



低碳製造計劃乃世界自然基金會的項目，旨在減少製造業的碳排放。

A WWF initiative to reduce carbon emissions in manufacturing

WWF Low Carbon Manufacturing Programme (LCMP)

Quarterly Newsletter

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Success Story - Hop Yick Bangladesh Limited

Hop Yick Bangladesh Limited (HY) is a subsidiary factory of Hop Lun (Hong Kong) Limited, specialising in manufacturing lingerie and swimwear products. Protecting the planet and reducing unnecessary environmental harm have become the guiding principles since its establishment in 2010. HY has set targets to reduce energy consumption by 20 per cent and GHG emissions by 18 per cent per production piece by FY23/24 compared with FY18/19. The factory joined LCMP in 2019 and received a Gold label that same year. Among the series of carbon reduction measures it implemented include:

- Replacing conventional clutch motors with energy-efficient servo motors in sewing machines, saving electricity consumption by about 120,000 kWh annually and resulting in carbon emissions reduction of about 80 tonnes annually.



Servo motor in sewing machine



- Improving the pipeline distribution of compressed air system, installing compressed air pressure control devices and optimising system's operating parameters, saving about 40,000 kWh of electricity consumption annually and resulting in carbon emissions reduction of about 26 tonnes annually.



Pressure control device in compressed air system

- Equipping water pumps with variable frequency drives, saving electricity consumption by about 28,000 kWh annually and resulting in carbon emissions reduction of about 19 tonnes annually.



Variable frequency drives in water pumps

Best practices: Ningbo Helong New Material Co., Ltd. - Wood Plastic Composite Manufacturing Industry

Ningbo Helong New Material Co., Ltd. entered the PE plastic and plant fiber recycling industry in 1997, specialising in producing wood-plastic composite materials. Its products offer an alternative to wood, helping to reduce deforestation and nature loss. Helong completed its third verification in 2018 and received the Gold label for a series of carbon-reduction measures, including:

- Replacing electro-magnetic induction/electro-resistance heating with infra-red on extrusion machines, reducing electricity consumption by 25 per cent
- Developing recycled wood-plastic products to minimise deforestation, using recycled materials and reusing scrap products to reduce wastage of resources
- Installing solar PV panels in production buildings and solar hot water heaters in the dormitory, adopting renewable energy to reduce grid's power consumption
- Adopting air compressors with variable frequency drive (VFD) and servo motors in the production facilities, reducing electricity consumption by about 19 per cent and 20 per cent respectively
- Adopting electric transport cars and forklifts, reducing carbon emissions from burning fossil fuels



Infra-red heater



Recycled wood-plastic material



Solar PV panels



VFD air compressor



Electric forklift

Impact of COVID-19 on aviation carbon emissions reduction

Aviation is one of the fastest-growing sources of greenhouse gas emissions. Studies indicate that if no measure is taken, the industry's carbon emissions level will triple by 2050, accounting for 27 per cent of global carbon emissions. The International Civil Aviation Organization (ICAO) therefore developed a series of climate action plans, including "The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)", improvement measures in aviation efficiency, technology and operational infrastructure, and adoption of aviation fuel with low carbon emissions. Among them, CORSIA potentially contributes to more than 60 per cent of carbon emissions reduction. CORSIA requires that from 2021, if an airline's carbon emissions is higher than its 2020 baseline (calculated from the average of its 2019 and 2020 carbon emissions), it would have to purchase carbon credits to offset their net increase amount. But with the slump in the aviation business brought on by the coronavirus pandemic, the baseline emissions will be much lower than normal, severely impacting airlines' ability to meet CORSIA emissions reduction targets. This issue should be addressed by the ICAO. Find out more here: <http://www.tanpaifang.com/tanjiaoyi/2020/0306/68676.html>

LCMP updates and activities

WWF / LCMP is organising the following engagement activities over the coming months:

- Factories conducting LCMP verification (April - June)
- Lidi suppliers webinar training (May - June)
- City Nature Challenge 2020 (April)
- Webinar on energy efficiency and carbon emissions(May)

For more details, please contact the LCMP team!

Power generation by osmotic power

Osmotic power (salinity gradient power) is energy produced from the difference in the salt concentration between seawater and river water that typically occurs at the junction of seas and rivers, and is primarily used for electricity generation. Currently, there are three major methodologies to extract osmotic power: "Pressure-retarded osmosis (PRO)", "Reversed electrodialysis (RED)" and "Vapor pressure differences (VPD)". Among them, PRO is the most popular, in which the low salinity water is allowed to permeate through membranes into a higher salinity solution, pressurising it and generating power when pressure is released through a turbine. Commercially, Norway's Statkraft Osmotic Power Prototype , with a power output of 4kW, is the world's-first osmotic power plant. Compared with fossil fuel power generation, osmotic power offers a great potential source of renewable energy derived from the ocean that can greatly reduce carbon emissions.