

The Issues and Opportunities of the Development of International Standards and Regulations in Lighting

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Challenges for the global lighting industry



Jan Denneman

President
Global Lighting Association

The global lamp and lighting business is in transfer from “analogue to digital” with all consequences for **business models** and **required regulation and standardisation**

Founded in 2007 as the Global Lighting Forum



Electric Lamp and Component Manufacturers' Association of India



Associação Brasileira da Indústria de Iluminação



Setting Standards for Excellence



Japan Luminaire Association

社団法人 日本照明器具工業会



China Association of Lighting Industry



Lighting Council
AUSTRALIA



한국조명연구원



EUROPEAN
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Global Lighting Association and CIE

- Global Lighting Association is part of the CIE network on Energy Efficient Lighting and Lighting Quality
- Memorandum of Understanding between CIE and Global Lighting Association is in preparation with the aim of closer co-operation

The main messages of this presentation

- The lighting industry will shift massively from classical solutions to LED Lighting
- To create the maximum benefits of LED Lighting, and avoid that LED Lighting is only focused on energy savings, the framework of Standards and Regulations needs to be adapted
- **Product Standards** need to support that product performance can be defined and measured, and interchangeability is secured
- **Application Standards** mainly made for classical lighting solutions need update
- **Regulations** need to secure create room for customers, environment & business

What is at stake?

- LEDs are exceptionally efficient and deliver carbon dioxide and costs savings
 - but they can deliver much more—
- LEDs give us the opportunity to take a proactive leadership role and develop and achieve standards for other aspects of light.

At the crossroads

The global lighting industry is at a crossroads in the history of artificial lighting



What are the issues? Which road to take?

Switching from “classical” technology to solid state systems means several things:

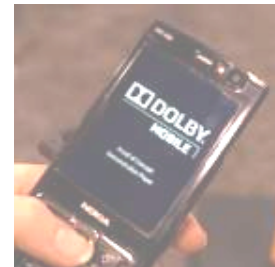
- Fast and breakthrough technological developments
- The distinction between light sources and luminaires disappears
- Adaptations of business models for manufacturers
- New communication strategies to stakeholders

The promises of LED lighting: new thinking, new opportunities

- LED lighting is much more than energy saving only
 - Undeniable contribution to a greener world
 - But also: using “intrinsic” intelligence of LED lighting
- LED technology offers new opportunities in enhancing lighting experience
 - Allows solutions closer to human need for natural lighting
 - From “stand-alone” to integrated lighting
 - Lighting will be connected



from analogue to digital



Experience from the past

- Transition from incandescent to energy saver lamps
 - Started in 1985
 - Penetration around 25% in over 25 years
 - Standards were available
 - Still a lot of concern in the market
- LED penetration will be much quicker
 - EU: 2009: 1,7 %, 2010: 6,2%, 2011: 12,8%
 - without appropriate standards – high consumer dissatisfaction is almost unavoidable

A scenario to be avoided









Why Standardization?

- Enable market access (safety standards & measuring methods standards)
- Enable fast take-up of new technologies by creating market confidence
 - Enable interchangeability (interface standards)
 - Enable high quality solutions (performance definitions & measuring methods standards)

Different types of Standards

- Technical product standards
safety, measuring methods, interface, performance definitions
 - via standardization development organizations (like IEC)
 - via industry consortia – new to lighting world (like Zhaga)
- Application standards and norms
 - Scientific fundamentals to be created by CIE
 - Challenge to translate scientific fundamental research into actual application standards – ISO initiative could be a step into the right direction

Ongoing activities in IEC

	Product Type	Safety Standard 	Performance Standard 
	LED drivers	IEC 61347-2-13 Publication 2006	IEC 62384 Publication 2006
	LED lamps	IEC 62560 Edition 1 Publication 2010	IEC 62612/PAS Public Available Specification
	LED modules	IEC 62031 Edition 1 Publication 2008	IEC 62717/PAS Public Available Specification
	LED luminaires	IEC 60598 Edition 1 & 2 Publication 2008	IEC 62722/PAS Public Available Specification

The role of consortium standardization initiatives



- Explore new ways to accelerate the development of standards
- A complimentary role to standardization bodies

Where do we stand?

