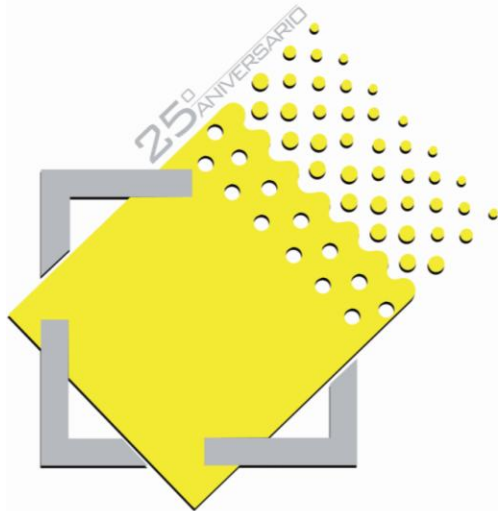




# **CELMA** **Lighting and the EuP's** **Directive**



**ANFALUM**  
ASOCIACIÓN ESPAÑOLA DE  
FABRICANTES DE ILUMINACIÓN

Mr. Alfredo Berges Valdecantos  
Managing Director of ANFALUM  
CELMA General Secretary – 1992 –  
2002 - 2008



**CELMA**

**C.E.L.M.A.**

*Federation of National Manufacturers  
Associations for Luminaires and  
Electrotechnical Components for  
Luminaires in the European Union*

**About us**



# European Lamp Companies Federation (ELC)



- 7 Member companies



- collectively employ 50,000 people in Europe
- account for 5 billion Euro European turnover
- [www.elcfed.org](http://www.elcfed.org)

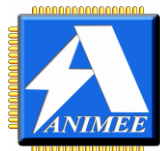


# European Luminaires and Gear Industry (CELMA)



- Created in 1991
- Represents professional & Domestic Luminaires and components
- 19 National Manufacturers Associations for Luminaires and Electrotechnical Components for Luminaires
- Represents around 1000 companies (*majority of small and medium-sized companies*)
- In 13 EU countries
- Directly employ more than 107.000 people
- Generate around 15 billion Euro annually
- <http://www.celma.org>

# CELMA MEMBERS' ASSOCIATIONS



BELYSNINGSBRANSCHEN



# Setting the scene

# Increasing commitments from Brussels to reduce energy



- The Directive on the promotion of end-use efficiency and energy services (ESD) and its national energy action plans – 9% savings over next 9 years..
- The Energy Using Products (EUP) Directive and forthcoming implementing measures for lighting
- The new Action Plan on Energy Efficiency
- The Energy Performance of Buildings Directive (EPBD)

- Lighting consumes 14% of all electricity consumption within the EU and 19% of global electricity consumption

*International Energy Agency*

- “Lighting requires as much electricity as is produced by all gas-fired generation and 15% more than produced by either hydro or nuclear power”.

*Light’s Labour’s Lost – Policies for Energy-efficient Lighting. IEA*





- Public lighting represents 1.2% of total electricity consumption\*
- Surprising amount of inefficient lighting lights up Europe's public offices, historical buildings, schools, streets and public spaces each year
- This has an adverse affect on the
  - **environment** by wasting large amounts of energy and producing unnecessary quantities of CO2
  - **public purse** as lighting accounts for a large total of central, regional and local government energy consumption and costs
  - **public spaces** as much of this lighting technology is poor quality

\*Martin Cahn - Energy Cities - <http://buybright.elcfed.org/uploads/fmanager/lille.pdf>

