Background & Motivation: Overview of Lighting Policies

Michael Scholand, IEA 4E Solid State Lighting Annex

Michael Scholand, IEA 4E SSL Annex

Worked to support governments and the private sector in the development of energy-efficiency programmes and policies for more than 15 years. He has worked on a broad range of appliances and equipment, with a specialisation in lighting.

After working for ten years to support the US DOE and Natural Resources Canada on efficiency regulations, he transitioned to Europe and started working for the UK Government and later CLASP as a technical expert supporting the European Commission's policy-making process.

Since 2012 he's supported UNEP's en.lighten initiative as a technical expert, focusing mainly on the Middle East and West Africa. In October he's travelling to Bangkok to help kick-off a regional harmonisation effort on lighting regulations in the ASEAN countries.

He also works to support the Operating Agent of the IEA 4E Solid State Lighting Annex, assisting with coordination of the Annex's research, the preparation of reports and operational support of the Annex.

Mr. Scholand is Lighting Certified by the National Council on Qualifications for the Lighting Professions (USA) and he holds an MSc in civil and environmental engineering and a BSc in mechanical engineering and environmental studies.

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Overview of Lighting Policies

Michael Scholand, IEA 4E Solid State Lighting Annex

SEAD | SUPER-EFFICIENT EQUIPMENT AND APPLIANCE DEPLOYMENT INITIATIVE

# About the IEA 4E Solid State Lighting Annex

- Established in 2010 under the International Energy Agency's Energy Efficient End-use Equipment (4E) Implementing Agreement

- To provide support to its member countries seeking to implement quality assurance programmes for SSL lighting

- Several research activities underway covering test standards, laboratory accreditation, lifetime testing, standby power, etc.

- Member countries are: Australia, Denmark, France, The Netherlands, Republic of Korea, Sweden, United Kingdom and United States of America. China is an expert member.

- Information on the SSL Annex: http://ssl.iea-4e.org/

Introduction and Context

- Why lighting?
  - Energy savings potential of policy measures
  - Accelerate adoption of energy-efficient lighting

- What technologies?
  - Light Emitting Diodes (LEDs) - a disruptive technology
  - LED lamps and luminaires in all shapes and sizes....good and bad

- How can policy makers address?
  - Policies and programmes, both mandatory and voluntary
  - Early, appropriate action can help the market develop
  - Integrated policy approach for sustained market transformation

- What programmes and policies are working today to shape our lighting markets?

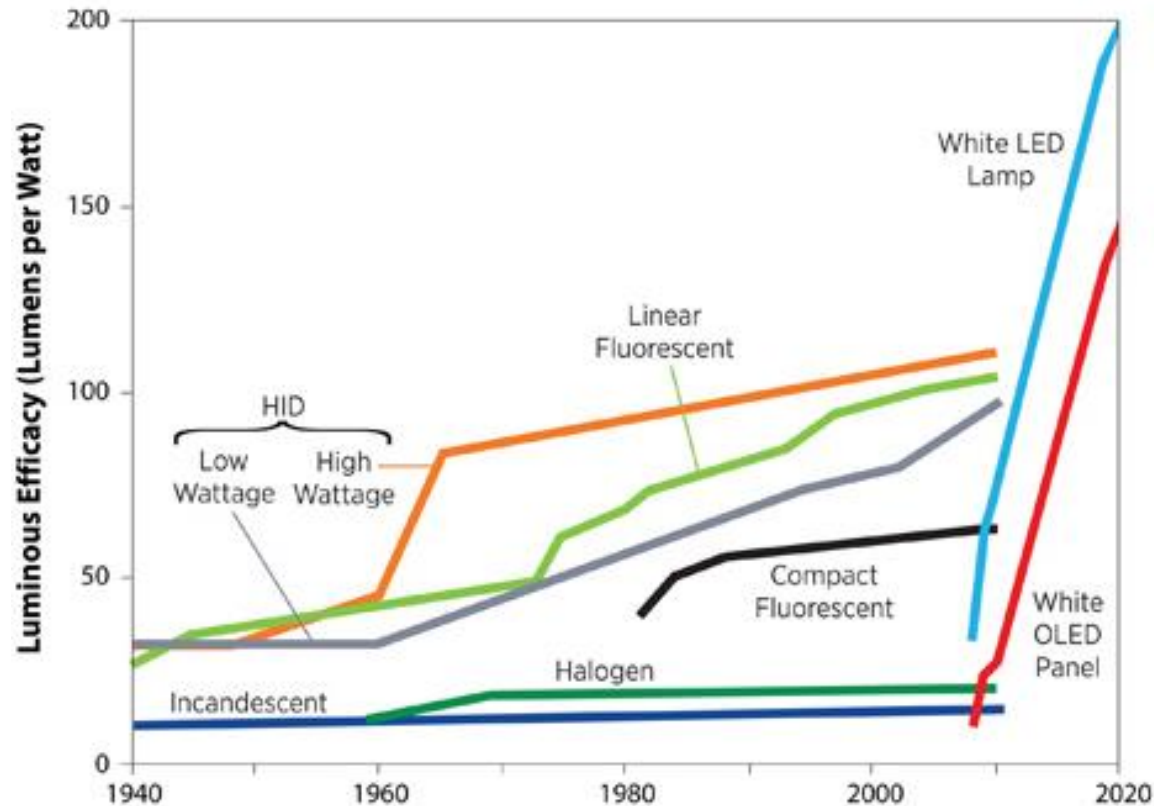# Projection to 2030 of Global Electricity Demand for Lighting, UNEP