- With regard to the complimentary existence of IEC and ZHAGA activities, the standardization of LED products is well addressed
- We need further concerted action as for LED measurement standards and application standards

LED measurement standards

Urgent need for improved SSL measurement standards

- Performance of luminaires not always aligned with chip performance
 - often leads to exaggerated claims about lumen output and other parameters
 - Responsibility of LED manufacturer to address this problem with improved measurements standards
- Global lighting industry welcomes initiatives that contribute to achieving a better framework for measurement standards on a global scale

Applications Standards

- CIE provides for a well established and globally recognized forum for scientific research
- It is the task of all lighting stakeholders to give more attention to close the gap between research and application
 - Scientific research has to be turned into appropriate application standards and norms with limited resources and in a reasonable timeframe
 - Norms have to be created to reap the benefits of other aspects than the pure visual, like biological effectiveness of lighting
 - The respective tools and networks to do this have to be developed on a global scale.

In summary: what is needed related to LED Standardization?

- Standards and regulations must be designed to enable the full use of the advantages of the new technology
 - Concerted approach between industry, CIE and other standardization bodies is required (measurement standards and application norms)
 - Additional initiatives (like Zhaga) will compliment the work of standardization development organizations
 - Increased speed of standardization initiatives
- Industry is ready to give the necessary support



Why Regulations?

- Create minimum quality levels in the market - Favor high quality solutions
- Create trust and consumer confidence
- Support objectives of society to energy saving - Increase renovation rate of lighting
- Secure the “legislative room” for additional benefits of LED lighting, like biological effectiveness of Lighting - Enable fast take-up of new technologies

Standards and Regulations

product standards

- safety & performance definition
- interchangeability






measurement methods

technical definitions

application norms

- lighting requirements
- limiting performance values




limiting values



regulations

- efficiency targets & timelines
- application regulations
- product regulations.





China Association of Lighting Industry

all standards are voluntary – till there is a legislative reference!

Standards and Regulations in practice

type	scope	technical definitions	measurement methods	limiting values
product standards	international	yes	yes	safety only
application norms	international	yes	yes	sometimes
regulations	regional	by reference	by reference	yes