# How lighting can help governments meet commitments

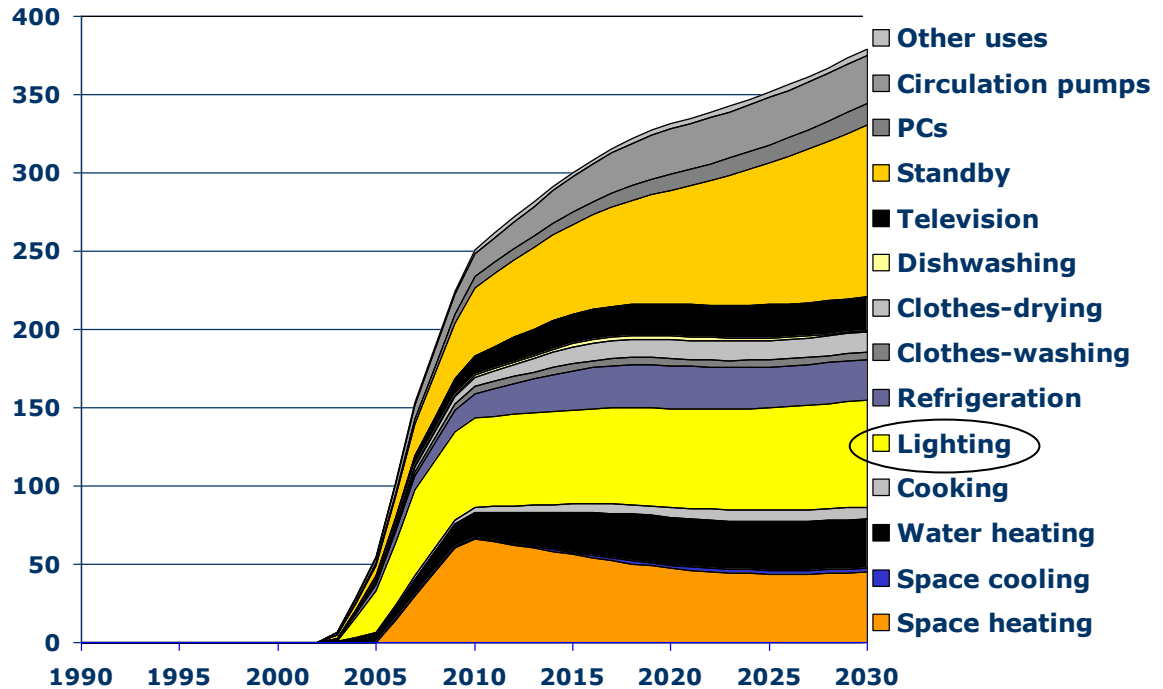


**Projected potential electrical energy savings by end-use (domestic) through using more energy efficient products....**



Source IEA

TWh/year





- A realistic energy savings of 20% on all the lighting currently installed in Europe would save:
  - **At least 25 Million tons of CO<sub>2</sub>**
  - **10 Billion euros in running costs** (20% saving at 0.10 Euro kw/h)
- European Municipalities could save 1.7 billion euros per year in running costs if they were to switch to new and efficient street lighting technology\*

\* e.g. from Mercury lamps to Ceramic Metal Halide

# New technology can also improve safety and light quality



Redbridge, UK, before



Redbridge, UK, after installation

- Redbridge, UK before and after
- The street below
  - Uses less energy
  - Provides higher quality light  
*(and therefore could increase property prices)*
  - Provides greater safety



- Over 60% of all Europe's lighting is old energy inefficient technology
- 1/3 of street lighting in Europe still based on old, outdated and inefficient technology
  - current switch over rate is 3% per year - *meaning it will take another generation to upgrade*
  - average life-time of lighting installation = 40 years
  - new technology available, more energy efficient and better quality light
- More than 75% of tertiary lighting systems still inefficient
  - current switch over rate is 7% per year
  - average life-time of lighting installation = 25 years
  - huge differences in efficiency between old and new systems (energy saving potential 30-80%)

**Overcoming the obstacles**

**What can be done?**

# Our vision



\*COM 2005/32/EC

\*COM 2006/545/EC

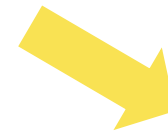
# ELC/CELMA joint recommendations for Tertiary lighting



- **New lighting products** (lamps, ballasts and luminaires) must meet pre-market minimum efficiency standards.
  - **Lighting plans destined for new and renovated streets** must include lighting standards (including minimum energy efficiency standards).
  - **Existing tertiary lighting systems** must be evaluated on their compliance with these lighting standards and the requirements for new lighting products mentioned above (including minimum energy efficiency standards).
- Lighting systems that do not comply should be renovated.



**EUP** Implementing measures for tertiary lighting



NATIONAL ACTION plans under the **ESD**

# Old v New



## OLD energy inefficient technology Mercury Vapor System



- Low efficacy typical 35-60 lm/W
- Large source
- Service lifetime 10000 hr (70%)
- Modest Ra: 40 - 50



- Bad light distribution due to 3 part reflector
- Low maintenance factor due to low IP-23

## NEW energy efficient technology Metal Halide / HP Sodium System



Metal Halide

- High efficacy typical 65-120 lm/W
- Small source
- Service lifetime 10000 hr (70%)
- Better Ra up to 95



HP Sodium

- Very high efficacy typical 65-150 lm/W
- Small source
- Service lifetime 20000 hr (70%)
- Low Ra : 20



- Good light distribution due to faceted reflector
- High maintenance factor IP-5X or higher

***\*full position available***

# Old v New



## OLD energy inefficient technology

### Old T12/T8 System



- High loss ballast
- halo-phosphate lamp
- no control (dimming)
- high glare (UGR)
- large luminaire

## NEW energy efficient technology

### Modern T5 System



- electronic ballast (highly efficient)
- tri-phosphor lamp
- fully controllable (daylight/presence)
- glare control (UGR)
- smaller luminaire due to better optics

