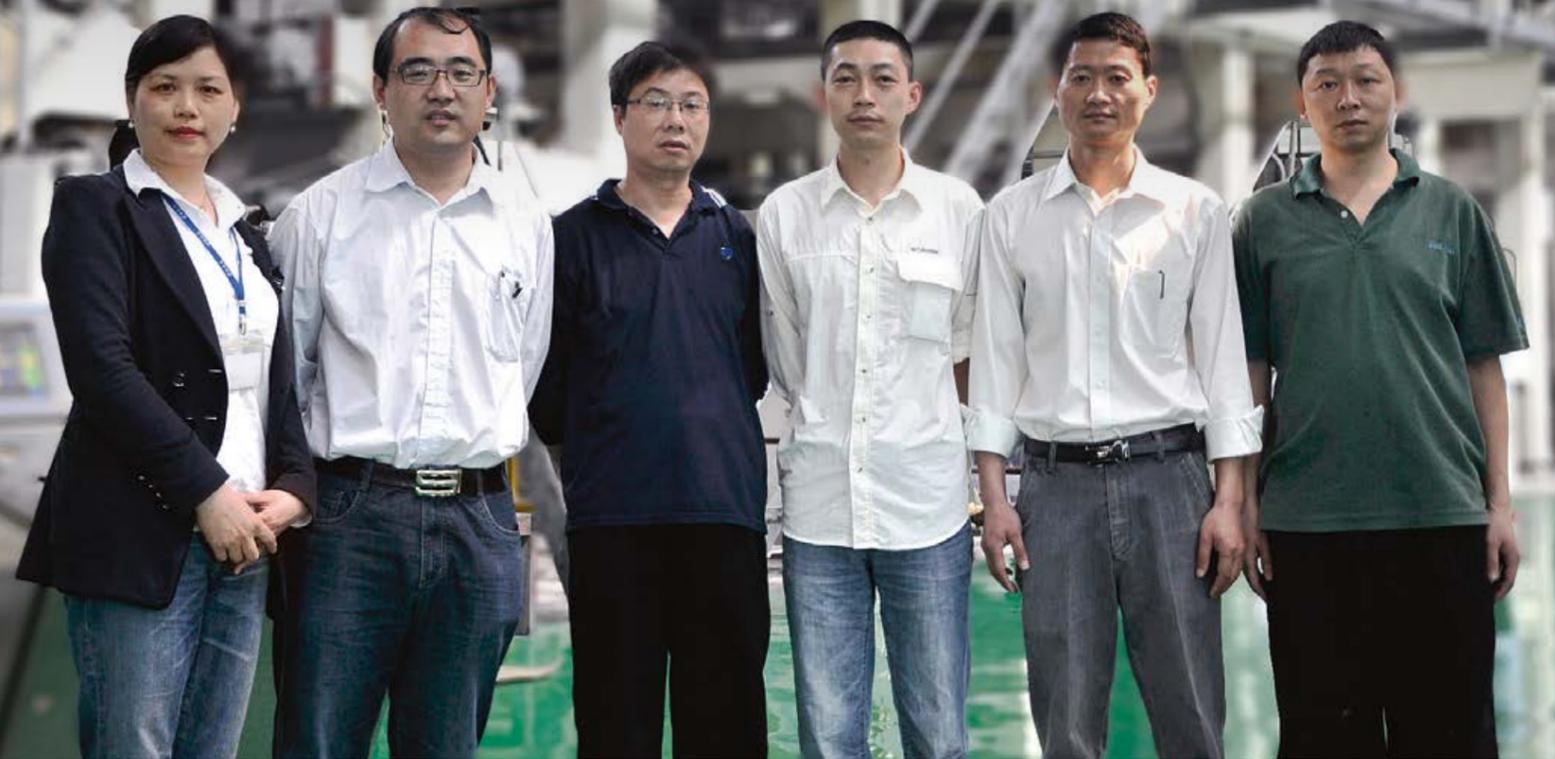


Air dryer nozzle upgrade at Dongguan Jianhui cartonboard mill:

SAVING COSTS AND ENERGY



IMPROVED CONDITIONS
Dongguan Jianhui Paper staff appreciate the cooler machine hall: the new nozzles leak less hot air. Left to right: Qunfei Zhang, Wang Bo, Zong Kaibo, Xu Qin, Zhang Shijun and Bi Donghai.

