connection of all alarms to each other so that when one is triggered, all will sound the alert. That means that if a fire occurs in one part of the home, no*

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<sup>59</sup> Record of Proceedings (Hansard), 2 December 2015, p 3079.

<sup>60</sup> See QFES website and also Record of Proceedings (Hansard), 2 December 2015, p 3079.

<sup>61</sup> Record of Proceedings (Hansard), 2 December 2015, p 3079.

*matter what the family is doing at the time, these measures will give families a greater chance of escaping their burning home.*<sup>62</sup>

### **Discussion**

The Coroner recommended in his findings from the Inquest in the Slacks Creek Fire that smoke alarms “be interconnected by hard wiring where possible and by wireless signal where hard wiring is impractical”.<sup>63</sup>

Further, at the 2015 Public Hearing, Mr Isaac of Fire and Safety Technologies Pty Ltd commented in relation to the 2016 Bill which had been introduced the day before the 2015 Public Hearing:

*So there is a separate bill which has come out which basically endorses what this bill does but takes it one stage further with interconnection, and I would endorse that. The parties, particularly Labor and Liberal, need to work in a bipartisan manner to achieve whatever means we can to get this change through to the smoke alarm legislation.*<sup>64</sup>

A number of submitters were supportive of the proposal in the 2016 Bill to mandate that all smoke alarms within a domestic dwelling be interconnected.<sup>65</sup> Additionally, a number of witnesses referred to the research in this area which points to the importance of interconnectivity in terms of saving lives. For example, at the 2016 Bill Public Briefing, Assistant Commissioner Reid from the QFES explained:

*The issue of interconnection is an important one. The way you get woken up by a smoke alarm is all about the sound level. A smoke alarm will give you 85 decibels within three metres of the smoke alarm. Away from the smoke alarm, particularly in a bedroom with a closed door, you might get as little as 36 decibels at the bed head. It is well known and is documented throughout the world that 75 decibels at the bed head is a requirement to make the average person wake up out of sleep.*

*The idea of putting them in bedrooms is, firstly, to make sure that if there is a fire in a bedroom that it goes off quicker than it would in a hallway. Secondly, the interconnection with the ones in the hallway is all about providing 75 decibels at the bed head.*

*There was a Victorian university study done some years ago which indicated that up to 50 per cent of deaths that happened in a 10-year period of that study could have been prevented if smoke alarms were in every room and were interconnected. There is a significant possibility of life saving by interconnecting them and giving them a sound throughout the dwelling.*<sup>66</sup>

Assistant Commissioner Reid’s comments were endorsed by the UFUQ in its submission on the 2016 Bill.<sup>67</sup>

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<sup>62</sup> Record of Proceedings (Hansard), 23 February 2016, p 398.

<sup>63</sup> Findings of the Inquest in the Slacks Creek House Fire by James McDougall, Office of the State Coroner, 28 November 2014, p 30.

<sup>64</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 2.

<sup>65</sup> For example, see Plumbers Union Queensland, 2016 Bill Submission No 2, p 1; Masters Electricians Australia, 2016 Bill Submission No. 3, p 1.

<sup>66</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 13.

<sup>67</sup> United Firefighters Union Queensland, 2016 Bill Submission No. 8, p 3.



Mr Isaac of Fire and Safety Technologies Pty Limited also referred to this research at the 2015 Bill Public Hearing:

*We also know from research done by the Victorian University of Technology that the waking effectiveness of smoking alarms is entirely determined by the ability to interconnect or hear the alarm at the bed head level and so we strongly advocate interconnection.*<sup>68</sup>

At the 2015 Bill Public Hearing, Mr Naumovski the founder of the Logan Fire Support Network stated:

*Whether it be interconnected or not, we are not fazed by that as long as they are in all rooms. ... Interconnectivity is debatable for us. Certainly eventually, absolutely, but cost-wise I think that is going to be the issue right now with interconnectivity.*<sup>69</sup>

However, Assistant Commissioner Reid at the 2016 Bill Public Briefing indicated that the cost issues arising from interconnecting smoke alarms have somewhat been alleviated by the advent of wireless interconnection technology:

*The interconnection is just a single wire that they run. The other option is what was spoken about earlier. That is the wireless interconnection. There are devices available now that retail at around \$130 each. They can be put in by the individual. They are placed on the ceiling and they wirelessly interconnect with the others.*

*In very rough terms, they are the same sort of price. The difference with the wireless ones is that the home owner can actually do it without an electrician and without having to get into the ceiling space which brings with it other issues. It allows for market forces to drive those costs down over time.*<sup>70</sup>

Also at the 2016 Bill Public Briefing, Assistant Commissioner Reid in response to questions from the Chair agreed with the importance of having alarms interconnected:

**CHAIR:** *It is my understanding that most fires start outside bedrooms and that they start in kitchens followed by lounge rooms.*

**Assistant Commissioner Reid:** *Correct.*

**CHAIR:** *Hence, that is the importance of having interconnectability. Where fires start in those locations it spontaneously notifies residents in areas where they are asleep.*

**Assistant Commissioner Reid:** *That is correct. Half of fires start in kitchens. The majority of fires start outside of bedrooms.*<sup>71</sup>

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<sup>68</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 2.

<sup>69</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 13.

<sup>70</sup> Transcript of Proceedings (Hansard), Public Briefing, Legal Affairs and Community Safety Committee, 16 March 2016, p 4.

<sup>71</sup> Transcript of Proceedings (Hansard), Public Briefing, Legal Affairs and Community Safety Committee, 16 March 2016, p 3.

Additionally, in its submission on the 2016 Bill, the Master Electricians Australia noted:

*There is little to no cost difference between having hard-wired smoke alarms installed and interconnected compared with battery only smoke alarms installed and interconnected.<sup>72</sup>*

The difficulties involved in retrofitting existing homes with interconnected smoke alarms were explained by Safety Watch Australia in its submission on the 2016 Bill:

*Whilst interconnection may seem an ideal solution on paper and is achievable in new builds or major renovations, trying to retrofit older homes is going to be virtually impossible not to mention costly. The Electrical Safety Office still considers many dwellings to be electrically unsafe after the insulation debacle resulting in work place health and safety practice guidelines for working within these high risk areas of which any proposal to mandate interconnection in existing dwelling would surely place workers into this unsafe territory.*

*With new innovations in wireless interconnection between smoke alarms provides a possibility to achieve a desired outcome but at a heavy price per alarm to the stakeholders. Whilst this sounds like an easy fix, this is reasonably new technology and has yet been proven to be reliable for the life span of a smoke alarm (10 Years).*

...

*Should a smoke alarm produce a false alarm event, all ...alarms will go into alarm mode. In this circumstance the occupant must locate the individual alarm that has caused the event in order to address the problem and stop the alarms ... from sounding. It is our professional experience that the average person has neither the knowledge nor the patience to systematically go through the house to find the offending alarm and, as a consequence, may render each beeping alarm that they encounter unserviceable until they finally address the correct alarm to stop the alarming. It is often the case that batteries are removed and not replaced until the next day or perhaps not at all; in this instance if the batteries are the lithium removable types, it could be a costly exercise to replace any missing batteries. And, in the case that lithium non-removable batteries are present in the smoke alarms the smoke alarms themselves are disabled (rendered non-functional) and would need to be completely replaced. Interconnection has the ability to render a dwelling's entire smoke alarm system inoperable leaving the occupants totally unprotected.*

*It is more important to mandate the optimal number of correctly positioned working photoelectric smoke alarms in domestic dwellings (especially existing dwellings) than to legislate a requirement for all existing homes to be retro-fitted to achieve interconnection. The degree of difficulty relies on the individual design, layout and construction type of each existing dwelling and once again we need to ensure we do not create new legislation that further disables stakeholders to attain smoke alarm compliance and/or place lives at risk as stated above.<sup>73</sup>*

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<sup>72</sup> Masters Electricians Australia, 2016 Bill Submission No. 3, p 2.

<sup>73</sup> Safety Watch Australia, 2016 Bill Submission No. 4, pp 7-8.

Similar comments regarding the difficulties involved in retrospectively achieving interconnection for properties which do not have a ceiling cavity for connections to be housed were made by Smoke Alarm Solutions in its submission on the 2016 Bill.<sup>74</sup>

REIQ, in its submission on the 2016 Bill, also did not support the mandating of retrospective interconnectivity in relation to established domestic dwellings:

*Retrospective interconnectivity (both hard-wired and wireless interconnectivity) for established dwellings would create a substantial cost burden for property owners. In particular, hard-wired interconnectivity would potentially involve significant work and expense depending on the age, structure and style of the dwelling. Similarly, wireless interconnectivity would require the installation of replacement wireless smoke alarms and radio frequency units (for each alarm).*

*The REIQ supports measures to encourage owners to consider interconnectivity but it should not be obligatory for all existing dwelling alarms to be interconnected as proposed. The cost burden and inconvenience factor is too high.*<sup>75</sup>

Similarly, Quickcheck, in its submission on the 2016 Bill, was also against the idea of interconnection:

*Whilst the interconnection of smoke alarms can provide additional warning to occupants in the event of a fire, our experience has shown that if all the alarms in a dwelling are interconnected and an alarm false activates, the occupants of the dwelling immediately disable all the smoke alarms, leaving the dwelling with no working smoke alarms. ...*

*We recommend a more prudent approach to the interconnection requirements of smoke alarms. We suggest that smoke alarms be required to be interconnected only if they are more than 7 to 8 metres from the smoke alarm closest to a main exit of a dwelling and/or that one smoke alarm on each level be required to be interconnected.*<sup>76</sup>

A number of other submitters expressed similar concerns about the high likelihood of disabling of all smoke alarms in the event that all are required to be interconnected.<sup>77</sup>

### **2.4.3. Appropriate compliance standard for smoke alarms**

Both the 2015 Bill and the 2016 Bill require that the photoelectric smoke alarms must comply with a certain Australian Standard. The 2015 Bill (and the current FES Act ) refers to AS 3786-1993 and the 2016 Bill refers to AS 3786-2014. Regarding the different versions of AS 3786 used in the different Bills, Assistant Commissioner Reid explained at the 2016 Bill Public Briefing that:

*The standards are very similar. Putting the most current standard in the bill was all about keeping up with the current standard.*<sup>78</sup>

#### ***Difference between AS3786-1993 and AS3786-2014***

Upon being asked at the 2015 Bill Public Hearing about the difference between the Australian Standard 3786-1993 and 3786-2014, Mr David Isaac of Fire and Safety Technologies Pty Ltd explained:

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<sup>74</sup> Smoke Alarm Solutions, 2016 Bill Submission No. 10, p 2. See also REIQ, 2016 Bill Submission No. 13, p 3.

<sup>75</sup> REIQ, 2016 Bill Submission No. 13, p 3.

<sup>76</sup> Quickcheck, 2016 Bill Submission No. 5, p 5.

<sup>77</sup> See, for example, Lyndon Baker, 2016 Bill Submission No. 6, p 1.

<sup>78</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 16 March 2016, p 3.

