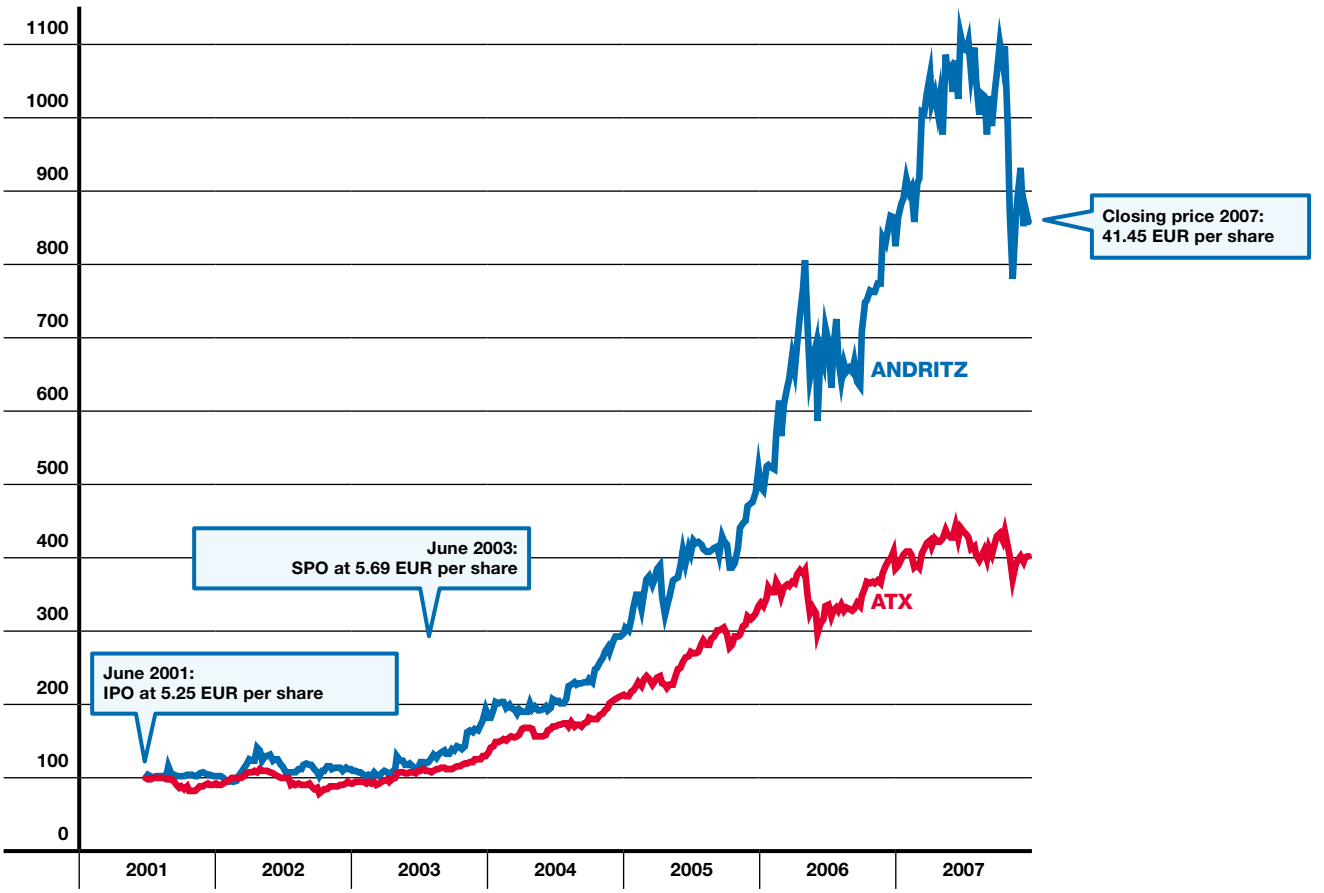
GLOBAL TOP PRODUCTS
ANNUAL REPORT 2007

ANDRITZ

DEVELOPMENT OF THE ANDRITZ SHARE



Relative share price performance of the Andritz share vs. the ATX since the IPO

STOCK EXCHANGE RELATED FIGURES

	2007	2006	2005	2004	2003
Earnings per share (EUR)	**2.57**	2.31	1.53	1.03	0.57
Dividend per share (EUR)	**1.00**[7]	0.75	0.50	0.35	0.25
Payout ratio (%)	**38.9**	32.5	32.6	34.3	44.2
Equity attributable to shareholders per share (EUR)	**9.07**	7.86	6.25	5.18	4.50
Market Capitalization as of end of period (MEUR)	**2,155.4**	2,135.9	1,207.1	729.3	493.4
Share price at year-end (EUR)	**41.45**	41.08	23.21	14.03	9.49
Highest closing price (EUR)	**54.00**	41.08	23.21	14.13	9.49
Lowest closing price (EUR)	**35.80**	23.13	14.15	8.75	5.25

Note: On May 3, 2007, the Andritz share was split in a ratio of 1:4; historical share price data and stock exchange related figures were adjusted accordingly.

Notes:

1) EBITDA: Earnings before Interest, Taxes, Depreciation, and Amortization; 2) EBITA: Earnings before Interest, Taxes, Amortization of identifiable assets acquired in a business combination and recognized separately from goodwill at the amount of 5,967 TEUR (2006: 2,895 TEUR) and impairment of goodwill at 2,771 TEUR (2006: 0 TEUR); 3) Additions to property, plant, and equipment and intangible assets; 4) Equity: Total shareholders' equity incl. minority interests; 5) ROE (Return On Equity): Net Income/Equity; 6) EV (Enterprise Value): Market capitalization based on year-end closing price minus net liquidity; 7) Proposal to the Annual General Meeting

KEY FIGURES 2003-2007 OF THE ANDRITZ GROUP (IFRS)

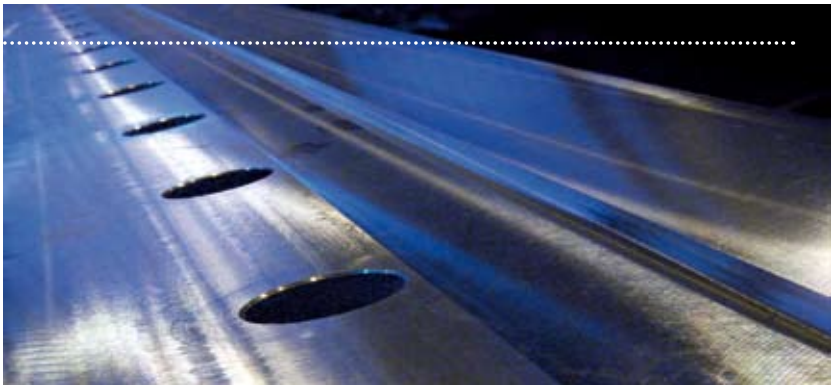
FINANCIAL FIGURES IN MEUR

	2007	2006*	2005	2004	2003
Order Intake	**3,750**	2,891	1,975	1,837	1,394
Order Backlog as of 31.12.	**3,843**	3,397	1,696	1,439	1,054
Sales	**3,283**	2,710	1,744	1,481	1,225
EBITDA[1)]	**242**	194	131	115	84
EBITA[2)]	**201**	163	107	93	63
Operating Result (EBIT)	**193**	160	107	76	49
Earnings before Taxes (EBT)	**198**	166	110	77	49
Net Income	**136**	121	80	54	31
Cash flow from Operating Activities	**33**	143	237	208	5
Capital Expenditure[3)]	**57**	46	27	29	21
Employees as of 31.12. (excluding apprentices)	**12,016**	10,215	5,943	5,314	4,771
Fixed assets	**630**	609	308	276	279
Current assets	**1,878**	1,777	1,083	877	688
Equity[4)]	**482**	415	329	277	239
Provisions	**395**	386	190	160	150
Liabilities	**1,631**	1,585	873	717	577
Balance sheet total	**2,508**	2,386	1,391	1,153	967
EBITDA margin (%)	**7.4**	7.2	7.5	7.8	6.9
EBITA margin (%)	**6.1**	6.0	6.1	6.3	5.1
EBIT margin (%)	**5.9**	5.9	6.1	5.1	4.0
Net Income/Sales (%)	**4.1**	4.5	4.6	3.6	2.5
ROE (%)[5)]	**28.2**	29.2	24.3	19.5	13.0
Equity Ratio (%)	**19.2**	17.4	23.6	24.0	24.7
EV[6)]/EBITDA	**7.9**	9.1	6.3	4.4	5.2
Depreciation and amortization/Sales (%)	**1.4**	1.3	1.4	1.5	1.7
Impairment resp. amortization goodwill/Sales (%)	**0.1**	0.0	0.0	1.1	1.2

* restated

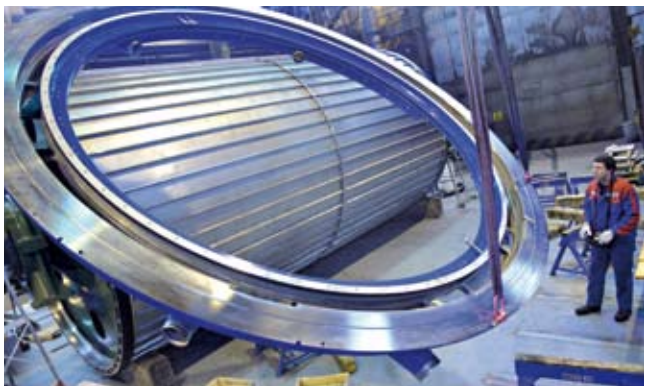
FINANCIAL CALENDAR 2008

29.02.2008	**Results for 2007**
27.03.2008	**Annual General Meeting**
31.03.2008	**Ex-dividend**
04.04.2008	**Dividend payment**
07.05.2008	**Q1 2008**
01.08.2008	**H1 2008**
07.11.2008	**Q1–Q3 2008**






GLOBAL TOP PRODUCTS

THE PROCESSES, SYSTEMS, AND PLANTS SUPPLIED BY ANDRITZ TO ITS CUSTOMERS AROUND THE WORLD COMPLY WITH STATE-OF-THE-ART TECHNOLOGIES AND THE INTERNATIONAL ENVIRONMENTAL STANDARDS.

WITH THESE 'GLOBAL TOP PRODUCTS', ANDRITZ HELPS ITS CUSTOMERS TO ACHIEVE THEIR GOALS WITH REGARD TO PROFITABILITY, SUSTAINABILITY, AND ENVIRONMENTAL TARGETS WHILE AT THE SAME TIME CONTRIBUTING TO THE SUSTAINABLE DEVELOPMENT OF THE GLOBAL ECONOMY.

TOP PRODUCTS ENSURE GLOBAL SUSTAINABILITY

Sustainable development – meeting the needs of the present without compromising the ability of future generations to meet their needs – is an integral and active part of Andritz's corporate policy. The products of Andritz support the economic growth of its customers – and of the countries and national economies where these customers are situated. Economic growth is a prerequisite for the ultimate goal of Andritz's corporate responsibility: social progress achieved on the basis of ecological and environmental balance.

ENVIRONMENTAL SUSTAINABILITY

Besides social progress and economic growth, the ecological balance is a pillar of sustainable development. Global efforts in support of climate protection over the past few years have significantly increased the relevance of energy generation from renewable sources such as hydropower and biomass.

It is a declared goal of Andritz to help customers achieve their goals with regard to profitability, sustainability, and environmental targets. Thus, Andritz's R&D programs strongly focus on the development of sustainable 'Top Global Products'. Already 35–40% of the Andritz Group's total Sales are derived from technologies and systems that generate energy from renewable sources such as hydropower and biomass. In the area of hydropower, Andritz offers modern equipment and services for hydropower plants, thus substantially contributing to the use of renewable, clean energy sources.

ABOUT 35–40% OF THE ANDRITZ GROUP'S TOTAL SALES ARE DERIVED FROM PRODUCTS, TECHNOLOGIES, AND SYSTEMS THAT GENERATE ENERGY FROM RENEWABLE SOURCES SUCH AS HYDROPOWER AND BIOMASS.

The Andritz Group is committed to promoting environmental protection and conserving natural resources by using biomass as raw material. Andritz has a comprehensive product portfolio for biomass starting from wood handling equipment, dryers and pelleting machines, to fluid bed boilers and gasifiers for lime kilns.

The Andritz Group offers sustainable global top products in all of its Business Areas:

In the **Pulp and Paper Business Area,** Andritz's developments in improving fiber yield, minimizing water consumption, increasing energy efficiency, reducing chemical consumption in bleaching, and waste recycling, all contribute markedly to the industry's sustainability. For example, in the past 20 years, technologies developed by Andritz have reduced the amount of water required (the process of making pulp demands large volumes of water) to produce a ton of pulp by 60%. Andritz systems also help recover and reuse up to 99% of the chemicals used in making pulp.

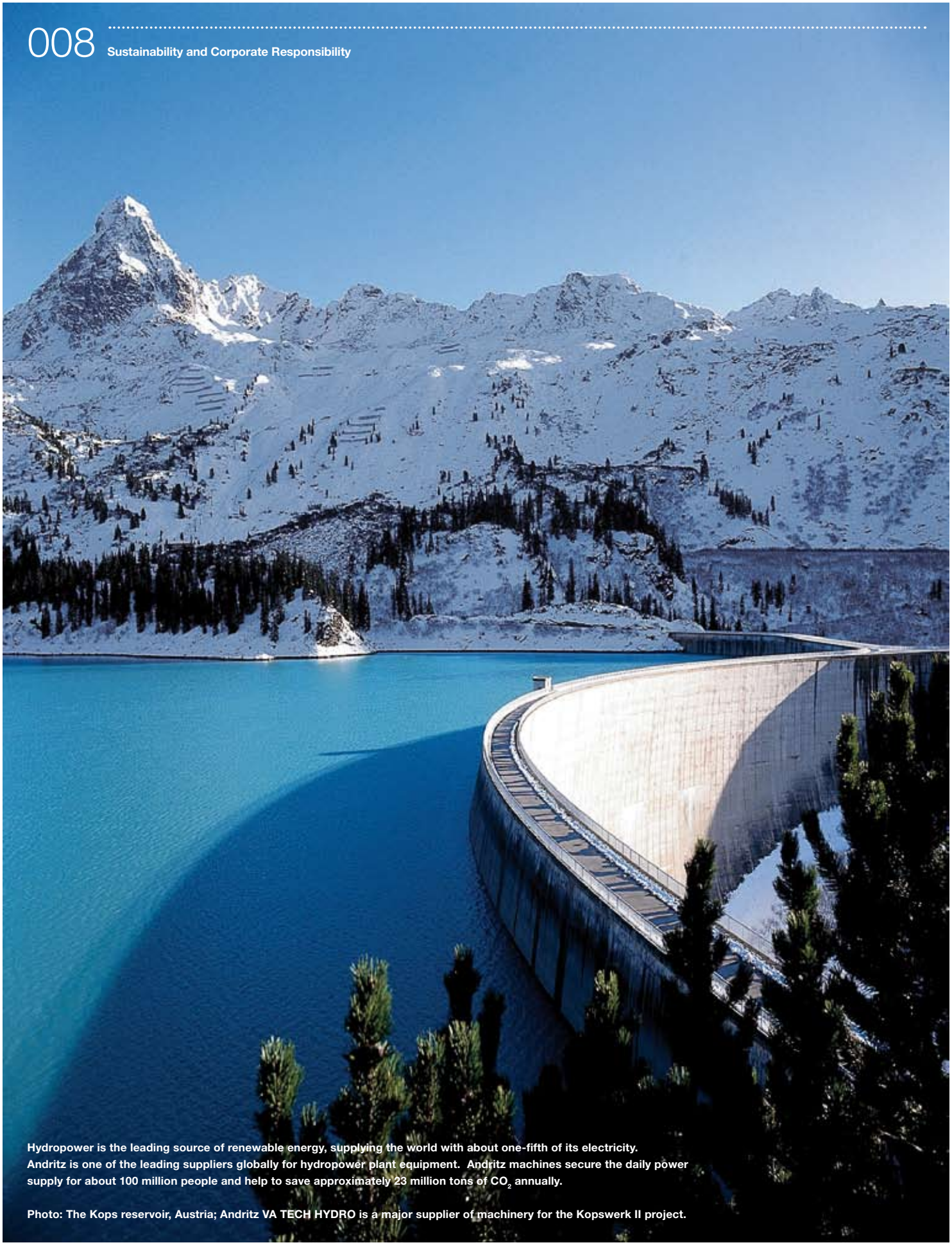
Andritz is one of the leading suppliers of recovery boilers, which are employed in chemical pulping and basically generate power from the balance of wood not turned into pulp (black liquor). This helps pulp mills to become net energy producers and thus to become eligible for CO_2 credits. The Andritz HERB (High Energy Recovery Boiler) at SCA's Östrand mill in Sweden operates at the highest temperatures and pressures and enables the mill to generate 500 Gigawatt hours of electrical energy per year – enough to make the mill virtually energy self-sufficient. The energy is generated from biomass which emits no fossil fuel-based carbon dioxide into the atmosphere. The technologies developed by Andritz help customers to further reduce emissions and maximize energy production.

Liquid biofuel produced by 'second generation methods' using forest residues, grass, straw, and bagasse is a fast growing area. Andritz (with its associated company Carbona) has agreed to cooperate with forestry company UPM on the development of a technology for biomass gasification and synthesis gas cleanup. In the project, forest residue is gasified and the cleaned syngas is then fed into a Fischer-Tropsch reactor (a method developed in Germany in the 1920s) for conversion into biorefinery products. Besides the main product ('raw biodiesel'), a variety of other products such as lubricants and raw materials for the chemical and medical industries can be produced. Andritz's experience with biomass gasifiers dates back to the 1980s and relates to gasifiers for lime kiln fuel production. As part of the joint project with UPM, an extensive pilot plant testing program will be performed at the Gas Technology Institute (GTI) in Chicago, USA.

The **Hydro Power Business Area**, which has been providing hydropower plants with modern equipment and extensive services for more than 160 years, holds a top global position in this field. Hydropower is the leading source of renewable energy, supplying the world with about one-fifth of its electricity. It is clean, leaves behind no waste, and neither emits pollutants nor significant amounts of dangerous greenhouse gases. →

Andritz supplies complete process lines that convert liquid sewage sludge into granulate. With a calorific value of approximately 10 to 13 MJ/kg, this granulate can be used as a substitute for fossil fuels in heat and power generation systems, thus reducing CO_2 emissions.

Photo: Wastewater treatment plant of Psyttalia, Athens, Greece, for which Andritz has supplied Europe's largest sludge drying plant.



Hydropower is the leading source of renewable energy, supplying the world with about one-fifth of its electricity. Andritz is one of the leading suppliers globally for hydropower plant equipment. Andritz machines secure the daily power supply for about 100 million people and help to save approximately 23 million tons of CO_2 annually.

Photo: The Kops reservoir, Austria; Andritz VA TECH HYDRO is a major supplier of machinery for the Kopswerk II project.

Through the use of renewable energy sources and highly efficient technologies, Andritz can already ensure future-oriented electricity generation. Andritz machines secure the daily power supply for about 100 million people and help to save approximately 23 million tons of CO_2 annually.

During the last few years, the market for hydropower equipment has been driven by the strong replacement investments in industrialized countries since most of the hydropower infrastructure has surpassed its useful lifetime, as well as by the higher environmental awareness and energy needs in the fast growing emerging markets. According to renowned market researchers, this trend should continue during the next few years.

In the **Rolling Mills and Strip Processing Lines Business Area,** conserving raw materials and minimizing emissions is the driving force of one of the core process areas. Andritz acid recovery and regeneration systems completely recycle the acids used in the pickling process. The latest Andritz technology provides a zero-effluent process for mixed acids. More than 99% of the acids are recovered and can be reused. All Andritz process lines employ technologies to substantially diminish or completely eliminate the emission of substances into the environment. In particular, Andritz has developed technologies to substantially reduce the emissions of NO_x from waste gas streams in furnaces and pickling lines.

The **Environment and Process Business Area** supplies complete process lines which convert liquid sewage sludge into granulate. With a calorific value of approximately 10 to 13 MJ/kg, this granulate can be used as a substitute for fossil fuels in heat and power generation systems, thus reducing CO_2 emissions. With its own optimization of the combined drying/incineration process of using dried granulate as fuel and the energy generated in the incineration process as heat for the drying process, self-sustaining reduction of CO_2 is achieved. Directives and stringent environmental regulations are long-term major growth drivers in this Business Area, especially in the U.S. and Europe.

The **Feed and Biofuel Business Area** is the world market leader for plants and systems for the production of environmentally friendly biofuel pellets out of renewable materials, such as wood and agricultural by-products. In this way, highly valuable fuels are generated from materials which would otherwise have to be disposed of, and the effect on CO_2 emissions is neutral. Andritz also supplies pelleting equipment for industrial and household waste. The pellets produced offer an environmentally friendly alternative to fossil fuels in heating power plants.

SOCIAL SUSTAINABILITY

Globalization creates economic growth and new jobs – both in the developed world and, more importantly, in the developing regions. New jobs provide more people with a living and amenities, and also bring along training, thus ultimately creating entrepreneurship. Sustainable enterprises must aim to support free, open markets in stable societies and a fair distribution of the benefits.

Andritz has a strong commitment towards the sustainable development of social life in emerging markets. For example, in the fast growing emerging regions such as Brazil, China, and India, Andritz has created new jobs by establishing engineering, production, and service sites. The number of Andritz employees working in emerging markets has increased from 50 in the year 2000 to the current total of over 2,400, thus contributing to the social welfare and well-being in these countries. This was not achieved by shifting jobs from Europe to Asia; Andritz also increased the number of jobs in Europe during that time.

During the last ten years, Andritz delivered the main equipment for several new greenfield pulp mills in South America, India, and China. These mills provide work for more than 3,000 people – many of these newly-created jobs requiring advanced technical or business skills – and more than 15,000 in the forestry and other supplier industries. Andritz targets suppliers who are equally committed to economic, environmental, and social stewardship.

Andritz implements the following measures to achieve economic growth and ecological balance:

- Developing and offering technologies that prevent pollution in the first place.
- Developing processes that use the by-products of one process as raw materials for another, thus minimizing waste.
- Offering new services which allow more efficient utilization of labor and raw materials within a customer's plant.
- Collaborating with customers to better understand their requirements for sustainability and aligning Andritz's business processes with these requirements.
- Further developing sustainable and environmentally friendly products.
- Operating the business in a socially responsible manner.
- Giving preference to suppliers that share these commitments to sustainability.

Investing in people

Corporate success is strongly dependent upon the competence and commitment of employees. Andritz funds the professional development of its employees. Human Resources management, with issues such as staff development, leadership, and management responsibility, is given top priority. A successful management training program ('Management Challenge') has been an integral part of human resources development for several years.

In staff development, Andritz is increasingly focusing on the promotion of technical careers, particularly with regard to female technical graduates. An important initiative in this respect is the new company kindergarten at the Graz site, which offers flexible, reliable child care, and supports young mothers in improving their work/life balance. →

In 2007, Andritz established a company kindergarten at the Graz site to support the work/life balance of its employees.

Mutual benefit

Young, fast growing companies in developing countries, their employees, and management all benefit from the experience of well-established Andritz companies in Europe. Management of Andritz affiliates by experienced local executives is one of the most important organizational principles in the Andritz Group. Whether in global Competence Centers or in local Sales and Service organizations, the management acting in these Andritz companies has often acquired its specific technical and product-related knowledge in the Andritz Group's Centers of Competence, preparing them well for their leadership functions. Wherever Andritz has the goal to further broaden the competence and enlarge the capacity of the Group's companies and activities, Andritz will strengthen local management responsibility.

Active communication and education

As part of its endeavors for a safe and sustainable environment, Andritz pursues an active information policy to communicate with authorities and stakeholders. The policy is based upon transparency and trust. One example of Andritz's information activities is the annual 'Waste Management Report' for certain locations. The aspects of ecology are an integral element in training and education programs for Andritz employees.

Employees are encouraged to contribute their knowledge and experience. One instrument is the 'Suggestions for Improvement' area in the Andritz Intranet. Cooperation with the employees' representatives is yet another principle at Andritz. Relevant issues are resolved in close collaboration with these representatives.

Health and safety

Andritz invests considerably in the health and well-being of its employees; their health and safety at work are major concerns. Andritz provides modern and safe equipment, clothing, tools, and accessories for the protection of its employees. Safe procedures are developed, documented, and enforced for all employees working in manufacturing facilities or at customer locations.

Social sustainability measures of Andritz's customers

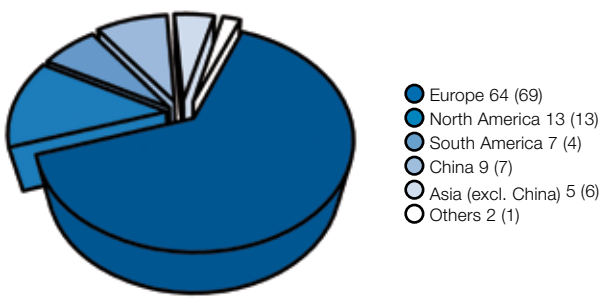
Most Andritz customers have a strong commitment towards sustainability. Their sustainability strategy is based on implementation of the best environmental technologies and practices, strong social commitment, and active dialog with all stakeholders. This results in significant investments in infrastructure, healthcare, and education of the people and communities where Andritz's customers operate. In addition, many new jobs for local workers, sub-suppliers, and other industries are created, thus improving the standard of living of several thousand people. ○

THE ANDRITZ GROUP AT A GLANCE

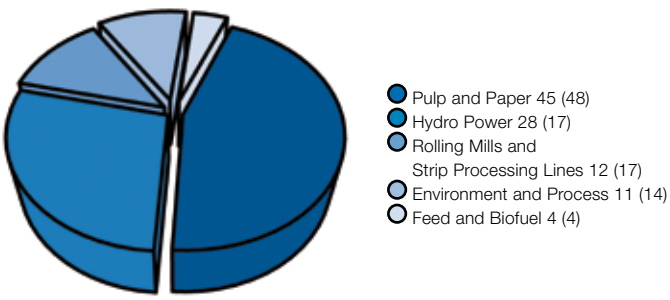
The Andritz Group is a global market leader in the supply of customized plants, systems, and services for the pulp and paper industry, the hydropower industry, the steel industry, and other specialized industries (solid/liquid separation, feed, and biofuel). Headquartered in Graz, Austria, the Group has about 12,000 employees worldwide. It manufactures and sells its products and services globally.

The Group is regarded as a technology leader in each of its Business Areas, with full-line capabilities in critical process areas. In addition, Andritz offers comprehensive services including the supply of replacement parts, the manufacture of engineered wear products, and the provision of technical support services, which help customers optimize production and reduce overall costs.

