Looking at 2030

Growth Strategy 2020 of Lighting Business
- Evolution of the lighting culture and contribution to the global environment -

Lighting Vision 2020 Ver.2

Japan Lighting Manufacturers Association
SSL (Solid State Lighting): Lighting using optical semiconductors such as LED, OLED and laser.

--- Vision ---

Evolution of the lighting culture and contribution to the global environment

Accelerate the popularization of solid state lighting (SSL) with the aim of contributing to the global environment and achieving international business expansion.

--- Mission ---

We will strive to find increasing application for energy efficient and environmentally friendly lighting to create a safer and more comfortable living environment and to help improve the global environment.

As the voice of the lighting industry, we will create a fair, healthy lighting market and contribute to the sustainable development of the lighting industry by working on the government growth strategy and exchanging of information with our stakeholders.

--- Build a foundation for standardization ---

Construct a new order in line with the paradigm shift from conventional light sources to SSL

- Reconstruct a sound market with fair and appropriate competition.
- Addressing the lighting business structure change

--- Accelerate the shift to SSL. ---

Market share of SSL luminaires

2020: 100% of shipments
2030: 100% of existing luminaires on the market

--- Evolution of the lighting culture and contribution to the global environment ---

- Accelerate the shift to SSL in the stock market.
- Step up voluntary activities to reduce mercury consumption.
- Create value of lighting spaces by enhancing lighting quality.

--- Double the ratio of overseas sales! ---

Expand overseas businesses.

- Improve the business environment for operations in overseas market.
- Establish a Japanese lighting brand in the global market.

Shift emphasis from efficiency to quality and move from standalone solutions to systems!
The average unit price of domestic SSL luminaires fell sharply to about 60% over the three years from 2010 to 2013. Since then, their average unit price has flattened somewhat due to the increase in HID replacement products, which are relatively expensive.

Although the LED lamp share rate as of 2015 is 3.4%, which is lower than that of luminaires, it is estimated that replacement with LED lamps will accelerate in the future. However, the domestic light source market is on a downward trend due to its longer life and the integration of SSL light sources and luminaires, etc. It is estimated that the total light source quantity will continue to decline in the future.

Higher added value
- From an emphasis on efficiency to an emphasis on quality (Lighting control, human-centric lighting, etc.)
- From standalone solutions to systems (IoT solutions, intelligent lighting, etc.)

Globalization
**Lighting Vision 2020**

Evolution of the lighting culture and contribution to the global environment

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### The New Growth Strategy of the Japanese Government
*(Japan Revitalization Strategy 2016)*

#### Regulatory and system reforms
1. Introduction of a new mechanism for regulatory reforms
2. Regulatory reforms towards future investment
3. Utilization of National Strategic Special Zones (breakthrough on structural reforms)

#### Strategic Market Creation Plan
1. The fourth industrial revolution (IoT, Big Data, artificial intelligence)
2. Toward becoming a world-leading healthcare country
3. Overcoming environment-energy constraints and expanding investments
4. Transforming sports and culture into a growth industry
5. Revitalizing markets for transactions of existing houses and reform

#### Strategy of Global Outreach
1. Promotion of economic partnership negotiations, and promotion of the conclusion and revision of investment agreements and tax treaties
2. Supporting regional SMEs’ overseas expansion in the wake of the TPP
3. Expansion of infrastructure system exports
4. Promotion of inward direct investment

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### Priority Challenges

1. **Create a new order in line with the paradigm shift from conventional light sources to SSL**
   - Reconstruct a sound market with fair and appropriate competition. Formulate related standards, build photometric test centers and strengthen the market surveillance system to secure a sound market.
   - Addressing the lighting business structure change. We will support the smooth business transformation to SSL from the existing light source business, and guide and support new business entrants.