- No new policies, lighting electricity use increases >3,200 TWh/yr
- Lighting policies could capture between 832 and 1209 TWh in annual electricity savings by 2030
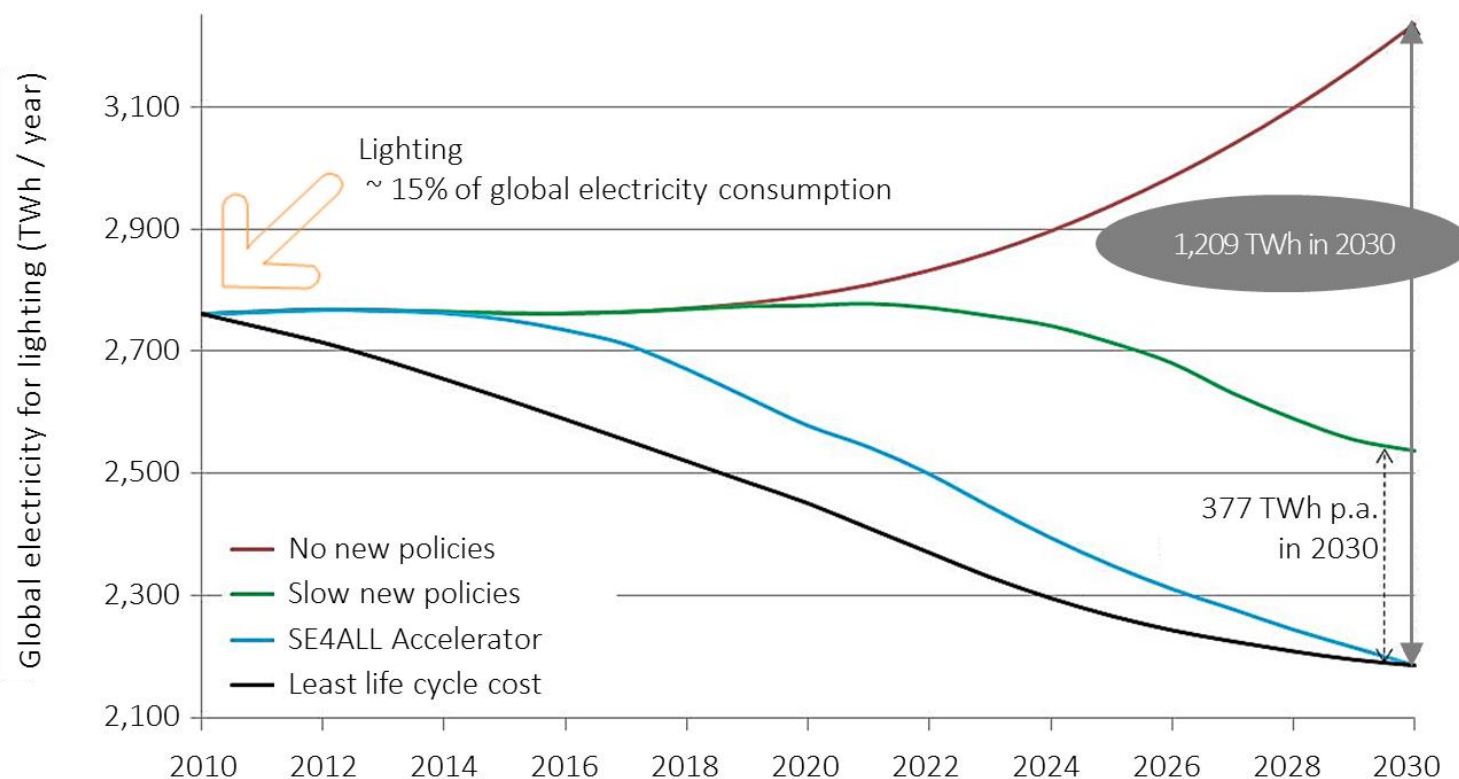
- Timeline shows SSL technology is the most efficient way of converting electricity into light (US DOE)