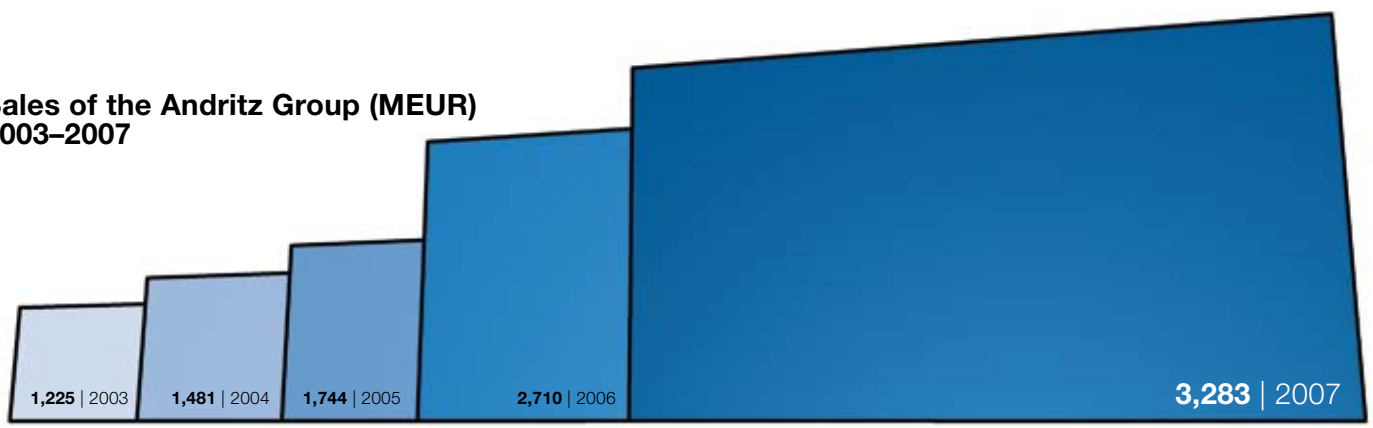
Employees by Region in % 2007 (2006)



Sales by Business Area in % 2007 (2006)



Sales of the Andritz Group (MEUR) 2003–2007



VISION

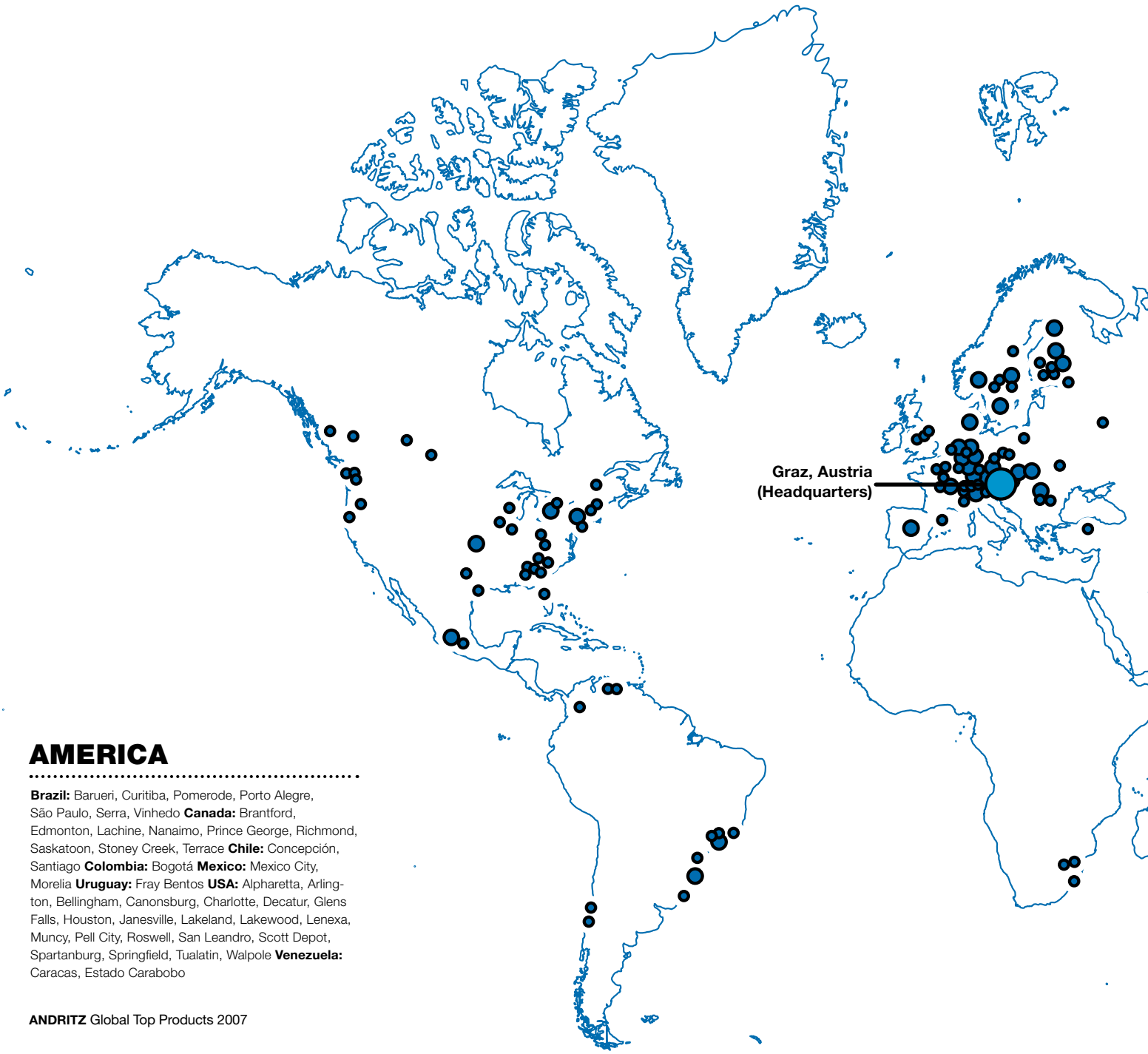
WORLD MARKET LEADER FOR HIGH-TECH PRODUCTION SYSTEMS AND SERVICES FOR PULP, PAPER, HYDROPOWER, STEEL, AND OTHER SPECIALIZED INDUSTRIES.





GLOBAL PRESENCE . . .

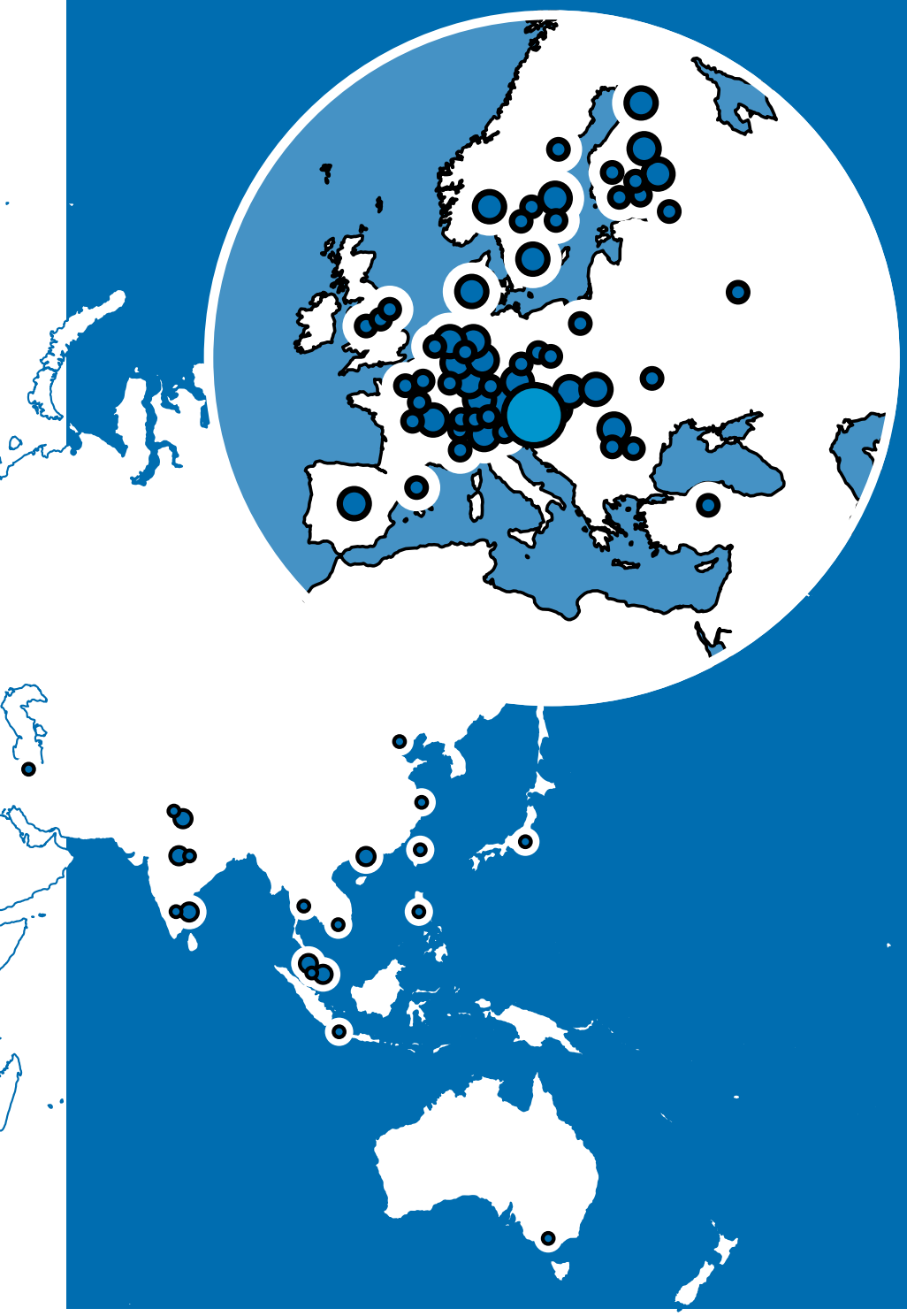
The Andritz Group has established a well-organized global organization with a presence in most major geographic market areas, thus ensuring fast support and service to its global customers. It is Andritz's declared goal to further enhance its strong global reach by improving its service presence and sustaining ongoing business relations with key customers.



AMERICA

Brazil: Barueri, Curitiba, Pomerode, Porto Alegre, São Paulo, Serra, Vinhedo **Canada:** Brantford, Edmonton, Lachine, Nanaimo, Prince George, Richmond, Saskatoon, Stoney Creek, Terrace **Chile:** Concepción, Santiago **Colombia:** Bogotá **Mexico:** Mexico City, Morelia **Uruguay:** Fray Bentos **USA:** Alpharetta, Arlington, Bellingham, Canonsburg, Charlotte, Decatur, Glens Falls, Houston, Janesville, Lakeland, Lakewood, Lenexa, Muncy, Pell City, Roswell, San Leandro, Scott Depot, Spartanburg, Springfield, Tualatin, Walpole **Venezuela:** Caracas, Estado Carabobo

. . . WITH MORE THAN 150 PRODUCTION AND SERVICE SITES WORLDWIDE



EUROPE

Austria: Graz (Headquarters of the Andritz Group), Linz, Vienna, Weiz **Czech Republic:** Hradec Králové, Prague **Denmark:** Esbjerg **Finland:** Helsinki, Hollola, Kotka, Savonlinna, Tampere, Varkaus **France:** Châteauroux, Châtellerault, Gennevilliers, Grenoble, Saint Martin Le Beau, Vélizy-Villacoublay **Germany:** Bretten-Gölshausen, Cologne, Düsseldorf, Hemer, Krefeld, Mettmann, Ravensburg, Regensburg, Selb, Senden **Great Britain:** Belper, Hull, Staffordshire **Hungary:** Tiszakécske **Italy:** Schio (Vicenza) **Netherlands:** Den Helder, Geldrop, Rotterdam **Norway:** Jevnaker **Poland:** Warsaw **Romania:** Bucharest, Cisnadie **Russia:** Moscow, St. Petersburg **Slovakia:** Humenné, Spišská Nová Ves **Spain:** Barcelona, Madrid **Sweden:** Hedemora, Karlstad, Örnsköldsvik, Stockholm, Växjö, Vallentuna **Switzerland:** Bülach, Kriens, Vevey, Wohlen, Zurich **Turkey:** Kavaklidere (Ankara) **Ukraine:** Kiev

ASIA

China: Beijing, Foshan, Shanghai **India:** Bangalore, Chennai, Faridabad, Mandideep, New Delhi **Indonesia:** Jakarta **Iran:** Tehran **Japan:** Tokyo **Malaysia:** Selangor **Philippines:** Laguna **Singapore:** Singapore **Taiwan:** Taipei **Thailand:** Bangkok **Vietnam:** Hanoi, Ho Chi Minh City

AUSTRALIA

Dandenong, Rathmines

AFRICA

South Africa: Durban, Johannesburg

FINANCIAL YEAR 2007: CONTINUATION OF PROFITABLE GROWTH

2007 was another successful year for the Andritz Group. The strong market position of Andritz in all Business Areas combined with a satisfactory and favorable development of the global economy and the industries served by Andritz led to increases in all relevant financial figures.

FINANCIAL PERFORMANCE

Sales

Sales of the Andritz Group amounted to 3,282.5 MEUR, increasing 21.1% compared to 2006 (2,709.7 MEUR), thus reaching a new record level. In particular, Sales of the Pulp and Paper, Hydro Power, and Feed and Biofuel Business Areas increased significantly compared to last year. Organic Sales growth of the Group in 2007 was approximately 9.4%.

Order Intake and Order Backlog

The Order Intake of the Andritz Group increased to 3,749.5 MEUR in 2007, up 29.7% compared to the very high level of 2006 (2,891.0 MEUR). The Rolling Mills and Strip Processing Lines, Hydro Power, and Feed and Biofuel Business Areas achieved strong organic growth rates of the Order Intake. Organic growth of the Order Intake in 2007 was approximately 14.7%.

The Group's Order Backlog also showed a strong increase compared to the reference date of last year, surging to 3,843.3 MEUR as of 31.12.2007 (31.12.2006: 3,397.1 MEUR). Thus, the Andritz Group has a solid visibility with regard to Sales for the coming months.

Earnings

In step with Sales, Earnings before Interest and Taxes (EBIT) increased to 192.6 MEUR in 2007 (2006: 159.8 MEUR). All Business Areas, in particular the Hydro Power, Rolling Mills and Strip Processing Lines, as well as the Feed and Biofuel Business Areas, showed a solid and satisfactory development of Earnings, thus more than offsetting the dilutive effect of VA TECH HYDRO on the Group's profitability, expected at the time of the acquisition. As a result, the Group's EBIT margin, at 5.9% for 2007, was unchanged compared to last year (2006: 5.9%).

The financial result, at 5.5 MEUR in 2007, was lower compared to 2006 (6.1 MEUR). The tax rate in 2007 amounted to 31.3% (2006: 26.9%).

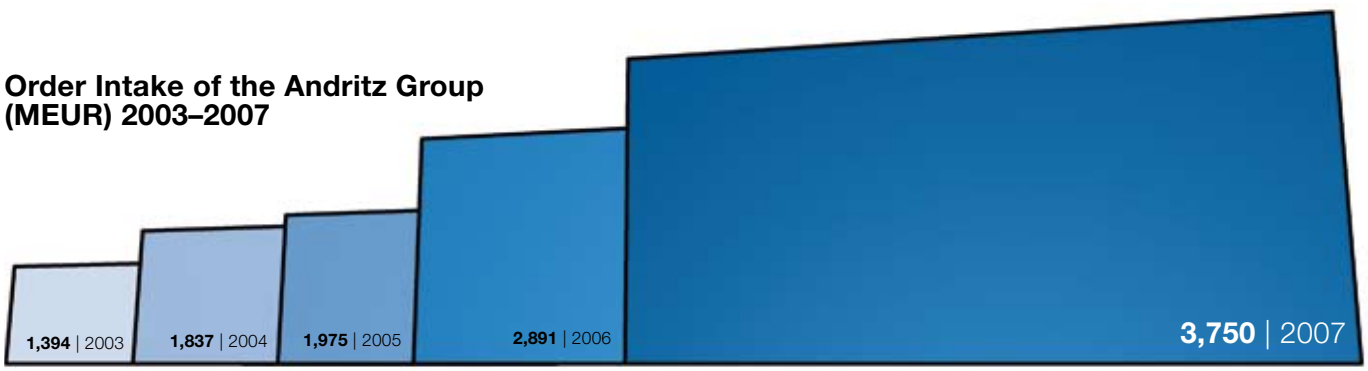
Net Income after deduction of Minority Interests amounted to 132.7 MEUR (2006: 118.5 MEUR).

KEY FINANCIAL FIGURES

MEUR	2007	2006	Change in %
Sales	**3,282.5**	2,709.7	+21.1
EBITDA[1)]	**242.3**	194.2	+24.8
EBIT	**192.6**	159.8	+20.5
Earnings before taxes	**198.0**	165.9	+19.3
Net income	**136.1**	121.4	+12.1

1) EBITDA: Earnings Before Interest, Taxes, Depreciation, and Amortization

Order Intake of the Andritz Group (MEUR) 2003–2007



Net worth position and capital structure

The balance sheet of the Andritz Group as of 31.12.2007 continued to show a solid capital structure. Total assets as of 31.12.2007 amounted to 2,507.5 MEUR, thus 121.4 MEUR higher than as of 31.12.2006 (2,386.1 MEUR).

The Group's net liquidity as of 31.12.2007 amounted to 246.5 MEUR, thus significantly lower compared to the exceptionally high level of last year (31.12.2006: 365.7 MEUR). The equity ratio as of 31.12.2007 was 19.2% (31.12.2006: 17.4%).

KEY BALANCE SHEET RATIOS

	2007	2006
Equity ratio (in %)	**19.2**	17.4
Net liquidity[2] (in MEUR)	**246.5**	365.7
Net debt[3] (in MEUR)	**-94.8**	-216.9
Net working capital[4] (in MEUR)	**99.1**	-93.6
Capital employed[5] (in MEUR)	**405.6**	194.5
Gearing[6] (in %)	**-19.7**	-52.3

2) Cash and cash equivalents minus financial liabilities
3) Interest-bearing liabilities including provisions for serverance payments, provisions for pensions, and jubilee provisions minus cash and cash equivalents
4) Non-current and current receivables and other assets minus non-current and current liabilities excl. provisions
5) Net working capital plus fixed assets
6) Net debt/Shareholders' Equity

Capex and cash flow

The Andritz Group's investments in tangible and intangible assets amounted to 57.0 MEUR in 2007, thus increasing by 24.7% compared to last year (2006: 45.7 MEUR). Capital expenditure mainly focused on building and workshop modernizations at some of the Group's existing sites as well as on capacity additions, especially in China. Cash flow from operating activities amounted to 33.1 MEUR (2006: 143.1 MEUR).

KEY CASH FLOW RATIOS

MEUR	2007	2006
Cash flow from operating activities	**33.1**	143.1
Capital expenditure[7]	**57.0**	45.7
Free cash flow[8]	**-19.6**	100.1
Free cash flow per share[9]	**-0.4**	1.9

7) Additions to property, plant, and equipment and intangible assets
8) Cash flow from operating activities minus capital expenditure plus payments from the sale of of tangible and intangible assets
9) Free cash flow/total number of Andritz shares

IMPORTANT ACQUISITIONS AND COOPERATIONS

Sindus Human Technology

In June 2007, Andritz acquired a 50% stake in Brazilian Sindus Human Technology, the leading provider of outsourced automation, instrumentation,and electricity maintenance services for the pulp and paper industry in Brazil. With 12 branches in eight states, Sindus Andritz is close to the largest pulp and paper mills in Brazil. Andritz will add its proven process know-how to Sindus' experience. Sindus Andritz will start to offer its services to mills in other South American countries as well.

Cooperation project with UPM

Global forestry company UPM, the Andritz Group, and Andritz's associated company Carbona started a joint development project for biomass gasification and synthetic gas purification. Gasification technology is required for the production of synthetic gas that will feed a Fischer-Tropsch based second-generation biodiesel production facility. The joint testing project will be conducted at the Gas Technology Institute's pilot lab in Chicago in the United States. Pilot testing is expected to be completed by the end of 2008. →

Through the acquisition of a 50% stake in Brazilian Sindus Human Technology, Andritz has strengthened its position in the Pulp and Paper Business Area.

Photo: A new Sindus Andritz field technician is receiving hands-on training on the maintenance of valve positioners at a mill in southern Brazil.

MAJOR ORDERS FROM RENOWNED CUSTOMERS WORLDWIDE

Pulp and Paper

The Business Area received an order from Votorantim Celulose e Papel (VCP), Brazil to deliver a complete fiberline, pulp drying/baling plant, and white liquor plant for the world's largest pulp mill. Design capacity of this greenfield bleached eucalyptus market pulp mill is 1,250,000 t/a. The mill is located at Três Lagoas in Brazil's Mato Grosso do Sul state. Andritz will provide the technology, equipment, basic and detailed engineering, electromechanical erection, erection supervision, start-up, and training.

Andritz received major orders for chemical, recovery, and pulp drying systems from renowned pulp producers in Spain and Portugal. For Celulosas de Asturias S.A. (CEASA), a pulp mill located in Navia, Asturias, Spain, Andritz will supply major recovery and market pulp drying systems for a mill upgrade program which will increase the production capacity and improve the performance of most departments of the mill. Celulose Beira Industrial (Celbi), S.A. ordered major market pulp drying systems and a lime kiln plant for the modernization and capacity increase of its Figueira da Foz pulp mill, Portugal.

Australian Visy Industries, the world's largest privately owned packaging and recycling company, selected Andritz to supply technology and systems for the expansion of its Tumut mill in New South Wales, Australia. The order encompasses the upgrade of the existing fiberline and recausticizing plant, and the installation of a new recovery boiler, pre-evaporator, lime kiln, equipment for the recycled fiber plant, stock preparation, and approach flow systems.

Hydro Power

In August, the supply and engineering contracts and the credit agreements for the construction of the Ilisu hydropower station in southeast Anatolia, Turkey, were signed in Ankara. The total project volume amounts to approximately 1.2 billion EUR, of which 530 MEUR fall to a European supply and engineering consortium, consisting of Andritz, Alstom, Züblin, Stucky, Colenco, and Maggia. The Ilisu hydropower station will supply two million households with electricity from environmentally friendly hydropower starting in 2014/2015. Compared to a thermal power station, this will help avoid about three million tons of carbon dioxide per year, or replace one or two nuclear power stations. The Turkish project operator, the Turkish government, and the export credit agencies involved have agreed upon a series of comprehensive accompanying measures and requirements for environmental protection, social cushioning, preservation of the cultural heritage, and interests of neighboring countries.

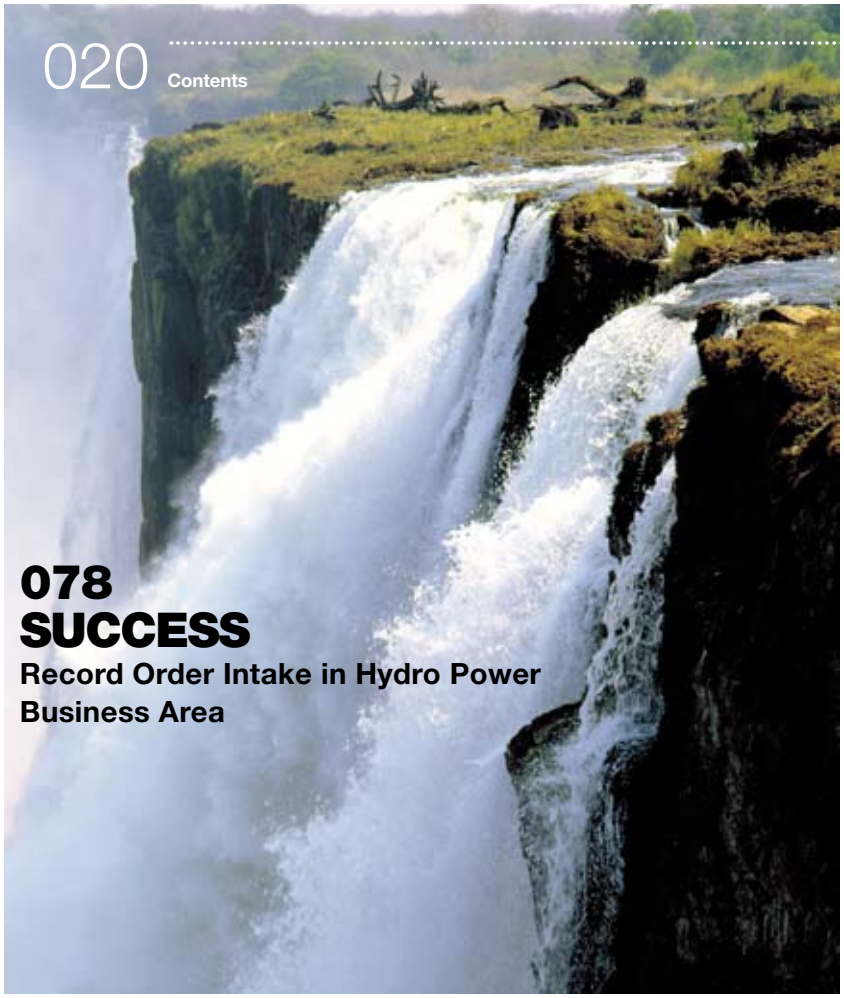
Rolling Mills and Strip Processing Lines

North America's largest integrated stainless steel producer, North American Stainless, placed an order for one of the world's largest annealing and pickling lines for hot-rolled stainless steel. NLMK, Lipezk, Russia ordered two special cold rolling mills for electrical steel and a hot-dip galvanizing line in combination with a color coating line.

Another hot-dip galvanizing line will be delivered to voestalpine Stahl GmbH in Linz, Austria, as part of voestalpine's Linz 2010 project. The product quality and output of 400,000 t/a are geared to producing top-quality surface finish, as well as new heavy-duty steel grades for the automotive industry, the household goods sector, and for steel profiles/building components. ThyssenKrupp Stainless ordered an annealing and pickling line for cold-rolled stainless steel strip for their new plant in the USA.

