



WWF Low Carbon Manufacturing Programme (LCMP)

Quarterly Newsletter

Oct 2014 Issue

Success Story

Dongguan Crystal Knitting and Garment Co., Ltd. (DCKG) is a subsidiary factory of Hong Kong's Crystal Group, which specializes in the manufacture of knitted garments. DCKG is located in Dongguan City in Guangdong Province, with clients located across the US, Europe and Japan. DCKG joined the LCMP in 2010, and since then the factory has adopted numerous carbon reduction measures, achieving impressive results. In both their 2011 and 2013 verifications, DCKG received the LCMP Platinum label. The company's accomplishments include:

- Replacing their seven diesel-driven boilers with biofuel boilers, lowering carbon emissions by almost 100 per cent, or more than 4,000 tonnes annually.

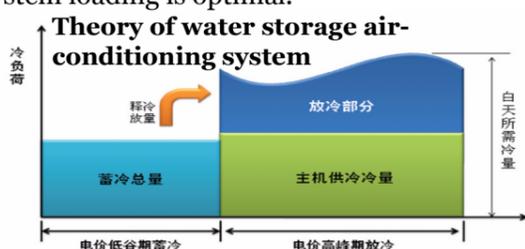


Diesel boiler



Biofuel boiler

- Adopting a "water storage air conditioning" system, in which the cooling unit operates to create cold water during nighttime hours. This cold water is stored in a large water tank and then released during the daytime to cool environments in the workshop and office. This has resulted in a shift in electricity usage from peak to off-peak periods of up to 40 per cent. This has not only reduced electricity costs but also cuts electricity consumption when the system loading is optimal.



Water storage tank

- Replacing traditional motors in sewing machines with servo motors. Using advanced energy-saving DC inverter technology, these servo motors have reduced annual electricity consumption by more than 80 per cent or 37,000 kwh, and lowered carbon emissions by more than 29 tonnes annually.



Traditional motor



Servo motor

Environmental news

The 2014 Climate Summit

The 2014 Climate Summit was held on 23 September at the United Nations in New York. More than 100 world leaders and over 800 leaders from the business and finance sectors and civil society attended the conference. The Climate Summit had two clear objectives: to reinvigorate the process that will lead to a meaningful universal climate agreement in Paris in 2015, and to catalyze significant action to cut emissions and reduce risks. Zhang Gaoli, the Vice-Premier of China, made a speech about the standpoints taken and measures adopted by China to combat climate change. To find out more about the summit, click here:

http://big5.ce.cn/gate/big5/intl.ce.cn/qjss/201409/24/t20140924_3587366.shtml

LCMP updates and activities

The LCMP is organizing a series of engagement activities in the coming months:

- The Fifth LCMP Labelling Award Ceremony (Dec)
- The 2014 LCMP report on accredited factories (Dec)
- A webinar on energy efficiency and carbon emissions (Dec)

For more details, please contact the LCMP team at any time!

Low Carbon Tips: The Heat Pump

The principle of how a heat pump operates is precisely opposite to an HVAC system. In a heat pump, heat energy is absorbed from the air in order to heat and vaporize the refrigerant in an evaporator. The temperature and pressure of the refrigerant vapour is then raised by a compressor, with the vapour then flowing to a heat exchanger in the water tank and heating up the water inside. After the heat has been released into the heat exchanger, the refrigerant is then condensed into a liquid and returned to the evaporator at a lower pressure and temperature after passing through the throttling valve, completing the cycle. Compared with an electric resistance water heater, the COP of a heat pump is normally higher, therefore the amount of heat energy produced is greater, while electricity consumption remains the same.

Best practices: Jiangmen New Star Hi-Tech Enterprise Ltd. - Fabricated Metal Industry

Jiangmen New Star has implemented several carbon reduction measures in their general utilities and production facilities. Steps taken by the company include:

- Replacing traditional supporting rail-spot welding and water grinding with laser welding, reducing energy consumed in the water grinding process;
- Replacing manual single-spot welding with a CNC welding machine, reducing electricity consumption by 68 per cent;
- Adopting solar panels and heat pumps for the hot water system in the dormitory, reducing carbon emissions by more than 29 tonnes annually;
- Installing energy-saving lamps in the deep draw workshop, replacing most T8 lamps with the more energy-efficient T5 lamps in factory areas like the welding and grinding workshop, reducing carbon emissions by more than 51 tonnes;
- Replacing traditional fans with a water-curtain HVAC system to reduce the temperature inside the workshops.



Water-curtain HVAC system



T5 lamps in workshop



Solar hot water system



Heat pump for hot water system