# LEDs are Emerging as
the Leading Lighting Technology

- LEDs will come to dominate all sectors and all end-use applications

- Long life, no mercury, instant-on, easily dimmable, range of colours, high-flux

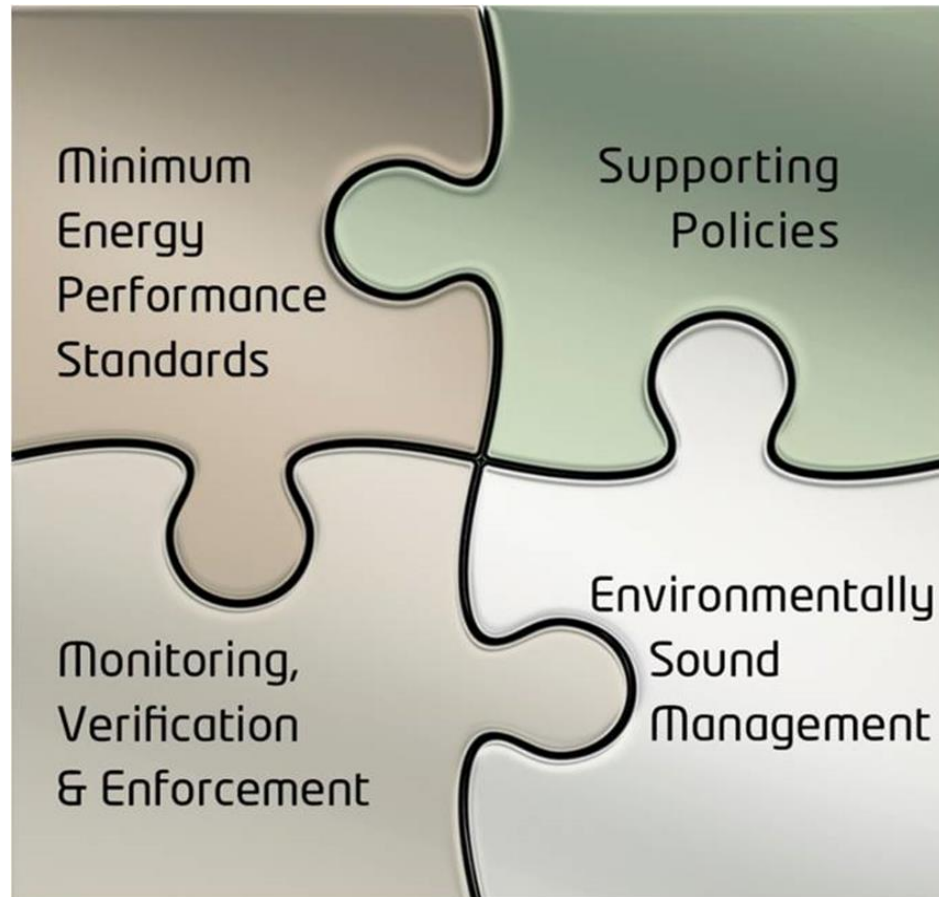# LED Market Growth – Good Time for Policy Intervention