*[AS] 3786-1993 was the smoke alarm standard in Australia prior to 2014. From 1993 to 2014 it had four amendments. It is the traditional smoke alarm standard that we know. I am a member of the Australian standards committee that wrote those standards. In 2014 we adopted the international standard, which was amended for Australia and published in 2014 still of the same name, AS3786-2014. It was called up in the BCA in May last year. So in 2015 the 2014 standard became part of the legislation.*

*Smoke alarms can comply with either of those two standards. Essentially, the standards are the same. The test fires that the alarm is tested to are different. The later 2014 standard uses the ISO test fires, or the European test fires, which is a series of test fires, whereas the previous version, the 1993 version, used an Australian smouldering smoke test, which used masonite as a smouldering media to check the effectiveness of the smoke alarm.<sup>79</sup>*

### *Inclusion of AS 1670.6*

A number of submitters suggested that in addition to referencing AS 3786, the relevant legislation should also reference Australian Standard 1670.6 – *Fire detection, warning, control and intercom systems – system design, installation and commissioning*.<sup>80</sup>

For example, at the 2016 Bill Public Hearing, Mr Graeme Hill from Safety Watch Australia explained:

*Our submission raises great concerns regarding the lack of clear reference to proper positioning of smoke alarms and areas to avoid so that the alarms perform to their criteria and are not degraded. I strongly urge the committee to consider the inclusion of such specifications which can be resourced within the Building Code, Australian Standard AS 1670.6, which is the domestic application of smoke alarms, and of course manufacturers' performance criteria.<sup>81</sup>*

Additionally, in its submission on the 2016 Bill, Complied Australia explained why it recommended the adoption of AS 1670.6:

*However one very important flaw in the current legislation pertaining to residential homes is the issue of specific smoke alarm placement requirements, or lack thereof.*

*The current NCC 2016 Vol. 2 fails to require that smoke alarms be installed outside of dead air spaces and away from forced air circulation and lights; these locations that will reduce the performance of the smoke alarm as designed and approved under AS3786, and in many cases based on scientific evidence, rendering the alarm useless. ...*

*Complied Australia suggest a proposal for the adoption and referencing of AS1670.6, Fire detection, warning, control and intercom systems - System design, installation and commissioning - Smoke alarms, in addition to referencing AS3786 by Fire and Emergency Services (Smoke Alarms) Amendment Bill 2015.*

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<sup>79</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 3.

<sup>80</sup> See Safety Watch Australia, 2016 Bill Submission, p 2 and Complied Australia, 2016 Bill Submission No. 12, pp 1-2.

<sup>81</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 20 April 2016, p 2.

*There are a range of requirements around the location and installation of smoke alarms that need to be considered to ensure that:*

- 1. Smoke detection is provided in egress (exit) paths so that an alarm can be sounded before smoke causes the egress path to become impassable.*
- 2. Smoke alarms are located in a position where smoke will readily reach them – away from wall corners, not inside dead air spaces and not too low when positioned on walls.*
- 3. Smoke alarms are not installed in locations where they will be subject to nuisance/false alarms (these often result in occupants disabling smoke alarms and therefore removing the protection they provide).*
- 4. Smoke alarms are located to maximise the potential that the audible alarm signal will be heard by occupants (especially in regards to wake sleeping occupants—the highest risk scenario).*
- 5. Smoke alarms are interconnected so that if one goes into alarm (sounds), all go into alarm (sound). Therefore, all occupants may be alerted to a developing fire and can escape before smoke and/or fire cause egress paths to become impassable.*

*Currently, the BCA and Queensland state legislative requirements for smoke alarms in existing residential buildings do not require all of the above to be provided. A smoke alarm is simply required to be installed. However, it is clear that without being correctly located and installed, smoke alarms will not achieve their purpose.*

*Currently the Fire and Emergency Services Act 1990 (Qld) – Section 104RB(2) references only AS3786. Complied Australia recommends that AS 1670.6 be referenced in Queensland state legislation to ensure that these important factors are implemented when installing smoke alarms.<sup>82</sup>*

#### **2.4.4. Smoke alarm specifications**

##### **2015 Bill Requirements**

The 2015 Bill provides that smoke alarms must be a 240 volt smoke alarm that is hardwired to the domestic dwelling's electricity supply or must be powered by a 9 volt lithium battery that is manufactured to have a battery life of a minimum of 10 years.

##### **2016 Bill Requirements**

The 2016 Bill requirements are similar to the 2015 Bill and provide that smoke alarms must be powered by:

- being hardwired to the domestic dwelling's electricity supply; or
- a battery that is built into the smoke alarm in a way that prevents the battery being removed and manufactured to power the smoke alarm for at least 10 years without being recharged.

The smoke alarms required under the 2016 Bill must have been manufactured less than 10 years before the smoke alarms are installed and operate when tested. The smoke alarms must also comply

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<sup>82</sup> Complied Australia, 2016 Bill Submission No. 12, pp 1-2.

with other requirements prescribed by regulation. In his Introductory Speech, the Hon Bill Byrne MP noted:

*A continuous power source, such as hardwiring or a 10-year lithium battery, reduces the risk of a smoke alarm being made useless by flat batteries that have not been replaced.*<sup>83</sup>

## Discussion

The approach to smoke alarm specifications taken in the 2015 Bill and the 2016 Bill are reasonably similar as they both give the consumer a choice of hardwired smoke alarms or to have a 9v non-removable tamper-proof lithium battery with a 10 year warranty.

At the 2015 Bill Public Briefing, Mr Bleijie further explained:

*My bill does not recommend mandating hardwiring. ... We suspect over time that they will get cheaper and cheaper as more regulation comes in. So it is about getting rid of ionised alarms and replacing them with the photoelectric alarms with a 10-year lithium battery. That is why my bill does not say you have to have them hardwired because we recommend that these new ones be interconnected wirelessly. These new ones coming out can be interconnected wirelessly. If people wish to put them in every bedroom, that is fine. Ultimately, at the end of the day that may be where we want to go.*<sup>84</sup>

In the context of the hardwiring of smoke alarms, Assistant Commissioner Reid from QFES points out:

*...that the requirement for a smoke alarm to be hardwired comes from the national code for new buildings. It is not a Queensland government choice; at the moment, it is Australia-wide. Yes, there is technology emerging every single day and it is just the start of that; I have already seen devices that send it to your mobile phone and all of those things. Again, the bill is designed to allow for all those things to happen.*<sup>85</sup>

## Cost analysis

Quickcheck also provided the committee with the following analysis and guide of the costs involved in the various options proposed under the Bills:

*Wireless 9 volt alarms currently cost approximately \$90-\$100, so a standard 3 bedroom home would, under the proposed legislation, require 4 or 5 wireless 9 volt alarms to be fitted. This would cost approximately \$400-\$500 and this cost could dramatically increase for homes with complex floor plans and/or 2 storey homes.*

*Hard-wired smoke alarms must by law be installed and interconnected by licensed electrical contractors. A standard 3 bedroom home would, under the proposed legislation, require 4 or 5 hard-wired smoke alarms that are interconnected. Manufacturer's warranties do not cover the interconnection of dissimilar smoke alarms, so existing smoke alarms would need to be replaced with alarms of the*

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<sup>83</sup> Record of Proceedings (Hansard), 23 February 2016, p 398.

<sup>84</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 19.

<sup>85</sup> Transcript of Proceedings (Hansard), Public Briefing, Legal Affairs and Community Safety Committee, 16 March 2016, p 10.

*same make/model of additional smoke alarms. Also, because of electrical interference caused by other fittings on the lighting circuit (such as ceiling fans and fluorescent lights) the smoke alarms would need to be installed on an additional circuit. This would cost approximately \$1000-\$1200 and this cost could dramatically increase for homes with inaccessible roof space, complex floor plans and/or 2 storey homes.*

*The high cost of retrofitting hard-wired smoke alarms in a dwelling may encourage some property owners to disobey the proposed legislation or worse, attempt to retro-fit hard wired smoke alarms in their property themselves.*

*Additionally, the high cost of inter-connectable 9 volt and 240 volt smoke alarms has the possibility to encourage cheap imports that at best don't meet Australian Standards and at worst could pose a significant danger to Australian residents. The recent spate of fires caused by "hover boards" that do not meet Australian standards is an example of this.<sup>86</sup>*

#### **Summary of issues arising from hard-wiring and lithium batteries**

A number of submissions highlighted certain issues arising out of the proposals under both Bills in the context of the smoke alarm specifications involving hard-wiring and lithium batteries.

- Issues arising from allowing battery only smoke alarms.

Masters Electricians Australia discussed the issue of allowing battery only smoke alarms in its submission on the 2016 Bill:

*Mandating hard wired only smoke alarms ensures that all smoke alarms are installed safely, correctly and in accordance with the relevant codes and regulations*

*Allowing battery only smoke alarms for existing dwellings on the other hand will likely lead to owners and tenants installing their own smoke alarms and the following is likely to occur:*

- (i) Smoke alarms not being installed in the correct location,*
- (ii) Smoke alarms not being interconnected correctly, either by cable or wireless connection,*
- (iii) Smoke alarms not being interconnected at all, due to the time required, lack of knowledge and financial considerations.<sup>87</sup>*

- Issues arising from retro-fitting homes with hard-wired smoke alarms

Quickcheck wrote to the committee about its concerns with retro-fitting homes with hard-wired smoke alarms:

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<sup>86</sup> Quickcheck, 2016 Bill Submission No. 5, p 5.

<sup>87</sup> Master Electricians Australia, Submission No. 3, p 2.

*As licensed electrical contractors, we have found that it may not be possible to install hard-wired (240 volt) smoke alarms in some properties at all, or without considerable building alterations and cost.*<sup>88</sup>

However, Commissioner Carroll at the 2016 Bill Public Briefing stated:

*Many homes will already have their smoke alarms hard wired and may only need to install additional ones in bedrooms and interconnect them. In other homes it may be more cost effective to install wirelessly interconnected devices with 10-year lithium batteries.*<sup>89</sup>

- Issues arising from confusion between alkaline and lithium batteries

Quickcheck also explained to the committee about various issues arising from alkaline and lithium batteries being involved in smoke alarms:

*Most 240 volt smoke alarms available on the Australian market as well as most 240 volt smoke alarms currently installed in Australian homes contain an alkaline battery that is used as a back up and are replaced approximately every 2 to 3 years. It seems inconsistent that 9 volt smoke alarms be required to contain a lithium battery whilst 240 volt smoke alarms would not.*

*The majority of smoke alarms available on the Australian market are sold with and designed to fit the standard sized 9 volt alkaline batteries and may not function correctly if lithium batteries are retro fitted.*

*Lithium batteries are fractionally bigger than the standard alkaline batteries. Even if lithium batteries are installed, an occupant can still remove the battery from the smoke alarm.*<sup>90</sup>

Safety Watch Australia also provided the following information in this regard:

*The majority of smoke alarms available on the Australian market are sold with and designed to fit the standard sized 9-volt alkaline batteries and may not function correctly if lithium batteries are retro fitted due to lithium batteries being fractionally larger than the standard alkaline batteries. **If a lithium battery is installed into any smoke alarm where the battery is a removable type, the battery can be removed rendering most smoke alarms ineffective therefore defeating the purpose of this Bill.***<sup>91</sup>

- Issues arising out of the 10 year life requirement of lithium batteries

Quickcheck also noted the following issues arising out of the 10 year life requirement of lithium batteries to the committee in its submission:

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<sup>88</sup> Quickcheck, 2016 Bill Submission No. 5, p 4.