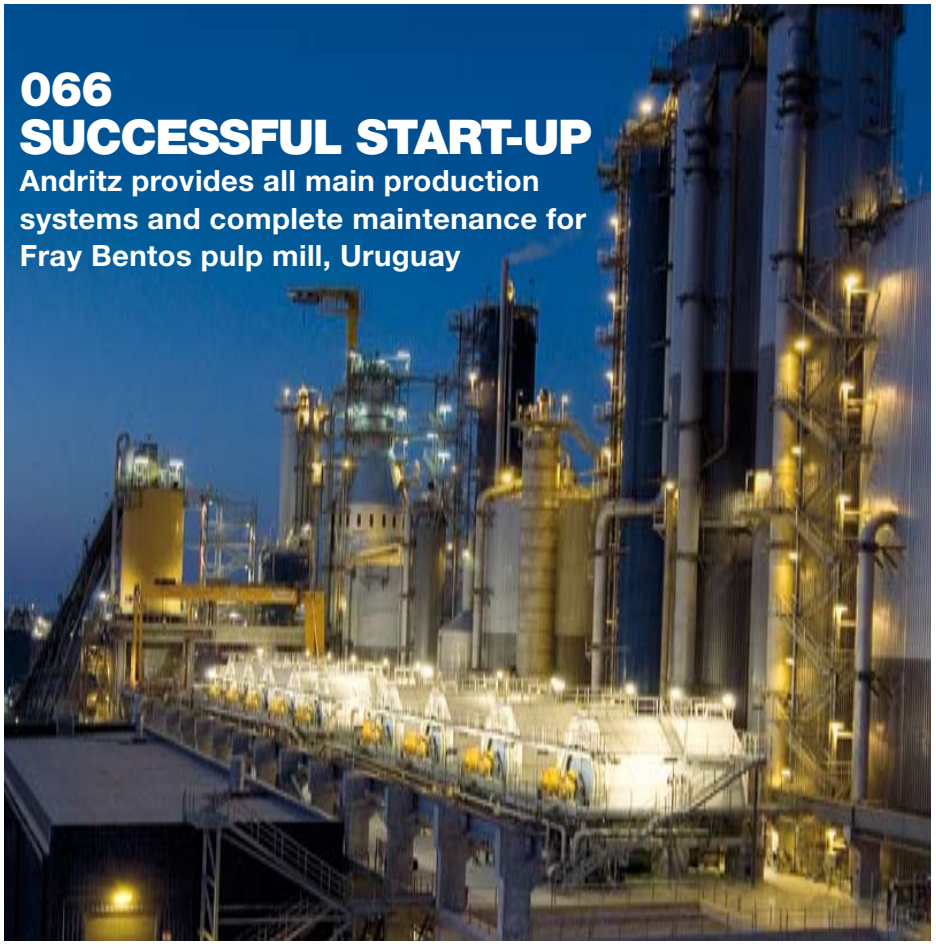
Environment and Process

Schwenk Cement, Germany placed an order for a belt dryer plant with a water evaporation capacity of 10 t/h for Bernburg, Germany. Ticona Germany, a company of the Celanese Group, ordered two fluidized bed drying plants designed to dry polyoxymethylene. The Separation Technologies Division received several major orders for centrifuges and filter presses from municipalities as well as from different industries, thus continuing its successful development shown during the last few years. ○



078 SUCCESS
Record Order Intake in Hydro Power Business Area

064 ACQUISITION
Sindus strengthens Pulp and Paper Business Area



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Andritz provides all main production systems and complete maintenance for Fray Bentos pulp mill, Uruguay

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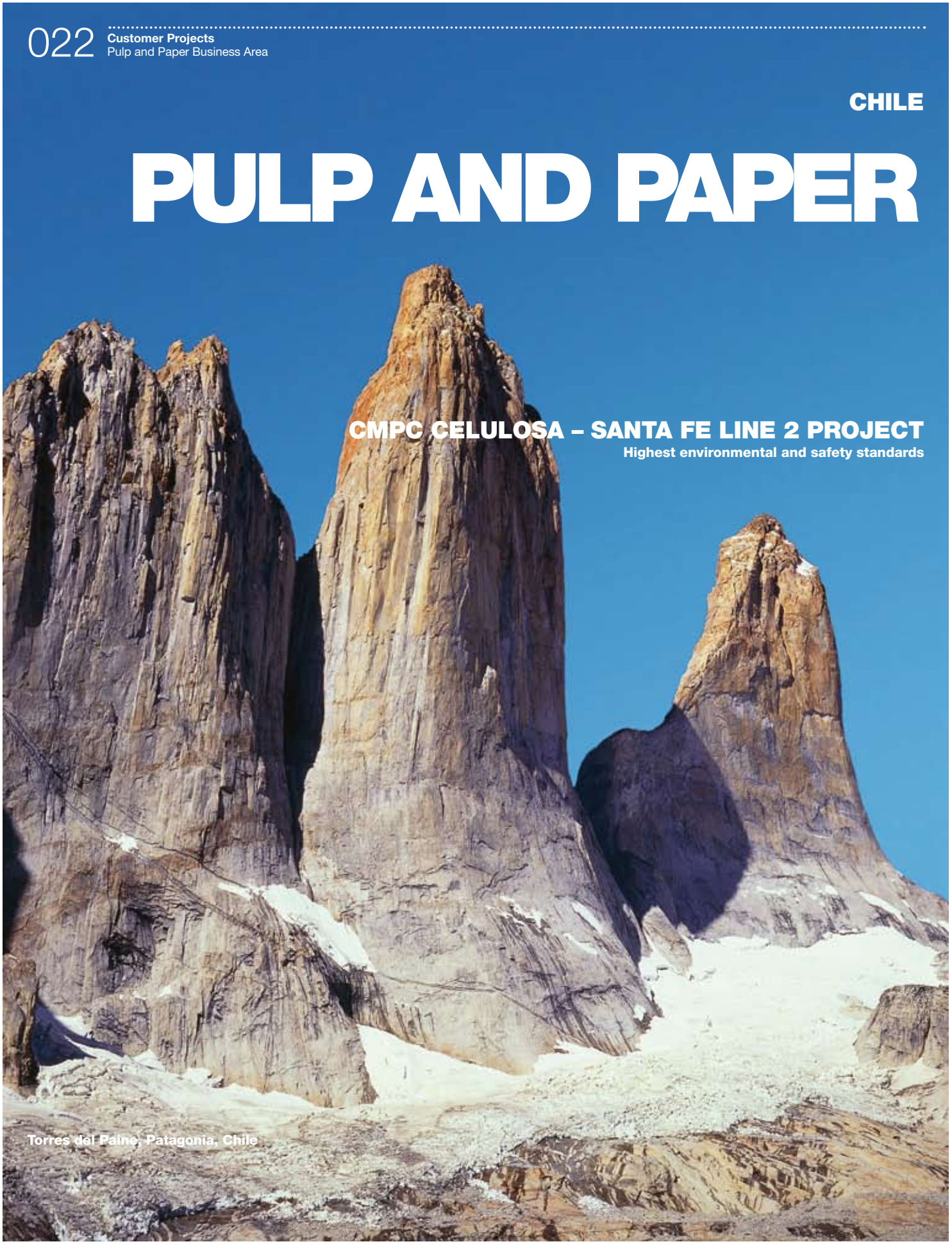
CHILE

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 international 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. ○

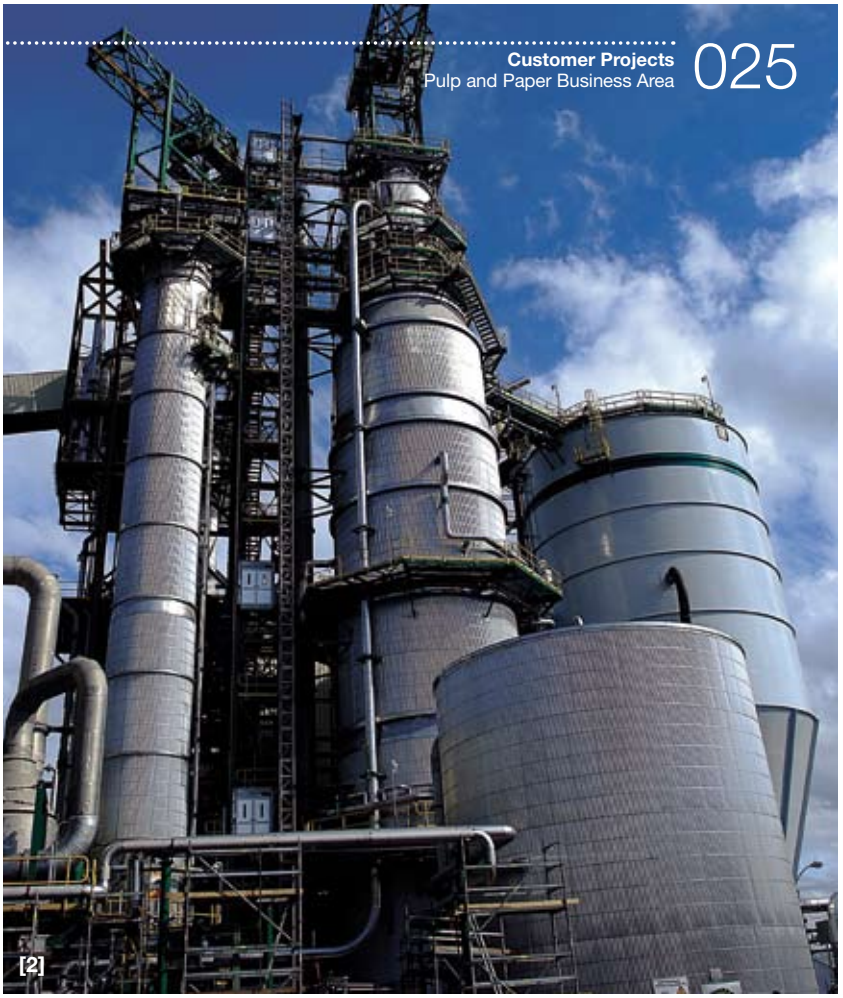
FOUR EPC PACKAGES FOR A GREENFIELD 800,000 T/A LINE AT CMPC'S SANTA FE MILL.

[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 m^3/d White Liquor Plant has a 600 t/d LMD kiln and utilizes X-Filters (shown here) for green liquor filtration.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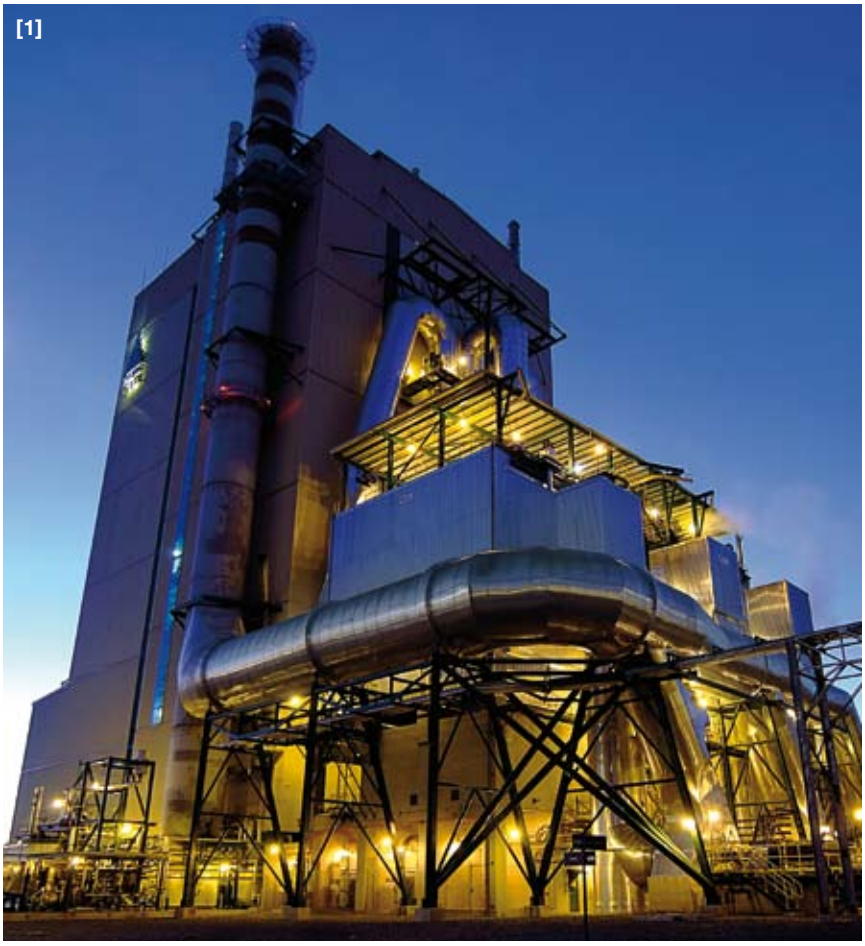
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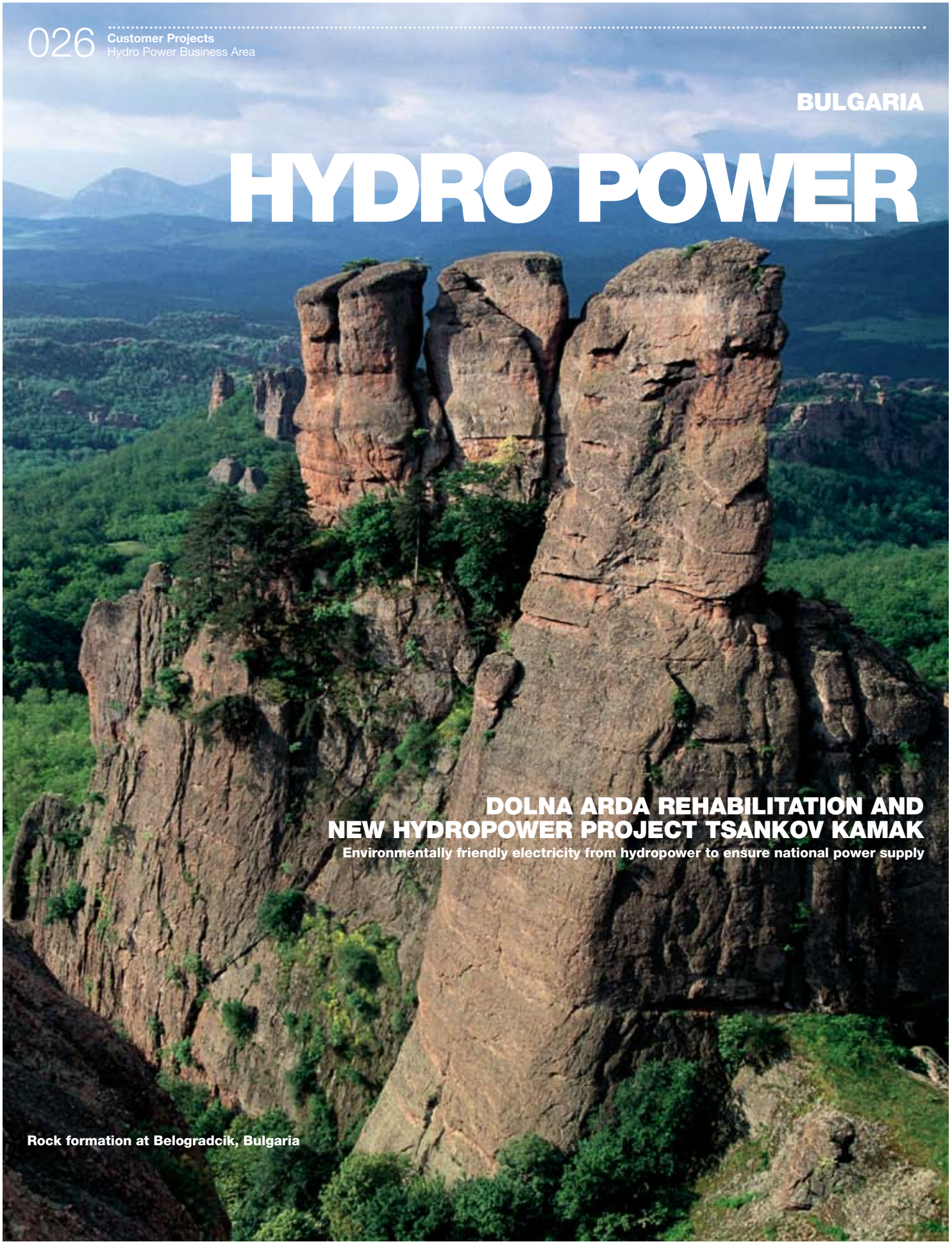
BULGARIA

HYDRO POWER

DOLNA ARDA REHABILITATION AND NEW HYDROPOWER PROJECT TSANKOV KAMAK

Environmentally friendly electricity from hydropower to ensure national power supply



Rock formation at Belogradcik, Bulgaria

‘THE ANDRITZ VA TECH HYDRO MACHINES AND SYSTEMS HAVE FAULTLESS OPERATION.’

LUBOMIR VELKOV

Chief Executive Director, NEK

Natsionalna Elektricheska Kompania EAD (NEK) of Bulgaria is the state-owned company dealing with electricity generation, transmission, and sales. It owns the transmission network and has its own generation assets – including 29 hydropower and pumped storage hydropower plants with 2,563 MW total installed capacity. Lubomir Velkov, NEK’s Chief Executive Director, talks about the role of renewable energy production in the EU’s newest member country, and his company’s long relationship with Andritz VA TECH HYDRO.

NEW POWER FOR EU'S NEWEST MEMBER

Interview with **Lubomir Velkov,**
Chief Executive Director, NEK

Experience
I graduated from the Moscow Energy Institute. I worked as a designer for Energoproject EAD for seven years, followed by six years as an expert in the Bulgarian Nuclear Safety Authority. In 2001, I joined the national electricity company NEK as Head of the Investments and Development Division and later became Director of that division. In November 2005, I was appointed Chief Executive Director of the company.

NEK and new market forces
NEK is in a new era with energy market liberalization. The traditional monopoly in energy generation and supply is shifting into a competitive, open market. Our tasks at NEK are to remain a leader in the services we offer, while meeting the new market demands. We also have to ensure the security of our national power supply.

The role of hydropower
On average, 7% of Bulgaria's electricity comes from hydropower, which is utilized mostly for peak load coverage and to regulate the load on our power system. We operate 29 hydropower plants, with the 14 largest being part of four major hydropower cascades. Hydropower helps us produce environmentally friendly electricity from renewable resources. Our focus is on maximizing the utilization of our existing plants and building new, smaller hydro plants on running water.

Experience with Andritz VA TECH HYDRO
Andritz VA TECH HYDRO is a company with great experience in the construction and rehabilitation of hydropower plants. They offer equipment on a world-quality level. NEK has had a long relationship with Andritz VA TECH HYDRO, dating back to 1910. More than 45 hydropower turbines and replacement runners with a total output of 850 MW have been delivered by Andritz VA TECH HYDRO. Their machines and systems have faultless and reliable operation. Equally important are the human aspects of working with them. They have a staff of excellent experts who work with us as a team member. Their attitude towards their clients is open and flexible.

In the period 2002–2005, our Devin and Teshel hydropower plants were rehabilitated by Andritz VA TECH HYDRO. The units were completely renovated with new excitation systems, relay protection, and control systems. This extended the plants' lives by more than 30 years. The excellent results from these projects contributed to the selection of Andritz VA TECH HYDRO for the Dolna Arda rehabilitation and the extension of the Studen Kladenets hydropower plant.

Dolna Arda rehabilitation
Currently, we are rehabilitating the Dolna Arda hydropower cascade. When this project is completed in 2010, we will have upgraded all 14 of our biggest hydropower plants. The project includes three hydropower plants in the cascade: Kardjali (four units), Studen Kladenets (four units), and Ivailovgrad (three units).

The Studen Kladenets 60 MW power plant was commissioned in 1958. Andritz VA TECH HYDRO will increase the turbine efficiency at the plant, and a fifth unit with a capacity of another 16 MW will be installed. An additional small turbine (1 MW) will process waters that are returned to the river, which will have a positive impact on the river ecosystem. Andritz VA TECH HYDRO is responsible for the electromechanical work, including the supply of the new hydro units. After the rehabilitation is completed, the improved efficiencies of the units plus the new capacity at Studen Kladenets will increase the total cascade capacity from its current 270 to 331 MW.

Tsankov Kamak hydropower plant
The new hydropower project Tsankov Kamak is the first project within the framework of the Kyoto Protocol's flexible mechanisms. Based upon our information, approximately 200,000 tons emission reduction units will be generated each year. Euromoney/Trade Finance magazine recognized the financing of this project as the 'Deal of the Year' in 2003. The project is managed and financed by NEK without a state guarantee in a complex structure with many resources, including banks and export credit agencies.

The Tsankov Kamak plant is on the Vacha River, one of the biggest in Bulgaria. Currently, there are six hydropower plants in operation on the river with 446 MW total installed capacity. The new site will include a dam and a new 80 MW power plant capable of generating 185 million kWh each year. Andritz VA TECH HYRDO is providing all the electromechanical equipment and installation for the new hydropower plant. ○

ANDRITZ VA TECH HYDRO HAS SUPPLIED OVER 45 WATER TURBINES AND REPLACEMENT RUNNERS WITH A TOTAL OUTPUT OF 850 MW TO NEK.


[1]

[1] For NEK's Aleko hydropower plant, Andritz VA TECH HYDRO upgraded the mechanical power station equipment, including the turbines (3 x 25.8 MW) and governors. Photo: Machine hall, turbine level

[2] For NEK's Belmeken hydropower plant, Andritz VA TECH HYDRO supplied runners of 76 MW output each for a total of three turbines. Photo: Belmeken HPP

[3] Shut-off device at the Aleko HPP

[4] Machine hall (generator level) at the Aleko HPP


[2]


[3]

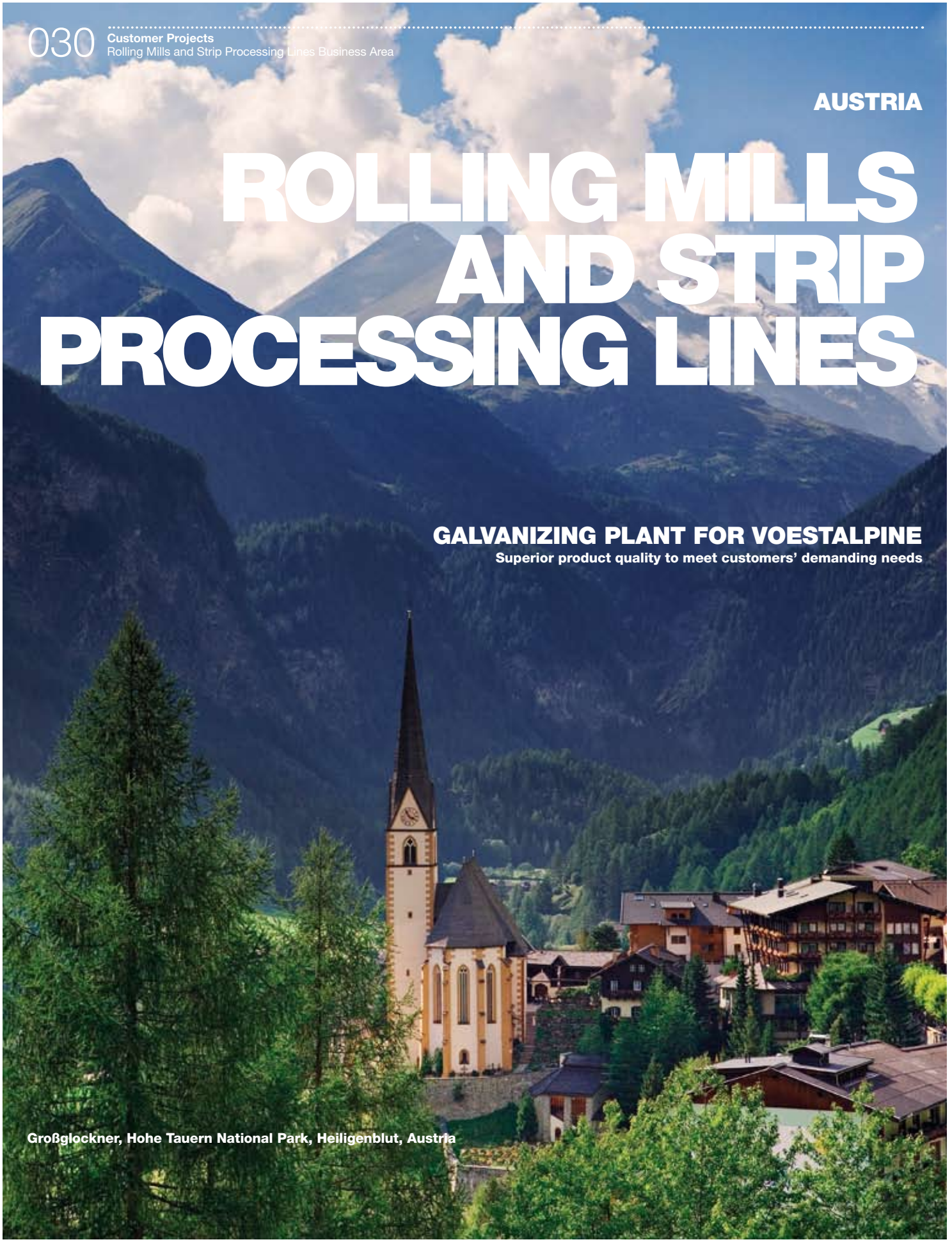

[4]

AUSTRIA

ROLLING MILLS AND STRIP PROCESSING LINES

GALVANIZING PLANT FOR VOESTALPINE

Superior product quality to meet customers' demanding needs



Großglockner, Hohe Tauern National Park, Heiligenblut, Austria

‘ANDRITZ TECHNOLOGY HELPS US IMPROVE OUR POSITION WITH STRATEGIC CUSTOMERS.’

DR. WOLFGANG LAKATA

Member of the Executive Board, voestalpine Stahl GmbH

With a crude steel production of over five million tons per year, voestalpine Stahl is one of the leading steel producers in Europe. The company develops and produces hot-rolled, cold-rolled, and surface-treated flat steel products. These include hot-dip and electrolytically galvanized strip and electrical steel strip for the automotive, household appliance, and construction industries. We spoke with Wolfgang Lakata, Member of the Executive Board and responsible for Production and Technology, about the role that Andritz has played in his company’s stated goal of remaining ‘one step ahead.’

STRONG AND BRIGHT – ONE STEP AHEAD

Interview with **Dr. Wolfgang Lakata,**
Member of the Executive Board, voestalpine Stahl GmbH

Experience
I am a graduate of Graz (Austria) Technical University, Technical Chemistry branch. During my 25-year career at voestalpine I have progressed from being a chemist for environmental analytics and coking to being appointed member of the Executive Board with overall responsibility for Production and Technology at our Linz facility. I am also Chairman of the Supervisory Boards of several voestalpine affiliates. The Steel Division accounts for about 50% of the voestalpine Group's sales. We operate a large, fully integrated metallurgical facility in Linz, Austria that incorporates all the manufacturing plants necessary to meet the high requirements of steel as a working material.

Customer requirements
Our customers' growth is accompanied by consistent expansion of our integrated facility in Linz. Not only must our steel have good processing properties, but the surface quality is very important. This applies to sheets and plates for visible faces (outer parts of car bodies, appliances, facades, etc.). Equally important is good service and logistics performance, expressed as ever shorter lead times. We have been developing steel materials with extremely high strength and good formability properties. At the same time, our ability to produce products with excellent appearance (bright galvanized or painted steel surfaces) has increased considerably.

Working closely with our customers, we invest heavily to ensure we have technically superior production plants. Suppliers like Andritz provide high-competence support in reaching our goal of remaining one step ahead of our competition.

Experience with Andritz
Andritz and voestalpine are long-term business partners. Our facility in Linz has several installations that prove Andritz's qualifications as a plant supplier (electrolytic galvanization line, acid regeneration for pickling-tandem mill, a strip coating line, and a hot-dip galvanizing line).

Andritz can deliver the total package – technology, quality of finish, reliability of supply, and competent erection – with a very favorable cost-benefit ratio.

Hot-dip galvanizing plant
The decision to build Hot-Dip Galvanizing Line 4 was defined in the course of an investment program to meet the needs of our most important automobile clients – higher-strength steel strip that also reduces the weight in car bodies.

