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## A city of bright ideas

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New technology is set to make street lighting more sustainable across the world. Credit@Taipei101viaflickr.

Creating a more sustainable world means taking many small, yet vital steps. Street lighting is an important piece of technology, which accounts for 6 per cent of global greenhouse gas emissions. Therefore, embracing innovative new street light technology is taking a vital step towards a sustainable future. Illuminating 9.2 kilometres of road and pathways is an experiment that understands the need for improved street lighting.

Albertslund, a suburb of Copenhagen, is the testing ground for the Danish Outdoor Lighting Lab (DOLL). The DOLL is testing new streetlights from a host of companies, each given an area to install their original piece of technology. These companies may be able to test how to effectively utilise their product and make improvements. Officials from other towns and cities may also visit and buy these unique lights for their own hometowns, therefore spreading the idea that street lighting is a productive source for tackling climate change mitigation.

Alfred Priess is one such company making an appearance at the event. Touché, a street light designed by architect Bjarne Schlägeris, is described by the company as “a beautiful gesture to nature”. Indeed this sophisticated light is completely carbon neutral and made from 100 per cent recyclable material. It is fitted with solar cells that completely cover the aluminium column, allowing it to generate its power from sunlight. Touché’s natural power source means that the lights are free of external cables, liberating the time spent installing and maintaining the equipment. Alfred Priess claims that Touché’s state of the art solar cells work even in cloudier countries.

Lined up alongside Alfred Priess at the DOLL is Tvilight. Tvilight’s intelligently designed streetlights react to the environment around them, only brightening when pedestrians or vehicles are present. They also react to different weather conditions. The lights may be individually programmed to reduce their brightness during specific off peak hours. This intelligent awareness means saving on both energy and money, whilst still providing a safe haven of light for pedestrians. Tvilight is aware that conventional street lighting costs Europe 27 million euros a day and aims for its technology to become widely used to save money. They claim their technology saves 50% on maintenance costs and 80% on energy costs, whilst making cities greener and giving them greater natural lighting.

On top of Twilight and Alfred Priess the Technical University of Denmark is testing their Copenhybrid light, which is powered by a combination of wind and solar power. This may be especially useful in cloudier countries, as wind energy may play a greater role. 25 companies are attending the event in total, with visitors expected from around the world, including Chinese and Taiwanese officials. In order to monitor the streetlights, sensors may constantly measure traffic levels, air quality, weather conditions, UV radiation and a number of other conditions to test which lights fair best under what environment. Visitors may then be able to cross compare these results with their own streetlights to determine what technology suits them best.

By the 18<sup>th</sup> September this year, the lighting lab aims to open to the public. The experiment aims to involve anyone passing, inadvertently shaping the future of street light technology. Copenhagen has set itself the goal of becoming a carbon neutral city by 2025. By embracing original, collaborative experiments and pieces of technology at the DOLL, the city is making admiral steps towards this target.

**What other technologies may be combined with street lighting to make them more productive?**