<sup>89</sup> Transcript of Proceedings (Hansard), Public Briefing, Legal Affairs and Community Safety Committee, 16 March 2016, p 2.

<sup>90</sup> Quickcheck, 2016 Bill Submission No. 5, p 4.

<sup>91</sup> Safety Watch Australia, 2016 Bill Submission No. 4, pp 5-7.



*Our experience has shown that the lithium batteries currently available within the Australian market rarely last the specified, ten-year life span (in some cases lithium batteries have only lasted three years).<sup>92</sup>*

This issue was also addressed by Safety Watch Australia:

*Our experience has shown that the lithium batteries currently available within the Australian market rarely last the specified ten-year life span (in some cases lithium batteries last as little as three years). **Manufacturers of lithium batteries do not warrant their product to last 10 years.***<sup>93</sup>

- Issues concerning the cost of lithium batteries

The cost of lithium batteries was also raised in submissions. For example, Quickcheck provided the following relevant information in this regard:

*Currently, the retail price for a 9 volt lithium battery is between \$20 and \$30. We believe that the inclusion of this requirement will add unnecessary costs to owners of domestic dwellings.*

*In an effort to reduce the current high price of lithium batteries, wholesalers and distributors may be tempted to import inferior quality lithium batteries and introduce them into the Australian market.*

*The recent issues that have arisen from the importation and distribution of the inferior “Infinity cable” demonstrates the risks the importation of inferior lithium batteries could pose.<sup>94</sup>*

This issue was also addressed by Safety Watch Australia.<sup>95</sup>

- Issues arising from the requirement that the smoke alarm only have non-removable batteries or otherwise tamper-proof batteries

A number of submissions discussed issues arising from the requirement that the smoke alarm only have non-removable batteries or otherwise tamper-proof batteries. Quickcheck commented as follows on this aspect in its submission on the 2016 Bill:

*Further, to stop the alarm from sounding in the event of false activation, both 240 volt and 9 volt smoke alarms with a sealed lithium battery require the alarm to be permanently disabled (broken, rather than temporarily disabled by disconnecting the battery), leaving the occupants without a working smoke alarm.*

*Regular testing, maintenance and cleaning of smoke alarms is recommended by all manufacturers in their operating manuals. This is most commonly undertaken whilst replacing batteries. The requirement for owners/occupants to replace the batteries in smoke alarms encourages the owner/occupiers of residential dwellings to test and clean the smoke alarm, as well as promoting smoke alarm and fire awareness.*

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<sup>92</sup> Quickcheck, 2016 Bill Submission No. 5, p 4.

<sup>93</sup> Safety Watch Australia, 2016 Bill Submission No. 4, pp 5-7.

<sup>94</sup> Quickcheck, 2016 Bill Submission No. 5, p 4.

<sup>95</sup> Safety Watch Australia, 2016 Bill Submission No. 4, pp 5-7.

*We believe that this section of the legislation will either promote complacency regarding smoke alarms, that is, a “set and forget” mentality, or encourage owners/occupiers to dismiss all smoke alarm requirements due to the additional costs that lithium batteries pose.<sup>96</sup>*

This issue was also addressed by Safety Watch Australia.<sup>97</sup>

However, Smoke Alarm Solutions had a different approach to this issue suggested that concerns might be overcome with a “hush button” option being included in smoke alarms:

*As per our fourth suggestion in our initial submission, we feel that an ‘enduring power source’ is a welcome addition to the current legislation however we would like to make an additional suggestion. We would like to see further clarification that an ‘enduring power supply’ refers to the alarms being tamper-proof. We feel that the battery in a 9 volt smoke alarm should be ‘tamper-proof’ (with a hush button) and not simply a removable 10 year lithium battery, so that occupants’ safety is enhanced. Although photoelectric alarms cause less nuisance false alarms, they are not perfect. An occupant can still simply remove a battery if the alarm is being a nuisance and forget to replace it, rendering the alarm useless. Having a hush button on an alarm will temporarily desensitise the alarm for about 8 – 10 minutes, giving the air time to clear, without the need to remove a battery and disabling the alarm.<sup>98</sup>*

- Issues arising from lithium batteries being toxic

The toxic nature of lithium batteries was discussed by a number of submitters. For example, Quickcheck noted in its submission on the 2016 Bill that:

*Further, lithium is a toxic substance. The Australian Competition and Consumer Commission has advised that, if swallowed, lithium batteries can get stuck in a child’s throat and burn through the oesophagus, causing severe burns or death. The most serious cases involve ten-cent sized lithium batteries, but all sizes are hazardous.<sup>99</sup>*

This issue was also addressed by Safety Watch Australia.<sup>100</sup>

- Issues arising from attempts to re-charge non-rechargeable batteries

The dangers inherent in attempts to re-charge non-rechargeable batteries was also addressed in submissions. For example, Quickcheck explained to the committee that:

*Also, unwittingly attempting to re-charge a lithium battery may cause it to catch fire. We have personally seen the aftermath of lithium battery fire where the tenant of the property attempted to charge a 9 volt lithium battery on a conventional battery charger with devastating results.<sup>101</sup>*

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<sup>96</sup> Quickcheck, 2016 Bill Submission No. 5, p 4.

<sup>97</sup> Safety Watch Australia, 2016 Bill Submission No. 4, pp 5-7.

<sup>98</sup> Smoke Alarm Solutions, 2016 Bill Submission No. 10, p 3.

<sup>99</sup> Quickcheck, 2016 Bill Submission No. 5, p 4.

<sup>100</sup> Safety Watch Australia, 2016 Bill Submission No. 4, pp 5-7.

<sup>101</sup> Quickcheck, 2016 Bill Submission No. 5, p 4.

A few of the submissions, notably from Quickcheck and Safety Watch Australia, in particular, were overwhelmingly against the proposal that lithium batteries be mandated in legislation. In conclusion on this topic, Safety Watch Australia stated:

*It is our professional opinion that the inclusion of a proposal regarding any form of lithium technology within the smoke alarm amendment has the possibility to decrease the overall number of working smoke alarms in Queensland properties and could potentially pose a serious risk to the public's health and safety.<sup>102</sup>*

#### **2.4.5. Location of Smoke Alarms**

##### **Current Requirements**

The installation requirements for smoke alarms under the Act adopt those set out for new buildings in the BCA. These require that, at a minimum, there be one alarm outside sleeping areas and one alarm on each level of the home.<sup>103</sup> Further details are set out in Appendix C.

##### **2015 Bill Requirements**

The 2015 Bill requires that smoke alarms be placed on each storey of a dwelling. If a storey contains a bedroom, then a smoke alarm must be installed between each part of the dwelling containing a bedroom and the rest of the dwelling and in each hallway that has an entrance to a bedroom. If a storey does not contain a bedroom, then in an exit path for the storey.

##### **2016 Bill Requirements**

The 2016 Bill has different requirements for the location of the smoke alarms depending on whether the dwelling concerned is an (1) existing domestic dwelling, or (2) a new or substantially renovated domestic dwelling.

For existing domestic dwellings, the proposed requirements under the 2016 Bill and 2016 Draft Regulations are that a smoke alarm must be installed on or near the ceiling:

- (a) for each storey of a domestic dwelling containing one or more bedrooms –
  - (i) in each bedroom
  - (ii) if 1 or more bedrooms are connected by door to a hallway – in the hallway
  - (iii) if a bedroom is not connected by door to a hallway – in a part of the storey that is between the bedroom and the rest of the dwelling
- (b) for each storey of the domestic dwelling that does not contain a bedroom:
  - (i) if the storey is connected by a stairway to another storey of the dwelling or an exit to outside the building – inside the building in the area of the stairway; or
  - (ii) otherwise – inside the building, on a path of travel from any place in the storey to an exit to outside the building.<sup>104</sup>

For new domestic dwellings or for domestic dwellings with substantial renovation requiring building development approval, the amendments set out in Part 3 of the 2016 Draft Regulation apply to amend

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<sup>102</sup> Safety Watch Australia, 2016 Bill Submission No. 4, pp 5-7.

<sup>103</sup> Department of Community Safety, Queensland Fire and Rescue Service, [Information Sheet: Smoke Alarm Legislation](#), 2015, p 1.

<sup>104</sup> See proposed new section 55D in Clause 4 of the 2016 Draft Regulation.

the Building Regulation 2006 such that a smoke alarm must be installed on or near the ceiling in each bedroom of the dwelling or part of the dwelling.<sup>105</sup>

#### *Discussion*

When briefing the committee on the 2015 Bill, Mr Bleijie explained that the opposition bill does not mandate alarms in every bedroom because:

*[M]y immediate priority was to get rid of ionised alarms from people's homes in Queensland and replace them with photoelectric alarms.*<sup>106</sup>

Ms Katarina Carroll, the Commissioner of the QFES, at the 2016 Bill Public Briefing, explained the rationale for the proposal in the 2016 Bill that smoke alarms be located in each bedroom:

*Interconnecting smoke alarms is made most effective by having them installed in bedrooms, which the bill will also require. By installing an alarm in the bedroom and interconnecting it to all other landmarks, persons are more likely to be woken before being overcome by smoke. It is expected the provisions in the bill will result in more homes in Queensland having functioning smoke alarms and that these will be installed in a way that will enable all residents to be rapidly alerted to the presence of a fire wherever they are in the building. This is critical to reducing the loss of life from house fires.*<sup>107</sup>

#### *Support for mandating smoke alarms in all bedrooms*

The requirements under the 2016 Bill regarding the location of smoke alarms was generally supported.<sup>108</sup> Fire Safety Expert, Mr David Isaac from Fire and Safety Technologies Pty Ltd spoke at the 2015 Bill Public Hearing about the importance of having multiple alarms particularly in bedrooms:

*In my submission I put that the most dangerous fires are those that occur at night when occupants sleep, between 8 pm and 8 am. It is imperative to have multiple alarms. It is no good having a smoke alarm in a home down the end of the corridor when you are asleep at the other end of the house in a bedroom and the smoke will not reach that smoke alarm. Particularly if that smoke alarm is an ionisation one, by the time it reaches that ionisation alarm the smoke particle size is too large for it to activate. They must be of the photoelectric type.*<sup>109</sup>

Mr Naumovski from Logan Fire Support Network gave evidence at the 2015 Bill Public Hearing that “we want photoelectric alarms in every bedroom, hallway and living areas”.<sup>110</sup>

The submission from Smoke Alarms Solutions is instructive in terms of explaining the impact the changes will have on a typical domestic property in terms of quantity of alarms and costs involved:

*As we have noted whilst conducting smoke alarm inspections in Queensland homes since 2007, the average number of required smoke alarms installed in every property is 1.6. If we consider an average-sized property with 3 bedrooms, it is safe*

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<sup>105</sup> See proposed new section 13AB in Clause 6 of the 2016 Draft Regulation.

<sup>106</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 18.

<sup>107</sup> Transcript of Proceedings (Hansard), Public Briefing, Legal Affairs and Community Safety Committee, 16 March 2016, p 2.