Andritz supplied the mechanical equipment, annealing furnace, cooling tower, and the overall planning for this plant. The order was placed in June 2005.

The plant was engineered in close cooperation with the project team from voestalpine. In addition to Andritz's own competence in plant construction, they also integrated the input from our operator's practical experience.

The target of producing the first galvanized strip in April 2007, and then the production ramp-up in July 2007, posed a real challenge for us. The tightness of the schedule, combined with a high backlog with the machinery manufacturing companies, led to delays in the delivery of equipment.

What we appreciated in our cooperation with Andritz was the high level of mechanical engineering and working practices. The machines were pre-assembled as much as possible, which reduced the time needed to install them at our site. Through this, and its professional site management techniques, Andritz succeeded in mostly offsetting the delays.

Performance
The new system definitely fulfills voestalpine's high expectations of production quality, quantity, and availability. The expected nominal production is 450,000 tons per year, and we have exceeded planned production quantities already in the first months. I should add that production is based on 220 m/min – which sets a new standard in this area. This increase in our capacity to produce high-quality hot-dip galvanized sheet has improved our position with strategic customers.

Andritz proved its competence and experience as a supplier, as well as the reliability of its engineering and on-site construction work. An elaborate start-up plan helped us achieve a structured, targeted, and on-time start-up of our new hot-dip galvanizing plant. The project was completed within budget. The on-site safety record was close to exemplary.

Our location in Linz always has to meet the highest environmental standards. Andritz has proved to be a partner with the highest competence. The efficiency and energy performance of the furnace in the hot-dip galvanizing line generates extremely low emissions. The technology for chromium-free passivation also contributes to environmental safety. ○

A 450,000 T/Y HOT-DIP GALVANIZING LINE FOR THE PRODUCTION OF HIGHER STRENGTH STEEL STRIP WHICH CAN BE USED TO REDUCE THE WEIGHT OF CAR BODIES.

[1]

[1] The new Hot-Dip Galvanizing Line 4 at voestalpine was put into operation in 2007. In this line, up to 450,000 tons per year of steel strip are coated with zinc for high-quality applications.

[2] Detail of Hot-Dip Galvanizing Line 4 at voestalpine. This line is equipped with a direct-fired furnace, an in-line skinpass mill and a tension leveler (shown here).

[3] View of the new acid regeneration plant at voestalpine. In this plant not only is the acid necessary for pickling recovered in an environmentally beneficial way, but also high value iron oxide is produced using Andritz's WAPUR technology.

[4] Tank farm of the acid regeneration plant. The plant meets the most stringent environmental standards on emissions.

[2]


[3]


[4]

FRANCE

ENVIRONMENT AND PROCESS

SEPARATION TECHNOLOGIES

Large decanter centrifuges and centrifugal pumps for Lillebonne bioethanol plant

Mont-Saint-Michel, Normandy, France

‘I AM IMPRESSED WITH THE EQUIPMENT QUALITY AND LEVEL OF SERVICE THAT ANDRITZ BRINGS TO ITS CUSTOMERS.’

ANTOINE PRADEL

Managing Director, BENP Lillebonne, Tereos Group

The Tereos Group of France is the third largest alcohol/ethanol producer in the world. Its 17,000 employees in the Group’s 32 large and modern industrial facilities in Europe, Africa, and South America process the sugar beets, sugar cane, and cereals out of more than 900,000 ha of land into sugars, various starches, and alcohols, such as ethanol. Along with 4.3 million tons of sugar, more than 1.3 million m^3 of alcohol/ethanol are produced every year, as well as co-products for animal feeds. We spoke with Antoine Pradel, Managing Director of Tereos’ Lillebonne plant, about the production of bioethanol and the utilization of Andritz technology.

WHEAT FOR FUEL

Interview with **Antoine Pradel,**
Managing Director, BENP Lillebonne, Tereos Group

Experience
I graduated from ENITIAA in 1994, an engineering school in France, with a specialty in agro-industry and food processing. That same year, I joined Tereos as a Production Engineer for their beet sugar production facility in Origny. I became Plant Manager for the Alcohol Division at Origny and later served as Technical Director for alcohol production for the entire Tereos Group. Now, I am Managing Director of our ethanol plant in Lillebonne. France has been one of the leading nations in Europe promoting biofuels, which are blended into gasoline. Tereos, as one of the leaders in the agro-industry, wanted to be part of this development of the biofuel industry. We invested in two large plants: one using beet as feed stock based in Origny (one hour's drive north of Paris) and one in Lillebonne based on wheat.

The Lillebonne project
The Lillebonne plant started as a major producer of synthesized alcohol. It is located in Normandy on the banks of the river Seine, so we have to respect the most stringent environmental regulations. In 2007, we completed a project to add a wheat-based ethanol production facility at Lillebonne. While there are many bioethanol plants in operation in the world, most use corn as a feed stock. So, that makes Lillebonne a bit unique in using wheat as the feed stock – and one of the largest in the world. Every year, it can convert 820,000 tons of wheat into 300,000 m^3 of ethanol and 300,000 tons of distillers' grain for animal feed. The waste streams from the whole plant are received by a wastewater treatment plant, with the same capacity of a town of 250,000 people. There, a methanization process produces biogas used as a fuel for our turbine that powers the plant.

Selection of Andritz
I was familiar with Andritz from my time at the Origny plant. We had two Andritz decanter centrifuges running in parallel with another unit from a major European manufacturer. This gave us the opportunity to evaluate their performance and reliability. We also visited the Andritz installation at the Valenton wastewater treatment plant near Paris. There we saw five large decanters running 24/7 and feeding two Andritz drum dryers. The simple operation of these machines, the reliability, and the low maintenance requirements were confirmed to us by the operating managers of the Valenton plant. What was most important for us at the end of the day was the quality of service. This was a key reason to select Andritz technology.

The Andritz scope
Andritz technology is involved in several stages of the process. At the beginning, up to 140 tons per hour of wheat are ground into whole flour. Andritz supplied two double-shaft mixers to mix this flour with liquid and other products into a slurry that goes to ferment. After fermentation, the alcohol is then separated by distillation. The remaining material (whole stillage) contains water and unfermented organic matter (bran, proteins). These fibers, along with the dissolved protein, are used to produce a high quality animal feed product. Thus, the first stage is to separate the solids from the liquid phase (thin stillage) as efficiently as possible. Andritz supplied seven large decanter centrifuges from their D7 Series to carry out this critical separation step. The centrifuges have a large diameter of 750 mm and are equipped with parts specially designed for this application such as the scroll conveyor, capable of high capture rates of the insolubles solids and high dryness for the solids separated. Additionally, a special energy recovery system developed by Andritz reduces the power absorbed by the centrifuges. Finally, Andritz also delivered more than 100 centrifugal pumps of various sizes installed throughout the process.

The project schedule
The project schedule was very tight and I believe we have established a record. From the first stages of procurement to the start-up was only 14 months. We built the plant in less than nine months. In May 2007, we started up the plant for the first time; within 15 days we had commissioned all the different process units. After one-and-a-half months, we were at 80% of the production capacity of the plant. Andritz is a very good supplier. They were very competitive from the beginning and delivered what they promised on time. This was critical for the success of our project given the very short construction period.

Performance
We were expecting a very easy start-up and adjustment of the centrifuges in order to produce as quickly as possible. The Andritz equipment has been available and performing well since the first day we put product in it. The performance and mechanical reliability of the machinery is top-notch. We have been running every day at the maximum capacity possible in order to meet our customers' expectations. The quality of service is also very high. Andritz engineers and technicians are highly skilled professionals and they listen to the needs of our crews. This makes a big difference at the end of the day. We know our process best and Andritz knows its technology best. By working together as trustworthy partners, both of us benefit. ○

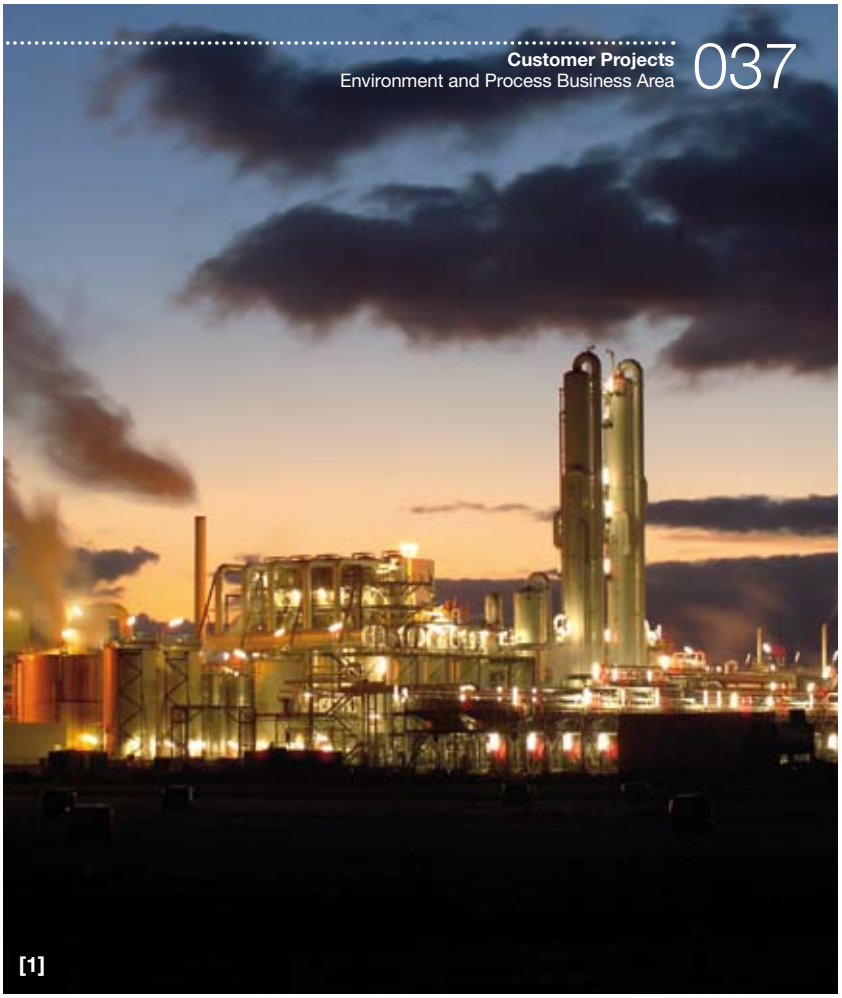
SEVEN HIGH PERFORMANCE DECANTER CENTRIFUGES FOR A 300 MILLION LPY WHEAT-BASED ETHANOL PLANT.

[1] The BENP Lillebonne wheat ethanol plant is strategically located in the heart of France's largest oil refinery industrial complex and close to the port of Le Havre on the Seine River and Atlantic Ocean.

[2] The seven High Performance D7 Series Decanters are running 24 hours a day, seven days a week with minimum operator attention. The solids discharged from the decanters are fed directly to the dryers; about 35 tons per hour of high-quality distillers' grain are thus produced.

[3] One decanter is shown in the background enclosed in its noise hood supplied by Andritz, to reduce the noise level by more than 15 decibels. This special design allows operators to have complete access to the decanters in less than one minute.

[4] The plant wastewater is digested in a treatment plant equivalent to the size of a 250,000 people town. The solids issued from a methanization process (biogas is used to produce power for the plant) are dewatered on an Andritz D4 Series decanter centrifuge to high dryness.


[1]


[3]


[2]

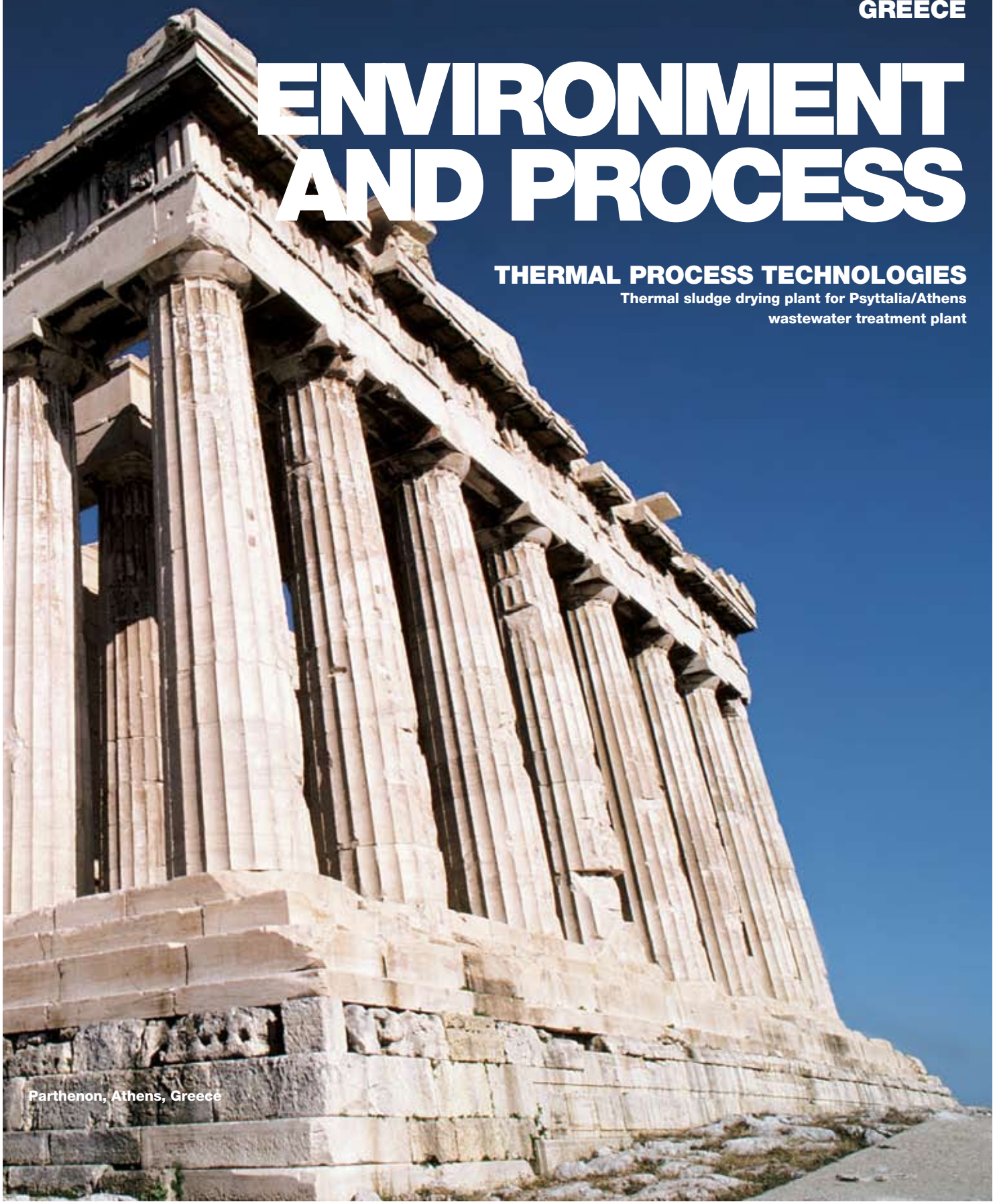

[4]

GREECE

ENVIRONMENT AND PROCESS

THERMAL PROCESS TECHNOLOGIES

Thermal sludge drying plant for Psyttalia/Athens wastewater treatment plant



Parthenon, Athens, Greece

‘ANDRITZ IS A RELIABLE AND SUPPORTIVE SUPPLIER.’

IOANNIS MARGIOLOS

Environmental Business Unit Director, AKTOR S.A.

AKTOR is the largest construction company in Greece. For more than 50 years, the company has played a dynamic role in the country’s technologically advanced projects: dams, bridges, marine works, tunnels, buildings, and industrial and municipal projects. The company has developed considerable expertise in the field of urban waste and sludge treatment, having constructed biological treatment facilities in Greece and the Middle East. We spoke with Ioannis Margiolos, Environmental Business Unit Director and the Project Manager for one of Europe’s largest wastewater treatment plants.

ENERGY EFFICIENT, ENVIRONMENTALLY SOUND

Interview with **Ioannis Margiolos,**
Environmental Business Unit Director, AKTOR S.A.

Experience
I have worked for AKTOR as Director of the Psyttalia Wastewater Treatment Plant for the past eight years, but I have over 20 years of experience in project management. I hold a degree in electromechanical engineering from the National Technical University of Athens.

As an Environmental Business Unit Director for AKTOR, I am now responsible for the construction of a sewage treatment plant in the United Arab Emirates and a wastewater treatment plant in Bucharest. It is a challenge for me to work on these two projects so far away from each other, but it makes my life interesting.

The KELPS facility
KELPS (The Wastewater Treatment Plant of Psyttalia) is located on the island of Psyttalia. It is the second largest wastewater treatment plant in Europe and one of the world's largest.

KELPS receives urban sewage and pre-treated industrial wastewater from the greater Athens area – population equivalent 5.6 million people. The plant has a capacity of 1,000,000 m^3 per day. In 2006, the daily average wastewater flow treated amounted to 705,000 m^3. The plant is designed in accordance with the EU's Wastewater Directive for the year 2020.

With the completion of Phase A (primary sewage treatment) in 1994, the pollution load was reduced by 35%. When Phase B (secondary biological wastewater treatment) was completed in the summer of 2004, the pollution load was reduced by 93% and the nitrogen load was reduced by 80% (through tertiary treatment). So the plant's operation has significantly improved the water quality and environmental cleanliness of the Saronic Gulf.

The sludge drying project
In March 2006, the joint venture between AKTOR S.A. and Athena S.A. was awarded the contract for designing and building a thermal sludge drying plant for KELPS. The total investment cost was EUR 30 million. The drying plant started operation in June 2007.

The plant consists of four drying lines with a total capacity of 34.5 tons of evaporated water per hour (300 tons of dried sludge per day). The plant is very energy efficient. The average consumption of thermal energy is 917 kWh/t of evaporated water. The energy comes either from direct heating or from biogas created by the digesting process. Up to 80% of the total energy required is recovered from the cogeneration plant. The treated odorous gases are passed through three regenerative thermal oxidizers before being released to the atmosphere.

Andritz's contribution
Andritz engineered and manufactured the main equipment for the sludge drying plant: drying drums, pre-separators, polycyclones, condensers, screening system (to turn very small particles of dried sludge into the proper granulate size), cooling system for the final product, and even the pneumatic transportation of the final product to the storage silos.

Andritz's technology dries the sludge from 25% to a minimum of 90% dry solids content. The granulate diameter is 1-5 mm for at least 93.5% of the final product.

Experience with Andritz
Before this project, I did not have any experience with Andritz. Because of this, I had questions about the company and its capabilities for a project of this size. But after visiting some of their reference installations in Europe, I was favorably impressed.

Performance
Andritz's performance during this entire project was a pleasant surprise. They delivered the drying drums very fast so that the building could be constructed around them. They worked with us step-by-step toward completion of the project. The level of cooperation was excellent. Andritz met all of its schedule commitments. The cost in relationship to the quality of the installation was sufficiently low, and the safety measures they took during the project protected workers against accidents.

After-sales support
After six months of operation, we are really happy to say that we have achieved all our contractual commitments and we are grateful to Andritz for that. Andritz was a reliable and supportive supplier. Even after the start-up, they continued to help us achieve our good results. I honestly feel that I can rely on them just like with good friends.

The most important factors to me when selecting a supplier are the technology used, the quality of the equipment, highly qualified manpower, and the service provided. Andritz satisfies all of these factors. If only all my suppliers were just as knowledgeable and responsible as Andritz is.

ANDRITZ HAS DELIVERED EUROPE'S LARGEST SLUDGE DRYING PLANT TO THE WASTEWATER TREATMENT PLANT OF PSYTTALIA/ATHENS, GREECE.

[1] The sludge drying plant consists of four identical drying lines with a total nominal capacity of 34.5 tons of water evaporation per hour. The drying process can be fueled by natural gas as well as biogas.
Photo: Drying drum, furnace, and burner of one line

[2] Dried sludge (granulate) loading station. The granulate can be used as a substitute for fossil fuels in heat and power generation systems or for soil improvement.

[3] Andritz provided a complete supply and services package consisting of engineering, purchasing, manufacturing, supervision of erection, and start-up of the drying plant. Photo: View of the individual levels

[1]


[2]

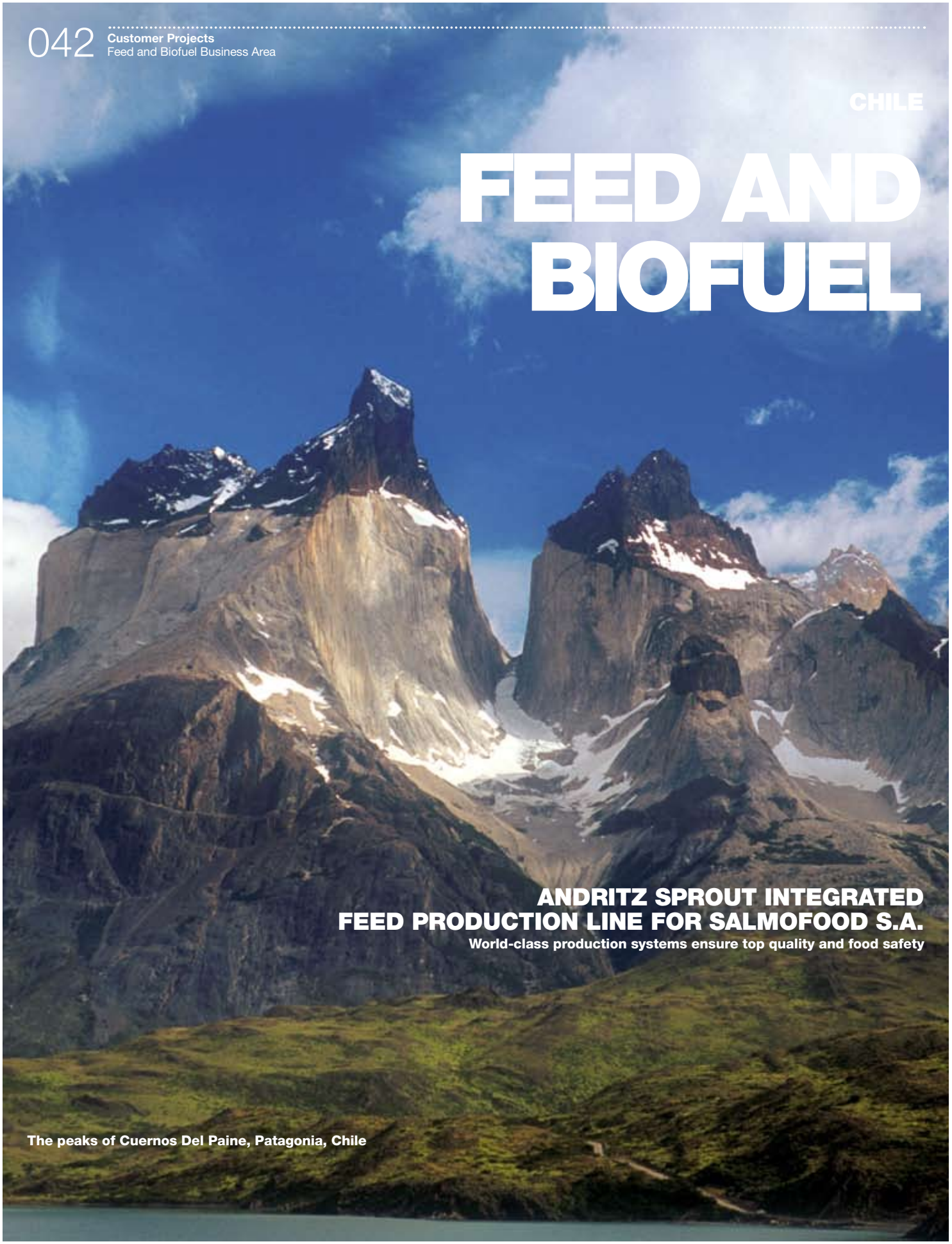

[3]

CHILE

FEED AND BIOFUEL

ANDRITZ SPROUT INTEGRATED FEED PRODUCTION LINE FOR SALMOFOOD S.A.

World-class production systems ensure top quality and food safety



The peaks of Cuernos Del Paine, Patagonia, Chile

‘THE TECHNOLOGY AND GLOBAL EXPERIENCE OF ANDRITZ HELPS US COMPETE.’

JUAN CARLOS PETERSEN

General Manager, Salmofood S.A.

Salmon production continues to enjoy dynamic growth, especially in Chile, the world’s leader in salmon production. Salmofood S.A. is the only fish feed producer owned by Chileans. It effectively doubled its production capacity this year with the addition of a new automated line from Andritz Sprout. Juan Carlos Petersen, General Manager of Salmofood, talks about how his company competes with the large multinationals.

SWIMMING WITH THE BIG FISH

Interview with **Juan Carlos Petersen,**
General Manager, Salmofood S.A.

Experience
I joined Salmofood seven years ago after a career in investment banking and finance. I hold an MBA and a degree in Economics and was eager to manage a dynamic, growing business.

Salmofood was started in the 1990s by four Chilean salmon producers – first to secure their own supply of high-quality feed, and then to sell feed to the national market. Over the years, the mix has changed to where 30% of the feed is used by related companies, today Invertec and Yadrán, and 70% is sold to market to more than 12 customers.

We are proud to be the only Chilean-owned feed producer, but to sell in this market, that is not enough. We have to be highly competitive to compete with the biggest companies in terms of cost, food safety and quality, and sustainability.

Challenges
Our most important concerns are safety, quality, and sustainability of supply. Fish farming is based on growing carnivorous fish – which means the feed we give them consists of other fish. There are clear signs that the available raw materials (fishmeal and fish oil) are insufficient to keep up with the demand. The industry is having to rely on other raw materials for feed production.

Feedstock alternatives, such as vegetable sources, combined with new technologies which improve the yield from raw materials and the overall efficiency of the production process, provide a significant increase in sustainability. Any technologies we employ have to adapt to where our quest for new raw materials takes us.

Expanding with a third line
Since this plant started up in 1995, Andritz Sprout has supplied production technology for it. The first two production lines have Andritz Sprout extruders and are each making 10 to 12 tons per hour of high quality feed. These lines produce about 120,000 tons per year.

In 2006, we made the decision to invest US$ 15 million to renovate and expand our plant. Our target was to increase annual production capacity to 240,000 tons, which would allow us to grow our market share from the current 10% to 15%. One of our goals is to have the capacity to complete an order and have it arrive at the farm site at the right time.

We looked at several potential suppliers for the new production line. Andritz Sprout put forth the best proposal in terms of price/performance, energy efficiency, support, and commercial terms. We already knew them to have excellent technology and service, so the decision was an easy one.

Andritz Sprout supplied an integrated 22 t/h line consisting of its own intake and batching system, serial grinding, extrusion, conditioning, drying, and vacuum coating, in combination with downstream equipment such as the automated packing and palleting line from other suppliers. The line is highly automated so that we have consistent product quality and considerable flexibility in optimizing formulations or for sequencing production tasks. The new line started up in December 2007 and is running well.