*\*full position available*

# **EuP Implementing Measure for tertiary sector lighting products**

# Important coming steps and timing



- ❖ **First (1st) stage requirements are expected to be applied as from March 2010 (1 year after the entry into force of the Regulation)**
- ❖ **Is a PRODUCT related regulation which is application independent (but with focus on lamps mainly used in street & office lighting)**
- ❖ **Contains detailed mandatory ecodesign requirements for fluorescent & HID lamps and related ballasts**
- ❖ **Contains mandatory product information requirements for luminaires able to operate such lamps and ballasts**
- ❖ **Contains mandatory requirements in 3 main stages and 2 intermediate stages:**
  - 1. Main stage 1, 1 year after into force, March 2010 + interm. stage 1,5 year**
  - 2. Main stage 2, 3 years after into force, March 2012 + interm. stage 6 years**
  - 3. Main stage 3, 8 years after entry into force, March 2017**

# Introduction to requirements at the different stages



- ❖ **Product phase outs are the consequence of energy efficiency & performance requirements and are not based on product technology as such**
  - ❖ **As a result of these requirements, some products will be banned**
- ❖ **Revision of the regulation will take place within 5 years after entry into force (2014)**
  - ❖ **Therefore stage 3 requirements can be updated during this revision**

# Latest news on the draft EuP Implementing Measure for domestic lighting products

# Introductory remarks



- ❖ **The EuP Implementing Measure for domestic lighting products is a related regulation focusing on lighting products mainly used in domestic and hospitality areas**
- ❖ **The Regulation is divided into two parts:**
  - 1. Part 1: non directional light sources (incandescent lamps)**
  - 2. Part 2: directional light sources and luminaires (system level improvement, reflector lamps, LED)**

# Latest proposal from the lighting industry - details



Stage	Date <sup>1)</sup>	Main Result	Allowed products clear lamps & non-clear lamps with CRI=100 <sup>2)</sup>	Allowed other non-clear lamps <sup>2)</sup>
Stage A	Oct 2009	Phase-out lamps >= 100W	>= 100W Energy class A, B <sup>3)</sup>	Energy class A
Stage B	Oct 2010	Phase-out lamps >= 75W	>=75W Energy class A, B <sup>3)</sup>	Energy class A
Stage C	Oct 2011	Phase-out lamps >= 60W	>=75W Energy class A, B <sup>3)</sup> 60W Energy class A, B, C	Energy class A
Stage D	Oct 2012	Phase-out lamps >= 40W	>=75W Energy class A, B <sup>3)</sup> 40- 60W Energy class A, B, C	Energy class A
Stage E	Oct 2013	Phase-out lamps >= 25W	>=75W Energy class A, B <sup>3)</sup> 25- 60W Energy class A, B, C	Energy class A

- 1) Implementation dates per Q4, due to the light season and retail business cycle.
- 2) Exemption list not included here
- 3) Energy Class C allowed for Halogen lamps MV and LV with special sockets (e.g. G9, R7s, G4, GY6.35) at all stages



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# The Benefit of a new Lighting Legislation

# Need: Lighting design legislation



- ❖ **Only the system / installation level will bring the maximum energy savings (40% on average compared to actual installed base)**
- ❖ correct installation or *“putting into service”*