<sup>108</sup> See Plumbers Union Queensland, 2016 Bill Submission No 2, p 1; UFUQ, 2016 Bill Submission No. 8, p 3.

<sup>109</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 2.

<sup>110</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 11.

*to say that the average alarms per property will rise from 1.6 to 4.6 smoke alarms (a 287% increase), if alarms are now required in each bedroom.*

*We feel that the installation of smoke alarms inside each bedroom in a property is a more favourable outcome for home owners and landlords than retrospectively interconnecting smoke alarms, primarily due to the higher cost and risk factors of interconnection. We feel that the likelihood of properties meeting the new minimum safety standards would be lower than desired if interconnection of alarms was required.<sup>111</sup>*

During the hearing, the committee heard from Mr Graeme Hill of Safety Watch Australia who spoke in detail about smoke alarm placement. Mr Hill was supportive of the concept of smoke alarms in every bedroom:

*With regard to smoke alarms in every bedroom, I have always thought that this has been something that had to have changed years ago and I am a strong supporter of it. However, I agree with this proposal for all homes regardless of the age of the dwelling. However, bedrooms are no longer just bedrooms and have undergone a multifunction change of use over the last decade to see more electronic devices introduced into those areas. It is no longer a place to just sleep. I strongly urge the committee to mandate that all properties, regardless of their age, have a nine-volt battery powered photoelectric smoke alarm as a minimum in all bedrooms. I make that clear: just nine-volt, not 240-volt or anything like that. This is achievable from a construction and installation perspective and also from a financial perspective. If you have 240-volt smoke alarms in homes built after 1 July 1997, which actually have the mandate for 240-volt smoke alarms, imagine the effort it will take to put 240 smoke alarms into bedrooms where there is no ceiling space, dangerous areas and so on. You may wish to ask me more questions about that later, but that is very unachievable in homes that are already constructed plus the danger of stepping into electrical hazardous areas given the death on the Gold Coast just recently.<sup>112</sup>*

Safety Watch Australia also set out detailed suggestions regarding how the 2016 Bill could be modified to improve the provisions regarding the placement of smoke alarms.<sup>113</sup> Mr Hill referred to this in his evidence before the committee at the 2016 Bill Public Hearing:

*With regard to proper positioning and degraded areas, I have made large comment in my submission regarding this. Our submission raises great concerns regarding the lack of clear reference to proper positioning of smoke alarms and areas to avoid so that the alarms perform to their criteria and are not degraded.<sup>114</sup>*

In summary, Safety Watch Australia submitted that:

- the language of the 2016 Bill regarding the location of smoke alarms is too vague, especially references to “storey” and “on or near the ceiling”
- smoke alarms should be specified to be away from:

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<sup>111</sup> Smoke Alarm Solutions, 2016 Bill Submission No 10, p 3.

<sup>112</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 20 April 2016, p 2.

<sup>113</sup> Safety Watch Australia, 2016 Bill Submission No. 4, pp 3-5.

<sup>114</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 20 April 2016, p 2.

- lights
- air vents
- ceiling fans
- dead air vents.<sup>115</sup>

At the 2016 Bill Public Briefing, Assistant Commissioner Reid expressed the importance of having alarms in bedrooms:

*The issue of interconnection is an important one. The way you get woken up by a smoke alarm is all about the sound level. A smoke alarm will give you 85 decibels within three metres of the smoke alarm. Away from the smoke alarm, particularly in a bedroom with a closed door, you might get as little as 36 decibels at the bed head. It is well known and is documented throughout the world that 75 decibels at the bed head is a requirement to make the average person wake up out of sleep.*<sup>116</sup>

### **Encourage smoke alarms in bedrooms but no mandate**

Not all submissions were supportive of the proposal under the 2016 Bill regarding mandating the location of smoke alarms. For example, Quickcheck made the following comments in this regard in its submission on the 2016 Bill:

*We do not support the requirement of smoke alarms to be contained in each bedroom.*

*Although considered good practice, we believe that it is not always suitable/appropriate for smoke alarms to be present in each bedroom. Our experience has shown that most smoke alarms whether photoelectric or ionisation will, at some point in their 10-year life span, false activate. People with intellectual disabilities or mental illnesses as well as children and the elderly can be dramatically affected by a false activating smoke alarm. Furthermore, people with difficulty sleeping, shift workers, nursing mothers, light sleepers, children, teenagers, among others can be affected by the flashing light "battery indicator" that is required on all smoke alarms in Australia by AS:3786-2015.*

*We believe that the requirement for every bedroom to be fitted with a smoke alarm would be counter-productive to the key outcomes of this legislation by encouraging a mindset that smoke alarms are an annoyance and are disabled as a result.*

*Further, the additional cost of installing additional smoke alarms in every bedroom could actively discourage property owners from complying with the legislation.*

*For example: A standard 3 bedroom home that is currently fitted with two hard-wired (240 volt) ionisation smoke alarms would need to have both of the alarms replaced as well as additional alarms installed in each bedroom. These alarms would need to be installed on a separate circuit, which would require additional wiring as well as additional work to be undertaken on the switchboard. The cost for a licensed electrician to retrofit this home could be expected to cost approximately \$1000-\$1200. This cost could dramatically increase for homes with*

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<sup>115</sup> Safety Watch Australia, 2016 Bill Submission No. 4, pp 3-5.

<sup>116</sup> Transcript of Proceedings (Hansard), Public Briefing, Legal Affairs and Community Safety Committee, 16 March 2016, p 3.

*more bedrooms or if the roof space of the home is inaccessible or if the property is a 2-storey home. Most households would consider this cost excessive and some households in financial difficulty could simply not afford this additional cost.*

*We would suggest that the Queensland government should encourage property owners to install smoke alarms in bedrooms but not require them to.*<sup>117</sup>

#### **Leave detail to Building Code of Australia**

A suggestion was made to the committee that instead of setting out the detail of the location of smoke alarms in state legislation, this aspect of the proposed scheme for domestic smoke alarms should instead be left to the Building Code of Australia. Mr Warwick Temby from Housing Industry Association explained the rationale for this suggestion at the 2015 Bill Public Hearing:

*The Building Code of Australia is constantly updated. I think, particularly in terms of the location of the devices, the Building Code has a lot more detail. While the language in the bill very much reflects what the Building Code of Australia says today, you do not want to have to be coming back in two years, three years or six years time to adjust the legislation to reflect what is happening in the Building Code of Australia. I think it would be better to cross-reference to the Building Code of Australia rather than develop your own frame of words about technical issues such as where these things should be put in a separate piece of legislation. I think there is some potential for confusion there.*

*There is also a lot more detail about location built into the Building Code. There are lots of nice diagrams, pictures, alternative solutions and those sorts of things which really are not possible to be done in a piece of legislation. If the legislation is made more generic in that way, referring to other bits of code and legislation and putting some things in legislation, even about the types of smoke alarms, I think that should be prescribed in regulation rather than built into the legislation because who knows what is around the corner in terms of better systems of detecting smoke alarms. That is probably the biggest issue.*<sup>118</sup>

#### **2.4.6. Timeframe for implementation**

##### **2015 Bill Requirements**

As noted above, subject to transitional provisions, the 2015 Bill requires that smoke alarms requirements be complied with by 1 July 2016. However, the 2015 Bill also provides for the following transitional provisions:

- In the event that a domestic dwelling that has smoke alarms in compliance with the FES Act prior to the amendments proposed in the 2015 Bill, then the owner has three years to replace the existing smoke alarms with those that comply with the requirements in the 2015 Bill<sup>119</sup>
- In the event that a domestic dwelling does not have smoke alarms then the owner must install smoke alarms compliant with the requirements in the 2015 Bill before the first of the following:
  - (a) Any transfer date for the dwelling

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<sup>117</sup> Quickcheck, 2016 Bill Submission No 5, p 3.

<sup>118</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 7.

<sup>119</sup> See proposed new section 206 in Clause 9 of the Bill.

- (b) The end date of any existing tenancy or rooming accommodation agreement
- (c) The start date of any new tenancy or rooming accommodation agreement
- (d) Within 1 year of the commencement of the 2015 Bill provisions.<sup>120</sup>

### **2016 Bill Requirements**

As noted above, the 2016 Bill provides for a staged transition of either 1 year, 5 years or 10 years as follows:

- after 1 year all new dwellings or substantially renovated existing dwellings must comply (i.e., by 1 January 2017)
- after 5 years all dwellings that are sold or leased must comply (i.e., by 31 December 2021)
- within 5 years all government-owned housing must comply (i.e., by 31 December 2021)
- within 10 years all domestic dwellings must comply (i.e., by 31 December 2026).

### **Discussion**

A staged transition process was a recommendation of the Coroner in the Slacks Creek House Fire Coronial Inquest.<sup>121</sup> While the Coroner's proposal is not exactly the same as that set out in the 2015 Bill, it is along similar lines. The proposal set out in the 2015 Bill is supported by REIQ in its submission on the 2015 Bill.<sup>122</sup>

Concern was expressed by a number of witnesses regarding the timeframe for implementation under the 2016 Bill at the 2015 Bill Public Hearing, particularly in relation to the 10 year time frame (i.e., under 31 December 2026) which applies to existing dwellings that are not sold or tenanted within that period.

However, Commissioner Carroll explained the rationale behind the timeframes at the 2016 Bill Public Briefing:

*As the committee would be aware, the bill provides extended time frames for home owners of existing dwellings to comply with the full provisions. After five years any home being sold or rented will need to comply and all other homes must be compliant after 10 years. In existing dwellings only the requirement to install photoelectric smoke alarms will be effective immediately and that will only relate to any time an alarm is being replaced or a new one installed.*

*These time frames are intended to not only provide households with time to prepare for the changes but also enable retail supply and pricing of compliant devices to adjust. Building applications for dwellings approved after the implementation of the legislation will, however, be required to be compliant with all provisions.<sup>123</sup>*

This rationale and the timeframes for implementation generally were supported by the UFUQ:

*While it is in the best interests of our members to have photoelectric smoke alarms installed as soon as possible, UFUQ acknowledges the wide scale of the*

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<sup>120</sup> See proposed new section 207 in Clause 9 of the Bill.

<sup>121</sup> Findings of the Inquest in the Slacks Creek House Fire by James McDougall, Office of the State Coroner, 28 November 2014, pp 29-30.

<sup>122</sup> REIQ, 2015 Bill Submission No. 2, p 2.

<sup>123</sup> Transcript of Proceedings (Hansard), Public Briefing, Legal Affairs and Community Safety Committee, 16 March 2016, p 2.



