

CHILE

PULP AND PAPER

CMPC CELULOSA – SANTA FE LINE 2 PROJECT

Highest environmental and safety standards

Torres del Paine, Patagonia, Chile

**‘ANDRITZ WAS FLEXIBLE IN FULFILLING
OUR NEEDS AND VERY RESPONSIVE IN
THEIR DECISION-MAKING.’**

SERGIO COLVIN

Managing Director, CMPC Celulosa

South America has become the world's most important region for hardwood market pulp. CMPC, a privately capitalized company, was founded in 1920 and today has one of the most competitive cost structures in the global pulp industry. It is well-positioned for growth, with a strong balance sheet and an expertise in managing risk. Sergio Colvin, Managing Director of CMPC's pulp business (CMPC Celulosa) talks about Andritz's involvement in his company's largest investment project to date – Santa Fe Line 2.



WORLD-RECORD START-UP

Interview with **Sergio Colvin**,
Managing Director, CMPC Celulosa

Experience

I studied Industrial Engineering at the University of Chile and furthered my education in the USA, earning a PhD in Economics from Boston University. Upon my return to Chile in 1978, I interviewed with CMPC. When I asked, 'What would my job be?' their response was, 'What would you like it to be?'

I told them that I wanted to help them turn their 'export department' into a true 'export business' – a network that would make them a world-class exporter of specialized products. We were able to accomplish this.

In 1997, I was named Managing Director for CMPC Celulosa. We have three kraft pulp mills in Chile with a production capacity of two million tons per year.

The Santa Fe Line 2 project

When we acquired the Santa Fe mill in 1997, its production was 250,000 t/a of eucalyptus-based pulp. Over the years, we expanded the line at Santa Fe to 370,000 t/a. The fiberline was upgraded with Andritz's Lo-Solids® cooking technology and later a Diamondback® chip bin was added.

In 2002, we began seriously planning a new line for Santa Fe. The goals were to increase capacity of the mill, produce a first-quality, stable product, and excel in environmental performance.

In January 2004, we sent out the formal bid packages and by September we had made our supplier selections. In between, we visited mills in Brazil and Scandinavia. We wanted the best available technology, but nothing untried or experimental. All the technology we were considering buying from Andritz could be seen operating somewhere in the world.

Probably the best cooking reference for Andritz was right here on Line 1. We knew the quality of the pulp, the throughput, and the characteristics of Lo-Solids® cooking. Our operators were very comfortable with it.

We awarded Andritz contracts for four of the six EPC packages (Fiberline, Recovery Boiler, Pulp Drying/Baling, and White Liquor Plant). Andritz was very flexible in presenting a proposal that minimized a potential source of conflict in any large project – the interconnection and battery limits issues. They were much more flexible in understanding our needs in building this project.

The project plan was for 24 months. At the height of construction, there were 8,000 people working at the site. Keep in mind that we were operating Line 1 at full production during this time. While there were small delays in construction, I was most impressed with how Andritz responded. Andritz always acted in a very professional way – solving rather than protecting.

Highest environmental and safety standards

The country's spotlight was on us. Two recent pulping expansions by other Chilean companies had raised concerns about environmental safety. We passed 13 national audits and one interna-

tional audit for environmental compliance during our start-up. We can now say that Santa Fe employs some of the world's most advanced equipment and procedures for environmental and personnel safety.

Record start-up

The Veracel mill in Brazil set a record of 174 days to reach design production on a 30-day rolling average basis. We were able to beat this – 171 days, which is now the record. To do this required quality equipment, trained operators, expert commissioning, and perhaps a little bit of luck.

That we could construct this mill without any safety or environmental problems, start it up and bring it to full production in world-record time, and operate it today with complete transparency for the authorities and our customers, is a grand tribute to all involved.

What nature puts at our door

Stability is key for us. Our customers depend on us to produce uniformly consistent, high-quality paper no matter what nature puts at our door. While the eucalyptus mix on Line 1 is 70% eucalyptus globulus and 30% nitens, the situation is reversed on Line 2. The fact that the pulp from both lines is almost identical in their key properties is quite amazing.

Andritz continues to provide technical advisory services and is developing a longer term maintenance program with us. This is exactly what we want to see. We must keep working together to optimize this mill. This is a permanent relationship, not a temporary one. ○

