

## CREATING SUSTAINABLE VALUE WITH LIGHT RESPONDING TO GLOBAL SUSTAINABILITY

CHALLENGES WITH EFFICIENT LIGHTING SOLUTIONS By **Dr. Constantin Birnstiel**, Chief Sustainability Officer, OSRAM



Global challenges such as climate change, resource scarcity, demographic change and urbanisation make sustainable development ever more important. This is why Osram is dedicated to products and processes that contribute to solving global sustainability challenges, address economic needs and protect the environment.

In order to ensure sustainable development on a social, ecological and economical level, we align our business operations to the triple bottom line, integrating sustainability holistically. Consequently, we are using natural resources ever more responsibly, invest in future-oriented technologies that support profitable growth and influence our suppliers to improve working conditions around the globe. Placing integrity at the center of business operations, we have been a solid, reliable partner for over 100 years – producing efficient products, acting as a global citizen, leading a sustainable business. To affirm these values and work towards making them universally accepted we joined the UN Global Compact in 2005.

## **ENERGY EFFICIENCY IS PART OF OUR DNA**

Electricity for lighting accounts for almost 20 percent of global electrical power consumption and close to 6 percent of worldwide greenhouse gas emissions. Replacing inefficient lighting technologies with state-of-the-art products like LED, innovative light systems and intelligent light management systems would cut the world share of electricity used for lighting by half. This could save as much CO2 as a newly planted forest around a quarter the size of the Arabian Peninsula would absorb – more than 600 million tons annually.

One way of responding to this challenge is our environmental portfolio, comprised of products, systems, solutions and services with outstanding energy efficiency – meanwhile generating more than two thirds of total revenue. An example would be our light management system "Encelium" that demonstrates perfectly how energy savings of up to 75 percent can



be achieved in offices, industrial buildings and functional buildings such as hospitals. This is made possible by using special software that identifies the individual optimisation potential. With these and other efficient Osram lighting solutions our customers saved nearly 70 million tons of CO2 within the last five years – this is as much as one Airbus 380 emits by flying around the world more than 30.000 times.

Another important step towards replacing inefficient lighting technologies is our founding membership in the UNEP initiative "en. lighten". The initiative addresses the challenge of accelerating global market transformation to environmentally sustainable lighting technologies by developing a global strategy in support of the gradual phase-out of inefficient lighting.

This way, the global energy demand for lighting can be cut significantly, reducing greenhouse gas emissions resulting from electricity production. To achieve this aim the initiative developed a new toolkit: "Achieving the Transition to Energy Efficient Lighting". This comprehensive toolkit is a practical reference manual that identifies many of the essential elements that need to be considered before and after inefficient lighting phase-out schemes have been initiated. This way it supports those that are responsible for drafting policies but also the private sector, public utilities and civil society organisations, helping to forward the transition to more efficient lighting technologies.

## SHAPING THE LIGHTING MARKET WITH SUSTAINABLE SOLUTIONS

An outstanding example of supporting the transition to sustainable lighting in developing countries is a project we implemented in Kenya in 2008, being the first lighting manufacturer to take a holistic approach to efficient lighting in off-grid areas. The Corporate Social Responsibility project aims at providing access to sustainable, environmentally friendly and affordable off-grid energy services such as light and potable water – thus significantly improving the livelihood of communities in remote areas. In 2011, a follow-up project was initiated with the aim to expand to peri-urban areas and informal settlements like those of Nairobi, addressing the challenge of urbanisation in areas without an affordable or regular power supply.

Thus, we address global sustainability challenges with innovative, efficient lighting solutions. To ensure their advancement and the profitable growth of Osram, we invest around 6 percent of total sales in research and development (R&D), employing around 2.400 experts. One result of these endeavors is our market leadership in automotive lighting, demonstrated by the fact that Osram LEDs can be found in every second car worldwide. Above that, we have a share in total sales of about 25 percent in LED-based products and hold a strong intellectual property portfolio with 8.000 LED-related patents. However, with R&D centers located in all parts of the world we develop products specifically tailored to regional needs. Hence, we continue to provide a full spectrum of lamp technologies to ensure customer choice while supporting them with the transition to more efficient lighting.

## SUSTAINABLE LIGHTING – ENHANCING QUALITY OF LIFE

However, sustainable lighting is more than just efficient: it protects, activates and comforts, thus improving people's quality of life. For example, our automotive lighting portfolio provides cutting-edge technologies that contribute to increasing road safety. It encompasses innovative products such as distance and microsleep sensors or night vision assistance systems that help reducing the causes of traffic accidents.



Another state-of-the-art technology developed by Osram is a special light system that matches the characteristics of natural daylight and therefore supports the daily biological rhythm of humans. This is based on studies demonstrating that blue enriched light influences the biological wellbeing of humans, improving daytime activity and cognitive brain functions, verifiably increasing productivity. Therefore these light systems can be used in educational institutions, office buildings, hospitals or homes for the elderly, addressing the challenges of demographic change and urbanisation. An innovative example for this is a study we carried out together with the "Transfer Centre for Neuroscience and Learning" in German schools, installing light systems of combined blue and white LEDs in classrooms. The results were consistently positive: Due to the biologically optimised lighting in the classrooms, the students achieved significantly better results in standardised tests for concentration ability than the comparison group, and their performance speed also increased substantially.

Hence, Osram offers a broad range of innovative solutions – from components to luminaires and light management systems – providing integrated sustainable lighting concepts. This is how we are maximising efficiency, minimising environmental impact, creating sustainable value.

OSRAM Website: www.osram.com