2. **Evolve the lighting culture and contribute to the global environment.**
   - Contribution to the global environment by accelerating the shift of the existing eluminaires on the market to SSL. We will contribute to energy savings and the reduction of environmentally harmful substances through the SSL conversion of the existing luminaires on the market.
   - Create value of lighting spaces through enhancement in lighting quality. Propose and disseminate new quality criteria apart from efficiency.
     - Propose a new lighting space
     - Increase the value of lighting in linkage with smart systems

3. **Expand overseas businesses**
   - Improve the business environment for operations in overseas market. Provide technical support for Asia and emerging countries to create a fair and sound market where players can complete on equal terms in order to encourage Japanese firms to enter the market.
   - Establish a Japanese lighting brand in the global market. Organize overseas events and business meetings to push ahead with activities for lighting that resemble the Cool Japan campaign.
map to 2020

2014~2016
- Promote commercialization of OLED luminaire.
- Start studies on high performance JS, finish formulation of JS for LED luminaires, inaugurate "Top Runner Approach" for saving energy for self-adhesive LED lamps, Diversity LED luminaire specifications and start commercialization of OLED luminaire.

2017~2019
- Improve business environment in national strategic special zones. Popularize EMS on a full scale. Implement overseas dispatch of senior human resources in small and medium enterprises.
- Advance diamond partnership agreement with India and ASEAN. Promote Cool Japan by supplying risk money.
- Put the high performance JS into effect. Consider top runners in LED luminaires. Advance the transition to high value-added LED luminaires. Speed up the commercialization of OLED luminaires.

2020~
- Organize the Olympic Games in Tokyo. Introduce smart meters to general households. Achieve ZEB and ZEH targets (100% compliance). Enrol ten thousand companies operating overseas. Double exports from small and medium enterprises from the 2010 level.
- Popularize office and home lighting based on network control. Popularize lighting with color cells panels. Distribute the lighting culture (nostalgia with lighting).

65%
60%
15%

2014~2016
- I-1-1. Press ahead with standardization.
- I-1-2. Foster and develop test centers and establish a third-party certification program.
- I-1-3. Establish a market surveillance system. (Implementation of survey of products in the market, etc.)
- I-2-1. Consider offering support for structural reforms of conventional light source businesses.

2017~2019
- II-1-1. Execute the strategy for acceleration of the SSL renewal (new renewal campaign).
- II-1-2. Visualize the shift to SSL in the stock market and implement progress management.
- II-1-3. Make sure that SSL is compulsory for luminaires in public facilities under all JUMA standards.
- II-1-4. Measures against environmentally hazardous substances (Mercury, VOC, PCB, radioactive material, etc.)
- II-2-1. Define and use a new target indicator for lighting quality improvement.
- II-2-2. Propose and disseminate new value of lighting space (holding lighting fairs, etc.)
- II-2-3. Foster intelligent lighting systems for to the smart society (e.g. HEMS, BEMS, solar power generation system, IoT).
- II-2-4. Propose and popularize new applications with SSL.

2020~ Vision
- • Build and institutionalize photometric test centers. Number of testing laboratories registered by JNA.
  - 6 (in 2014) → 20 (in 2020)
- Establish a market monitoring system. Number of Members.
  - 176 (in 2013) → 196 (in 2020)

- III-1-1. Visualize the progress of overseas market development.
- III-1-3. Construct and implement a task force for giving trade tariffs fairer forms.
- III-1-4. Establish a market surveillance system based on international collaboration.
- III-1-5. Gather information through affiliates in each country, and exercise influence over international organizations and governments.
- III-2-1. Organize events for business matching.

- • Contribute to fair and healthy market construction in Asia, emerging countries and elsewhere. Know your way to market entry opportunities for Japanese companies.
- • Develop Japanese lighting into a brand. Increase the brand strength of Japanese products.
- • Double the ratio of overseas business. * Excluding LED chips and photostates
Evolution of the lighting culture

From an emphasis on efficiency to an emphasis on quality
From standalone solutions to systems

- Create value of lighting spaces by enhancing lighting quality.