Wider coat weight control window saves costs

“In addition to the major energy savings achieved and the short return on investment, we have been able to widen the coat weight control window and control all our coating stations in a more flexible way with different grades and machine speeds,” says **Wang Bo**, Production Manager. “We can put less coat weight on the top coating and more on the pre-coating and middle-coating. This lowers coating color costs by nearly RMB 20 per tonne.”

More drying capacity, better coating layer quality

Due to the production increases over the years, the drying capacity in some coating stations was limited. The nozzle upgrade removed this problem, and also allowed the mill to improve coating layer quality, as coating color no longer sticks onto the roll surface.

With Valmet’s help, the mill also optimized the air dryer control system. Now the process settings can be monitored and controlled automatically. To save more energy, frequency control was added to the exhaust fan motors. No changes were made to the coater layout or control system.

Improved working environment

Another benefit the PowerFloat Plus nozzle has brought is less hot air leaking into the machine hall since the distance between the web and nozzle is smaller.

In summertime, the average temperature in South China is about 33 °C. The new nozzles now reduce the machine hall temperature and improve the working environment for the staff.

Decreased energy consumption by up to 40%.

Payback period of less than one year

Open communication and good cooperation contributed to a very smooth project. The shutdown took only four days, and the paper machines reached their target production immediately after start-up.

“I can honestly say that we are very satisfied with Valmet. We want to thank Valmet for the support we got,” says Wang Bo. “During the sales stage, Valmet audited the site and calculated the energy savings, drying capacity increase and return on investment to convince us of and help us better understand the benefits. During the project, Valmet gave us technical support to optimize our internal investment costs. The payback period for this project is well under one year. Meanwhile, we have started to receive energy-saving subsidies from the Guangdong government, which makes our investment more valuable.” ■

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Switching to efficient Valmet PowerFloat Plus air dryer nozzles at the coating section has decreased energy consumption by up to 40%, increased drying capacity and improved coating quality at Dongguan Jianhui’s PMs 1 and 2.

TEXT
Qunfei Zhang

When started up back in 2004 and 2005, Dongguan Jianhui Paper’s PM 1 and PM 2 were among the first white lined chipboard (WLC) lines in the South China market. Since then, competition has tightened and new lines have been built. At the same time, the Chinese government has been setting stricter targets for environmental protection and energy efficiency.

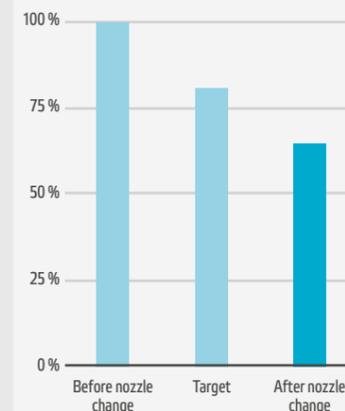
Jianhui Paper’s PM 1 and PM 2 produce white lined chipboard (WLC) in a basis weight range of 250–400 g/m². In the past ten years, the lines have been continuously developed, and their original total annual output has been increased from 600,000 to 800,000 tonnes. The machines currently have a 30% share of the South China WLC market.

To meet the requirements set by the Guangdong government, Jianhui Paper decided to upgrade the nozzles of the air dryers on the coating sections of PMs 1 and 2. The mill chose Valmet’s latest PowerFloat Plus nozzle technology in order to improve energy efficiency and increase the competitiveness of the line.

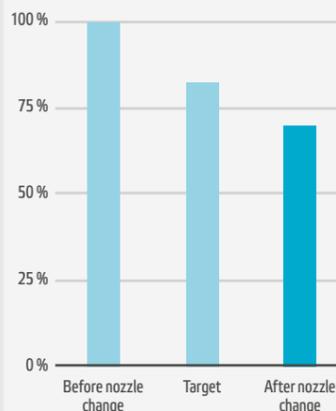
Energy savings of over 40%

The results have exceeded the mill’s original expectations of 20% energy savings. The average energy savings have been more than 30%, with some grades saving more than 40%. The payback time for the investment is less than one year.

PM1 STEAM CONSUMPTION WITH NOZZLE CHANGE



PM2 STEAM CONSUMPTION WITH NOZZLE CHANGE



ENVIRONMENTAL ASPECTS

“We hope to cooperate more with Valmet on energy-saving and environmentally friendly solutions in the future, too.” says Wang Bo, Deputy Manager of production department of Dongguan Jianhui Paper.