*implementation process and the fact that the onus of installation is on the property owner.*<sup>124</sup>

During the 2016 Bill Public Briefing, in response to a question from the committee, Ms Hill from the Department of Housing indicated that most of the government housing stock already has photoelectric alarms installed:

**Miss BARTON:** *My questions are for Ms Hill and the Department of Housing and Public Works. Following on from what Senior Sergeant Reynolds said, it is my understanding—sorry if I am verballing you—that it is the department’s desire to have all of the public housing stock in Queensland compliant within the next five years. Are you able to provide details to the committee of that transition and that rollout and how it will happen over the next five years?*

**Ms Hill:** *We expect that there is a lot of current housing stock that does already have photoelectric alarms installed and interconnected alarms, but we have not completed a full audit of the existing housing stock at this stage.*

A staged transition process as provided in the 2016 Bill was also supported by the REIQ, however, the REIQ propose a maximum 3 year transition period to photoelectric smoke alarms for all domestic dwellings provided that immediately prior to the commencement of the Bill, the dwelling complies with the existing smoke alarm requirements. The REIQ was also opposed to the proposed compliance requirements triggered by the sale or lease of property:

*There is no justification for imposing earlier obligations on sellers and lessors. Fire safety is important for the entire Queensland community and laws designed to administer this should be fairly and consistently applied.*<sup>125</sup>

In its submission on the 2016 Bill, Smoke Alarm Solutions included the following table which sets out a comparison of the proposal under the 2016 Bill and its suggested timeframe:<sup>126</sup>

Building Type	Proposed under Bill	Smoke Alarm Solutions’ Suggestions
New Dwellings	1 January 2017	Day after Bill enacted
Dwellings Sold or Leased	5 years	Sold – immediately Leased – 18 months
Government-owned Housing	5 years	18 months
Domestic Dwellings	10 years	5 years

In relation to the timeframes for government-owned housing and domestic dwellings, Smoke Alarm Solutions set out the following explanation of its concerns in its submission:

*We feel that the proposed timeframes of 5 and 10 years (respectively) for dwellings that are sold, leased, government-owned and domestic in nature, all have too long of a lead time to comply with legislation and there is not enough urgency created to ensure action is undertaken. Many catastrophic events have the possibility of*

<sup>124</sup> UFUQ, 2016 Bill Submission No. 8, p 4.

<sup>125</sup> REIQ, 2016 Bill Submission No 13, p 3.

<sup>126</sup> Smoke Alarm Solutions, 2016 Bill Submission No 10, p 4.

*occurring in the next 5 or 10 years, which is exactly what this legislation is aiming to reduce.*<sup>127</sup>

In relation to the question regarding the 10 year lead time for compliance by domestic dwellings, Mr Graeme Hill from Safety Watch Australia responded as follows:

*I am also a pool safety inspector and one of the original committee members for pool safety inspectors at SPASA. I have made plenty of commentary on the pool safety legislation. The five-year lead-in period was tremendous. We had five years, and if we sold or rented our property we needed to have a pool safety certificate or say that there was not one and then the purchaser had to get a pool safety certificate within 90 days. I think there should be something similar to that where we just give them a five-year lead-in period and, come a certain date, you have to be smoke alarm complaint, and with rental properties or sales of properties let us just put it out there and say, 'You have two years to get them up to speed and as of this date, if the lease or anything changes over, you are going to have to do that.'*

*In terms of us doing our job, there are far too many dates to try to work through. From 1 July 1997, the property has to have 240-volt smoke alarms. Prior to that, it does not. In 1991 we needed to have all power outlets on safety switches. When we go to domestic dwellings there is no proof of age of the property. Making just a clear date that everyone can understand is a much better approach. I think what you have proposed at the moment is a little bit of a grey area in so many different areas. I think you need to simplify that if people are going to comply.*<sup>128</sup>

#### **2.4.7. Issues raised by real estate industry**

##### **Current Law**

Section 104RC (Lessor must replace smoke alarm) of the FES Act provides that a lessor (as distinct from an owner) must replace a smoke alarm in the dwelling before it reaches the end of its service life.

Section 104RD (Testing smoke alarms) of the FES Act provides for the testing of smoke alarms in Queensland. Under this provision:

- Within 30 days before the start of a tenancy in a domestic dwelling, the lessor must test each smoke alarm in the dwelling
- During a tenancy in a domestic dwelling, the tenant must test each smoke alarm in the dwelling at least once every 12 months.

##### **2015 Bill Proposal**

Under the changes proposed in the 2015 Bill, however, the obligation to test smoke alarms is applicable to owners of dwellings (rather than just lessors) whether they are tenanted or not and within 30 days before the start of a tenancy (see clause 6 of the 2015 Bill amending section 104RD(1)).

##### **2016 Bill Proposal**

Under the 2016 Bill, s104RC is to be replaced with a new provision which is titled "Owner must replace smoke alarm". Under this new s104RC, the obligation is placed on the owner of the dwelling (i.e., not

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<sup>127</sup> Smoke Alarm Solutions, 2016 Bill Submission No 10, p 4.

<sup>128</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 20 April 2016, p 6.

just the lessor) to replace a smoke alarm in the dwelling within 10 years after the day the smoke alarm was manufactured or if the smoke alarm does not operate when tested. The new provision also states that if the smoke alarm being replaced was hardwired then the replacement smoke alarm must also be hardwired. The 2016 Bill does not significantly amend section 104RD of the FES Act, other than to include a provision to provide additional clarity around the term “operates when tested” (see clauses 8 and 9 of the 2016 Bill amending sections 104RC, 104RD(1) and 104RD(3)).

### **Discussion**

Representatives from the real estate industry in relation to both Bills indicated overall support with the concept of replacing ionisation smoke alarms with photoelectric smoke alarms or at least upgrading the quality of smoke alarms in residential properties.<sup>129</sup> However, a number of practical issues concerning the proposals outlined in the Bills were raised by representatives from the real estate industry in their submissions. In particular, concerns were raised regarding:

- Clarity regarding the responsibility for testing smoke alarms (i.e., owners, lessor owners or tenants)
- The need for consistent testing procedures across all domestic dwellings not just tenanted dwellings
- The timing for the testing of smoke alarms
- Issues arising out of the removal of batteries.

### **Responsibility for smoke alarm testing**

Both Bills shift the responsibility for testing smoke alarms from either the lessor or tenant to the “owner of the dwelling. This has been welcomed by the real estate industry. For example, in its written submission on the 2016 Bill, the REIQ noted that:

*The current provisions for replacement of smoke alarms only apply to lessors (section 104RC of the Fire and Emergency Services Act 1990). We welcome the removal of this lessor specific requirement and the introduction of the proposed new section 104RC contained in the Bill. This will result in consistent replacement requirements across all domestic dwellings.*<sup>130</sup>

The Property Owners Association of Queensland also notes that a number of provisions in the 2015 Bill refer to the owner of the property (see Clauses 6 and 7 of the 2015 Bill amending s104RD, s104RDA and s104RDB). The Property Owners Association of Queensland was concerned that these provisions should also incorporate the property manager and owner’s representative as well.<sup>131</sup> In this regard, it appears that section 104RJ of the FES ACT (Agent may act for owner) will apply which should resolve this issue.

In its submission on the 2015 Bill, the REIQ welcomed the proposed introduction of consistent testing procedures across all domestic dwellings as set out in Clause 6.

Quickcheck submitted that testing of smoke alarms should be conducted by licensed and insured service providers. Additionally, Quickcheck submitted that such testing should take place within 3 to

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<sup>129</sup> Property Owners Association of Queensland, 2015 Bill Submission No. 1, p 1; Little Real Estate, 2015 Bill Submission No. 3, p 1; REIQ, 2015 Bill Submission No. 11, p 1; and Residential Tenancies Authority, 2015 Bill Submission No. 13, p 1.

<sup>130</sup> REIQ, 2016 Bill Submission No 13, p 4.

<sup>131</sup> Property Owners Association of Queensland, 2015 Bill Submission No. 1, p 1.

7 business days after a tenancy has commenced, then tested at least once every 12 months from the dates that the alarms were last tested.<sup>132</sup>

### ***Timing of smoke alarm testing***

A number of submissions on the 2015 Bill referred to the requirement that smoke alarms in tenanted dwellings be tested “within 30 days” before the start of a tenancy in the dwelling and at least once every year. This obligation also exists under the existing FES Act provisions (see s104RD(1)(b)).

In this regard, the Property Owners Association of Queensland comments:

*If the required battery with a life of 10 years has been fitted to the required smoke alarm why would it be necessary to test the battery within 30 days before the start of a new or continuing tenancy to the dwelling.*<sup>133</sup>

The issue is also taken up by Little Real Estate in its submission which highlights that compliance with this “within 30 days” requirement is a two-fold issue:

- Firstly, it places a higher regime of testing of safety equipment in a tenanted dwelling than that of an owner-occupied dwelling, which is unreasonable in terms of fairness and economic grounds; and
- Secondly, it places owners in the possible/probable scenario where they have broken the law due to circumstances beyond their control.<sup>134</sup>

Little Real Estate suggests that the issues arising from the use of the words “within 30 days” can be resolved by changing the proposed new s104RD(1)(b) to require that the test be completed before or within 7 days of the start of a tenancy of a new tenant in the dwelling. Additionally, Little Real Estate suggests that any test completed prior to the start of a new tenancy must be completed after the prior tenant has handed back possession of the property to the owner thereby preventing the possibility that the departing tenants can interfere with the smoke alarm between the date of the test and when they vacate the dwelling.<sup>135</sup>

In regard to the current provisions which require testing “within 30 days” before the start of a tenancy in a dwelling, Little Real Estate also raised that issue of the situation when there is a slow rental market when it can take 6 weeks or more to find a new tenant. If the smoke alarms are tested immediately on vacation of old tenant, then there may need to be an additional test later on for the new tenant, which will involve the owner being responsible for the cost of a second inspection. It is also difficult to predict the timing of the commencement of a new tenancy arrangement so it is possible that the owner may unwittingly be in breach of the law.<sup>136</sup>

This point was also made by the REIQ in its written submission in relation to the 2016 Bill. The REIQ also suggested that instead of requiring a lessor to test ‘within 30 days’ before the start of a tenancy, that the lessor be required to test each smoke alarm in the dwelling ‘within 7 days from the start of any new tenancy’. The REIQ note that:

*This amendment would allow a limited time period for testing smoke alarms in tenanted dwellings when new agreements were entered into. It would not apply*

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<sup>132</sup> Quickcheck, 2016 Bill Submission No 6, p 4.

<sup>133</sup> Property Owners Association of Queensland, 2015 Bill Submission No. 1, p 1.

<sup>134</sup> Little Real Estate, 2015 Bill Submission No. 3, p 1.

<sup>135</sup> Little Real Estate, 2015 Bill Submission No. 3, p 4.

<sup>136</sup> Little Real Estate, 2015 Bill Submission No. 3, p 1.