System solutions

- Application in agriculture, fisheries and industrial sectors
- "Dimming and color tuning" technology for improving facility environments
- Natural energy IT control
- Smart grid data network
- Smart factory
- Smart building
- Smart house

- System linkage for creating comfortable living environments

- Task & Ambient
  - 300lx
  - 750lx
- "Dimming and color tuning" technology for creating comfortable living environments

- Distribution of multiple lighting for creating comfortable living environments

- Residential use

- Effort efficiency

Expansion of overseas business

Helping create a fair market environment
Developing Japanese lighting into a brand

- Support for market development in emerging economies
  (in close cooperation between the public and private sectors)

- Initiative for international standardization and international exchange

  - Gathering of information such as market trends in different countries
  - Negotiate with international organizations and governments in international collaboration with industrial circles in different countries
  - Participation in IEC standardization activities (IEC/TC34)
  - Incorporation of comments from the industry into trade barrier negotiations

IEC, CIE, lighting-related organizations as well as national governments and international organizations

- Global Lighting Association(GLA)
- EU
- United States
- China
- Rep. of Korea
- Australia
- Taiwan
- India
- Brazil
- Middle East

JLMA

Standardization support, personnel dispatch, organization of events and business matching, distribution of information on Japanese products, etc.

Enrichment of human networks
Exchange of information related to the policies, markets and project, etc.

Thailand
Indonesia
India
Vietnam
etc.
**Reduction of power consumption**

Reduction of power consumption for luminaires

- **2006**: Conventional (Non-SSL) 1,649 million kWh
- **2020**: SSL 1,162 million kWh, Conventional (Non-SSL) 863 million kWh

- **30%** reduction in power consumption from 2006 to 2020
- **48%** reduction in power consumption from 2006 to 2030

*The estimate is made based on the assumption that the number of existing luminaires on the market in 2030 will remain unchanged from the 2006 level, while 50% of them in 2020 and 100% of them in 2030 will have been replaced with SSL luminaires.

**Reduction of mercury consumption**

Trend in mercury consumption in mercury-containing lamps

- **2000** to **2009**: Mercury consumption for fluorescent lamps
- **2010** to **2019**: Mercury consumption for cold cathode fluorescent lamps for backlights
- **2020** onwards: Mercury consumption for HID lamps

- **90%** reduction in mercury consumption

**Market share of SSL luminaires:**
- **100%** in luminaire shipments
- **50%** in existing luminaires on the market

Notes:
1. Mercury consumption = [production quantity (according to the Ministry of Economy, Trade and Industry’s Machinery Statistics)] x [average mercury content per lamp (estimated by JLMA)]
2. From 2013 onwards, cold cathode fluorescent lamps for backlights are included in fluorescent lamps.
Profile of the Japan Lighting Manufacturers Association

Japan Electric Lamp Manufacturers Association (JELMA) and Japan Luminaires Association (JLA) were started with Japan Lighting Manufacturers Association (JLMA) newly established through a consolidation-type merger on April 1, 2013. JLMA is a general incorporated association consisting of manufacturers manufacturing and selling light sources, materials and parts for lighting, control-gears and luminaires, and related organizations, and its aim is to contribute to the development and promotion of the lighting industry, the securing of safety of people’s lives, and the enhancement of culture of life. JLMA are working for popularizing the better lighting culture and more environment-friendly energy saving products.

General Activities
- Popularization and enlightenment
- Improvement in the performance and safety of products
- Standardization
- Statistical survey
- Cooperation with related organizations

International Activities
- Global standardization activities
- International exchange activities

Certification business
- Certification services for luminaires for escape lighting
- Voluntary evaluation services for luminaires for emergency lighting
- Products registration services for recessed luminaires ($-type)
- Services for the establishment of standards and the confirmation of approval drawings for luminaires for public building lighting
- Research and study for luminaires for emergency lighting
- JLMA laboratory designation system on photometry

Japan Lighting Manufacturers Association

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