

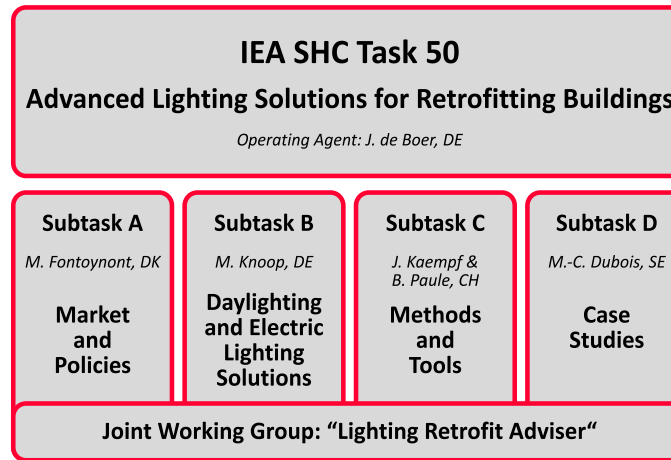
Example of a simple tool easy and quick to use

Deliverables

Within the scope of Task 50, the following main deliverables are anticipated:

- Report on the lighting retrofit market, including policy issues and proposals of action
- Source book on daylighting and electric lighting retrofit technologies, covering low-budget and new advanced retrofit solutions
- Toolbox with (simple) methods and tools for energy and economic auditing, rating and performance simulation
- Documentation of realized projects and case studies of lighting retrofits for different building types
- "Lighting Retrofit Adviser"
An electronic, interactive source book including design advice and recommendations, decision-making tools and design tools for lighting retrofits

Most deliverables will be available on the Website. In addition, Workshops and Newsletters will inform about progress and disseminate important outcomes.



Structure of IEA SHC Task 50

Coordination

Subtask A: Market and Policies

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Subtask B: Daylighting and Electric Lighting Solutions

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IEA SHC Task 50

Advanced Lighting Solutions for Retrofitting Buildings

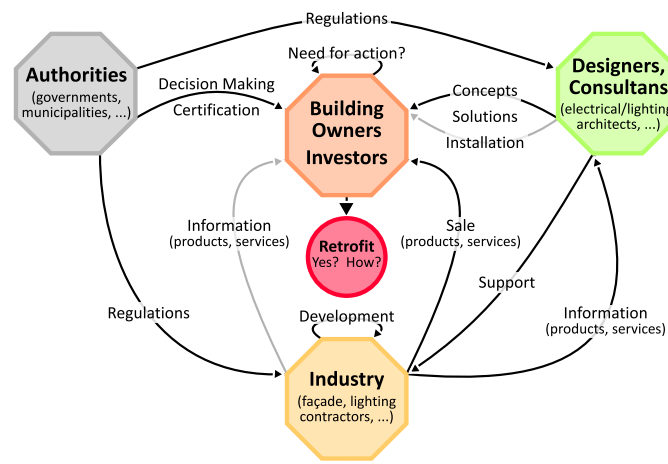
Daylighting
Electric Lighting
Lighting Controls



The "New Gallery" (Kassel, Germany) before and after refurbishment



Outdated lighting solutions and retrofit in action



Graphic scheme of stakeholders in the lighting market



New systems of lamps/luminaires and façades for retrofitting

Large Potential for Saving Electricity

Lighting accounts for approx. 19 % (~ 3000 TWh) of the global electric energy consumption. Without essential changes in policies, markets and practical implementations, it is expected to continuously grow despite significant and rapid technical improvements like solid-state lighting, new façades and light management techniques.

With a small volume of new buildings, major lighting energy savings can only be realized by retrofitting the existing building stock. Many countries face the same situation: About 75 % of the lighting installations are considered to be out of date (older than 25 years). Compared to existing installations, the majority of new solutions allow a significant increase in efficiency – easily by a factor of three or more – going along with highly interesting payback times. However, lighting refurbishments are still lagging behind compared to what is economically and technically possible and feasible.

With the activities in Task 50, we aim at improving the lighting refurbishment process in non-residential buildings in order to unleash energy saving potentials while at the same time improving lighting quality.

Target Group: Stakeholders in Relighting

Different main stakeholders are involved in the lighting retrofit market. This leads to diverse interests and needs, which will be identified and addressed within Task 50.

- **Authorities**, like governments and municipalities
Interest: Meet energy efficiency and CO₂ emission reduction goals
Needs: As lighting only gradually gets into focus – Improvement of regulations, standards and certifications
- **Building owners / investors**
Interest: Optimization of total cost at different investment horizons/payback times
Needs: Transparent cost structures, additional values like “green image”
- **Industry**
Interest: Economic success by adapting products and services to market developments
Needs: Changing focus on lighting services and integrated solutions
- **Designers / consultants** (e.g. architects, engineers)
Interest: Providing optimal solutions for various cases
Needs: Support in lighting design as part of complex design process with diversity of approaches

Activities to Get There

The overall objective is to accelerate retrofitting of daylighting and electric lighting solutions in the non-residential sector using cost effective best-practice approaches, which can be used on a wide range of typical existing buildings.

This includes the following activities:

- Develop a sound overview of the lighting retrofit market
- Trigger discussion, initiate revision and enhancement of local and national regulations, certifications and loan programs
- Increase robustness of daylight and electric lighting retrofit approaches technically, ecologically and economically
- Increase understanding of lighting retrofit processes by providing adequate tools for different stakeholders
- Demonstrate state-of-the-art lighting retrofits
- Develop as a joint activity an electronic interactive source book including design inspirations, design advice, decision tools and design tools