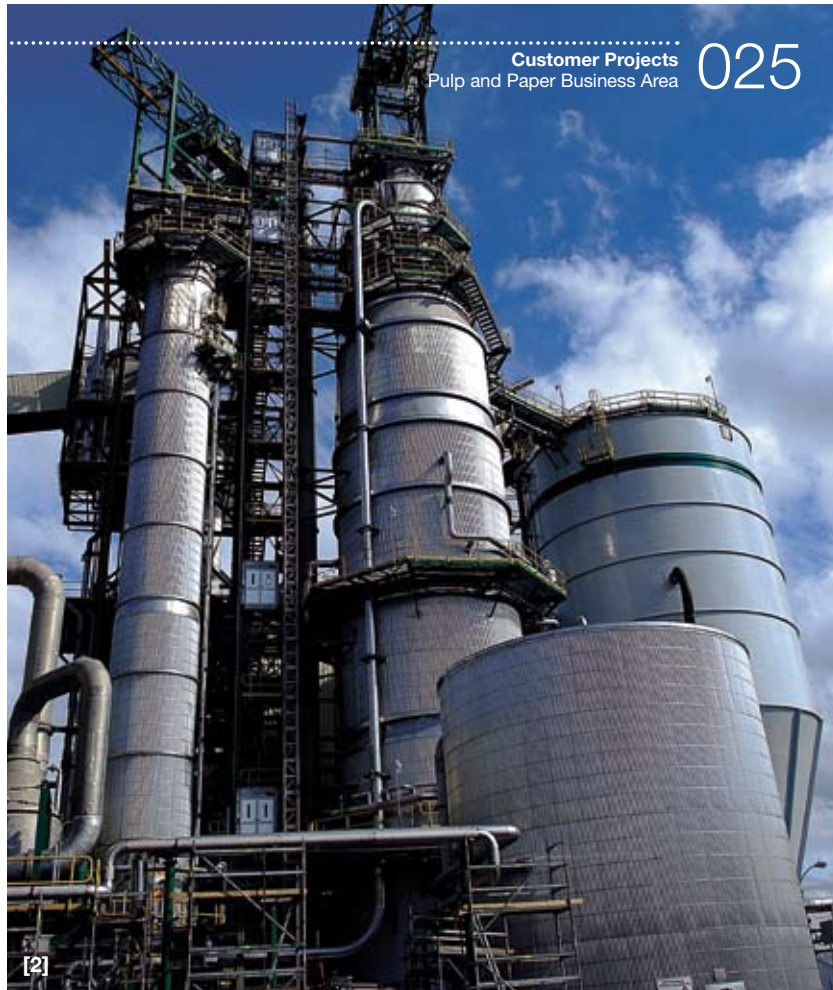
FOUR EPC PACKAGES FOR A GREENFIELD 800,000 T/A LINE AT CMPC'S SANTA FE MILL.

[1] The 3,800 t/d Recovery Boiler has a Vertical Air™ system which virtually eliminates NO_x emissions.

[2] Andritz delivered a 2,405 t/d Fiberline consisting of a Lo-Solids® digester with TurboFeed™ chip feeding, brownstock washing, oxygen delignification, post-oxygen pulp screening and washing, and four-stage ECF bleaching. DD Washers are used for all washing stages.

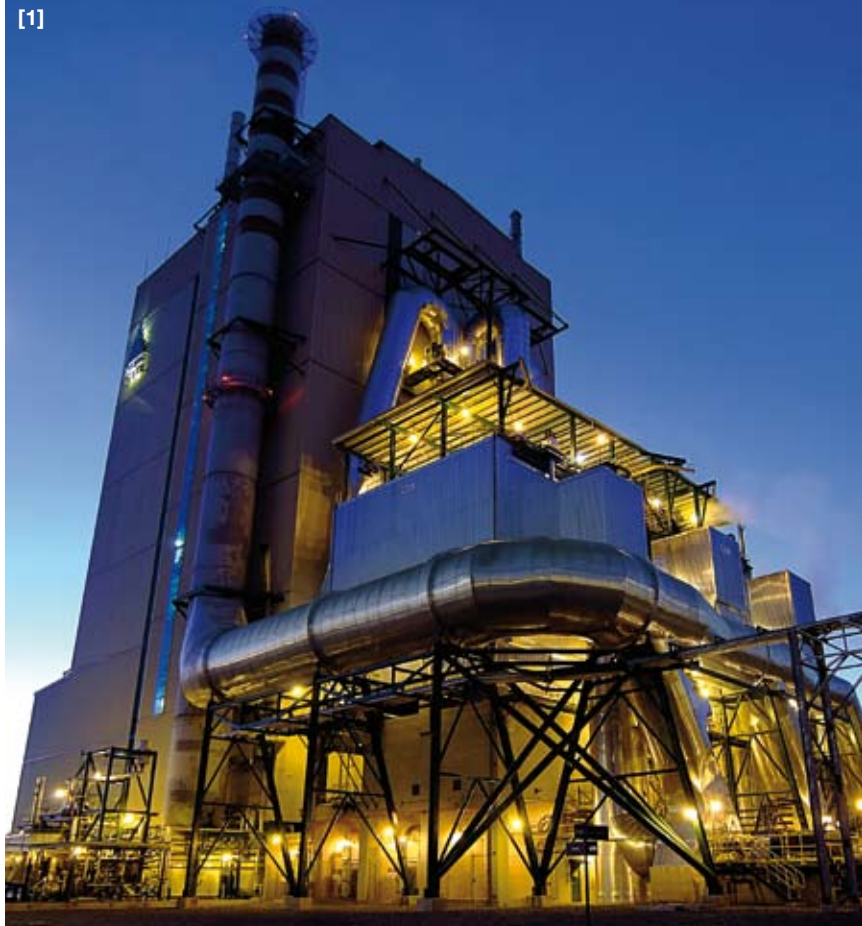
[3] The Pulp Drying/Baling plant from Andritz is a single-line design. Design capacity is 2,520 t/d. Andritz delivered the stock preparation system, the twin-wire pulp machine (shown), the Fläkt dryer, cutter/layboy and three automated bale finishing lines on an EPC basis.

[4] The 8,100 m³/d White Liquor Plant has a 600 t/d LMD kiln and utilizes X-Filters (shown here) for green liquor filtration.



[2]

[1]



[3]



[4]

