



The Future of Lighting Standards in New Zealand

Massey University - Auckland – 29 July 2024

Bryan King

Executive Director - Lighting Council New Zealand

Bryan - Standards Committee Activity

Lighting standards committees for 21 years:

- Standards New Zealand - Committee Chair of SNZ P4097 Energy Performance
- Standards Australia - Committees EL-041, LG-002, TE-003, IT-069
- IEC TC 34 Lighting (Lighting Products)
- IEC ACEA - Advisory Committee on Environmental Aspects (Environmental Strategy)
- ISO TC 274 Light and Lighting (Lighting Application)
- GLA – Global Lighting Association - International Standards Working Group

NZ Lighting Standards are in Transition (Turmoil?)

AS/NZS Standards de-jointing is now happening at a rapid pace affecting:

- Lighting manufacturers, importers, suppliers
- Lighting designers, engineers, consultants
- Building designers, architects
- Building developers, owners, managers
- Government regulators for product and buildings - safety, comfort, energy, carbon

Why is this ? What are the consequences ? What is the solution?

NZ Lighting Standards - History

For the last 40-50 years NZ has had a relatively simple standards repertoire:

Lighting Product Standards

- Lamps – AS/NZS 60432.1, AS/NZS 4782.1
- Control gear – AS/NZS 61347 series
- Luminaires – AS/NZS 60598 series
- Emergency Luminaires - AS/NZS 2293.3
- EMC Emissions – AS/NZS CISPR 15

Lighting Application Standards

- Interior Lighting – AS/NZS 1680 series
- Road and Public Lighting – AS/NZS 1158 series
- Control of Obtrusive Light – AS/NZS 4282
- Emergency Lighting - AS/NZS 2293.1, AS/NZS 2293.2
- Lighting Energy Efficiency - NZS 4243.2

Consequently, NZS and AS/NZS standards have been “the safe haven” for NZ lighting suppliers, designers, consultants, purchasers, owners.

Now... AS/NZS standards are de-jointing rapidly

Many of the core lighting standards are already de-jointed:

Lighting Product Standards

- ~~Lamps – AS/NZS 60432.1, AS/NZS 4782.1~~
- ~~Control gear – AS/NZS 61347-series~~
- ~~Luminaires – AS/NZS 60598-series~~
- ~~Emergency Luminaires – AS/NZS 2293.3~~
- ~~EMC Emissions – AS/NZS CISPR 15~~

Lighting Application Standards

- ~~Interior Lighting – AS/NZS 1680-series~~
- Road and Public Lighting – AS/NZS 1158 series
- Control of Obtrusive Light – AS/NZS 4282
- ~~Emergency Lighting – AS/NZS 2293.1, AS/NZS 2293.2~~
- ~~Lighting Energy Efficiency – NZS 4243.2~~

NZTA is continuing to fund AS/NZS 1158 (latest update now) & AS/NZS 4282 (recently updated)



Why de-jointing?

Treasury Reform: **The NZ Standards and Accreditation Act 2015**

The purpose of this Act is to make provision for standards and conformity assessment systems in New Zealand that—

- a) are consistent with international practice; and facilitate trade; and protect the health, safety, and well-being of individuals:
- b) provide for the development, approval, and maintenance of New Zealand Standards:
- c) make provision for access to New Zealand Standards:
- d) designate an official known as the NZ Standards Executive to be responsible for the oversight of New Zealand Standards:
- e) establish the New Zealand Standards Approval Board:
- f) continue the Testing Laboratory Registration Council and rename it the Accreditation Council:
- g) provide for accreditation of conformity assessment bodies:
- h) repeal the Standards Act 1988 and the Testing Laboratory Registration Act 1972



Standards Australia vs International Standards

There are **differences in philosophy and approach** in some AS/NZS committees:

Standards Australia (AS/NZS)

Users may not be trained and experienced. Fundamentals need to be explained.