- 28% Combined Annual Growth Rate (CAGR), lamps/luminaires 50:50 in 2018
- Good opportunity for policy measures to protect markets and guide the transition to EE Lighting
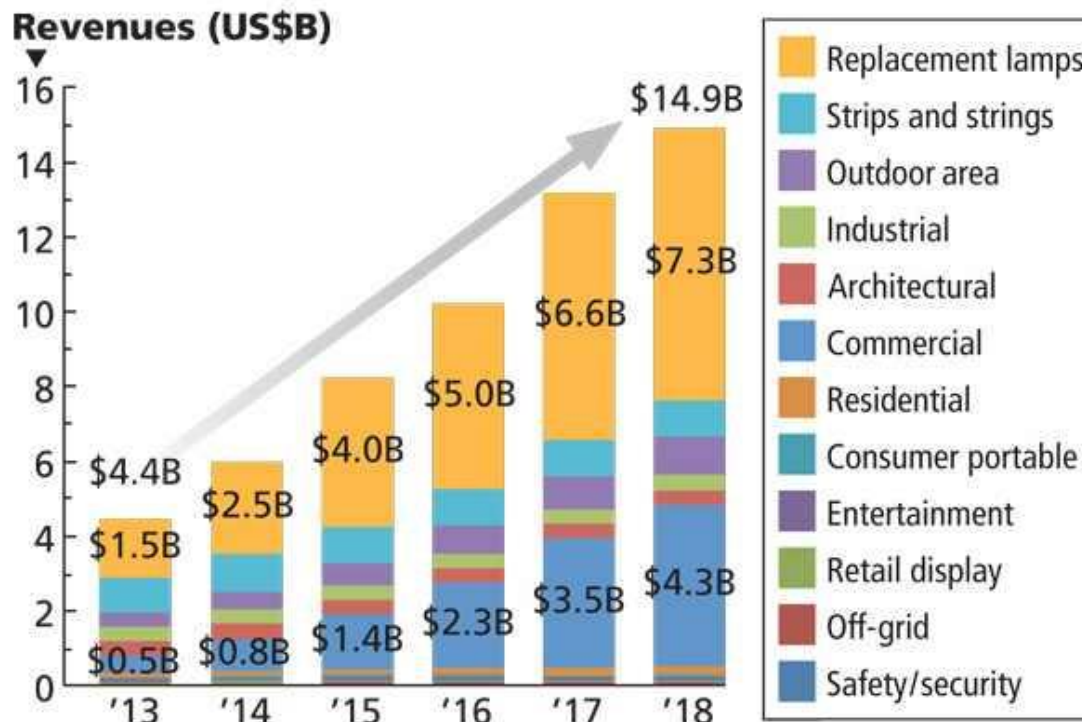
The Integrated Policy Approach – Key to Sustained Market Transformation

Standards and Labelling for LEDs
Current Status Globally…

- Canada
- Chile
- China (PRC)
- European Union
- Germany
- Hong Kong
- India
- Japan
- Jordan
- Republic of Korea
- Malaysia
- Mexico
- Nigeria
- Switzerland
- Turkey
- United Arab Emirates
- United Kingdom
- United States

clasp

CLASP's Global S&L Database
http://clasp.ngo/Tools/Tools/SL_Search/

For LEDs:
- 21 endorsement labels (e.g., E-Star)
- 8 comparative label (e.g., A to G scale)
- 9 MEPS – largely based on European

Overall, at a national level for LEDs:
- 21 voluntary programmes & 17 mandatory

Some of the Efficient Lighting Collaborations and Programmes

- Asia Lighting Compact (ALC)
- CALiPER (US DOE)
- Clean Energy Ministerial – Global Lighting Challenge
- Efficient Lighting Initiative (ELI)
- Global Lighting and Energy Access Partnership (Global LEAP)
- IEA 4E Solid State Lighting (SSL) Annex
- L Prize (US DOE)
- Lighting Africa (also called "Lighting Global") (IFC/World Bank)
- Light Savers Canada
- lites.asia
- LUMINA project
- PILESLAMP
- Regional Centre for Lighting South Asia (RLC)
- Super-Efficient Equipment and Appliance Deployment (SEAD) Initiative
- Top Ten
- UNEP/GEF en.lighten initiative
- Zhaga Consortium

New standards are helping to address the new challenges with SSL…

- Global measurement standard

- Colour rendering

- Flicker

- Lifetime

- Standby power

IEA 4E SSL Annex
Performance Tiers

- The IEA 4E SSL Annex maintains voluntary product performance tiers for common SSL applications in support of various government policy objectives (e.g., public procurement, bulk purchase, etc).

Non-directional Lamps for Indoor Residential Applications

Linear Fluorescent LED Lamps (non retrofit)

Directional Lamps for Indoor Residential Applications

Replacement Linear Fluorescent LED Lamps (retrofit 360°)

Downlight Luminaires

Street Lighting / Outdoor Lighting

Please visit: http://ssl.iea-4e.org/product-performance