*to renewed tenancy agreements where the same tenant remains in place. In such cases, the lessor would still be required to test smoke alarms in the leased premises at least once per year.*<sup>137</sup>

Safety Watch Australia agreed with the proposal under the 2016 Bill that smoke alarms be tested each year and within 30 days of the start of the tenancy.<sup>138</sup> However, Safety Watch Australia notes:

*The term "at least 1 every year" is too ambiguous and this could be construed to mean each calendar year and therefore as an example the smoke alarms could be tested in January 2016 and not tested again till December 2017 and the owner would still comply; the reality of this wording is that the alarms could be tested almost 2 years apart.*<sup>139</sup>

### **Removal of battery issues**

In relation to the issue of tenants removing batteries, Property Owners Association of Queensland Inc noted that:

*People will always find ways and means of removing batteries from smoke alarms. It comes back to the situation that people should take responsibility for their own safety as well as the safety of others.*<sup>140</sup>

In this regard, the submission from Little Real Estate on the 2015 Bill is relevant:

*If the drafters of this legislation believe that greater checks on tenanted property smoke detectors are required because of the incidences of tenants removing batteries (from battery only devices), then this has already been remedied by the new legislation requiring 9V lithium powered 10 year battery life detectors. This is because it is not possible to remove these batteries without destroying the alarm which is against the law.*<sup>141</sup>

### **2.4.8. Additional issues raised by real property industry representatives**

The Property Owners Association of Qld also raised some additional concerns which included the following:

- That any necessary costs incurred in the upgrade of smoke alarms in residential rental properties will be passed on to the tenants<sup>142</sup>
- Due to the difficulties involved in retro-fitting hard-wired alarms to properties built prior to May 2014, it is in the best interests of all property owners to allow 9V lithium smoke alarms.<sup>143</sup>

## **2.5 Public Awareness and Education**

It was clear from the evidence presented in submissions and during the public hearings on both Bills that upon any change to the legislation there is a need for greater public awareness including a comprehensive education campaign. For example, Brooks concludes in its submission on the 2015 Bill:

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<sup>137</sup> REIQ, 2016 Bill Submission No 13, pp 4-5.

<sup>138</sup> Safety Watch Australia, 2016 Bill Submission No 4, pp 8-10.

<sup>139</sup> Safety Watch Australia, 2016 Bill Submission No 4, p 8.

<sup>140</sup> Property Owners Association of Queensland, 2015 Bill Submission No. 1, p 1.

<sup>141</sup> Little Real Estate, 2015 Bill Submission No. 3, p 2.

<sup>142</sup> Property Owners Association of Queensland, 2015 Bill Submission No. 1, p 1.

<sup>143</sup> Property Owners Association of Queensland, 2015 Bill Submission No. 1, p 1.

*Finally, Brooks Australia strongly recommends that any regulatory measures addressing smoke alarms be accompanied by an awareness campaign educating the public about the importance of testing and maintaining their smoke alarms regularly and in accordance with the manufacturer's recommendations and written instructions.<sup>144</sup>*

Similarly, the REIQ indicated in its submission on the 2015 Bill:

*If and when these new laws are implemented, we are happy to provide support to educate the Queensland real estate community about these important changes.<sup>145</sup>*

The need for a public awareness and education campaign was addressed at the 2016 Bill Public Briefing. In response to a question from the committee regarding whether the department was intending to run a consumer protection and awareness campaign, Assistant Commissioner Reid provided the following information:

*There has been a figure of \$3 million allocated to it across the 10-year period. A large sum of money has been put aside for the campaign to set it up originally, with an ongoing campaign of \$250,000 per year. That is due to start once the legislation is enacted so that the community of Queensland are well aware of what is required of them. We did a similar thing back in 2007 when it became compulsory to have smoke alarms in homes. We were able to effectively get that message out there to the point where currently 88 per cent or 90 per cent of homes in Queensland have smoke alarms.<sup>146</sup>*

The importance of education was also discussed during the 2015 Bill Public Hearing. See, for example, the following comments made by Mr David Isaac, from Fire and Safety Technologies Pty Ltd:

*I think education, explaining what the bills will mean when they are finally adopted by government is absolutely critical. Social media went berserk yesterday. ... we need people such as me who understand to write clear documents that the public can understand so that they know what the requirements are. The public are going to be concerned that they are going to have to get a licensed electrician in and they will not be able to afford it. Many people will not be able to afford to pay out \$1,000 and have this done immediately. But with a bit of coaching they can understand it. As I said, they can buy one alarm at a time – one month, two months later, another. By the time they period of the legislation comes to its close they would have complied. So there are lots of things that they can do.<sup>147</sup>*

In response to a question on how best to raise awareness in this regard, Mr Naumovski from the Logan House Fire Support Network suggested:

*We have to get into the school curriculum. Children are like sponges: they absorb a lot of things. If we can try to get into the schools and start talking—and not just to little preppies but start going constantly, just like the Morcombes do. They constantly go out there and that issue is constantly in the public eye and people know about it. If we could do that, we could have little forums, we could have family*

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<sup>144</sup> Brooks, 2015 Bill Submission No. 8, p 3.

<sup>145</sup> REIQ, 2015 Bill Submission No. 11, p 5.

<sup>146</sup> Transcript of Proceedings (Hansard), Public Briefing, Legal Affairs and Community Safety Committee, 16 March 2016, p 4.

<sup>147</sup> Public Hearing Transcript, 24 February 2016, p 6.

*days and all the rest of it. As you said, in low socioeconomic demographic areas and multicultural areas, certainly we need more and more emphasis on that. We need interpreters to start coming along with us, to try to talk to those different multicultural nationalities.*<sup>148</sup>

## **2.6 Additional Issues**

Evidence was presented to the Committee during its Inquiry of a number of key matters relating to fire prevention and fire safety that were out of scope in relation to the Bills under consideration. However many of the points raised were of value and should be noted in the context of future reforms in this area.

### **2.6.1. Additional electrical safety features**

In this regard, the Committee notes the following key points raised by Master Electricians Australia as matters which, while outside the scope of the 2015 Bill, are necessarily worthy of legislative attention at some stage in the near future:

- The installation of safety switches on all capable sub-circuits especially in light of the increasing availability of cheap imported electrical products. This was also a key recommendation from the 2013 Coronial Inquest into three of the four deaths under the Home Insulation Program<sup>149</sup>
- The installation of arc fault interrupters which operate in circumstances of loose wiring, ageing installations, damaged extension cords, overloaded plug outlets and faulty appliances<sup>150</sup>
- The mandatory requirement of a five yearly inspection by a licensed electrical contractor of all electrical equipment<sup>151</sup>
- The prevention of the sale of non-compliant electrical articles.<sup>152</sup>

### **2.6.2. Compliance**

A number of submissions were received which discussed the importance of ensuring that any new provisions concerning domestic smoke alarms must be accompanied by a compliance and enforcement regime. In this regard, the following comments from the Master Electricians Australia are relevant:

*An inspection and regulatory compliance/enforcement regime must be put in place to ensure that working smoke alarms have been installed correctly. This can be done via a body such as the Electrical Safety Office (ESO). The ESO already undertakes these activities to confirm the installation of safety switches. The inspections required are triggered by the sale of a domestic dwelling or the signing of a new lease for a rental property. A similar enforcement regime should apply to smoke alarms regulations.*<sup>153</sup>

Quickcheck, in its submission on the 2016 Bill, provides the following suggestion in terms of how to regulate a compliance regime:

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<sup>148</sup> Public Hearing Transcript, 24 February 2016, p 16.

<sup>149</sup> Master Electricians Australia, 2015 Bill Submission No. 2, pp 2-3.

<sup>150</sup> Master Electricians Australia, 2015 Bill Submission No. 2, p 3.

<sup>151</sup> Master Electricians Australia, 2015 Bill Submission No. 2, p 3.

<sup>152</sup> Master Electricians Australia, 2015 Bill Submission No. 2, p 3.

<sup>153</sup> Master Electricians Australia, Submission No. 3, p 2.

*The recently introduced “Pool safety laws” governed by QDC mp 3.4 and overseen by the Pool Safety Council is an example of how such a licensing system could operate. We believe that the Queensland Government should require owners of residential rental properties to obtain a “Smoke Alarm Compliance Certificate” from a licensed and insured service provider who has been trained and certified in the newly introduced Queensland Development Code in the following circumstances:*

- a) Before the property is made available for rent;*
- b) If the property is currently rented, within 12 months from the date of commencement of this Act;*
- c) A period specified by legislation. For example, every 1, 2 or 3 years.*

*Further, we believe that owner/occupiers should be required to obtain a “Smoke Alarm Compliance Certificate” from a licensed and insured service provider in the following circumstances:*

- a) Before any transfer date for the dwelling; or*
- b) Before the commencement of any building or construction works on the property; or*
- c) Before the commencement of any electrical work on the property.*

*The above requirements would be a more reasonable and enforceable approach to ensure that there is an ever-increasing number of compliant properties within Queensland. We would urge the Legal Affairs and Community Safety Committee to recommend to parliament the introduction of a smoke alarm compliance system, and would encourage a “user pays” system for both licensing and “Smoke Alarm Safety Certificates”.*

*The benefits of this proposed system would be:*

- a) To ensure the safety of occupants of Queensland homes by ensuring that smoke alarms in residential properties are installed correctly, consistency and in accordance with the relative legislation and codes;*
- b) To provide a regulated and accountable industry which would in turn create additional jobs within the Queensland economy;*
- c) To provide the Queensland Government with an additional revenue stream that could be used to fund the relevant government department as well as provide funding for safety awareness campaigns.*



### 3. Compliance with the Legislative Standards Act 1992

Section 4 of the *Legislative Standards Act 1992* (LSA) states that ‘fundamental legislative principles’ are the ‘principles relating to legislation that underlie a parliamentary democracy based on the rule of law’. The principles include that legislation has sufficient regard to:

- the rights and liberties of individuals
- the institution of Parliament.

#### 3.1 Examination of the Bills

The committee has examined the application of the fundamental legislative principles (FLPs) to the Bills and has detected no potential FLP issues in either Bill.

#### 3.2 Offence provisions

##### PROPOSED NEW OR AMENDED OFFENCE PROVISIONS FOR THE 2015 BILL

Clause	Offence	Proposed maximum penalty
6	Amended s104RD(1)  The owner of a domestic dwelling must test each smoke alarm in the dwelling in compliance with this section –  (a) at least once every 1 year; and (b) within 30 days before the start of a tenancy in the dwelling.	5 penalty units
9	New s207(2)  The owner of the domestic dwelling must install smoke alarms in the dwelling in compliance with section 104RB before the first of the following happens –  (a) any transfer date for the dwelling; (b) the day any existing residential tenancy agreement or rooming accommodation agreement for all or part of the dwelling ends; (c) the day any new residential tenancy agreement or rooming accommodation agreement for all or part of the dwelling starts; (d) the day that is 1 year after the commencement.	5 penalty units

##### PROPOSED NEW OR AMENDED OFFENCE PROVISIONS FOR THE 2016 BILL

Clause	Offence	Proposed maximum penalty
7	<b>Insertion of new sections 104RBA and 104RBB of the <i>Fire and Emergency Services Act 1990</i></b>  <b>104RBA Owner must install smoke alarm</b>  (1) This section applies to a domestic dwelling if – (a) an application for a building development approval is made after 31 December 2016; and	5 penalty units

	<p>(b) the building work to which the application relates is a substantial renovation; and</p> <p>(c) a final inspection certificate or certificate of classification is issued for the building work.</p> <p>(2) This section also applies to a domestic dwelling if, after 31 December 2021 –</p> <p>(a) the owner of the residential land on which the dwelling is constructed enters into an agreement to transfer the land to another person; or</p> <p>(b) a new tenancy for the dwelling starts or an existing tenancy for the dwelling is renewed.</p> <p>(3) The owner of a domestic dwelling must install smoke alarms in the dwelling in compliance with this section.</p>	
8	<p><b>Replacement of section 104RC (Lessor must replace smoke alarm) of the <i>Fire and Emergency Services Act 1990</i></b></p> <p>104RC Owner must replace smoke alarm</p> <p>(1) The owner of a domestic dwelling must replace a smoke alarm in the dwelling under this section within 10 years after the day the smoke alarm was manufactured.</p> <p>(2) Also, if a smoke alarm in a domestic dwelling does not operate when tested, the owner of the dwelling must immediately replace the smoke alarm under this section.</p>	<p>5 penalty units</p> <p>5 penalty units</p>

### 3.3 Explanatory notes

Part 4 of the *Legislative Standards Act 1992* relates to Explanatory Notes for Bills. It requires that an Explanatory Note be circulated when a bill is introduced into the Legislative Assembly, and sets out the information an Explanatory Note should contain.