International (IEC and ISO)

Users are trained and experienced. Fundamentals do not need to be explained.

Consequence:

More conflicts coming with increasing complexity of lighting technologies and techniques

What is the Value-add of Funding Jointed Standards?



- Are NZ stakeholders are willing to pay high fees to Standards Australia? **No!**
- IEC/ISO standards are frequently updated, so are many SA fee requests coming? **Yes!**
- Do AS/NZS committees have expertise to develop standards in the digital-age? **No!**
- Are lighting products and services now globally aligned? **Yes!**
- Are International Standards necessary for efficient trade in goods and services? **Yes!**

So.... Are jointed AS/NZS standards still fit for purpose and value for money for NZ?

No!

Déjà vu ?

SNZ Message to NZ Stakeholders in 2016

SNZ message following introduction of the NZ Standards and Accreditation Act 2015:

“The new agreement between Standards New Zealand and Standards Australia has resulted in additional costs being imposed for the development of joint standards and thus the volume of work able to be achieved for a given price will be reduced.”

“In order to make the Kiwi dollar go further it is proposed that identical adoptions of IEC standards not proceed under the joint process, but as New Zealand only adoptions.”

John Kelly
PRINCIPAL ADVISOR

Standards Development, Standards New Zealand
Ministry of Business, Innovation & Employment

What Happens After AS/NZS De-jointing?

There is no “Plan B”. There is a void about what the future holds

The options are:

1. Retain the outdated AS/NZS standard version?
2. Adopt the updated AS standard as a NZS Direct Text Adoption?
3. Adopt the updated AS standard directly?
4. Adopt the IEC or ISO standard as a NZS Direct Text Adoption?
5. Adopt the IEC or ISO standard directly?

Which is best?

SNZ is chairing the ‘ESSAG’ advisory group for industry/government debate, and BusinessNZ is coordinating a cross-sector rationalisation lobby to government

NZ Standards Implementation Realities

Citations in NZ legislation and regulation

How best to cite (and update) standards in NZ legislation and regulation?

- Safety
- Lighting performance
- Energy efficiency
- EMC
- Radio broadcast (ie wireless control communications)



**BUILDING
PERFORMANCE**



WORKSAFE
NEW ZEALAND | MAHI HAUMARU
AOTEAROA



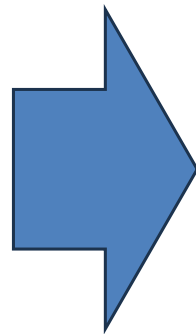
**RADIO SPECTRUM
MANAGEMENT**



EECA
TE TARI TIAKI PŪNGAO
ENERGY EFFICIENCY & CONSERVATION AUTHORITY

Moving Forward for New Zealand

Much is happening internationally..... But how does NZ implement the advances?



European Commission



Lighting Product Standards

IEC TC 34 Lighting

New product topics:

- Modular product design, and systems connectivity interfaces
- Communication protocols for connected IoT systems, interoperability, cybersecurity
- BIM for design and asset management
- Environmental: durability, material efficiency, circular economy, e-waste, carbon footprint

Lighting Council NZ provides active IEC input:

- Member - TC 34 Luminaire committee
- Member – TC 34 Lighting systems committee
- Convenor – TC 34 Environmental committee
- Lighting representative IEC ACEA - Advisory Committee on Environment (reports to IEC board)



Lighting Application Standards

ISO TC 274 Light and Lighting

New application topics:

- Lighting design using smart digital control systems
- Building Information Modelling – BIM simulation for design and asset management over life
- Systemic lighting energy quantification
- Daylight application
- Commissioning of lighting systems – indoor and outdoor
- Energy Performance of Buildings (EPB), expanding the new ISO 52000 EPB series

NZ ISO National Committee provides NZ ISO input:

- NZ is an ISO TC 274 'P-Member' with a NZ ISO National Committee and voting rights
- Publication of ISO/CIE 8995-1 Lighting for Workplaces - Interior (adopting for NZ)





Who Pays ?