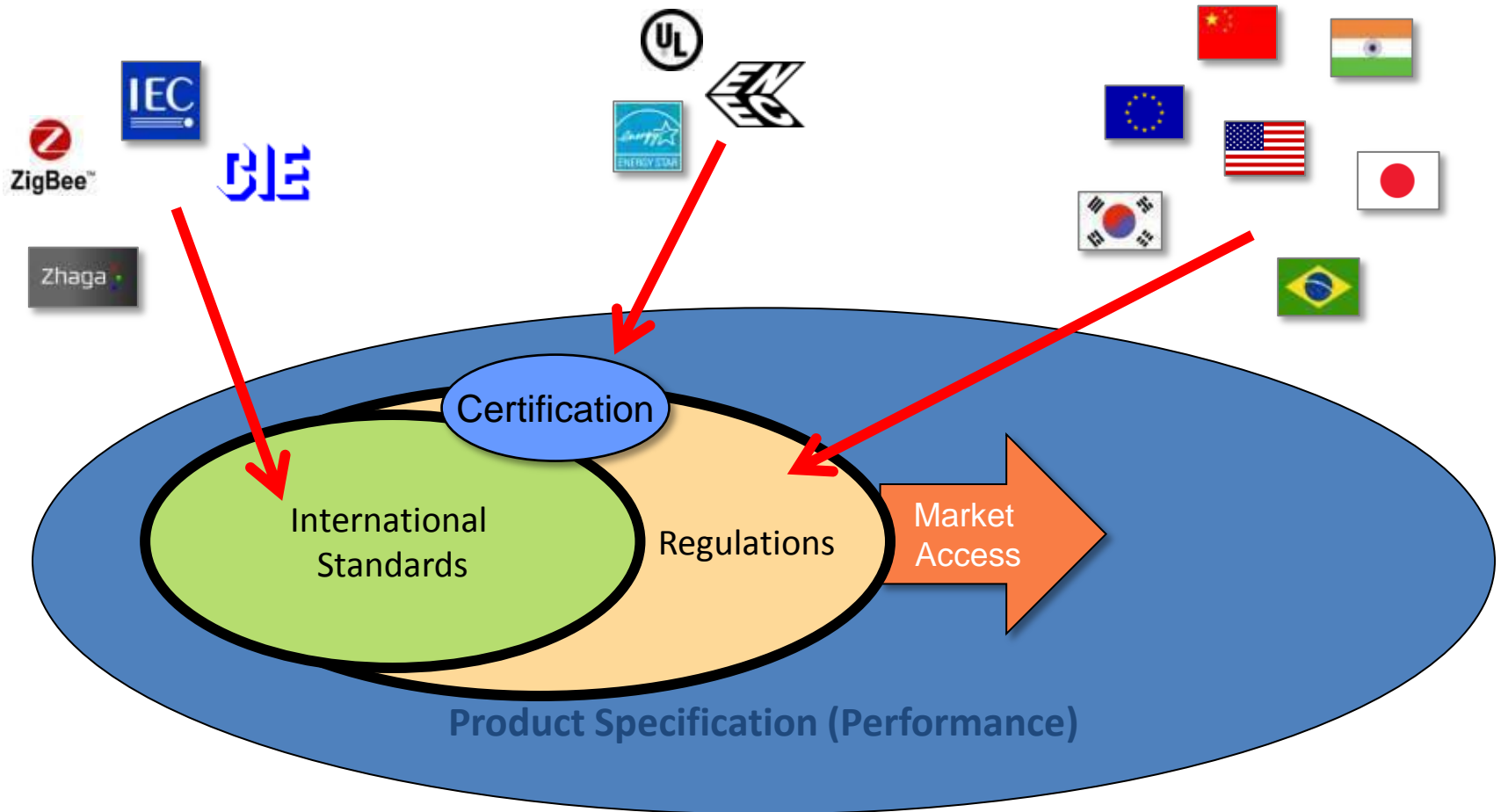
Standardisation

- int. IEC/CIE standards are accepted via regional/national bodies
- main focus is on 'technical definitions' & 'measurement methods'
- allowing regional tweaks in 'limiting performance values'

Regulations

- Country authority programs
- main focus on 'limiting performance values'
- reference to standards for 'definitions' & 'measurements'

Standards and Regulations overview



Growing importance of Regulations

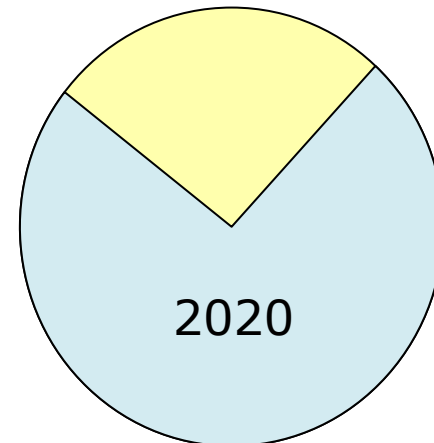
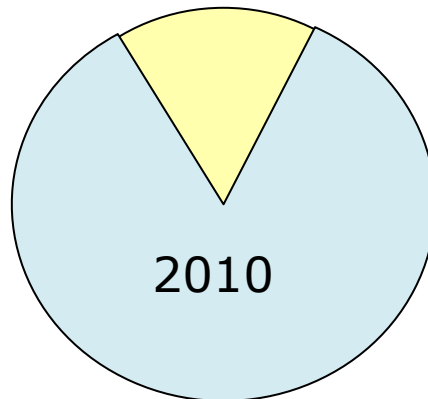
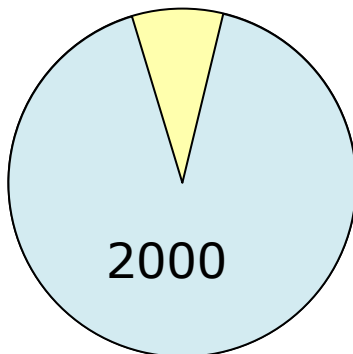
Classical market drivers

Product Portfolio
Marketing Capabilities
Supply Capabilities
Standardisation
Competition



New additional market drivers

Energy Supply security
Environmental protection
Climate change / Kyoto
Safety & Security
Demographic change



Source: Daniel Guéguen, ETI Brussels

Standardization versus Regulation

- Industry supports the separation between global standards and regionally applicable regulations
- => there is no scope to have international consortia influencing the setting of regional regulation

The main messages of this presentation

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- **Product Standards** need to support that product performance can be defined and measured, and interchangeability is secured
 - Create confidence for consumers with reliable standards
 - Secure interoperability between components and systems
 - Pave the way for wireless connectivity
- **Application Standards** mainly made for classical lighting solutions need update
 - Need to be updated for LED Light sources
 - Create room for other aspects like biological efficiency
 - Take the challenges of demographic changes into perspective
- **Regulations** need to secure create room for customers, environment & business
 - Regional differences between markets
 - Other aspects than energy efficiency, like biological efficiency
 - Secure level playing fields in markets

The conclusion

The industry is committed to working with CIE and the scientific community to speed up the process of

- creating the updated application norms
- creating tools to utilize other than visual aspects of lighting

One step forward

- Global Lighting Association invites you to a workshop during Light & Building on 18 April 2012 in Frankfurt
- Speakers from CIE, ZHAGA, IEC and industry will be present to discuss approaches for better alignment of activities and scope for cross learning exercises and joint positioning

***The industry is committed to working
with CIE and the scientific community
to speed up the process***

www.globallightingassociation.org