Explanatory Notes for both Bills were tabled with the introduction of the Bill. In each case, the Explanatory Notes are fairly detailed and contain the information required by Part 4 and a reasonable level of background information and commentary to facilitate understanding of the respective Bill's aims and origins.

## Appendix A – List of Submissions

### *Part 1 – List of Submissions on the 2015 Bill*

No	Name
1	Property Owners Association of Qld
2	Master Electricians Australia
3	John White, Little Real Estate
4	Orr Partners
5	Logan House Fire Support Network
6	Housing Industry Association
7	The World Fire Safety Foundation
8	Brooks
9	Smoke Alarm Solutions
10	Fire and Safety Technologies Pty Ltd
11	REIQ
12	Keith Golinski
13	Residential Tenancies Authority (RTA)
14	Schneider Electric
15	Quickcheck Pty Limited

### *Part 2 – List of Submissions on the 2016 Bill*

No	Name
1	Queensland Family and Child Commission
2	Plumbers Union Queensland
3	Master Electricians Australia
4	Safety Watch Australia Pty Ltd
5	Quickcheck Pty Ltd
6	Smoke Alarm Services
7	Schneider Electric
8	United Firefighters Union of Australia
9	Strata Community Australia (Qld)
10	Smoke Alarm Solutions Pty Ltd
11	Logan House Fire Support Network Inc
12	Complied Australia
13	Real Estate Institute of Queensland
14	Property Owners' Association of Queensland
15	Keith Golinski
16	Wally Fietkau

## **Appendix B – List of Witnesses**

### ***Part 1 – List of Witnesses at the 2015 Bill Public Hearing on 24 February 2016***

In order of appearance before the committee:

#### **2015 Bill Public Hearing**

- David Isaac, Fire and Safety Technologies Pty Ltd
- Gary Veenstra (State Manager), Master Electricians Australia
- Warwick Temby, Housing Industry Association
- Louie Naumovski, Founder, Logan Fire Support Network
- Keith Golinski, Father of Matt Golinski

#### **2015 Bill Public Briefing**

- Mr Jarrod Bleijie, MP, Member for Kawana

### ***Part 2 – List of Witnesses at the 2016 Bill Hearings on 16 March 2016***

#### **2016 Bill Public Briefing on 16 March 2016**

- Mr Matthew Byrnes, Acting Director, Strategic Policy, Building Industry and Policy Division, Department of Housing and Public Works
- Ms Katarina Carroll, Commissioner, Queensland Fire and Emergency Services
- Ms Michelle Hill, Manager, Building Industry and Policy Division, Department of Housing and Public Works
- Mr Neil Reid, Assistant Commissioner, Queensland Fire and Emergency Services
- Senior Sergeant Robyn Reynolds, Legislation Branch, Public Safety Business Agency

#### **2016 Bill Public Hearing on 20 April 2016**

- Graeme Hill, Safety Watch Australia Pty Ltd
- James Freestun, Strata Community Australian (Qld)
- Robert Honeycombe, Real Estate Institute of Queensland

## Appendix C – Installation Requirements under the Building Code of Australia

### Installation requirements under the BCA

The installation requirements for smoke alarms in certain types of buildings are set out in the BCA.

The installation requirements for smoke alarms under the FES Act, adopt those set out for new buildings in the BCA. These require that, at a minimum, there be one alarm outside sleeping areas and one alarm on each level of the home.<sup>154</sup>

#### ***Class 2 Buildings***

A class 2 building under the BCA refers to a building containing two or more sole-occupancy units each being a separate dwelling.<sup>155</sup> According to the NCC Series 2015 Guide:

*A sole-occupancy unit is an area within a building for the exclusive use of the owner or occupier. It is irrelevant if the area is occupied by an individual, a number of people, or by a company. Exclusivity of use is the key factor in determining whether an area or room is a sole-occupancy unit.*<sup>156</sup>

Under the FES Act, installation of a smoke alarm in a class 2 building must be in accordance with specification E 2.2a, clause 3(c)(i) of the BCA.<sup>157</sup> This section requires that in a number of classes of building, including a Class 2 building, alarms must:

- be installed within each sole-occupancy unit
- be located on or near the ceiling in any storey
- where the storey contains bedrooms, be located:
  - between each part of the sole-occupancy unit containing bedrooms and the remainder of the sole-occupancy unit; and
  - where bedrooms are served by a hallway, in that hallway, and
- where the storey does not contain bedrooms, be located in egress paths.<sup>158</sup>

#### ***Class 1a Buildings***

A class 1a building under the BCA refers to a single dwelling being a detached house, or one or more attached dwellings, each being a building, separated by a fire-resisting wall, including a row house, terrace house, town house or villa unit.<sup>159</sup>

Under the Act, installation of a smoke alarm in a class 1a building must be in accordance with specification 3.7.2.3 of the BCA. This section requires that smoke alarms are installed in a Class 1a building on or near the ceiling in-

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<sup>154</sup> Department of Community Safety, Queensland Fire and Rescue Service, [Information Sheet: Smoke Alarm Legislation](#), 2015, p 1.

<sup>155</sup> Queensland Building and Construction Commission, [Classification summary of buildings and structures](#), (accessed on 19 February 2016).

<sup>156</sup> Australian Building Codes Board, National Construction Code Series 2015 Guide to Volume One, p 44.

<sup>157</sup> [Fire and Emergency Services Act 1990 \(Qld\)](#), s 104RB (2).

<sup>158</sup> Australian Building Codes Board, National Construction Code Series 2015 Volume One, Specification E 2.2a, clause 3(c)(i), p 245.

<sup>159</sup> Queensland Building and Construction Commission, [Classification summary of buildings and structures](#), (accessed on 19 February 2016).

- any storey containing bedrooms—
  - between each part of the dwelling containing bedrooms and the remainder of the dwelling, and
  - where bedrooms are served by a hallway, in that hallway, and
- any other storey not containing bedrooms.<sup>160</sup>

### **Other ways of satisfying the installation requirements**

An owner of a sole-occupancy unit complies with s 104RB if the owner installs a heat alarm or an alarm acknowledgement facility in accordance with specification E 2.2a, clause 3(b) of the BCA.<sup>161</sup> This section of the BCA applies in kitchens and other areas where the use of the area is likely to result in smoke alarms causing spurious signals.

According to the BCA, in these circumstances:

- any other alarm deemed suitable in accordance with AS1670.1 may be installed provided that smoke alarms are installed elsewhere in accordance with Clause 3(c)(i) and Clause 3(c)(ii), or
- an alarm acknowledgement facility may be installed.

However where the kitchen or other area is sprinklered, the alarms need not be installed in the kitchen or other areas likely to result in spurious signals.<sup>162</sup>

If it is impracticable for an owner of a domestic dwelling to put a smoke alarm at the location required under s104RB(2), the owner may put the alarm at another location that will provide a warning to occupants of the dwelling.<sup>163</sup>

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<sup>160</sup> Australian Building Codes Board, National Construction Code Series 2015 Volume Two, Specification 3.7.2.3, p 262.

<sup>161</sup> [Fire and Emergency Services Act 1990 \(Qld\)](#), s 104RB (3)

<sup>162</sup> Australian Building Codes Board, National Construction Code Series 2015 Volume One, Specification E 2.2a, clause 3(b), p 244.

<sup>163</sup> [Fire and Emergency Services Act 1990 \(Qld\)](#), s 104RB (4).

## **Government Members' Statement of Reservation**

The Government members of the committee support the following recommendations:

### **Recommendation 1**

The committee concurs with the majority of evidence from the many stakeholders and endorses inter-connected alarms.

### **Recommendation 2**

The committee recommends an alarm be powered by prescribed regulation and be either hard-wired or have a 9v tamper proof lithium battery with a 10 year warranty.

### **Recommendation 3**

The committee recommends smoke alarms be located in accordance with the requirements set out in AS1670.6 and as a minimum be installed in each bedroom of the residence.

### **Recommendation 4**

The committee recommends the lessor check alarms at least once each calendar year and within 30 days before any new tenancy.

### **Recommendation 5**

The committee recommends the installation of timeframes be provided for in accordance with the Fire and Emergency Services (Domestic Smoke Alarms) Amendment Bill 2016.



Mark Furner MP  
Member for Ferny Grove  
Chair

## **Non-government Members' Statement of Reservation**

Submissions to and evidence tendered to the committee are clear on this point - ionisation smoke alarms must be replaced with photoelectric smoke alarms as soon as possible.

The 2015 Bill is the best way to achieve this goal because it is simpler and cheaper to comply with, and as a result the rate of compliance will be greater.

The 2015 Bill implements recommendations from the Coronial Inquest into the Slacks Creek house fire that occurred in August 2011, claiming the lives of 11 people, including eight children. It provides for a staged transition process so that by 1 July 2019, all compliant homes in Queensland have photoelectric smoke alarms. The transition is stipulated as:

- 1) for dwellings with smoke alarms complying with the law immediately before 1 July 2016: the owner must replace them with smoke alarms complying with the 2015 Bill, within 3 years
- 2) for dwellings with no smoke alarms complying with the law on 1 July 2016: the owner must install smoke alarms compliant with the Bill before the first of -
  - a) a transfer of the dwelling;
  - b) the end of an existing residential tenancy or rooming accommodation agreement for all or part of the dwelling (or the start of a new one); or
  - c) 1 July 2017.

This will ensure that all non-compliant homes are fitted with photoelectric smoke alarms by 1 July 2017. In contrast, the 2016 Bill introduced by the Government has a 10 year phase in period.

This statement sets out the non-government members' views on various issues.

The committee report identifies the following key issues arising out of the 2015 Bill and the 2016 Bill:

1. Whether smoke alarms should be prescribed to be photoelectric or ionisation smoke alarms?
2. Whether the smoke alarms should be interconnected?
3. Whether smoke alarms need to comply with an Australian Standard, and, if so, which Australian Standard?
4. Whether smoke alarms should be specified to be hard-wired or powered by 9v battery?
5. Where smoke alarms should be located?
6. What is the timeframe for implementation of the recommended changes?
7. Various issues raised by real property industry representatives.

Each of the above seven issues is discussed in the report.

### **Whether smoke alarms should be prescribed to be photoelectric or ionisation smoke alarms**

Non-government members and government members agree that smoke alarms in residential premises in Queensland should be prescribed to be photoelectric.

### **Whether the smoke alarms should be interconnected**

Non-government members do not agree that it should be mandatory for smoke alarms to be interconnected, although they do consider that interconnectedness should be encouraged. The entire committee has heard evidence that mandating interconnectivity imposes a significant cost impediment to getting photoelectric smoke alarms into every home in Queensland as soon as possible, and will in fact result in less photoelectric smoke alarms being installed. Non-government members



consider that the first priority is to transfer all existing domestic dwellings in Queensland to photoelectric smoke alarms.

