

Case Study for SEAS Roundtable Discussion (BBP)

Lumileds Singapore – First and only manufacturing plant to reach Green Mark Platinum Award for existing building with the support of BBP.

Instead of replacing the 14-year-old chiller plant, Lumileds assigned BBP to optimize the existing system with the goal of achieving lower energy consumption. BBP system is helped Lumileds' central chiller plant achieve best efficiency of 0.63 kW/RT by improving its performance with 27%. This led to Lumileds saving over S\$700,000 in annual energy costs. The project also resulted in Lumileds' winning the BCA Green Mark Platinum Award in 2015 where BBP acted as ESD consultant.



Image source: streetdirectory.com

To improve overall operational efficiency, the obvious option for Philips Lumileds Singapore was to replace its 14-year-old chiller plant at significant expense. Instead, Philips Lumileds Singapore decided to engage BBP, a Singapore based energy efficiency service company in to extract the best performance from its existing central chiller plants.

BBP help companies to achieve up to 40% of energy and cost savings using patented HVAC optimization technologies, Internet of Things (IoT), proprietary software algorithms, Artificial Intelligence (AI) and machine learning.

BBP provided an alternative to Philips Lumileds Singapore, that is, optimising the current chiller plant, to deliver the required cooling in an energy-efficient manner.

The optimisation solution provided by BBP includes the connection of variable speed drives to the chilled water and condenser water pumps as well as to the cooling towers.

Further, in line with the BCA Green Mark requirements for effective measurement and verification, dedicated digital power meters have been connected to all major equipment like chillers, cooling towers and pumps.

Every chiller is connected to a magnetic, full bored flow meter and high accuracy temperature sensors on both the chilled water and condenser water sections. The heat balance is determined at every chiller and header level.

BBP also connected each site to a cloud-based central system, enabling Philips Lumileds Singapore to have access to remote monitoring, auto reporting and other features to improve day-to-day operations.

As a result of all these efforts, Philips Lumileds Singapore achieved a 27% improvement in the chiller plant's efficiency, without needing to replace major equipment or disrupt operations at the plant. With sustained savings of 30% of initial energy consumption, Philips Lumileds Singapore was able to realise a reduction of S\$ 700,000 in annual energy costs.

Awards and recognitions achieved with Lumileds:



BBP's Unique Approach to Achieving MEES Energy Efficiency Standards

Today more than 70% of water-cooled systems in industrial facilities are operating at sub optimal levels. NEA's mandatory Minimum Energy Efficiency Standard (MEES), is a chance for companies to reduce energy costs as well as do good to the environment by reducing carbon emission and in many cases generate the required data to increase operational efficiency.

BBP has been helping companies achieve efficiency levels at MEES standard since 2014. We offer companies different options to achieve MEES energy efficiency levels with varying financing options.

Instead of replacing any equipment, BBP's proposal allows companies to achieve energy savings without any CAPEX and should there be need for limited equipment replacement, BBP works with these companies to minimize or avoid CAPEX.

Customers like Lumileds have achieved MEES standards at zero CAPEX and continue to enjoy improved savings since they first engaged BBP.