# What is lighting design?

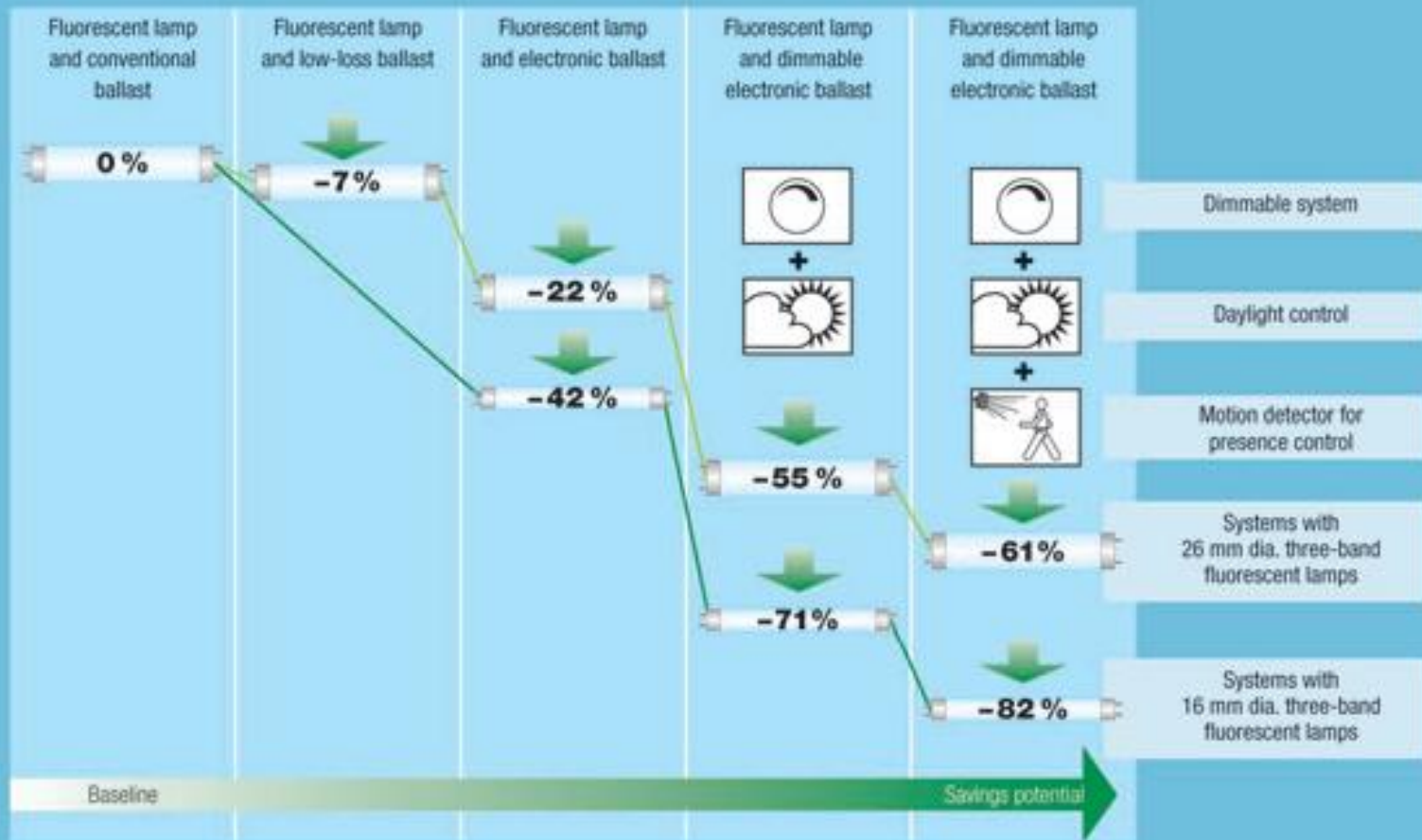


- ❖ Lighting design is a plan, scheme or drawing detailing the configuration and layout of luminaires related to a ceiling and other vertical and horizontal surfaces, including all related control equipment.
- ❖ Such drawing and information are binding for the installer.
- ❖ An installation executed to the plan results in the correct lighting solution for the intended application

# Saving potentials with modern technique



## Milestones to energy conservation with modern lighting



# Big savings in renovation



**75 % of office lighting is inefficient**

**Modern lighting may save 50 %**

# Lighting quality is life for people



## Visual function

Identifying, working without mistakes, safety, orientation



## Emotional feelings

Pleasant environment, motivation, mood



## Biological functions

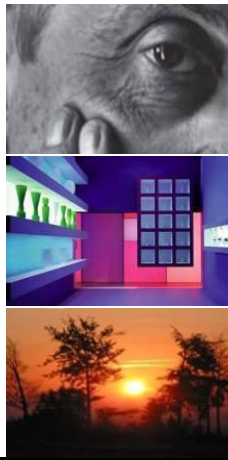
Body clock, sense of wellbeing, health



# A balance between lighting quality and energy efficiency is needed



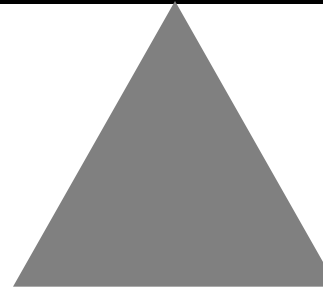
Quality



Energy



Strengthen  
quality aspects



# Summary: Why an EU-wide lighting design legislation?

- ❖ Since lighting solutions and their energy saving criteria are in principle the same across EU Member States, such binding Lighting Design rules would avoid the risk of 27 divergent national criteria, which would be unnecessary, costly and time-consuming.
- ❖ So this new lighting design legislation should come from the EU level to have the same rules applying for all EU countries.
- ❖ The rules would have to be applied for NEW installations.
- ❖ Whether renovation has to take place will have to be decided by the countries (proportionality and subsidiary principle), but when the decision is taken, the installation after renovation shall be in compliance with the new EU legislation.

# Saving energy through lighting Easy as 1,2,3



## Three steps

- New lighting products
- New lighting systems
- Existing lighting systems



## A triple win

1. For the environment
2. For society
3. For the economy





# MORE INFORMATION IN:



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**Thank you**