

Case story | FreshWind

# Finnish sawmill **doubles humidification capacity** with the same Danfoss PAH pump – and **minimal investment**

**2 x**production capacity  
achieved by using  
the same PAH pump[hpp.danfoss.com](http://hpp.danfoss.com)

*FreshWind Limited specializes in high-pressure humidification systems and provides a wide range of energy-efficient solutions within moisture management, dust suppression, fire protection and cooling. When one of their Finnish sawmill customers added a huge new specialty drying kiln, FreshWind turned to the same reliable PAH pump to meet output demands – even though they were twice as high as the existing system's.*

## **The challenge: Double capacity of existing humidification system as cost efficiently as possible – and without sacrificing reliability**

FreshWind installed a new humidification system for a large sawmill located in central Finland back in 2014. Designed to provide moisture control for five drying kilns, the system depends on a Danfoss PAH 10 to supply the pressure.

“We’ve installed a lot of Danfoss components for our customers over the years,” explains FreshWind project engineer Aki Kuvaja, “so it was natural for us to choose a Danfoss PAH back in 2014. Zero-contamination risk was important, of course, but just as critical was the pump’s exceptional reliability. Sawmills depend on exact moisture management in their drying kilns, and a single pump failure can cost them tens of thousands of euros.”

In 2017, the sawmill added a large new specialty kiln whose drying capacity was equal to the five existing kilns, and asked FreshWind to recommend a solution. What would be the most cost-efficient way to double the sawmill’s humidification system output and maintain the same reliability?

## **The solution: New piping, valves, pressure sensors and VFD – same PAH pump**

After FreshWind’s engineers analyzed the new requirements, they realized the solution was relatively simple and could be implemented quickly.

Rather than proposing a whole new installation, the customer could expand the existing system using the same pump that had operated so reliably for the three years since the original installation.

Because of their axial piston design, PAH pumps have broad output range. For the PAH 10, for example, flow varies from a minimum 7.6 l/min to a maximum 21.6 l/min. Therefore, the sawmill was able to double its humidification system’s capacity simply by installing additional pipe, pressure sensors, and a variable frequency driver.

**The result: Doubled humidification capacity quickly, cost efficiently, and reliably**

“We’ve come to know the PAH 10 as a dependable workhorse, so we had complete confidence in doubling its output to meet the new demands,” says Kuvaja. “The expanded system has run with practically no maintenance since installation.

Along with this outstanding reliability, the flexibility this pump gives our customers – doubling humidification capacity by simply adding new pressure sensors and a VFD – is a good example of the excellent return on investment FreshWind strives to build into every project, and how our customers depend on Danfoss pumps to protect their bottom lines.”



UPW pump unit using a PAH 10 pump



PAH 10 pump

*About FreshWind: FreshWind Ltd. has extensive experience with the production and maintenance of high-pressure systems for a broad range of humidification needs. Based in south-central Finland, the firm provides energy-efficient solutions within moisture management, dust suppression, fire protection and cooling to customers throughout Europe. For more information, visit [www.freshwind.fi](http://www.freshwind.fi).*

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