Flexibility, quality, food safety, and traceability
We have to optimize the feed formulations every day based upon the needs of our customers and the relative prices of raw materials. The Andritz Sprout technology accommodates this with just a few inputs into the automation system. It is very flexible.

Our feed is formulated with prime quality raw materials manufactured under strict quality control conditions. Our basic raw materials are rigorously selected and fortified with well-suited nutrients that support the metabolic functions of the fish. Andritz Sprout's automation system efficiently controls the thermal processes, which is essential for the protection of sensitive feed nutrients.

Food safety is paramount. The documentation capabilities of the Andritz Sprout system provide a good audit trail if we ever need to go back and look at a production run.

We use natural raw materials. Water and oils are recovered and reused. Our entire production chain has very low environmental impact.

Andritz Sprout
Andritz Sprout has a world-class position. Their systems are very efficient in terms of yield and reducing waste. If you are efficient in production, there won't be much environmental impact.

We know and trust Andritz. It is a company with world-class technologies, not just in feed. This innovation flows to customers in all its markets. They have new technologies which we are eager to utilize and they offer very good support. ○

INTEGRATED ANDRITZ SPROUT LINE DOUBLES CAPACITY OF SALMOFOOD PLANT.

[1]

[1] A high-speed Andritz Sprout Multimill pulverizes the feed ingredients to fine powders prior to thermal treatment.

[2] Salmofood is the only fish feed producer owned by Chileans. It doubled production capacity this year with the addition of a new automated line from Andritz Sprout.

[3] The Hopper Scale weighs the feed ingredients in batches of 2,000 kg with an accuracy of +/- 0.1%.

[4] The computerized Andritz Sprout Extruder is the heart of the process line. The extruder cooks and shapes the feed to create very uniform pellets with a high nutritional value.


[2]


[3]

[4]

LETTER FROM THE EXECUTIVE BOARD

Ladies and Gentlemen,
Dear Shareholders, Dear Employees,

2007 was another very successful year for the Andritz Group. We were able to increase all relevant financial figures, such as Order Intake, Order Backlog, Sales, and Net Income, in comparison with the previous year. Despite unchanged strong competition, all our Business Areas maintained – and in many segments expanded – their market positions. In particular, the Hydro Power, the Rolling Mills and Strip Processing Lines, and the Feed and Biofuel Business Areas won a number of significant orders, thereby further strengthening their competitive positions globally.

Our success is due to the continuous launch of new, innovative products and services, which form the basis for sustainable organic growth (approximately 12% p.a. over the past ten years), and to the acquisition of companies with complementary technologies/products, which was successfully continued in 2007.

In June 2007, we acquired a 50% stake in Brazilian Sindus Human Technology, the leading provider of outsourced automation, instrumentation, and electricity maintenance services for the pulp and paper industry in Brazil. We intend to use Sindus' good market position and expand their business activities, by means of Andritz's global distribution network, into other South American countries and later into other continents.

We purchased the Coater Division for paper production from Bachofen + Meier AG, Switzerland, a globally renowned specialist for paper coating technologies and systems. Having thus complemented our existing product portfolio for paper and board production, we are now able to offer complete systems in this area as well. Through the acquisition of VA TECH HYDRO in 2006, the Andritz Group has substantially strengthened its market position in the strongly growing segment of renewable energies/hydropower. Integration of VA TECH HYDRO has been progressing as planned and is expected to be completed in 2008.

Focus on renewable energies

Our employees – currently more than 12,000 – form the backbone of our company's success. In all of our Business Areas, they develop and manufacture products with a global technological lead that help our customers achieve their goals in terms of productivity, quality, and – through the reduction of resources required – also sustainability. Our comprehensive product portfolio in the field of renewable energies that we offer our customers worldwide encompasses the HERB recovery boilers and gasification systems in the Pulp and Paper Business Area, which produce 'green power' from biomass; the sewage sludge drying systems and centrifuges for bio-ethanol in the Environment and Process Business Area; and the pelleting systems for wood and other biomass in the Feed and Biofuel Business Area.

A total of 35–40% of Group Sales is derived from technologies and systems that generate energy from renewable resources. We have made it our goal to launch further innovative products in the coming years that will help our customers achieve further enhancements in terms of profitability and sustainability. Some of our sustainable 'Global Top Products', which meet the same high environmental standards worldwide, are presented in this Annual Report.

Outlook and goals for 2008

One of our main goals for 2008 is to process our very high order backlog according to plan. Only if we process all orders according to agreed schedules and in accordance with our customers' requirements will we be able to maintain our position in the highly competitive markets and achieve our goals in terms of growth and profitability.

We expect Group Sales to increase organically to approximately 3.5 billion Euros in 2008, and we maintain our goal of reaching an EBITA margin of 7%. We will continue our strategy of acquiring complementary companies. There are several interesting opportunities for acquisitions in all of our Business Areas. Sufficient growth and high Earnings with sustained good margins are the preconditions for a secure future for our company and employees.

We would like to thank all employees of the Andritz Group for their outstanding performance in 2007, and our customers, business partners, and shareholders for the confidence placed in us. We will continue to do our utmost in 2008 to promote the success of the Group in the best possible way.

The Executive Board
Graz, February 2008

The Executive Board of Andritz AG (from left to right):
Karl Hornhofer, Franz Hofmann, Friedrich Papst, Wolfgang Leitner (President and CEO), Humbert Köfler

COMPANY BOARDS

Humbert Köfler | Karl Hornhofer | Franz Hofmann | Wolfgang Leitner, President and CEO | Friedrich Papst

EXECUTIVE BOARD

Wolfgang Leitner (President and CEO) Wolfgang Leitner joined Andritz in 1987 as Chief Financial Officer. He has served as President and CEO since 1994. His responsibilities encompass central Group functions such as Human Resources, Controlling & Finance, Corporate Communications & Investor Relations, Internal Auditing, Information Technology, and Business Process Development. **Professional career:** Member of the Managing Board of AGIV AG • Founding member of GENERICON Pharma GmbH • Management consultant at McKinsey & Company • Research chemist at Vianova

Franz Hofmann Franz Hofmann joined Andritz in 1999 as Member of the Executive Board. He is responsible for the Rolling Mills and Strip Processing Lines Business Area, the Environment and Process Business Area, and the Automation department. **Professional career:** Divisional Director at SMS Schloemann-Siemag AG • Management consultant at A.T. Kearney • Researcher at Vereinigte Deutsche Metallwerke

Karl Hornhofer Karl Hornhofer joined Andritz in 1996 and held managerial positions in the Pulp and Paper Business Area. He was appointed as Member of the Executive Board as of January 2007 and is responsible for the Capital Systems segment of the Pulp and Paper Business Area. **Professional career:** Head of the Pulp and Paper Machines Division at Andritz AG • Head of the Pulp Drying Systems Division at Andritz AG • Design Engineer at Austrian Energy

Humbert Köfler Humbert Köfler joined Andritz in 1987 and held managerial positions in the Pulp and Paper Business Area. He was appointed as Member of the Executive Board as of April 2007 and is responsible for the Service and Units segment of the Pulp and Paper Business Area. **Professional career:** Head of the Paper Mill Services Division at Andritz AG • Head of the Mechanical Pulping Systems Division at Andritz AG • Regional Sales Manager at Andritz Sprout-Bauer GmbH • Export marketing manager at Biochemie GmbH

Friedrich Papst Friedrich Papst joined Andritz in 1979 and held leading positions in manufacturing and logistics. He has been a Member of the Executive Board since 1998 and is responsible for the Hydro Power and the Feed and Biofuel Business Areas, as well as for Manufacturing, Procurement, and Quality Management. **Professional career:** Vice President of Andritz Sprout-Bauer Inc. • Director of Manufacturing at Andritz AG • Director of Production Planning at Andritz AG

SUPERVISORY BOARD

Appointed Members

Kurt Stiassny (Chairman of the Supervisory Board)
Chief Executive Officer of Buy-Out Central Europe II Beteiligungs-Invest AG; Chairman of the Supervisory Board of Andritz AG since 1999, and elected until the Annual General Meeting of Andritz AG in 2010. **Other Supervisory Board functions:** Chairman of the Supervisory Boards of Pipe & Pile International S.A. (Holding TRM/Buderus) and Tiroler Röhren- und Metallwerke AG; Member of the Supervisory Board of Palfinger AG.

Hellwig Torggler (Deputy Chairman of the Supervisory Board)
Attorney-at-law; Deputy Chairman of the Supervisory Board of Andritz AG since 2004; Member of the Supervisory Board of Andritz AG since 2000, and elected until the Annual General Meeting of Andritz AG in 2009. **Other Supervisory Board functions:** Member of the Supervisory Boards of Mondi AG, Mondi Services AG, FRAPAG Industrieholding AG, A.S.A Abfall Service AG, Alpine Holding GmbH, Alpine Bau GmbH, Hoch & Tief Bau Beteiligungs GmbH; Deputy Chairman of the Supervisory Board of Theater in der Josefstadt Betriebsges.m.b.H.

Peter Mitterbauer
Chairman of the Managing Board of MIBA AG; Member of the Supervisory Board of Andritz AG since 2003, and elected until the Annual General Meeting of Andritz AG in 2010. **Other Supervisory Board functions:** Chairman of the Supervisory Boards of ÖIAG (Österreichische Industrieholding AG) and FFG (Österreichische Forschungsförderungsgesellschaft m.b.H.); Member of the Supervisory Boards of Oberbank AG, and Rheinmetall AG.

Christian Nowotny
Full-time professor at the University of Economics in Vienna; Member of the Supervisory Board of Andritz AG since 1999, and elected until the Annual General Meeting of Andritz AG in 2009. **Other Supervisory Board functions:** Member of the Supervisory Boards of CA Immo AG, Allianz KAG, Immofinanz Beteiligungs AG, and Generali Drei Banken Holding AG.

Fritz Oberlerchner
Deputy Chairman of the Managing Board of STRABAG SE; Member of the Supervisory Board of Andritz AG since 2006, and elected until the Annual General Meeting of Andritz AG in 2011. **Other Supervisory Board functions:** Member of the Supervisory Boards of STRABAG AG (Cologne), STRABAG AG (Spittal/Drau, Austria), and STRABAG Zrt.; Chairman of the Supervisory Boards of STRABAG A.S. and STRABAG Sp.z.o.o.

Klaus Ritter
President & CEO of AVI Alpenländische Veredelungs Industrie Ges.m.b.H, EVG Entwicklungs- und Verwertungs-Gesellschaft m.b.H., and Stahl- und Walzwerk Marienhütte Ges.m.b.H.; Member of the Supervisory Board of Andritz AG since 2004, and elected until the Annual General Meeting of Andritz AG in 2012. **Other Supervisory Board functions:** none

Delegated Members

Andreas Martiner Member of the Supervisory Board of Andritz AG since 2001

Martha Unger Member of the Supervisory Board of Andritz AG since 2007

Brigitta Wasserbauer Member of the Supervisory Board of Andritz AG since 2000

ANDRITZ SHARE

SPLIT OF SHARES

Based on the resolution by the Annual General Meeting, the Andritz share was split in ratio of 1:4 on May 3, 2007. The number of shares is thereby quadrupled, from 13,000,000 to 52,000,000 no-par value shares. With this split of shares, Andritz has intended to facilitate the tradability of its shares and to increase their attractiveness, especially for retail investors. All historical share price data was adjusted accordingly.

SHARE PRICE DEVELOPMENT

During 2007, the Andritz share price showed a mixed development. After a very strong increase of approximately 20% during the First Three Quarters of 2007, the Andritz share price significantly declined during the Fourth Quarter of 2007 in step with all major international stock markets. Concerns among institutional investors about a potential significant negative impact of the U.S. sub-prime crisis on the global economy led to global sell-off on the international stock markets, thus wiping out practically all the gains of the First Three Quarters of 2007.

As a consequence, the Andritz share price increased by only 2.6% in 2007, but again outperformed the ATX (leading stock exchange index of the Vienna Stock Exchange), which declined by 1.0% during the same period (see also chart on page 002). The highest closing price of the Andritz share during the reporting period was 54.00 Euros (July 13, 2007), the lowest 35.80 Euros (November 22, 2007).

TRADING VOLUME

In 2007, the average daily trading volume of Andritz shares at the Vienna Stock Exchange was 452,909 shares (2006: 355,580 shares). The highest daily trading volume was 2,097,854 shares (November 20, 2007), the lowest 85,240 shares (January 2, 2007).

SHAREHOLDER STRUCTURE

Andritz has a very stable and well balanced shareholder structure. Approximately 26% of the shares are owned by Certus Beteiligungs GmbH whose Managing Director is Wolfgang Leitner, President and CEO of Andritz. With over 70% of free float, Andritz has a widely diversified shareholder structure consisting of institutional investors and private retail shareholders. The majority of institutional investors come from Anglo-Saxon countries (particularly Great Britain and the USA), but also from Austria and Germany. Private retail investors are mainly based in Austria and Germany.

STOCK EXCHANGE FIGURES FOR ANDRITZ SHARES

	2007	2006	2005	2004	2003
Highest closing price (EUR)	**54.00**	41.08	23.21	14.13	9.49
Lowest closing price (EUR)	**35.80**	23.13	14.15	8.75	5.25
Closing price at year-end (EUR)	**41.45**	41.08	23.21	14.03	9.49
Market capitalization as of 31.12. (MEUR)	**2,155.4**	2,135.9	1,207.1	729.3	493.4
Performance	**+2.6%**	+74.9%	+62.8%	+52.5%	+65.0%
ATX weighting as of 31.12. (%)	**2.3946**	2.4077	1.8200	1.7656	2.3250
Average daily number of shares traded	**452,909**	355,580	335,972	282,976	181,640

Note: On May 3, 2007, the Andritz share was split in a ratio of 1:4; historical share price data and stock exchange related figures were adjusted accordingly.
Source: Vienna Stock Exchange

INVESTOR RELATIONS

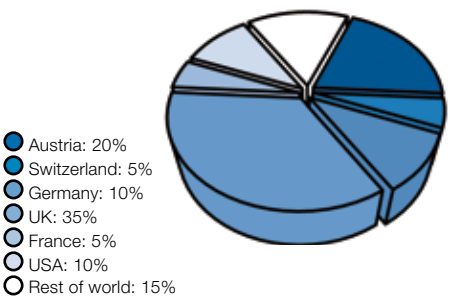
In 2007, approximately 230 individual one-on-one meetings (2006: approximately 190 meetings) with institutional shareholders and financial analysts were held in London, Edinburgh, Milan, New York, Denver, Austin, San Francisco, San Diego, Boston, Toronto, Montreal, Lisbon, Madrid, Sydney, Singapore, Shanghai, Tokyo, Zürich, Brussels, Amsterdam, Helsinki, Paris, Vienna, and Frankfurt. Andritz also presented itself at various investor conferences, such as JPMorgan's Capital Goods Conference in London; Sal. Oppenheim's Small and MidCap Conference in New York; Bank Austria's Austrian Investor Conference in Kitzbühel, Austria; and at the Investor Conference of Erste Bank in Stegersbach, Austria.

The 2007 Andritz Capital Market Days – held on 22–25 October in China – focused on Andritz's activities in China (visit to Andritz Technologies and the new stainless steel foundry Andritz-Wolfensberger), and the Rolling Mills and Strip Processing Lines Business Area, including a visit to the SKS ThyssenKrupp stainless steel mill in Shanghai.

Analyst coverage further broadened

At the end of August 2007, Crédit Agricole Cheuvreux Frankfurt initiated the research coverage on Andritz. As a consequence, 11 national and international banks and investment companies publish reports on Andritz on a regular basis. They are (in alphabetical order): Berenberg Bank, Cheuvreux, Deutsche Bank, Erste Bank, Goldman Sachs, JPMorgan, Kaupthing Sofi, Sal. Oppenheim, Raiffeisen Centrobank, UBS, and Unicredit. ○

Shareholder structure of the free float by region



Source: Andritz estimates

CONTACT

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Phone: +43 316 6902 2722
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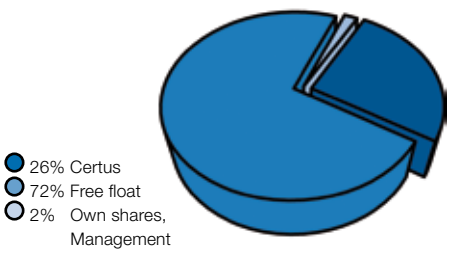
welcome@andritz.com / www.andritz.com

Shareholder structure of Andritz (as of 31.12.2007)



KEY FIGURES FOR ANDRITZ SHARES

ISIN Code	AT0000730007
First Listing Day	June 25, 2001
Types of Shares	no-par value shares, bearer shares
Total Number of Shares	52 million
Authorized Capital	none
Free Float	approximately 72%
Stock Exchange	Vienna (Prime Market)
Ticker Symbols	Reuters: ANDR.VI; Bloomberg: ANDR, AV
Stock Exchange Indices	ATX, ATXPrime, WBI

CORPORATE GOVERNANCE

CORPORATE GOVERNANCE CODE

Compliance with the rules of conduct laid down in the Austrian Corporate Governance Code is an integral part of the Andritz Group's corporate policy. Andritz regards the Code as an essential means to implement responsible company management and control, which is directed towards creating sustainable added value and transparency for shareholders and other stakeholders.

Andritz endorses compliance with the Austrian Corporate Governance Code. Implementation of and compliance with the Code will promote and intensify the confidence of shareholders, investors, customers, employees, suppliers, representatives of the media, and other stakeholders in the Company. The Executive Board and the Supervisory Board, as well as the entire staff of Andritz, are committed to complying with the Code.

Besides the mandatory L Rules, which refer to legal requirements, Andritz explains the requirements of and the deviations to the Code's C Rules as follows:[1)]

C Rule 30

The Members of the Executive Board are entitled to receive pension scheme benefits. In addition to a retirement pension, these include benefits in the event of occupational disability, as well as pension payments for dependents following the death of the beneficiary. The retirement pension is normally paid as from a certain age provided that the employment contract has already been terminated by this date. The administration has been transferred to a pension fund; in the event that the employment contract is terminated prematurely, contributions made up to this point shall still be vested. The pension amount to which the beneficiary is entitled is not subject to an escalation clause before any benefits become payable, but will be adjusted annually thereafter. Each Member of the Executive Board shall, upon termination of his/her function and concurrent termination of employment, be entitled to severance payments in the meaning of Article 23 of the Austrian Employees Act.

C Rule 34

The information and reporting obligations of the Executive Board, as well as the setting up of various committees, are stipulated in the Company's Articles of Association, which are available on the Andritz AG website.

C Rule 38

Andritz AG's Articles of Association do not stipulate an age limit for its Executive Board Members. Appointment of Executive Board Members is solely contingent on personal and professional qualifications.

C Rule 39

The Supervisory Board of Andritz AG shall nominate committees depending on the prevailing situation and necessities. These committees can be composed of all Members of the Supervisory Board.

C Rule 41

The Supervisory Board of Andritz AG does not have a separate Nomination Committee. The Supervisory Board of Andritz AG is composed of experts from different fields who hold constructive sessions at regular intervals to discuss, inter alia, the filling of vacant Executive Board positions and the planning of succession.

C Rule 43

The Supervisory Board of Andritz AG does not have a separate Remuneration Committee. The Supervisory Board of Andritz AG is composed of experts from different fields who hold constructive sessions at regular intervals to discuss, inter alia, the remuneration of the Executive Board and employment contracts.

C Rule 51

Pursuant to Article 15, paragraph 1 of the Articles of Association of Andritz AG, the Members of the Supervisory Board may be granted a remuneration. The amount of this remuneration is adopted in each case by a resolution of the General Meeting of Shareholders, which is free to determine different amounts for the individual Supervisory Board Members. The General Meeting may also fix a total remuneration for the Supervisory Board and leave it to the Supervisory Board to decide on its distribution.

The remuneration scheme of the Supervisory Board is composed of a fixed and an attendance-related portion. The fixed portion is a global sum, which is to be distributed such that the Chairman of the Supervisory Board receives double the amount and his Deputy one-and-a-half-times the amount paid to the other Members. The second portion consists of a lump sum fee paid in respect of each meeting that the Member attends.

C Rule 53

With regard to independence criteria, the Supervisory Board of Andritz AG follows the guidelines of Annex 1 of the Corporate Governance Code. According to these guidelines, all Members of the Andritz Supervisory Board, with the exception of Hellwig Torggler, can be seen as independent.

C Rule 54

The free float of Andritz is approximately 70%. No Member of Andritz AG's Supervisory Board owns more than 10% of the company. With regard to the independence criteria of the Supervisory Board Members, please see explanations to C Rule 53.

C Rule 57

Andritz AG's Articles of Association do not stipulate an age limit for its Supervisory Board Members. Appointment of Supervisory Board Members is solely contingent on personal and professional qualifications.

The complete Corporate Governance Code can be accessed and downloaded from the Andritz website (www.andritz.com). The website also contains Andritz's statement on compliance with the Code, including explanations to deviations.

*) The Austrian Code of Corporate Governance encompasses the following three categories of rules: Legal Requirement (L): referring to mandatory legal requirements; Comply or Explain (C): this rule is to be followed; any deviation must be explained and the reasons stated in order to be in compliance with the Code; Recommendation (R): the nature of this rule is a recommendation; non-compliance with this rule requires neither disclosure nor explanation.

COMPLIANCE GUIDELINES

Equal treatment of all shareholders as well as the provision of detailed and simultaneous information to all market participants are essential goals of the Andritz Group. In compliance with the regulations of the Austrian Financial Market Authority (FMA) and the Vienna Stock Exchange, Andritz has implemented comprehensive and detailed Compliance Guidelines which encompass the following:

- Appointment of a Compliance Officer to supervise compliance with the Compliance Guidelines
- Rules for the prohibition of misuse of insider information, and its handling, transmission, and release ('Ad hoc publicity')
- Definition and implementation of Group-wide confidential areas (permanent as well as temporary project-related areas) of the Company where persons have regular or cause-related access to insider information
- Trading bans on Andritz shares during black-out periods
- Notification of Directors' Dealings (notification to the Financial Market Authority regarding transaction of Andritz shares and securities similar to shares, or of derivatives relating to these, by any person with management tasks within the Andritz Group)
- Keeping and updating an Insider Register (list of all persons from confidential areas)
- Potential civil law (tort) and administrative consequences of infringements of these Compliance Guidelines

The Andritz Compliance Guidelines cover the Members of the Supervisory Board and the Members of the Executive Board of the Andritz Group, its Managing Directors, and its employees, as well as all persons with regular or cause-related access to insider information. ○

CORPORATE STRATEGY

The overall strategic goal of the Andritz Group is to be the leading global supplier of production systems and services with full-line capabilities in all of its Business Areas. All strategic measures and decisions are focused on continued growth and increased profitability of the Group.

During the last decade, the Andritz Group has grown by approximately 19% annually. This growth has been predominantly based on strong organic expansion supported by both market growth and product innovation, but also on the acquisition of companies with complementary products and technologies. At the same time, and in spite of a very competitive environment, the profitability of the Group has been enhanced by better fulfillment of customer needs for economical production systems, technological leadership, and continuous efficiency improvement measures.

THE GROUP'S STRATEGY IS BASED ON THE FOLLOWING PRINCIPLES:

Focus on existing markets and customers

As a leading global supplier of machinery and systems for the production of pulp, paper, and steel, as well as electromechanical equipment for hydropower stations and other environmental equipment, the Group serves industries with long-term growing markets. Within each of these markets, Andritz will continue to focus on the fastest growing segments, e.g. energy production from renewable resources, stainless steel, or tissue paper. As a leading supplier of plants, machines, and systems to all major customers in these markets, Andritz is in a position to benefit from the growth of these markets.

R&D and complementary acquisitions

Andritz will continue to invest in the development of new products and processes, often in cooperation with customers, in order to consolidate or expand its competitive position. The main goal is to remain a preferred technological supplier and leader in all Business Areas and to continuously expand this edge by launching new products that are cost-efficient, reliable, and will increase productivity for the customers. It is a declared goal of the Group to provide funds for all promising R&D projects falling into the defined strategic areas.

On average, approximately 3% (including project-related expenses in connection with customer projects) of the Group's Sales have been spent for R&D over the last few years. In addition, pilot plants are run and operated together with customers. In total, over 300 people work in the Group's research centers to develop new processes and products.

Andritz will also continue to seek opportunities to acquire companies and businesses that complement its existing range of products and services. The goal is to offer customers full-line capabilities with regard to products and services in all Business Areas. This allows Andritz to offer all production lines, processes, and services required by its customers.

Andritz has a very strong long-term commitment to the companies it acquires. The main goal is to further expand these companies, thus giving the former owners – frequently families with decades of history with the company – the confidence that their former company will continue to thrive within the Andritz Group. As part of the global Andritz Group, acquired companies can grow very quickly by using the existing, very comprehensive global distribution network of Andritz to market and sell their – often local – products on a global basis.

Global presence

In all of its Business Areas, the Andritz Group serves leading international companies and industries with global reach. Fast support and service, together with local expertise, are, therefore, main requirements for Andritz to optimally satisfy the customers' needs. Thus, Andritz has established a well-organized global organization with a presence in all major geographic market areas.

It is Andritz's declared goal to further enhance its strong global reach by improving its service presence and sustaining ongoing business relations with key customers internationally. Andritz seeks to achieve this objective in part through recently established centers in growth areas such as Chile, Brazil, China, and India. By establishing company sites in such countries, Andritz – besides benefiting from highly-specialized local expertise – also contributes to the further development of technical competence in these countries. Since the Group also has production sites in most major economic areas of the world, it can better balance potential currency fluctuations, thus avoiding or reducing major negative impacts on the Group's competitiveness.

Expansion of Service

Service is an integral part of Andritz's product offerings to its customers. It covers not only the sale of spare parts, but also of engineered wear products, whose technical features have a great influence on the quality of the customers' end product as well as on the reliability and profitability of the plants and processes. The product portfolio in Service encompasses daily maintenance from single services to full-service contracts. In partnership with the customers' own maintenance personnel, Andritz efficiently maintains the machines, production lines, and complete plants.

Andritz will seek to continue to grow its service capabilities in order to support its customers in reaching their defined production and profitability goals. For Andritz, further growth of Service will result in balancing out potential cyclical swings of the Capital business. Recognizing the importance of a local presence for Service, Andritz will organically expand its geographic network and, when appropriate, acquire specialist service providers in local markets. ○

CORPORATE RISKS

The Andritz Group is a globally-operating company serving a variety of industrial markets and customers. As such, the Group is subject to certain general and industry-specific risks. To identify, manage, and mitigate these risks, Andritz has a long-established Group-wide Management Steering Committee whose main task is to identify nascent risks early and to take countermeasures. This is an important element in the active risk management within the Group. The risks described below, and the effects these risks may have on the business development of Andritz, have been taken into account in the Group's corporate planning.