Non-government members point to this evidence received that does not advocate interconnectivity of smoke alarms, especially due to the difficulties involved in retro-fitting existing homes with interconnected smoke alarms, as explained by Safety Watch Australia in its submission on the 2016 Bill:

*Whilst interconnection may seem an ideal solution on paper and is achievable in new builds or major renovations, trying to retrofit older homes is going to be virtually impossible not to mention costly. The Electrical Safety Office still considers many dwellings to be electrically unsafe after the insulation debacle resulting in work place health and safety practice guidelines for working within these high risk areas of which any proposal to mandate interconnection in existing dwelling would surely place workers into this unsafe territory.*

*With new innovations in wireless interconnection between smoke alarms provides a possibility to achieve a desired outcome but at a heavy price per alarm to the stakeholders. Whilst this sounds like an easy fix, this is reasonably new technology and has yet been proven to be reliable for the life span of a smoke alarm (10 Years).*

...

*Should a smoke alarm produce a false alarm event, all ...alarms will go into alarm mode. In this circumstance the occupant must locate the individual alarm that has caused the event in order to address the problem and stop the alarms ... from sounding. It is our professional experience that the average person has neither the knowledge nor the patience to systematically go through the house to find the offending alarm and, as a consequence, may render each beeping alarm that they encounter unserviceable until they finally address the correct alarm to stop the alarming. It is often the case that batteries are removed and not replaced until the next day or perhaps not at all; in this instance if the batteries are the lithium removable types, it could be a costly exercise to replace any missing batteries. And, in the case that lithium non-removable batteries are present in the smoke alarms the smoke alarms themselves are disabled (rendered non-functional) and would need to be completely replaced. **Interconnection has the ability to render a dwelling's entire smoke alarm system inoperable leaving the occupants totally unprotected.** (emphasis added)*

*It is more important to mandate the optimal number of correctly positioned working photoelectric smoke alarms in domestic dwellings (especially existing dwellings) than to legislate a requirement for all existing homes to be retro-fitted to achieve interconnection. The degree of difficulty relies on the individual design, layout and construction type of each existing dwelling and once again we need to ensure we do not create new legislation that further disables stakeholders to attain smoke alarm compliance and/or place lives at risk as stated above.<sup>164</sup>*

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<sup>164</sup> Safety Watch Australia, 2016 Bill Submission No. 4, pp 7-8.

Non-government members note the following comments of Mr Naumovski, founder of the Logan House Fire Support Network, at the committee's 2015 Bill public hearing:

*Whether it be interconnected or not, we are not fazed by that as long as they are in all rooms. ... Interconnectivity is debatable for us. Certainly eventually, absolutely, but cost-wise I think that is going to be the issue right now with interconnectivity.<sup>165</sup>*

Similarly, REIQ, in its submission on the 2016 Bill, oppose the mandating of retrospective interconnectivity and identify its potential cost burden:

*Retrospective interconnectivity (both hard-wired and wireless interconnectivity) for established dwellings would create a substantial cost burden for property owners. In particular, hard-wired interconnectivity would potentially involve significant work and expense depending on the age, structure and style of the dwelling. Similarly, wireless interconnectivity would require the installation of replacement wireless smoke alarms and radio frequency units (for each alarm).*

*The REIQ supports measures to encourage owners to consider interconnectivity but it should not be obligatory for all existing dwelling alarms to be interconnected as proposed. The cost burden and inconvenience factor is too high.<sup>166</sup>*

Non-government members also draw attention to the views of Quickcheck in its submission on the 2016 Bill:

*Whilst the interconnection of smoke alarms can provide additional warning to occupants in the event of a fire, our experience has shown that if all the alarms in a dwelling are interconnected and an alarm false activates, the occupants of the dwelling immediately disable all the smoke alarms, leaving the dwelling with no working smoke alarms. ...*

*We recommend a more prudent approach to the interconnection requirements of smoke alarms. We suggest that smoke alarms be required to be interconnected only if they are more than 7 to 8 metres from the smoke alarm closest to a main exit of a dwelling and/or that one smoke alarm on each level be required to be interconnected.<sup>167</sup>*

Although, non-government members acknowledge that interconnectivity of alarms has been recommended by the Coroner as part of the coronial inquest into the Slacks Creek house fire, timely implementation of photoelectric smoke alarms is considered to be the priority. Non-government members are concerned that the financial cost of mandated interconnectivity may not make homes safer, but in fact make homes more dangerous by hindering the timely installation of photoelectric alarms.

### **Where smoke alarms should be located**

When briefing the committee on the 2015 Bill, Mr Bleijie MP explained that the Bill does not mandate alarms in every bedroom because:

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<sup>165</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 13.

<sup>166</sup> REIQ, 2016 Bill Submission No. 13, p 3.

<sup>167</sup> Quickcheck, 2016 Bill Submission No. 5, p 5.

*[M]y immediate priority was to get rid of ionised alarms from people's homes in Queensland and replace them with photoelectric alarms.*<sup>168</sup>

Non-government members support Mr Bleijie's position. However, we note the evidence from Mr Naumovski from Logan Fire Support Network that "we want photoelectric alarms in every bedroom, hallway and living areas".<sup>169</sup>

Non-government members note that smoke alarms must be installed in accordance with the relevant sections of the Building Code of Australia (BCA), depending on the type of dwelling involved. Government and non-government members agree that technical details as to the installation and location of smoke alarms should be prescribed under the BCA, as opposed to being provided for by state legislation.

Accordingly, non-government members support the views of Mr Warwick Temby from Housing Industry Association:

*The Building Code of Australia is constantly updated. I think, particularly in terms of the location of the devices, the Building Code has a lot more detail. While the language in the bill very much reflects what the Building Code of Australia says today, you do not want to have to be coming back in two years, three years or six years time to adjust the legislation to reflect what is happening in the Building Code of Australia. I think it would be better to cross-reference to the Building Code of Australia rather than develop your own frame of words about technical issues such as where these things should be put in a separate piece of legislation. I think there is some potential for confusion there.*

*There is also a lot more detail about location built into the Building Code. There are lots of nice diagrams, pictures, alternative solutions and those sorts of things which really are not possible to be done in a piece of legislation. If the legislation is made more generic in that way, referring to other bits of code and legislation and putting some things in legislation, even about the types of smoke alarms, I think that should be prescribed in regulation rather than built into the legislation because who knows what is around the corner in terms of better systems of detecting smoke alarms. That is probably the biggest issue.*<sup>170</sup>

### **What is the timeframe for implementation of the recommended changes**

Non-government members support the implementation timeframes set out in the 2015 Bill. Therefore, subject to transitional provisions, non-government members support that smoke alarms requirements be complied with by 1 July 2016. The imperative is to ensure that photoelectric smoke alarms are installed in all Queensland homes as soon as possible, and the 2015 Bill's cost implications make it significantly more likely that it will be complied with by more households. Non-government members oppose mandated interconnectivity at this time, in favour of prioritising removal of ionised smoke alarms and their replacement with photoelectric smoke alarms.

Mr Louie Naumovski from Logan House Fire Support Network stated the following at the public hearing on 24 February 2016 about the transition timeframes:

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<sup>168</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 18.

<sup>169</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 11.

<sup>170</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 24 February 2016, p 7.

*“When we had discussions with the shadow emergency services minister late last we were looking at implementing a requirement that from 1 July this year all brand-new homes must be done, 1 July 2017 all rentals must be done and 1 July 2019 all other residents must be completed. That is a three-year phase-in period. Last year there were 1,908 house fires in the state of Queensland and we had 23 fatalities. I do not know about you, but I do not want another 6,000 house fires over the next three years and I do not want to lose another 50 lives. With the new bill that was introduced yesterday [the 2016 Bill], which would have a 10-year phase-in, we are looking at a further 20,000 house fires and over 200 deaths. If we had any other incident like this in this state, legislation would be passed so quickly with fewer fatalities. Some 230 Queenslanders could potentially die over the next 10 years.”*

A shorter transition must be adopted with a minimum cost framework because this issue is fundamentally about saving lives.

In relation to the timeframes for government-owned housing and domestic dwellings, non-government members support the views of Smoke Alarm Solutions and share its following concerns:

*We feel that the proposed timeframes of 5 and 10 years (respectively) for dwellings that are sold, leased, government-owned and domestic in nature, all have too long of a lead time to comply with legislation and there is not enough urgency created to ensure action is undertaken. Many catastrophic events have the possibility of occurring in the next 5 or 10 years, which is exactly what this legislation is aiming to reduce.<sup>171</sup>*

Non-government members support shorter implementation timeframes that facilitate easy compliance. In that regard, non-government members support the timeframes and requirements set out in the 2015 Bill.

The proponent of the 2015 Bill, the Member for Kawana had the following to say on the issue of hard-wiring, the placement of smoke alarms and interconnectedness of all smoke alarms in a dwelling:

*“My concern with the government’s bill [the 2016 Bill] is that, just like pool fences where we had a five-year implementation plan for people to spend thousands of dollars getting their pool fences, it says that you have to have these photoelectric alarms in every bedroom, plus they have to be hardwired, which means people have to pay for electricians. People in lower socioeconomic environments may not be able to afford the electricians. They may not be able to afford the hardwiring. They may not be able to afford to put an alarm in each bedroom. **My bill says, ‘You currently have smoke alarms. Replace those smoke alarms with photoelectric alarms.’** For me, having any photoelectric smoke alarms in the properties rather than ionised ones is a good start, to get rid of the ionised alarms. But we do not want to have a situation where people are prevented from putting any photoelectric alarms in because they cannot afford over a 10-year period to put one in every bedroom.”*

#### **Various issues raised by real property industry representatives.**

Non-government members acknowledge and support the following concerns raised by REIQ in the 2016 Bill public hearing:

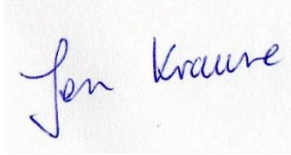
*The REIQ also recommends consistent smoke alarm testing and replacement requirements across all domestic dwellings in Queensland, regardless of whether they are rented or occupied by their owners. Fire safety, in our opinion, is important for the entire community. To this end, we do not support differing time lines on the phasing in of photoelectric alarms. It is an*

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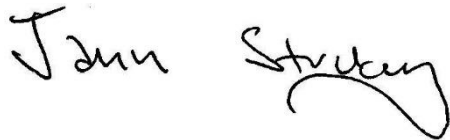
<sup>171</sup> Smoke Alarm Solutions, 2016 Bill Submission No 10, p 4.

*important issue and we believe all dwellings, regardless of occupant and regardless of when they change hands, should be upgraded in a three- to five-year time frame.<sup>172</sup>*

As expressed above, non-government members consider that shorter implementation timeframes are essential.



Jon Krause MP  
Member for Beaudesert



Jann Stuckey MP  
Member for Currumbin



Michael Crandon MP  
Member for Coomera

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<sup>172</sup> Transcript of Proceedings (Hansard), Public Hearing, Legal Affairs and Community Safety Committee, 11 May 2016, p 4.