IEC TC 34 Lighting

- LCNZ – Funds full F2F representation for all international events
- Worksafe NZ - No representation
- Worksafe NZ - Funds some IEC to NZS adoptions
- MBIE-BSP – No representation



ISO TC 274 Light and Lighting

- LCNZ - Funds full F2F representation for all international events
- IESANZ – Funds virtual committee representation
- IESANZ – Has funded some F2F representation for international event (Tokyo 2023)
- EECA – Funds virtual committee representation
- EECA – Funds ISO to NZS energy standards adoptions
- Massey University - Funds virtual committee representation (*)



Environmental Standards for Lighting

There are currently no published IEC or ISO environmental standards for lighting

IEC TC 34 Committee – Products (NZ a 'P Member')

Scope: safety, performance, systems, environmental (new)

ISO TC 274 Committee – Application (NZ a 'P Member')

Scope: design, application, commissioning, modelling, daylight, energy

IEC TC 34 WG 24 Environmental committee is now working on two publications:

- ***“Literature review on the use of standards and other documents”*** Project Lead: Bryan King
- ***“LCA/EPD PSR Product specific rules for luminaires”*** Project Lead: John Gielen

NZ Emissions Reduction Plan ~~2022~~ 2024

NZ Building Sector Responsibilities –
How to implement?

MBIE Building for Climate Change Programme:

- Energy and carbon emissions reductions
- E-waste reduction and management
- Circular economy supply-chain practices



Internationally aligned NZS standards essential to deliver desired outcomes

Update: Version 2 2024 - Just released for Public Comment - Minister Simon Watts

Coming - NZS Lighting Standards

- **NZS** 20086 Energy Performance – Workplace Lighting - Interior **DONE**
- **SNZ** ISO/CIE TR 3092 Energy Performance – Explanation/Justification **DONE**
- **SNZ** ISO/CIE TR 3092 Energy Performance – Calculation Software **DONE**
- ISO/CIE 8995-1 Workplace lighting - Interior (replacing AS/NZS 1680.1?) **?**
- ISO TS 21274 Commissioning of lighting systems **COMING SOON**
- ISO TR 5911 Commissioning - Explanation/Justification **COMING SOON**
- IEC 63XXXX Environmental LCA-EPD - PSR for Luminaires **?**
- ISO/CIE 10916 Calculation of the Impact of Daylighting **?**

Coming - Circular Economy for Lighting

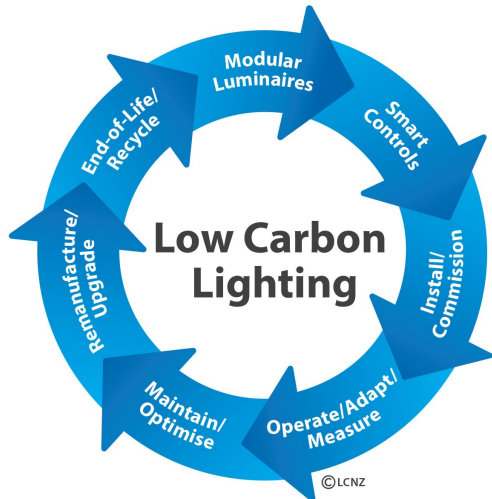


The European Commission **Single Lighting Regulation (SLR)** of 2021 and 2023 is acting as a global influence.

Circular material flows replace the “take, make, waste” linear model.

- **NZ BfCC** – Operational/emodied emissions reporting - Mandated (?)
- **NZ Govt Procurement** – Circularity reporting - Mandated (?)

IEC, ISO, EN standards for Circular Economy performance quantification can show tangible progress towards circular economy targets





Wrapping Up

Where to from here?

There is much to be done?

Who will do it?

Who will pay for it?

Thank you Bryan King



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