The risks that the Andritz Group faces include, but are not limited to, the following:

RISKS RELATED TO THE INDUSTRIES IN WHICH THE GROUP OPERATES

Volatility of incoming orders

Some customers and industries served by the Andritz Group are directly dependent on the general economic development and subject to frequent fluctuations in demand for their products. This is especially true of the Pulp and Paper, and the Rolling Mills and Strip Processing Lines Business Areas, but all Business Areas can be affected. The prices for these products are, in part, dependent on the prevailing relationship between supply and demand. Possible price fluctuations are, therefore, apt to have a direct influence on each customer's capital investment decisions, with subsequent influence on the Group's Order Intake. This may lead to volatility in the development of Order Intake of the Group.

Customer concentration

In many of the industries served by Andritz, there is a trend towards consolidation and mergers. This is especially prevalent in the pulp and paper and steel industries. This consolidation may result in a reduction of the number of customers in the future, as well as the Group having to negotiate with global companies that have greater purchasing power. The dependence on key customers may increase, which could have direct consequences on the Group's financial development.

Uncertainty of future contracts

The Group's future performance depends on, among other things, securing certain new contracts. It can be difficult to predict when an order for which the Andritz Group has provided a quotation will actually be awarded. Contract awards are often affected by events outside the control of the Group, such as prices, demand, general economic conditions, the granting of governmental approvals, and the securing of project financing. This uncertainty can cause difficulties in matching the Group's fixed costs and predicted order volume. Although Andritz has been able to successfully manage this risk by outsourcing during brisk sales periods and producing in-house in periods of sales decline, this may change in the future.

Safety and environmental matters

The Group's operations are subject to numerous local, national, and supranational environmental regulations. The Group uses and generates hazardous substances in its manufacturing operations. In addition, many of the Group's current and former properties are, or were, used for industrial purposes, and disposal of waste at disposal sites has been arranged. It is possible that in the future the Group may be subject to liabilities relating to the investigation and cleanup of contaminated areas.

In addition, most of the Group's systems involve technologies that pose the risk of serious injury, death, and property damage. Several systems involve the use of dangerous and hazardous chemicals and materials, and the Group provides installation and other services on industrial sites containing dangerous and hazardous chemicals and materials. In the event of an accident, including but not limited to a spill of hazardous materials, a fire, or explosion, the Group could be responsible for extensive property damage, personal injury, death, and environmental remediation. While the Group maintains insurance policies covering some of these risks, there is no assurance that such insurance will be sufficient to cover the risk.

RISKS RELATED TO THE GROUP'S BUSINESS

Currencies

The Group has operations and subsidiaries in a large number of countries outside Euroland, and a significant portion of its Sales and costs are denominated in non-Euro currencies, mainly in U.S. dollars and British pounds. The currencies in these countries are subject to fluctuations in exchange rates. Although the Group attempts to hedge the net currency exposure of the orders to mitigate the currency risk, currency fluctuations can result in the recognition of exchange rate losses in the Group's financial statements. →

Developments of exchange rates may also have translation effects on the Group's Sales and Earnings, whose values are converted into Euros. In addition, shifts in exchange rates may affect Andritz's position relative to its competitors, although most of the main competitors of Andritz are also based in Euroland. As some of Andritz's major customers are based outside Euroland, changes in exchange rates could lead to a delay of project decisions by those customers. Also, the Shareholders' Equity of the Andritz Group is not hedged and is thus susceptible to being affected by changes in the exchange rate.

Competitive position

The Andritz Group does business in very competitive markets. Some of the markets in which the Group competes are highly fragmented, with a few large, international manufacturers competing against each other and against a high number of smaller, local companies. This has, in some cases, adversely impacted sales margins realized by certain of the Group's businesses. The Andritz Group invests approximately 3% of total Sales in Research and Development and has so far been able to offer its customers the latest technological developments. There is, however, no assurance that the Group can maintain and defend this position in the future.

To the extent the Group's competitive position can be traced to proprietary technology, the increase globally in piracy and reverse engineering may also have an adverse effect on the Group's competitive position.

Acquisition and integration of complementary businesses

One of the Group's main strategic goals is to become a comprehensive supplier of systems and equipment in all of its Business Areas through organic growth and complementary acquisitions. In the course of implementing this strategy since 1990, the Group has acquired and integrated a number of businesses with worldwide operations.

However, no assurance can be given that the Group will be successful in identifying and acquiring appropriate acquisition candidates in the future, or that suitable candidates will be available, or that sufficient financing will be available. Furthermore, although Andritz has an excellent track record of integrating newly-acquired businesses, it is possible that in connection with existing or future integration efforts, including the ongoing integration of VA TECH HYDRO, the integration will not succeed and that planned objectives and synergies are not realized, or the Group may be exposed to new or legacy risks that have not been properly managed or identified.

Legal proceedings

In the course of its business, the Andritz Group is party to numerous legal proceedings before both administrative and judicial courts, and bodies and arbitration tribunals. The substantial majority of such proceedings is of a nature considered typical of the Group's business. Where appropriate, provisions are made to cover the expected outcome of proceedings to which Group companies are a party, to the extent that negative outcomes are likely and reliable estimates can be made. However, even when provisions are made, there is no guarantee that these will always be sufficient.

As of December 31, 2007, Andritz Inc., a subsidiary of the Andritz Group, is one of many defendants in a total of approximately 26 asbestos cases in the USA. In aggregate, the cases involve 608 plaintiffs. Nearly all of these cases involve claims by multiple plaintiffs against multiple defendants. Andritz Inc. does not believe it should be found liable in connection with any of these claims and plans to vigorously defend each claim.

Compliance matters

The Andritz Group is subject to various laws, including anti-trust and anti-bribery laws in Austria and other countries where the Andritz Group conducts business. To make sure the Group does not violate any such laws it has a number of compliance policies in place. In particular, it has introduced global compliance policies prohibiting the violation of applicable anti-trust laws and anti-bribery laws as well as other rules of conduct. While the Group attempts to make sure, through a multitude of measures, that such policies are followed, there can be no assurance that no violations occur. Any such violation could have a materially adverse impact on the financial position and reputation of the Group.

RISKS RELATED TO MAJOR ORDERS AND OTHER CONTRACTS

Payment risks from customers

Much of the Group's business involves handling major projects with a large contract value. If a customer fails to meet its payment obligations for one of these projects, this may have negative effects on the net worth and liquidity position of the Group. The Andritz Group tries to limit these risks by securing payment guarantees from banks. Even in projects covered by export credit insurance, typically only 85% of the purchase price is secured through such insurance.

Performance risk of projects

In conjunction with the performance of plants supplied by Andritz, the Group is, in many cases, under contractual obligation to make performance guarantees and to meet certain deadlines. If the performances stated are not achieved or if deadlines are exceeded, the Group may have to perform remedial work at its expense or pay damages. If a guaranteed performance level or deadline is missed by a wide margin, the customer may have the right to terminate the agreement and return the delivered system to the Group for a full refund and/or recover damages. Such action could adversely affect the Group's financial development. The Group has put risk management procedures in place to reduce, among other things, its contractual and financial risk exposure on projects.

Cost overruns

A substantial majority of the Group's projects are based on fixed price contracts awarded on a competitive bidding basis. The sales and operating margins realized in a fixed price contract may vary from original estimates as a result of changes in costs, especially fluctuating material costs, and productivity over the term of the contract, especially on projects that include plant-wide engineering and/or construction.

In addition, since certain parts of the manufacture of the Group's supplies are outsourced, the Group may be compelled to quote at a fixed price to the customer without knowing exactly how much the purchased parts will cost. While estimates are made using empirical data and quotes from potential suppliers, these may not be accurate. The Group has experienced significant losses on certain past and pending projects in this regard and similar difficulties and losses may occur in the future in a way that would adversely affect the Group's financial condition.

EPC/turnkey contract risks

In a growing number of the Group's projects, Andritz has responsibility for plant-wide engineering and/or construction in addition to the supply of Andritz equipment and systems. These turnkey or EPC contracts involve the risks discussed above, but also involve risks relating to greater on-site responsibilities including environmental matters, local labor conditions, and construction and installation risks. Additionally, the Group is exposed to risks inherent in managing the third parties that perform construction, installation, and engineering services on these projects. The Group has put risk management procedures in place, including insurance programs, contract policies, and project management discipline to reduce these EPC-related risks. However, there is no guarantee that these systems are sufficient to prevent negative financial consequences.

Government contracts

A significant amount of the Group's Hydro Power business involves projects with governmental entities. These projects can present the performance, liability, and EPC/turnkey contract risks described above. Due to public bid requirements and local laws, it may not be possible for the Group to achieve its desired contractual protections and it may thus remain more exposed to such risks in connection with these projects.

Limitations of liability

Liabilities arising out of the Group's contracts may include liabilities for Andritz's customers' lost profits and other liabilities that can vastly exceed the value of the contract in question. While the Group attempts to include in its contracts appropriate limitations of liability, there can be no assurance that appropriate limitations will in fact be in place in all contracts or that such a limitation will be enforceable under the applicable law.

RISKS RELATED TO THE CAPITAL MARKETS

Dependence on the development of international financial markets

Apart from company-related occurrences, the development of the Andritz share price is also dependent on price fluctuations within international financial markets. Possible price fluctuations and high volatility of major stock markets may adversely affect the price of Andritz shares.

Recommendations by research analysts

As a publicly-listed company, Andritz is regularly analyzed by financial analysts and institutional investors. Analysts' recommendations to buy or sell Andritz shares and subsequent investment decisions by shareholders may lead to considerable price fluctuations of the shares. The Andritz Group has consistently followed a policy of open and transparent information exchange with shareholders and the financial community to minimize unfounded price fluctuations of its shares.

Active trading of Andritz shares

The high level (approximately 70%) of public free float of the Company's total outstanding shares has led to active trading in Andritz shares on the Vienna Stock Exchange. However, there is no assurance that active trading will be maintained in the future. If active trading is not maintained, the liquidity and the market price would be adversely affected and investors might not be able to sell their shares at what they perceive to be an acceptable price. It could also result in the removal of Andritz shares from the ATX, the leading index of the Vienna Stock Exchange. ○

PULP AND PAPER

Business Area Managers

LEADING TECHNOLOGIES FOR THE PULP AND PAPER INDUSTRY.

Humbert Köfler | Vienna | Austria

Karl Hornhofer | Graz | Austria


[1]

[1] Andritz delivered four major EPC packages for CMPC's Santa Fe Line 2 in Chile, which produces 800,000 t/a of bleached kraft pulp. Shown here is the 2,405 t/d continuous digester with Downflow Lo-Solids® cooking technology.

[2] Andritz high-consistency refiner at Estonian Cell in Kunda, Estonia, the first P-RC™ APMP mill in Europe. Andritz supplied the complete fiberline. It produces 140,000 t/a of mechanical market pulp, which is sold to paper mills all over Europe.

[3] An essential part of Andritz's services concerns improvements to plant availability by customized maintenance activities. Preventive measures are as important as regular checks, optimizations, and repair work. The local Andritz service teams specialize in the performance of efficient, fast, and cost-effective services at customers' mills. Photo: Andritz engineer inspecting a chip metering screw

[2]


[3]

THE DIVISIONS OF THE PULP AND PAPER BUSINESS AREA

The Pulp and Paper Business Area of the Andritz Group is organized into two major segments, **Capital Systems** as well as **Service and Units.**

Within the Capital Systems segment are the Wood Processing, Fiberline Systems, Recovery Systems, Chemical Systems, Pulp Drying Systems, Paper Machines, and Paper Finishing Divisions.

The Service and Units segment comprises the Pulp Engineered Services, Paper Engineered Services, Engineered Wear Products, Mechanical Pulping Systems, Fiber Preparation Systems, and Andritz Automation Solutions Divisions.

Divisional Managers

Milind Karkare | Andritz Automation Solutions Division

from left to right:
Wolfgang Lashofer | Mechanical Pulping Systems Division
Thomas Bachhofner | Paper Engineered Services Division
Dietmar Heinisser | Engineered Wear Products Division

from left to right:
Jari Ålgars | Wood Processing Division
Harry Rickman | Recovery Systems Division
Jarmo Häkkinen | Pulp Engineered Services Division
Mikael Forslund | Fiberline Systems Division
Markku Kosonen | Chemical Systems Division

from left to right:
Michael Pichler | Paper Machines Division
Erich Weitgasser | Pulp Drying Systems Division

from left to right:
Christian Pedratscher | Fiber Preparation Systems Division
Harald Suttor | Paper Finishing Division

PROFILE

The Pulp and Paper Business Area is a leading global supplier of systems, equipment, and services for the production of all types of pulp, paper, tissue, board, Medium Density Fiberboard (MDF), and nonwovens.

The successful acquisition of complementary technologies over the last decade has enabled the Business Area to supply complete processing lines and comprehensive services.

The Business Area's technology is employed for the processing of wood; the production of chemical, mechanical, and recycled fiber pulps; the preparation of paper machine furnish; the production of tissue and board products; the calendering of paper, board, tissue, and nonwovens; the coating of paper and board; and the handling of reject materials and sludges. In addition, the Business Area provides complete chemical recovery plants and biomass boilers for power generation.

Service activities within the Business Area are focused on assisting customers to increase their operational efficiency while reducing operating costs. Service products include maintenance and development agreements; equipment upgrades and rebuilds; engineered wear products for all brands of equipment (refiner plates, screen baskets, rotors, cleaner cones, disc filter sectors, chipper knives, etc.); and complementary technical services.

Depending upon a customer's needs, the Pulp and Paper Business Area can provide basic and detailed engineering, procurement, manufacturing, equipment erection, construction supervision, commissioning and maintenance services, as well as the supply and start-up of complete installations on an EPC basis.

KEY FIGURES PULP AND PAPER

MEUR	2007	2006	2005	2004	2003
Sales	**1,462.2**	1,304.2	1,032.9	884.6	810.3
Order Intake	**1,406.4**	1,432.4	1,017.0	1,218.9	857.3
Order Backlog as of 31.12.	**1,060.4**	1,124.4	950.4	951.1	622.7
EBITDA	**101.1**	89.6	76.1	77.9	63.9
EBITDA margin	**6.9%**	6.9%	7.4%	8.8%	7.9%
EBITA	**83.5**	75.9	63.6	64.8	49.1
EBITA margin	**5.7%**	5.8%	6.2%	7.3%	6.1%
Capital investments	**21.8**	21.7	13.6	14.3	9.3
Employees as of 31.12.	**4,843**	3,863	3,018	2,805	2,959

MARKET DEVELOPMENT

During 2007, international pulp markets developed very positively. Due to a continued strong demand from international paper producers and wood supply disruptions caused by bad weather conditions and strikes, pulp supply has been tight. As a result, the price for NBSK (Northern Bleached Softwood Kraft Pulp) has continuously increased during the reporting year, from USD 750 at the beginning of the year to USD 860 per ton in December 2007.

In step with NBSK, the price for short-fiber pulp (birch and eucalyptus) also increased during 2007. Strong demand, and new capacity in South America coming onstream somewhat later than expected, led to a price increase for eucalyptus pulp from USD 670 in January to over USD 750 per ton in December 2007. Since pulp is usually traded in U.S. dollars, and the dollar has depreciated against most currencies, the effect of the price increase was somewhat dampened for Euro-based customers.

Project activity for pulping equipment during the reporting period remained at a satisfactory level, with the focus for greenfield pulp mills again concentrating on the Southern hemisphere (South America, Australia, and Asia) and China. Investments for the modernization and refurbishment of existing pulp mills remained focused on Europe, and, to some extent, North America.

BUSINESS DEVELOPMENT

Sales of the Business Area increased to 1,462.2 MEUR, increasing 12.1% compared to 2006 (1,304.2 MEUR). All Divisions of the Business Area showed a satisfactory development of Sales. In line with Sales, EBITA also increased, to 83.5 MEUR (2006: 75.9 MEUR).

The Business Area's Order Intake amounted to 1,406.4 MEUR in 2007, thus slightly lower compared to 2006 (1,432.4 MEUR).

Global forestry company UPM, the Andritz Group, and Andritz's associated company Carbona started a joint development project for biomass gasification and synthetic gas purification. Gasification technology is essential to the production of synthetic gas that will feed a Fischer-Tropsch based second-generation biodiesel production facility. Testing is being conducted at the Gas Technology Institute's pilot laboratory in Chicago in the United States. Pilot testing is expected to be completed by the end of 2008. Andritz has a comprehensive product portfolio for biomass starting from wood handling equipment, dryers, and pellet machines to fluid bed boilers and gasifiers for lime kilns. The recent addition of Carbona's gasification technology enables the development of future applications to complement the product family.

In June 2007, Andritz acquired a 50% stake in Brazilian Sindus Human Technology, the leading provider of outsourced automation, instrumentation, and electricity maintenance services for the pulp and paper industry in Brazil. Sindus, which has annual Sales of approximately 20 MEUR, specializes in sophisticated analysis systems for the process industry, including outsourcing of human resources to the leading pulp and paper mills in Brazil. (See also special report on page 064.)

Metsä-Botnia S.A., Uruguay successfully started up a 1,000,000 t/a bleached kraft pulp mill near Fray Bentos in November. This site is the first to have all major production systems provided by one supplier – Andritz. Andritz supplied proven and best available technology for the woodyard, fiberline, pulp drying/baling plant, and chemical recovery/energy island. In addition, Andritz is providing maintenance services for the mill's production area through a multi-year contract. (See also special report on page 066.) →

SINDUS HUMAN TECHNOLOGY COMPLEMENTS ANDRITZ'S PROCESS TECHNOLOGIES

In June 2007, Andritz acquired a 50% stake in Sindus Human Technology, a company specializing in maintenance services for pulp, paper, and other industries in Brazil. With Andritz's global scope, Sindus Andritz will be able to expand its business into other South American countries and beyond. With Sindus' expertise, Andritz has a closer connection to the Brazilian pulp and paper market.

A humble beginning

It was 1987 when Luis Binotto, his brother-in-law, and four other engineers formed Sindus Human Technology in an empty laundry room in the Binotto family house. Their initial business was maintaining complex laboratory equipment. As the business grew, the company moved from the family house and the engineers began to develop a gas analyzer for environmental monitoring – the TRS analyzer. Today, Sindus is the only manufacturer of Total Reduced Sulfur (TRS) analyzers in Brazil.

Outsourced maintenance

In addition to maintaining laboratory equipment, customers began to ask Sindus to maintain their analyzers. Sindus saw this as an opportunity to expand into outsourced maintenance contracts, where Sindus manages all the maintenance activities – recruiting and training specialists, scheduling and performing the work, analyzing the failures, and reporting on the progress.

In the 1990s, a pioneer in maintenance outsourcing for the pulp and paper industry was the Aracruz Guaíba mill (called Riocell at that time) near Porto Alegre. In 1994, Riocell asked Sindus to maintain all the instrumentation and electrical systems in the mill. As part of the process, Riocell employees became employees of Sindus. This was the company's first large contract.

What is a non-core activity for many manufacturing plants (maintenance) is the core business for Sindus Andritz. Customers rely on Sindus Andritz to perform the maintenance of instruments, controls, motors, and valves more efficiently than they could by themselves.

Close association with Brazilian industry

Today, Sindus Andritz has major contracts in force and works with all the leading pulp and paper producers in Brazil. With Sindus Andritz employees in the mills every day, they know the customers' needs and priorities very well.

Sindus Andritz today

Sindus Andritz has 680 employees. About 70 are located at the company's headquarters in Porto Alegre. The average age of an employee is 32 years. About 130 employees have university degrees or are in the process of obtaining their degrees. Of this number, about 50% are engineers. Field technicians typically have high school degrees plus some specific technical training. The average Sindus Andritz employee has been with the company over three years, though many have worked for 10 years or more. The average is distorted since the company hires from 50 to 100 employees each year to meet the growing demand for its services. Three employees who started in apprentice positions have now risen to managerial positions within the company. In general, pulp and paper accounts for about 80% of Sindus Andritz's annual revenue. The rest comes from other process industries such as steel, chemicals, and mining.

Distributed communications and training

With employees spread out across Brazil (up to 5,000 km apart), Sindus Andritz relies heavily on technology to support its remote communications and training. The company uses video-conferencing, tele-conferencing, and web-conferencing regularly to link all the site managers together.

For employees, web-based training technology is being used. Every specialist has to have basic skills in math and physics, with a thorough knowledge of the complex electronic and control equipment installed in a modern pulp and papermaking facility. Employee training needs are prioritized based upon their impact on customer results.

New browser-based training modules are made available to employees in their job sites around the country. There are online 'chat sessions' where specialists can share their knowledge and compare notes. The training can be delivered online for individuals or small groups through the tele-conferencing and web-conferencing systems.

New tools

OPP (Optimization of Process Performance) is a software package developed by Sindus Andritz that collects information from distributed control systems and programmable logic controllers to help specialists identify instruments that need attention and to better tune their control systems. This results in improved equipment efficiencies and higher production. Five mills in Brazil currently have the OPP system installed.

Another new development is to perform maintenance tasks on automation systems through an Internet link. In a pilot project, Sindus Andritz found it could do 90% of the automation maintenance tasks for one mill remotely. Technically, there are few limits. Customers gain access through a remote link to a group of experts with extensive experience who can improve the technical support of existing maintenance contracts. ○

[1] The Analyzer Division of Sindus Andritz has expanded over the years from the initial manufacturing of TRS analyzers to include all kinds of devices for gas analysis. Here, a technician assembles a total system, including sensor, sample handling, and system electronics.

[2] Based upon input from the OPP (Optimization of Process Performance) system, a Sindus Andritz engineer isolates a control loop problem to a faulty valve positioner in the pulp mill. By replacing the positioner, effective control is restored to the process.

[3] With nearly 700 people spread out up to 5,000 km apart, Sindus Andritz relies heavily on technology to support its remote communications. Here, business directors discuss a project's status during a weekly video-conference. For employees, web-based training technology is utilized to a large extent.

METSÄ-BOTNIA AND ANDRITZ: PROVEN PARTNERS TAKE ON A NEW CHALLENGE

When Metsä-Botnia was formed in the 1970s, Andritz was a key supplier of production systems for the first greenfield mill (Kaskinen). This relationship has strengthened over the years. The most recent collaboration has Andritz providing all the major production technology for the one million ton-per-year greenfield pulp mill in Fray Bentos, Uruguay – plus maintenance for all areas of the mill. This extent of involvement has never been accomplished on such a large scale by a single supplier before.

Andritz and Botnia have grown to work closely together in an atmosphere of mutual respect and trust. So, it was logical for Botnia to consult with Andritz about the possibility of the next grand collaboration – a very large greenfield kraft pulp mill in Uruguay.

Botnia's Fray Bentos mill in Western Uruguay is its first large investment outside Finland. The Fray Bentos mill represents another first: the first time a single supplier (Andritz) provided all the major production systems and comprehensive maintenance for a greenfield market pulp mill.

While this project was indeed a significant challenge for Andritz, it was not illogical. Every Andritz process and every system in the Fray Bentos mill is successfully proven somewhere in the world, many in South America. Andritz has delivered very large systems whose start-up and production curves have set world records.

With regard to maintenance, Botnia outsourced maintenance activities for all its mills in Finland and was very interested in establishing the outsourcing concept in Uruguay. It looked to a company with global experience and a base of expertise in South America. During the time that Andritz's project team was preparing quotations for the technology, the Andritz service team put together a 10-year maintenance plan and maintenance cost estimates. In September 2005, Botnia signed the contract with Andritz for long-term mill maintenance services.

Long-term local presence

A considerable amount of work is involved in planning the maintenance of a new pulp mill, such as Fray Bentos. Pre-engineering was largely done in Finland – working side-by-side with Botnia's project team for the year before the core maintenance team came to Uruguay in October 2006 to recruit Uruguayan managers and technicians and to begin the site implementation of maintenance activities.

Pre-engineering planning included criticality analyses performed on the major production systems in the mill – determining how important the equipment is to the process, the time required to repair, the cost to repair, etc. From this, a preventive and predictive maintenance plan was prepared and the plan was entered into Botnia's computerized maintenance system. This approach ensured that maintenance was adequately considered through all stages of the project.

The maintenance target for Fray Bentos is to have better productivity (in terms of maintenance cost per ton of pulp produced) than in Finland. As part of the training, Andritz brought eight key maintenance managers from Uruguay to Finland for a three-month period in 2006 – for intense training in pulp mill processes and pulp mill maintenance. They also gained work experience at Botnia's Joutseno mill.

Training continued during the construction period, equipment commissioning, and mill start-up. The maintenance team now has a network of local companies with experience at the mill to support its various tasks. The work during the construction of the mill gave these companies a good understanding of the installed equipment. This will become extremely relevant during annual shutdowns – periods when hundreds of people can be on-site at one time to perform inspections, maintenance, and repairs to the production equipment.

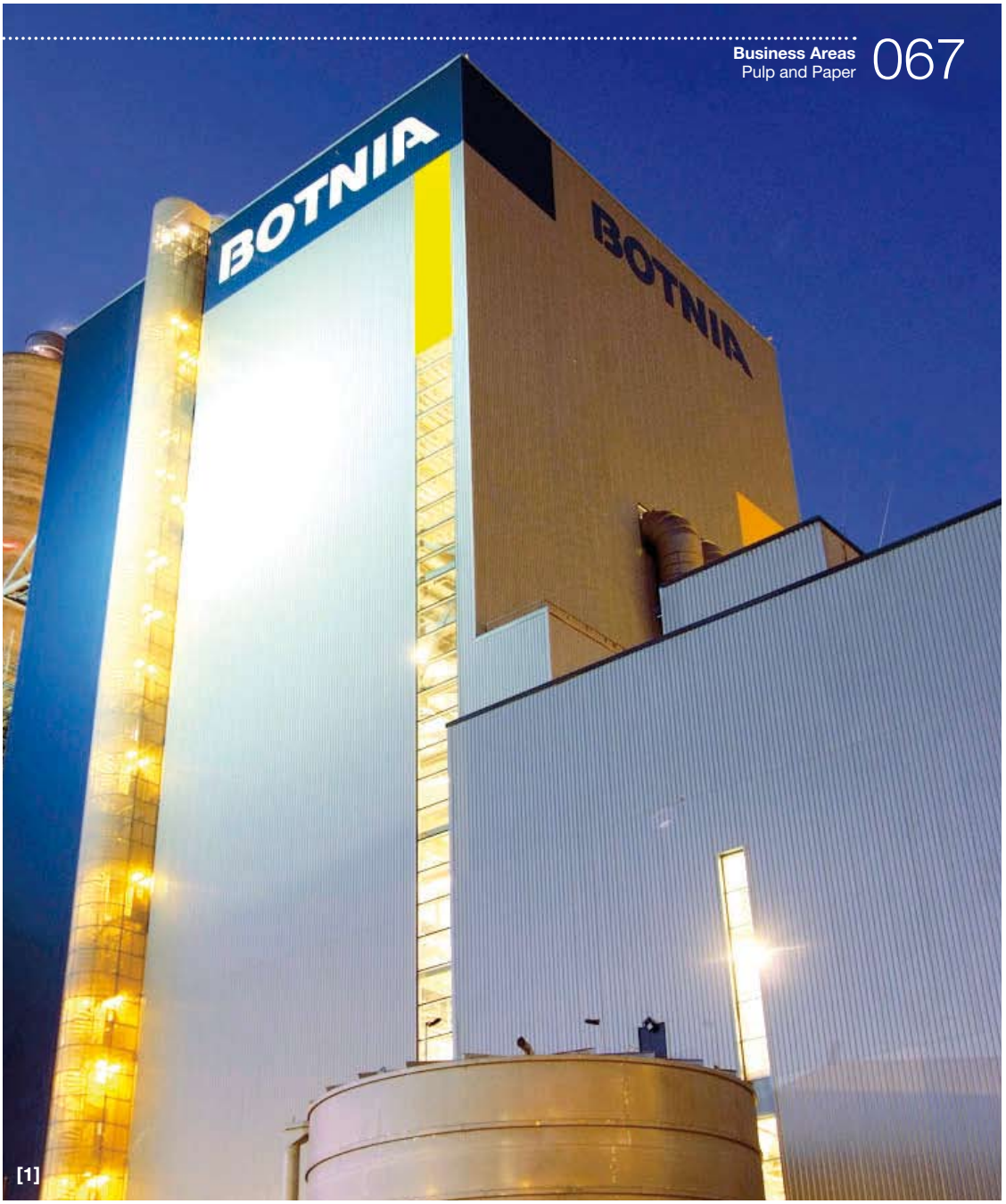
A commitment to the government is that at least 75% of the approximately 100-person maintenance staff will be Uruguayan. Since Uruguay does not have a tradition of pulp production, this required Andritz to recruit locally and train extensively. Today, 95% of the staff is from Uruguay and Andritz's goal is to increase that to 100%. In addition, local companies have been hired as subcontractors for auxiliary maintenance services (HVAC, cleaning, etc.). Thus, Andritz and Metsä-Botnia are contributing substantially to not only creating highly qualified jobs, but also to training local personnel to take advantage of these jobs. →

[1] Andritz supplied the entire chemical recovery island for the Fray Bentos mill. The evaporation plant has a capacity to remove 1,100 t/h of water. The recovery boiler (pictured), capable of burning 4,450 tons of dry solids per day, is among the world's largest.

