

# CDM Methodology for Energy Efficiency with Compact Fluorescent Lamps



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# OSRAMs Commitment to the Environment



• Employees :  
More than  
40.000

• Production sites:  
53 factories in  
18 countries

• Turnover:  
EUR 4.6 billion

• Group Profit:  
EUR 481 million  
10,5% of Sales

• R&D expenses:  
5 % (of sales)



- OSRAM has made a worldwide commitment to adopt a sustainability philosophy
- This program governs all of our business practices, innovation and code of conduct.
- This sustainability initiative is designed to drive positive results to the triple bottom line addressing social, economic and environmental needs.
- OSRAM is a member of the UN Global Compact, and we actively support *all ten* principles.
- Recycling and the use of recycled material are key elements in our commitment to the environment.



# Climate Protection made easy



Artificial lighting accounts for 19% of the global demand for electricity

- in Germany approximately 9%
- in USA approximately 24%

Especially in emerging and developing countries lighting accounts for a higher proportion of electricity consumption!

- Energy-saving lamps consume up to 80% less electricity than ordinary light bulbs and last up to 15 times longer.
- Over its entire life time an OSRAM Longlife energy-saving lamp will save a total around 1 MWh of electricity and around 0,5 t of CO<sub>2</sub> emissions.
  - more than a tree can absorb in 15 years.
- **A 30% worldwide change to energy-efficient lighting systems could reduce CO<sub>2</sub> emissions by 260 million tonnes and save 460 billion kWh of electricity.**

# Climate Protection and CDM



In 1985 OSRAM invented the first Compact Fluorescent Lamps with integrated ballasts (CFLi).

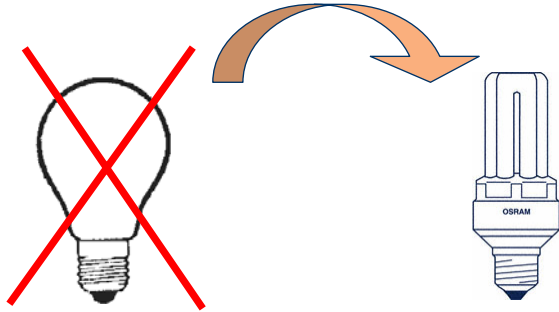
At a very early stage OSRAM decided to make use of the CDM, as energy saving lamps can substantially contribute to climate protection.

The target group of OSRAM CDM policy comprises households that otherwise could not afford to buy energy-saving lamps.

***“ The CDM projects will lead to an appreciable reduction in CO<sub>2</sub> emissions, help emerging and developing countries to keep their energy needs at low levels, and save consumers in these countries their hard-earned cash! “***

Note: Even without CDM, OSRAM is involved in the main global DSM and Worldbank CFLi projects for lighting.

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**Energy Savings (in kWh)**  
**x Grid Emission Factor (g CO<sub>2</sub>/kWh)**  
**x Project Duration (10 / 3x7 years) => CER's**

Product Requirements:

## **DULUX EL Longlife**



- 15.000h lifetime (4h/day x 365days x 10years = 14,600h)
- provide high quality with stable lumen output over whole lifetime
- endure voltage fluctuations
- endure different climate conditions

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The philosophy of the OSRAM CDM methodology leads to a sustainable change of consumer lighting behaviour!

Main requirements are:

- education of users
- a stable product quality

in order to avoid a fallback to conventional lighting and **a loss in consumer trust!**

and

**if the product fails during the project time → no CER's**

# Methodology



- The approved methodology is the first of its kind with respect to energy efficiency for private households
- BMU proactively supported the project idea behind the methodology
- Duration 2,5 years with two rejections prior to approval. Each rejection was leading to additional requirements, thus increasing the complexity.
- In the start-up period the communication with UNFCCC was extremely difficult. Direct communication was impossible, thus resulting to substantial delays and cost increase of the project.
- Even global enterprises are lost without an experienced CDM consultant.

Note: Midsize companies with limited resources are clearly disadvantaged by the very complex UNFCCC methodology process!



# Methodology – Risks



- Presently OSRAM is developing a CDM partner model in several emerging and developing countries
- Target countries are mainly China, Indonesia, South Africa and the former GUS countries
- Prime target is the free CFLi distribution to consumers who normally cannot afford to purchase energy-saving lamps
- High risks are involved due to:
  - Technical instability of grid
  - Local consumer behaviour / Theft of lamps
  - High investment risk
  - Extremely complex monitoring mechanism



# The Triple Bottom Line



- ✓ High energy saving potential and climate protection with CFLi
- ✓ Social and financial benefits for users who usually cannot afford CFLi - plus a sustainable change in consumer behaviour
- ✓ A profitable and attractive business model for entrepreneurs