[2] For added flexibility, Botnia selected two identical Andritz dewatering and drying lines designed to handle 3,600 t/d production.

[3] The Andritz white liquor plant represents the most modern technology for recausticizing and lime reburning. The lime kiln (foreground) is 135 m in length and 4.75 m in diameter.

[4] Andritz provides all the maintenance services for Fray Bentos under a long-term contract. The target is to have better productivity (in terms of maintenance cost per ton of pulp produced) than in Finland. Since Uruguay does not have a tradition of pulp production, Andritz had to recruit locally and train the new maintenance employees extensively. Today, 95% of the maintenance staff is from Uruguay. The longer term goal is to increase this to 100%.



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FRAY BENTOS IS THE FIRST PROJECT WHERE A SINGLE SUPPLIER (ANDRITZ) PROVIDED ALL THE MAJOR SYSTEMS AND COMPREHENSIVE MAINTENANCE FOR A GREENFIELD MARKET PULP MILL.

[1]

[1] A two-vessel continuous digester (background) produces 3,200 t/d of prime quality pulp. A total of nine large DD Washers (foreground) wash the pulp as it flows through the oxygen delignification, screening, and bleaching stages.

[2] Two chipping lines produce high quality chips. Chip storage utilizes the latest blending technology with a rotating stacker-reclaimer. Two species of eucalyptus are blended to achieve the optimum fiber for pulp production.

[2]

Andritz Technology at Fray Bentos

The Fray Bentos mill is based in all aspects on the best available technologies, e.g. for forestry, wood harvesting and transport, pulp production, pollution control, and environmental management. The Best Available Technologies (BAT) from Andritz are impressive in terms of scale and efficiency.

Woodyard

Two-line chipping system, chip storage, chip screening, and conveying system provide high-quality eucalyptus chips to the fiberline. Chipping capacity is 330 m^3/h per line.

Pulp Production

Two-vessel Downflow Lo-Solids® continuous digester (capacity: 3,200 t/d) with patented TurboFeed® chip feeding system produces high-yield, high-quality pulp. DD Washers clean the pulp before and after two-stage oxygen delignification. Combined knot separation and screening system cleans the pulp prior to bleaching.

Pulp Bleaching

Four-stage light ECF bleaching with patented A-Stage™ to reduce the amount of bleaching chemicals required. Four efficient DD Washers wash the pulp to final cleanliness and further reduce effluent volume due to filtrate recycling capabilities.

Dewatering/Drying/Baling

The drying plant consists of two five-stage screening systems to ensure pulp cleanliness, followed by parallel Twin Wire Former pulp machines (each 5.3 m width), Andritz Fläkt dryers, and Cutter/Layboys. There are four automated baling lines to weigh, press, wrap, stencil, and tie the dried pulp bales.

Chemical Recovery and Energy Production

The evaporation plant (1,100 t/h evaporation rate) consists of seven effects with internal stripping of volatile gases and the ability to segregate condensate streams. The recovery boiler has a capacity of 4,450 tds/d. The white liquor plant (10,000 m^3/d) consists of advanced technology for the filtration of green and white liquors, and a 830 t/d lime reburning kiln. A complete system for the collection of odorous gases and incineration in the recovery boiler (with backup alternatives in the auxiliary boilers) ensures low odor emissions from the mill. The steam from the recovery boiler is sufficient for the turbo generator to generate enough electricity to power the entire mill.

Dynamic Simulation

Dynamic process simulator from IDEAS to model all the mill's processes for training operators prior to start-up.

The Fray Bentos project

A global team of project managers, technical experts, site managers, erection specialists, and commissioning technicians were a key part of the team in Fray Bentos. The overall construction manpower at the mill peaked at about 4,500 people during the first months of 2007. One Andritz site manager likened the scene to a 'miniature United Nations' with people from 25 countries working together to build this massive mill. Even with this, the majority of workers came from Uruguay – between 70–80% during the construction peak period were Uruguayans.

Environmental care

Compared to the amount of pulp produced, the emissions from the Fray Bentos mill are among the least intrusive in the world. Due to improved management of the combustion processes and cleaning of fuel gases, what comes out of the smokestacks is mostly water vapor. Air emissions of nitrous oxide and sulfur dioxide have been virtually eliminated with the advanced chemical recovery technologies.

Modified cooking and efficient pulp washing lower the effluent load from the fiberline. Oxygen delignification and A-Stage™ bleaching decrease the amount of chemicals required. The level of organic chlorine compounds in treated effluents is so low that it is no longer considered environmentally significant.

As a result of using raw materials this efficiently, there is very little solid residue left to discard to the landfill. In fact, less than 1% of the initial raw material is discarded.

Since the collection and treatment of odorous gases are a major factor in forming the local community's opinion about having a pulp mill as a neighbor, the mill has added auxiliary boilers into the plant design if there is a process disturbance. Electricity is generated in an environmentally friendly way at the Fray Bentos mill. The black liquor from the pulping process which is burned in the recovery boiler is a renewable biomass material derived from eucalyptus. Botnia's electricity generation adheres to the Clean Development Mechanism (CDM) which is determined in the Kyoto Protocol to the United Nations Framework Convention on Climate Change. ○

BUSINESS DEVELOPMENT (CONTINUED)

CMPC Celulosa S.A., Chile reached the top of its start-up curve for a new 780,000 t/a bleached eucalyptus chemical pulp line, supplied by Andritz to the Santa Fe mill. Full production – on a 30 days rolling average – was reached in just 171 days, beating the previous world record of 174 days. Andritz supplied the main equipment for the fiberline – from digester to dried pulp bales – as well as the recovery boiler and white liquor plant on an EPC basis.

In 2007, Veracel Celulose S.A., Brazil, set two new world records with its 9.34 m pulp dryer supplied by Andritz in 2005. The machine delivered 3,796 t/d of prime quality bleached eucalyptus pulp; a speed record of 247 m/min was achieved at the cutter/layboy.

The Wood Processing Division and Fiberline Systems Division successfully started up systems for the new eucalyptus fiberline at Suzano Bahia Sul Papel e Celulose S.A.'s Mucuri mill in Brazil. The woodyard systems include three chipping lines and circular stacker reclaimer-type chip storage. The fiberline systems include washing, oxygen delignification, knot separation/screening, and bleaching. The bleaching line includes four of the largest DD washers ever delivered.

In April, the Wood Processing Division started up a debarking and chipping line for Natron-Hayat Maglaj in Bosnia and Herzegovina. In September, the Division started up a two-line debarking and chip screening system with JetScreen™ for Stora Enso Fine Paper in Varkaus, Finland.

Several Divisions of the Pulp and Paper Business Area contributed to the successful start-up of a major new production line for Marusumi Paper in Ohe, Japan. Marusumi is one of Japan's major newsprint producers. The new line increases the mill's pulping capacity from 100,000 to 252,000 t/a. The Andritz scope of supply encompassed the fiberline (including a continuous digester with the first TurboFeed® chip delivery system in Japan), a six-effect evaporation plant (the first complete evaporation plant delivered by Andritz to Japan), and a white liquor plant (including a StiroX™ white liquor oxidation system). Andritz delivered the project on an EPC basis. Start-up of the fiberline occurred in mid-May 2007, two weeks ahead of schedule.

In the area of mechanical pulp grades, Estonian Cell AS signed all acceptance certificates and took over the entire BCTMP mill in Kunda, Estonia.

In March 2007, Andritz successfully handed over a 100,000 t/a market pulp mill to Shandong Zhongmao Shenyuan Co. Ltd, China. The fast and successful project execution, installation, and start-up provided the best approach for Shandong Zhongmao Shenyuan Co. Ltd. to use this project in order to produce market pulp, thus entering a new business segment. Andritz supplied its proven P-RC™ APMP technology, which is the best available technology for hardwood mechanical pulping systems, allowing the most economical production of all kinds of hardwood mechanical pulp grades.

Klabin, one of the largest manufacturers of paper, board, and paper products in South America, successfully started up the Andritz CTMP line based on Andritz's proprietary P-RC™ APMP technology at its Monte Alegre mill. The line is among the first in the world to use eucalyptus as raw material. This order once again underlines Andritz's dominant position in hardwood CTMP production technology.

Stora Enso Kvarnsveden, Sweden made a very fast start-up of its new bleaching plant supplied by Andritz in 2007.

The Paper Machines Division reports a new world speed record for CrescentFormer machines set by PT. Lontar Papyrus, Jambi, Indonesia. The Andritz tissue machine broke the 2004 record set by the same mill. In July 2007, the machine ran at 2,125 m/min for over 54 hours producing 13.5 g/m^2 of facial tissue. Procter & Gamble's new Andritz machine was successfully started up in Green Bay, Wisconsin, USA.

MAJOR ORDERS

- The Business Area received an order from Votorantim Celulose e Papel (VCP), Brazil to deliver a complete fiberline, pulp drying/baling plant, and white liquor plant for the world's largest pulp mill. The design capacity of this greenfield bleached eucalyptus market pulp mill is 1,250,000 t/a. The mill is located at Três Lagoas in Brazil's Mato Grosso do Sul state. The Andritz fiberline includes a 4,180 t/d single-vessel continuous digester, washing, oxygen delignification, screening, and low-impact bleaching based upon the proven Andritz DD washer technology. The drying plant includes a 9,334 m pulp drying machine and three automated baling lines. The white liquor plant is designed to produce 12,100 m^3/d of white liquor and features green liquor filtration based on X-Filter™ technology, a CD-Filter™ for white liquor filtration, an LMD-Filter™ for lime mud washing, and the largest lime kiln to be installed in South America. Andritz will also supply the basic and detailed engineering, electromechanical erection, erection supervision, start-up, and training.

- Australian Visy Industries, the world's largest privately owned packaging and recycling company, selected Andritz to supply technology and systems for the expansion of its Tumut mill in New South Wales, Australia. The order encompasses the upgrade of the existing fiberline and recausticizing plant, and the installation of a new recovery boiler, pre-evaporator, lime kiln, a 1,300 t/d OCC line, stock preparation, and approach flow systems. It is planned that the entire integrated mill will be operational during the first half of 2009.

In addition, the individual Divisions received orders as follows:

The **Wood Processing Division** will supply a complete chipping line to Sappi Saiccor Pty. Ltd., South Africa. Inland Paperboard & Packaging, Texas, USA placed an order for a turnkey tree-length debarking line, as well as a portal crane. The Division will also deliver a complete woodyard with chipper, chip screens, and chip handling for the new MDF plant of Duratex S.A., Brazil. In addition, there was a debarking line modernization order from Mondi Packaging Stambolijski EAD, Bulgaria and a PowerScrew™ reclaimer order from Tableros Talsa, S.L., Spain. Several clients in Australia, Japan, Indonesia, and Austria ordered key woodroom equipment.

The **Fiberline Systems Division** signed a contract with Stora Enso Fine Papers in Varkaus, Finland for modernization of the chip feeding system (Diamondback® chip bin, TurboFeed® system, and a vapor reboiler). The Division will also upgrade the softwood digester at Domtar Industries' mill in Ashdown, Arkansas, USA with a TurboFeed® chip feeding system, Diamondback® chip bin, and RETRO-fit™ flash tank. In Canada, St-Féliciene Kraft Pulp ordered a new blowline Pressure Diffuser system for its northern softwood fiberline.

The **Chemical Systems Division** booked a repeat order from an Indonesian customer for a new sector cooler for an LMD lime kiln. To Cellulose Beira Industrial (Celbi), S.A. in Portugal, a complete lime kiln will be supplied on an EPC basis. The Division was also chosen to deliver a recausticizing plant for West Coast Paper Mills, India, including an X-Filter™ for green liquor handling and a CD-Filter for white liquor filtration. Munksjö Paper will upgrade the lime kiln at its Aspabruk mill, Sweden with LMD technology from Andritz. Several StiroX™ systems for white liquor oxidation were ordered by customers worldwide.

The **Recovery Systems Division** was awarded a contract to deliver a new recovery boiler, power boiler, and evaporation plant for the Ence Group's Navia Asturias mill, Spain as part of a program to increase pulp production at the mill. The new plants will also significantly increase the amount of energy generated from biomass. A new MVR evaporator for the Andritz mechanical pulping line was sold to Sun Paper's Yangzhou mill in Shandong, China. Mondi Packaging ordered an evaporation plant upgrade for their Stambolijski mill, Bulgaria. In the USA, the Division will rebuild a recovery boiler for Weyerhaeuser in Columbus, Mississippi. In addition, the Division will supply an ash leaching chloride removal system to Lwarcel Celulose e Papel, Brazil. This will be the first chloride removal system based on leaching the ash from the electrostatic precipitator. The Division will also upgrade the evaporation plant at Zellstoff Pöls, Austria to increase capacity and the volume of reusable condensate for other processes in the mill. The upgrade includes a new sixth effect, surface condenser, and a condensate stripper.

The **Pulp Drying Systems Division** was selected to deliver a machine rebuild (wet end) to Pitkyaranta Pulp Works OAO, Russia. The machine has a working width of 5.2 m and a production capacity of 255 t/d. The Division booked an order for a dryer upgrade from Jari Celulose S.A., Brazil. A market pulp drying line was ordered by Cellulose Beira Industrial (Celbi), S.A. in Portugal. The pulp drying system will be based on the successful Andritz Twin Wire Forming Technology and have a design capacity of 1,815 t/d at a working width of 4.8 m. →

The **Pulp Engineered Services Division** was awarded a contract to deliver evaporation replacement lamellas for UPM, Finland. A further project included supplies for three different Stora Enso mills in Finland (evaporation lamellas, recovery boiler economizer upgrade, debarking drum rebuild, and Downflow Lo-Solids® cooking upgrade). Also in Finland, the Division signed a multi-year maintenance contract (OPE™) for Botnia's Joutseno mill and existing contracts at several mills were extended. In Sweden, the Division will rebuild a lime kiln for Billerud and a feeder for MoDo's Husum mill. The Division also received a significant recovery boiler retrofit order from Sweden and an order to rebuild a wash press. The Division was selected to rebuild a drum for a competitor's woodyard in France. In Indonesia, the Division will rebuild a recovery boiler originally delivered by a competitor. From Russia, equipment for a digester upgrade at JSC Bratsk Pulp and Board Mill and the upgrade of a lime kiln at International Paper's Svetogorsk mill were ordered. In North America, upgrades of several recovery boilers will be performed for International Paper and Georgia-Pacific mills, as energy is a key focus. Also in the USA, the Division will rebuild two existing digesters for Red Shield Environmental and will supply equipment for the mill's cooking process to be used in the co-production of pulp and ethanol from wood cellulose. Smurfit Stone ordered a debarking drum replacement. In Brazil, Veracel S.A. chose Andritz to perform field services for part of the fiberline. Sindus Andritz in Brazil signed a multi-year contract with Klabin for complete electrical and instrumentation maintenance.

The **Paper Machines Division** will deliver a complete packaging paper machine to Hebei Yongxin Paper Co. Ltd., China including stock preparation plant, winder, and mill automation. The machine will have a wire width of 6.2 m, a design speed of 1,100 m/min and will produce over 400,000 tons of kraftliner and linerboard per year. Also in China, Zhangzhou Liansheng Paper Co. Ltd. selected Andritz to deliver headboxes. Swedish Tissue AB, Sweden ordered a new tissue machine, with a working width of 3,370 mm. The machine will incorporate the new PrimePress XT shoe press, enabling the customer to produce softer and bulkier tissue paper and reduce energy costs at the same time. Cartiere Miliani Fabriano, Italy awarded Andritz a contract to rebuild its PM3 horizontal reel with a reel spool magazine and unwinder. The rebuild will be suitable for a parent roll diameter of 3,200 mm. For SCA Tissue North America – one of the largest manufacturers of Away From Home tissue products in North America – a second CrescentFormer tissue machine will be installed at the Barton mill, Alabama, USA.

The **Fiber Preparation Systems Division** was selected to supply a 500 t/d deinking line, sludge handling, and stock preparation equipment to Shandong Chenming Paper Holdings Limited, China. Also in China, Lee & Man Paper ordered a line for processing 250 t/d of mixed office waste, OCC processing equipment, and paper machine approach system components for three paper machines. Shandong International Paper & Sun Coated Paperboard selected the Division for new stock preparation and paper machine approach systems for coated board. Hebei Yongxin Paper bought a 1,350 t/d OCC line for kraft paper; and Anhui Shanying Paper placed an order for a 900 t/d OCC line and a paper machine approach system. Stock preparation equipment was ordered by Henan Yinge Industrial Investment Holding, Luoho City. Also in Asia, Joint Creation Limited, Can Tho, Vietnam signed a contract with the Division to supply a new OCC line and paper machine approach components for PM15. Daehan Paper, South Korea ordered a sludge handling system. In South Africa, a FibreFlow® drum pulper, coarse screening, and reject press were ordered by Mondi Packaging South Africa Pty Ltd., Felixton mill. In Europe, the Division will deliver a stock preparation system for the new Andritz tissue machine at Swedish Tissue AB, Kisa, Sweden. Stock preparation equipment was also ordered by Weidmann, Rapperswil, Switzerland, and Papierfabrik Palm, Germany ordered a sludge handling system for its Eltmann mill. In the USA, Andritz received orders for two new FibreFlow® drum pulpers: one for Abitibi-Consolidated's Snowflake, Arizona mill and the other for Georgia-Pacific's Muskogee, Oklahoma mill. SCA Tissue awarded the Division a contract to provide the complete stock preparation system for a new Andritz tissue machine. The Division also received an order from Georgia-Pacific, Green Bay, Wisconsin for deinking line equipment including a FibreFlow® drum pulper, RotoWash, SpeedWasher, screens, and cleaners. In South America, Papelsa, a subsidiary of the Smurfit Kappa Group, selected Andritz to provide a complete 350 t/d OCC line for its Barbosa plant, Colombia.

The **Mechanical Pulping Systems Division** will modernize the TMP system at Holmen Paper's Braviken mill, Sweden. This rebuild will help the mill lower its energy costs. It includes systems for chip washing, RT Pre-treatment, and equipment for the rejects system. Also in Sweden, the Division has provided the detailed engineering, equipment, and erection work for the new peroxide high-consistency bleach plant for SC++ paper grades at Stora Enso's Kvarnsveden mill. Nanning Jinlang Pulp Co. Ltd., China awarded Andritz a contract for a new P-RC™ APMP system. The mill plans to produce 200 t/d of market pulp for lightweight printing and writing grades. Also in China, the Division received a follow-up order for a control system from Sun Paper Industry Joint Stock Co. Ltd. for its 260 t/d P-RC™ APMP system purchased from Andritz in late 2006. In South America, the delivery for the new TMP 3 line at Norske Skog's mill in Pisa, Brazil included main process equipment, basic engineering, erection, and start-up services. TMP 3, which is equipped with the latest Twin Refiner technology, will supply up to 665 t/d of high-quality pulp from fast growing pinus taeda for the second newsprint machine at this location. In Europe, the Division received its fourth order from PF Louisenthal, Germany to supply a bleach plant for cotton combers-based pulp. PF Louisenthal operates Andritz bleach plants in its own mills and procures them for other bank note paper producers.

The **Panelboard Department** received four orders from Brazil for pressurized refining systems. Two will be delivered to new MDF plants for Indústria de Compensados Guararapes Ltda. and Indústria de Compensados Sudati Ltda. Duratex S.A. selected Andritz to provide a complete fiber preparation system for their third new MDF plant in Agudos. With a capacity of over 1,500 t/d, this will be the world's largest single-stage pressurized refining system. In addition, Andritz will deliver another pressurized refining system to Satipel Industrial S.A. via Siempelkamp Ges. m.b.H. In China, Shangqiu Dingsheng Wood Industry Co. Ltd. and the Guandong Weihua Group ordered new pressurized refining systems. The system for the Guandong Weihua Group is the fourth Andritz unit ordered by this customer. It will be delivered to Liaoning Taian Weiliban Woodworking Industry Co. Ltd. Vezirkopru Orman Urunleri Ve Kagit San. A.S., Turkey also ordered new pressurized refining systems. Siam Fiberboard Co. Ltd., Malaysia placed a repeat order for a pressurized refining system. This is the third Andritz installation at the site and the fifth to be delivered to the Group. In Europe, Andritz booked an order from Dieffenbacher, Germany for the supply of a pressurized refining system for HDF/MDF for the Homanit Group's project in Poland. The system is designed for a capacity of over 500 t/d. This will be the fourth system supplied to the Homanit Group by Andritz. In addition, Andritz received two orders from Pfleiderer AG. Andritz will supply a refining system to the Nidda MDF plant, replacing a competitor's fiber preparation system. Pfleiderer also selected Andritz to deliver a turnkey woodyard and fiber preparation system (capacity 1,200 t/d) for a new investment in Novgorod, Russia. Andritz will also deliver a pressurized refining system for Abinsk MDF in Russia. The order was received via IMAL of Italy. Andritz Panelboard has sold the first pressurized refining system to Nigeria. The system was sold via Salzgitter Mannesmann International and will be installed at OMO Wood in 2008.

The **Paper Finishing Division** was awarded a contract to supply a soft-nip calender (PrimeCal Soft with MatOnLine technology) and a hard-nip calender (PrimeCal Hard) to two Chinese companies. Another hard-nip calender (PrimeCal Hard) will be delivered to Stora Enso's Fors mill, Sweden. The order will include the new PrimeFeeder feeding system and the rebuild of the drying section. Start-up is planned for January 2009. Finally, the Division received orders for three shoe press modules. Two of the shoe presses are PrimePress X Twin models to be installed on new machines built by the Paper Machines Division. The third shoe press will be installed on a pulp machine in Portugal.

The **Paper Engineered Services Division** received orders for dewatering equipment rebuilds from Steyrermühl, Austria; Ence Pontevedra, Spain; Norske Skog Halden, Norway; Steti, Czech Republic; Rottneros, Sweden; Klabin, Brazil; and M-real Stockstadt, Germany. Andritz obtained the first repair order for a Thune screw press from Stadacona, Canada. Jiangxi and Yueyang, China, Holmen Paper's Braviken mill, Sweden, Mondi Syktyvkar, Russia, and Stora Enso's Varkaus mill, Finland placed major orders for mechanical pulping services. Among further significant contracts for the pulper business were orders from Mepco, Saudi Arabia and Dunapack, Hungary. Dewatering equipment will be supplied to NSI Golbey, France; Rhein Papier, Germany; KC-Aranguren, Spain; Hainan, China; Maruishi, Japan; and Sappi Umkomaas, South Africa. Service orders for mechanical pulping systems continued very well with orders from Yueyang, China and Klabin, Brazil. Automation orders were received from Mayr-Melnhof and Norske Skog, both Austria; Domtar and Georgia-Pacific, Leaf River, both USA; and Abitibi-Consolidated, Canada. Large spare parts orders for stock preparation equipment were received from China, India, and Turkey.

The **Engineered Wear Products Division** received significant orders for refiner plates from Solikamsk, Russia; UPM, Finland; and Stora Enso, Sweden. For the screening product line, major orders came from Cheng Loong, Taiwan; Nine Dragon, China; PT Lontar Papyrus, Indonesia; Paper Corea, Korea; and UPM, Finland. In North America, orders for Cleaner products were entered by Weyerhaeuser and Buckeye, and a disc filter sector exchange program was ordered by Smurfit Stone. In the PerfTec product line, German producers Linde, Krones, and Bühler all placed major orders.

RESEARCH AND DEVELOPMENT

The Divisions within the Business Area have focused their R&D activities on the development of technologies helping customers to maximize specific production parameters while at the same time reducing the amount of input materials and energy to a minimum (higher efficiencies and yields with less raw material, use of natural resources, and lower energy consumption). R&D programs address the needs of capital equipment buyers as well as users to lower the total cost per ton produced.

Two major trends are driving customer investments today. First is the goal to reduce the investment cost per ton to its lowest possible level. This is leading to larger, single-line production units with no redundancy of systems. The second trend is to continue to make the production process more sustainable.

Andritz is not only reacting to these trends, but actively developing technologies that offer substantial improvements. Andritz's response to the sustainability requirement is evident in the new systems which have been adapted to the efficient processing of plantation fibers, and technology which consumes much less energy than its predecessors. As part of this, considerable R&D effort is being employed to more effectively utilize biomass as an energy source. Not only does this substantially reduce fossil fuel-based CO_2 emissions, but it also enables many more pulping operations to become virtually energy self-sufficient, or even produce surplus electricity which is supplied to the public grid.

Sophisticated simulation programs are being utilized to improve individual processes. Advanced control systems for all the fiberline process areas are being developed and tested.

The Divisions' R&D programs in detail are as follows:

Wood Processing

The trend in wood processing is towards simple, easy-to-operate, and reliable high-capacity lines. The amount of planted wood being debarked in the forest is growing. In order to serve this demand, the Division has developed bigger lines for both barked and debarked logs. A new chipper with 18 knives (the largest in the world) has been developed to serve bigger lines for barked and debarked wood.

For debarking, a new high-capacity (42 m long and 5.5 m diameter) drum has been developed. The Division also developed a new technology for separating sand and loose bark which can be utilized for processing logs that are debarked in the forest. More efficient washing and cleaning methods based upon a roller conveyor have been developed for conventional log cleaning.

Fiberline Systems

Technology development in the Fiberline Systems Division continues to focus on lowering the investment cost per ton of pulp produced. This is being accomplished through process simplification, increased unit capacities, standardization, and modularization. This development is not only targeted to large greenfield mills, but also to develop cost-competitive solutions for small- and medium-sized lines and also for the modernization of existing lines.

These new product developments are evident in the start-up curves and quality of pulp of recent deliveries. Digester feedline improvements, the larger scale of DD washers, next generation of MC-equipment, and advanced control systems are introduced in these deliveries.

The environmental impact of the chemical pulping process is another important driver in Fiberline technology development. Less chemicals are now required for cooking and bleaching while pulp quality (strength, cleanliness, and brightness) is being improved. Reduced fresh water consumption and correspondingly lower effluent volumes are achieved by new washing concepts and by pressurizing/closing process steps to prevent emissions to the atmosphere. Simplified process designs and improved equipment efficiencies are also consuming less energy.

Many of these developments are now in practical application in the latest Andritz installations, for example at the Suzano Mucuri mill in Brazil, the CMPC Santa Fe mill in Chile, and the Metsä-Botnia mill in Uruguay.

Chemical Systems

The Chemical Systems Division is further developing technologies for environmental sustainability and increased capacities of pulp mills. In terms of capacity, a new lime kiln was designed for an installation in Indonesia with a capacity exceeding 1,000 t/d. A new series of white liquor disc filters with a diameter of 4.4 m will be delivered to Brazil in 2008.

The Division's new concept for green liquor handling has become widely accepted. In 2007, X-Filter green liquor filtration technology was introduced to a new market – India. The application of centrifuge technology for dregs dewatering and washing is gaining acceptance. The centrifuge minimizes the impact of dregs in landfills. With the centrifuge, lime mud can be purged separately in an uncontaminated form, which allows it to be used as a soil amendment.

A system for the selective reduction of phosphorus in the lime circulation will be installed in a mill in Finland, which will enable further closing of the lime cycle and reduction in solid waste and dead-load. Modernizations offer interesting challenges. A new lime kiln technology is now in operation in Brazil which considerably boosts the throughput that can be achieved from an existing lime kiln shell.

Recovery Systems

Due to continuously rising energy costs for pulp and paper producers, a development program was launched in 2006 to introduce advanced biomass-fired power boilers to the industry and the first power boilers are already under construction.

High oil and gas prices have triggered growing interest in using biofuels in lime kilns, which are still significant consumers of fossil fuels in the pulp mill. As experience with the operation of the High Energy Recovery Boiler (HERB) is accumulated, plans for the next steps to increase the electricity generation from black liquor are in place.

Developments to increase the accuracy of CFD modelling (simulation of heat transfer and fluid streams within the recovery furnace) continue, as well as utilization of improved calculation methods for the Andritz automatic control system.

As mills continue to close their chemical circulation loops to reduce emissions, chloride removal is becoming more important. The first leaching-based chloride removal process by Andritz is being constructed in Brazil and this offers a lower cost alternative to the proven ash re-crystallization process.

Technology development in the evaporation process continues to focus on lowering the investment cost. This is being accomplished through process simplification, standardization, and modularization – resulting in fewer engineering hours and shorter delivery times. Significant development efforts have been made to reduce the operating costs of the evaporation. A new patented approach has been developed to address recent trends in thermal and electrical energy prices.

Studies have been conducted on materials to find a more corrosion-resistant material for liquors with high alkaline content. Due to the high price of certain commodities, the emphasis is on finding alternative materials for stainless steels with a high nickel content.

In the pulp mill automation area, the product development for ACE™ advanced control and optimization of a recovery boiler's sootblowing and combustion activities is proceeding at full speed. A pilot project has been agreed upon with a Finnish customer. A mill in China recently ordered the Recovery ACE™.

Since the development of Safety Related Systems (SRS) in 2003, over 20 system packages for processes such as recovery boilers, lime kilns, and power boilers have been sold. Andritz's engineers follow a predefined procedure that covers steps from risk evaluation, through safety controls planning, up to testing, start-up, and normal operation.

Pulp Drying Systems

The research and development focus of the Pulp Drying Systems Division is to increase the production capacity of a single drying line based upon Twin Wire forming technology from approximately 4,000 t/d today to over 4,500 t/d or over 1,300,000 t/y of pulp. Energy consumption of the entire drying line will be reduced by simplifying the process and optimizing the 'biggest energy consumers' in the line (e.g. thermal energy, vacuum sources).

Further development work for the process simulator on the sheet drying line has been carried out. In addition, the first advanced process control using BrainWave® controllers was successfully installed to improve machinery uptime. The next level – optimization – will be accomplished with the ACE™ (Andritz Control Expert) to ensure stable and uniform operation of the machine while minimizing the steam and energy consumed.

Pulp Engineered Services

The Division's leading development program is the OPE® (Overall Production Efficiency) concept, where the target is to enhance production efficiency and maintenance practices in order to secure the highest lifecycle profits for customers.

Supporting the OPE® concept is the Life Cycle Profits (LCP) program, which helps to secure and maximize a profitable operation for customers. Parts of the program are being developed in cooperation with European research organizations. LCP also supports a customer's sustainability targets. The program consists of several elements, where predictive tools for online diagnostics of pulping processes are developed. High importance is attached to developing proactive practices which support process improvements and maintenance routines. One example is the development of sophisticated mill-wide maintenance audit tools. Another is the development of a service for refurbishing chipper wear parts. →

Product innovations such as software tools for improving predictive maintenance are being introduced. An example is the software to determine the most cost-effective timing for changing chipper knives. Another is the software to predict the maintenance needs for hydraulic drives; still another is the smooth functioning of DD washers even under difficult, volatile circumstances. For cooking systems, the Division is continuing the development of screen plates for both continuous and batch digesters. In the recovery area, an advanced diagnostics system helps to improve the efficiency of the recovery boiler operations. A significant part of the development work includes advanced control systems that focus on improving energy efficiency and minimizing the environmental impact of existing mills.

Paper Machines

Technology development for the Paper Machines Division centers around three main items: reduction of investment cost, energy savings, and improved efficiency.

Developments in the tissue group included the introduction of the PrimeDry Steel, a Yankee dryer completely made of welded steel. The main advantages are higher performance and higher operational safety compared to a conventional cast iron Yankee.

In the air engineering department, the focus was on energy-saving equipment. A new step in heat recovery from the exhaust of Yankee hoods – ReEvaporation – has been developed. Condensate is re-evaporated in a heat exchanger by using exhaust air. Up to 25% savings in primary steam is possible.

Additionally, a new web guiding device after the creping doctor, the PrimeTakeOff, has been introduced. The benefits are fewer paper breaks at higher machine speeds.

The modular Yankee hood allows delivery of the huge hood body to the construction site in smaller parts, with final assembly on-site. Parts from different suppliers, some manufactured locally, can be used in this way to minimize cost.

Another focus is to develop advanced solutions for the modernization of board and packaging machines integrating Andritz Küsters and Andritz BMB products.

Fiber Preparation Systems

Increasing system efficiency and reducing energy consumption are the focal points of development in the Fiber Preparation Systems Division. The Division introduced an ash washing machine (SpeedWasher) for Mixed Office Waste (MOW) papers and a pressurized disperser for Old Corrugated Container (OCC) grades.

Mechanical Pulping Systems

The continuous increase of energy prices has led to increased demand from customers for technologies with lower energy consumption. Reducing energy consumption not only lowers production costs, but helps to save energy resources and supports the goal of lowering the emission of greenhouse gases. Another priority is to simplify processes and improve the reliability of equipment to lower investment/operating costs.

The Division modernized its pilot plant in Springfield, Ohio, USA to better meet future requirements, including the application of low-consistency refiners at various process stages, which offers the potential to further reduce energy consumption and simplify the process.

Further development work has been done on a novel pre-treatment process for wood chips prior to the refining stage (RT Fibration), which enhances energy savings and helps improve the pulp quality. The new technology allows/facilitates the use of alternative wood species (e.g. various pine species) which were formerly not desirable for papermaking. One part of the Division's R&D work is focused on the selection and testing of such species as eucalyptus, acacia, birch, maple, bagasse, reed, and kenaf. This supports sustainable development in countries with different wood species or where wood is a rare resource.

A new fiber centrifuge, which separates steam and fibers more effectively after the HC refiner, and a new series of compression devices and refiner plug screws are examples of new equipment introduced to the market.

To cope with more restrictive limits being placed on mills for effluent release, the Division is continuing its development of low-effluent technologies – particularly scenarios where all the effluent streams from a mechanical pulp mill can be collected, evaporated, and incinerated. Fresh water consumption is significantly reduced and valuable chemicals can be recovered. This project is carried out in cooperation with other Andritz Divisions and demonstrates the internal synergies for information exchange and sharing of resources.

Minimizing energy consumption throughout the whole process is also the main focus in the panelboard industry. In a basic research program, the design of the entire fiber processing plant is being evaluated with the target of optimizing fiber quality while reducing energy consumption.

Another priority program is to reduce the moisture content of the raw materials, which reduces the overall energy demand and lowers emissions.

A newly developed system directed to the mixed plastic recycling industry is gaining interest in the market.

With these developments, the Division supports environmental protection, material recycling, waste reduction, and sustainable management of limited resources.

Paper Finishing

Energy efficiency and cost savings continue to be important issues in the paper industry. For the tissue industry, the Division developed the smallest shoe roll ever built – with a diameter of only 710 mm. Patented features like additional lubrication and the edge relief system make it possible to obtain higher dryness without loss of bulk and with the fewest possible belt changes. Cost reduction is very often a question of reliability and availability. The Division's R&D team came up with a new design for the PrimeFeeder technology that makes the entire process significantly more stable and helps reduce the time it takes a paper machine to reach full production after a sheet break. This solution has a patent pending.

Paper Engineered Services

The R&D focus is on improving the efficiency of equipment already installed in a customer's plant to lower the operating costs. This involves optimizing the machine design to conserve energy and increase reliability, especially in the areas of sealing and wear technologies. An excellent example of such a value-added solution is the high-precision CONCEPT rebuilding program for Andritz Twin refiners. CONCEPT not only extends the time between major rebuilds, but also significantly increases the operational efficiency of the equipment.

For dewatering machines, the focus is on introducing wear-resistant technologies for disc filters, Twin Wire presses, and screw presses from different manufacturers. State-of-the-art sealing technologies have been developed and are being retrofitted on these machines.

For the pulping of stock, broke, and recycled fiber, a development program is in progress to enable up to 20% energy savings for the majority of pulpers installed in mills.

In the automation area, a new optical sensor for measuring fiber properties online was introduced. The sensor requires significantly less maintenance and eliminates the need for intense recalibration often required for competitive units. This is a major step toward fully automated pulp production lines.

The Division will continue to make modern technologies available for upgrades and retrofits of existing equipment, regardless of the original supplier, to increase the efficiency of each customer's installation. ○

HYDRO POWER

Business Area Managers

COMPREHENSIVE PRODUCT PORTFOLIO: ELECTROMECHANICAL EQUIPMENT FOR HYDROPOWER PLANTS; PUMPS; TURBO GENERATORS.

Franz Strohmer | Linz | Austria

Harald Heber | Weiz | Austria

Manfred Wörgötter | Graz | Austria

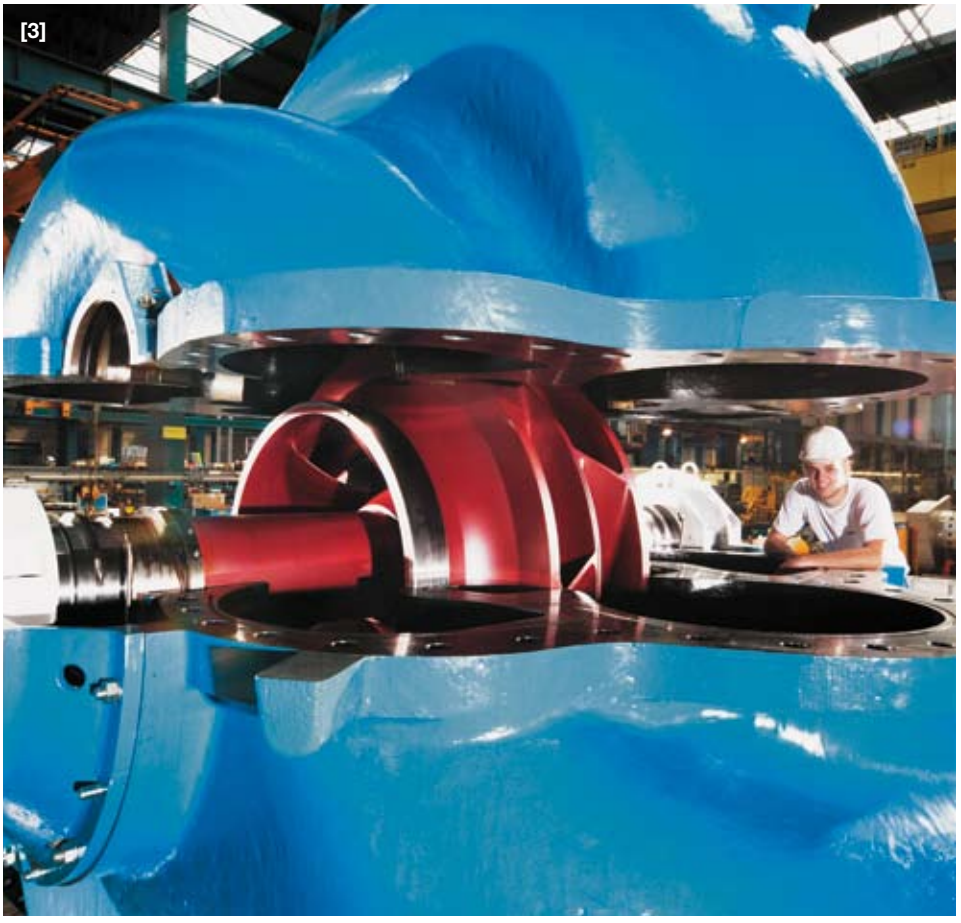

[1]

[1] Large new plants (like the hydropower station constructed by Andritz VA TECH HYDRO in Caruachi, Venezuela, shown in the picture), and small power stations are essential contributions toward sustained, renewable, environmentally friendly energy production.

[2] In the high-growth energy market, gas power stations and combined gas stations cover a large portion of the demand. Modern, efficient turbo generators form a core of these stations. The photo shows the stator of a 175 MVA turbo generator for General Electric.

[3] The global market is asking for ever larger and more efficient pumps specially designed to the customer's individual requirements. The photo shows one of the Andritz pumps supplied to Hui Nan Zhuang pumping station, China. They are the largest pumps of this design ever built anywhere in the world.


[2]


[3]

PROFILE

The Hydro Power Business Area of the Andritz Group is a leading global supplier of turnkey electromechanical equipment and services for hydropower plants. It offers new hydroelectric power stations, as well as services, rehabilitation, and upgrading of existing plants.

The Business Area also offers the development, design, and manufacture of large-scale pumps for selected applications like water transport, pumps for the primary and secondary loops in nuclear power stations, cooling water pumps for thermal power stations, and centrifugal pumps for the pulp and paper industry.

The Business Area also provides the design and manufacturing of air-cooled turbo generators, used for gas and steam turbines.

MARKET DEVELOPMENT

In 2007, project activity for hydropower plant equipment developed very favorably. Due to the continued strong increase in electricity demand, several new hydropower plants are in the planning or construction phase, especially in India and China.

Investments in Europe and North America focused on modernization and rehabilitation, as well as on capacity increasing projects for existing plants. Due to the necessity of securing network stability, pumped storage systems also saw a continued high level of project activity.

Apart from investments by governmental institutions, private investments are also increasing in several countries. Typical examples are Turkey, where the new privatization law has driven local and foreign investors to start new projects, and Canada, where the private sector has become an essential driver of the hydropower development, especially in British Columbia.

The market for small-scale hydropower stations is also seeing a continued positive development. Additional drivers of this segment are the worldwide activities with respect to climate protection and the increase in the use of renewable energy sources.

The market for centrifugal pumps as well as for irrigation and drinking water pumps also showed a very solid development, especially in China. With its successful 60:40 joint venture Andritz-Kenflo in Foshan, Andritz has been the clear market leader in this region for some years now.

The investment activity of the European energy industry has started to increase considerably during the past few years. This trend is likely to continue, not only in the rehabilitation sector but also with regard to new plants, especially thermal power stations, with positive effects on the market for cooling water pumps.

KEY FIGURES HYDRO POWER

MEUR	2007	2006*	2005	2004	2003
Sales	**910.0**	467.9	52.7	43.8	32.0
Order Intake	**1,216.1**	585.4	71.5	58.7	37.3
Order Backlog as of 31.12.	**1,954.9**	1,659.5	60.5	40.7	27.2
EBITDA	**63.6**	33.3	4.8	5.5	3.2
EBITDA margin	**7.0%**	7.1%	9.1%	12.6%	10.0%
EBITA	**49.5**	25.1	2.6	3.8	3.3
EBITA margin	**5.4%**	5.4%	4.9%	8.7%	10.3%
Capital investments	**25.4**	13.5	3.4	2.4	1.7
Employees as of 31.12.	**4,390**	3,678	474	365	302

Note: VA TECH HYDRO was consolidated into the financial accounts of the Andritz Group for the first time in Q3 2006; no pro forma figures for 2006 are available.
* restated

BUSINESS DEVELOPMENT

In 2007, the Business Area developed very favorably. Sales amounted to 910.0 MEUR (2006: 467.9 MEUR), with all Divisions of the Business Area – Large Hydro, Hydro Service, Compact Hydro, Pumps, and Generator Turbo – showing a very solid Sales development. EBITA of the Business Area in 2007 was 49.5 MEUR (2006: 25.1 MEUR). Profitability (EBITA margin) developed as expected and amounted to 5.4% (2006: 5.4%).

Order Intake of the Business Area developed very favorably in 2007, increasing to 1,216.1 MEUR (2006: 585.4 MEUR). All Divisions of the Business Area showed a very satisfactory development.

On September 29, 2007, Andritz VA TECH HYDRO celebrated the delivery of the 500th turbo generator for gas turbines from its workshops in Weiz, Austria to General Electric (GE). This marks an important milestone in the very successful business relationship with GE since the early 1990s.

At Aschach power station on the Danube, which is operated by VERBUND-Austrian Hydro Power (AHP), the implementation phase of the machine renewal project is currently taking place. Reconstruction of the first of a total of four machine sets was successfully completed at the end of March 2007. Work on the second machine set commenced during the Third Quarter of 2007.

In 2006, Salzburg AG had entrusted Andritz VA TECH HYDRO with the contract for delivery of a pumped storage unit supplying 75 MVA for the underground power station at Hintermuhr. In 2007, the overspeed tests of the generator rotor were held successfully. At a runaway speed of 1,492 revolutions per minute, the rotor is subject to forces equivalent to up to 3,000 times the acceleration due to gravity. Andritz VA TECH HYDRO has proved once again that it can ensure high quality even near material stress limits.

Based on its analysis of the Sub-Saharan Africa power plant market, Frost & Sullivan, the world leader in technology and market research for various industries, has conferred the '2007 Africa Frost & Sullivan Award for Customer Satisfaction Leadership in Hydro Turbine Service' to Andritz VA TECH HYDRO for achieving the highest levels of customer satisfaction in hydro turbine services. Frost & Sullivan has interviewed plant managers, who ranked Andritz VA TECH HYDRO as the leading provider in terms of quality of work, technical knowledge, pricing, and delivery times. According to Frost & Sullivan, Andritz VA TECH HYDRO is the leader in hydropower generation and refurbishment services in Sub-Saharan Africa.

MAJOR ORDERS

- In August 2007, the supply and engineering contracts for the construction of the Ilisu hydropower station in southeast Anatolia, Turkey were signed. The total project volume amounts to approximately 1.2 billion Euros, of which 530 million Euros fall to the European supply and engineering consortium, consisting of Andritz VA TECH HYDRO, Alstom, Züblin (a member of international STRABAG Group), Stucky, Colenco, and Maggia. The Turkish project operator, the Turkish government, and the export credit agencies involved have agreed upon a series of comprehensive accompanying measures and requirements for environmental protection, social cushioning, preservation of the cultural heritage, and protection of neighboring countries. Compliance will be monitored by an independent international commission implemented by the export credit agencies. Thus, the project meets the high Western standards of OECD and the World Bank. The order will be put in force in Q1 2008. The Ilisu hydropower station – which is urgently needed in Turkey due to the country's fast economic growth – will have an output of 1,200 MW and will supply two million households with electricity from environmentally friendly hydropower starting in 2014/2015. Compared to a thermal power station, this will help avoid approximately three million tons of carbon dioxide per year, or replace one or two nuclear power stations.

- The Business Area received two major orders from India, thus further extending its excellent market position in the fast-growing Indian hydropower market. For Teesta Urja Limited, Gurgaon, New Delhi, India, Andritz VA TECH HYDRO will supply the complete electromechanical equipment for six vertical Pelton machine sets for Stage III of Teesta Hydropower Station. The total nominal output will be 1,200 MW. The six sets will go online by August 2011. Jaiprakash Industries placed an order with Andritz VA TECH HYDRO to supply four erosion-resistant Francis turbines with a total output of 1,200 MW for Karcham Wangtoo Hydropower Station on the river Satluj. These four units will also go onstream by August 2011. Both the Satluj and the Teesta rivers carry large amounts of sand from the Himalayas during the rainy season. Due to its high quartz content, this sand can cause major erosion damage to the turbine parts. Therefore, the aspect of erosion-resistance was given special attention in the turbine design. In addition, all turbine runner surfaces in contact with water will be provided with a very hard, special ceramic coating.

- Electromechanical equipment for a new weir power station on the Rhine will be delivered for Rheinkraftwerk Albbruck-Dogern AG, 77%-owned by German RWE. Together with the existing facilities, the power station will supply electricity to more than 180,000 households. The heart of the new plant will be a bulb turbine generator set with a runner diameter of 6.1 m.

- Andritz VA TECH HYDRO AG, Vevey was awarded a contract to deliver four MicroGuss™ Pelton runners to Chhukha, Bhutan. Each of the four units has an output of 84 MW and consists of 21 buckets with a total weight of more than 17 tons. Andritz VA TECH HYDRO was able to win the contract thanks to the outstanding reliability of the proven MicroGuss™ Pelton technology installed in more than 300 hydropower plants worldwide. In Bhutan, where approximately half of the electricity produced is exported, hydropower has become a very important source of electricity generation, thus supporting the strong growth of the country's economy.

- After having successfully rehabilitated unit 1, Andritz VA TECH HYDRO also obtained the order for rehabilitation of units 2–5 of the Rock Island hydropower station, the oldest hydropower station on the Columbia River, Washington, USA. One of the decisive criteria for the order award by Chelan County Public Utility District was the fish-friendliness of the design offered. A habitat conservation plan aims at improving the migration of the red salmon in this region.

- Refurbishment of hydropower plants to the north of Rome will be carried out for Endesa Italia by Andritz VA TECH HYDRO through its affiliate VA TECH Escher Wyss S.r.l. in Schio, Italy. In total, this supply includes six Francis turbines and two Kaplan turbines, as well as new power systems and complete plant automation based on the Andritz VA TECH HYDRO NEPTUN concept.

- SAF Hydroelectric, LLC placed an order with VA TECH HYDRO USA Corp., a member of the Andritz VA TECH HYDRO Group, to install HYDROMATRIX® units at the lower Saint Anthony Falls Lock & Dam in Minneapolis, Minnesota, USA. The 16 units will produce a total of 10 MW. SAF Hydroelectric was created for the purpose of developing the Lower Saint Anthony Falls Project and is majority-owned by Brookfield Power, a major producer of hydropower in North America. The HYDROMATRIX® Turbine-Generator concept is a leading solution for the development of hydropower at existing low dams and gate structures, utilizing a factory assembled grid or 'matrix' of small propeller turbine-generator units. This contract represents years of engineering and development in close relationship with the customer to bring this first major U.S. HYDROMATRIX® project to fruition.

- IRIDE ENERGIA S.p.A., Turin awarded a contract for refurbishment of the mechanical part of the Rosone hydropower plants to Andritz VA TECH HYDRO, through its affiliate VA TECH Escher Wyss S.r.l., Schio, Italy. The plant is located in the Piedmont Region, northwest of Turin in the Orco valley. VA TECH Escher Wyss will be responsible for the design engineering, manufacturing, installation, and commissioning of two horizontal Pelton units with an output of 41 MW each.

- VA TECH HYDRO AS, Norway received an order from Statkraft for the supply of four new Francis runners for the Tokke hydropower plant. Tokke is one of the largest power stations in Northern Europe, generating approximately 430 MW with four turbines harnessing the 394 m drop from the Vinjevatnet Lake to Bandak. The basis of this order was the successful new runner design, leading to increased efficiency above the guaranteed values. The performance was verified both in Andritz VA TECH HYDRO's laboratory in Vevey, as well as in the laboratory of the University of Trondheim.

- VA TECH BOUVIER HYDRO S.A.S. will deliver hydropower equipment including two Compact S-type turbines with a runner diameter of 2.6 m for the Dafnosonara hydropower station, located on the Acheloos River, for Terna S.A.; Terna is an important private Greek energy producer with an installed capacity of 130 MW wind power and 147 MW thermal power. The Dafnosonara hydropower station will have an installed capacity of 8.5 MW.

- Electromechanical equipment for six hydropower plants in the Harrison Lake region was sold to Peter Kiewit Sons Co., Richmond, British Columbia, Canada. The contractor and Andritz VA TECH HYDRO have established intensive collaboration to develop the design and technical parameters, resulting in optimization of the whole system.

  The award of this contract and the fast development of hydropower in the province of British Columbia have prompted Andritz VA TECH HYDRO to open a new branch office in the Greater Vancouver area in late 2007 to enhance the sales and project management activities.

  This successful cooperation was strengthened and continued with another order: Peter Kiewit Sons Co. awarded VA TECH HYDRO Canada Inc. a contract for the supply of the electromechanical equipment for the East Toba and Montrose water power plants situated approximately 190 km northwest of Vancouver, British Columbia. Andritz VA TECH HYDRO will deliver two complete machine sets for each plant, with a maximum output per set of 73 MW for East Toba and 44 MW for Montrose. The delivery includes six-jet Pelton turbines, digital speed governors, spherical valves, generators, and excitation. The two power stations will generate an average of 750 GWh of electricity per year, which is sufficient to cover the electricity demand of 75,000 households and represents a savings of approximately 455,000 tons of greenhouse gases per year.

- To BC Hydro, VA TECH HYDRO Canada Inc. will supply three turbines, generators, and governors, as well as related electrical and mechanical auxiliaries for the redevelopment of the Aberfeldie Generating Station, located on the Bull River, 30 km east of Cranbrook in the province of British Columbia, Canada. The Aberfeldie dam and generating facility will assist in filling the growing supply/demand gap for electricity in British Columbia producing enough clean energy to supply 10,500 residential customers annually. →

- Electrogoes S.A. entrusted VA TECH HYDRO Brasil with the electromechanical equipment supply for the new Rondon II power plant on the Comemoração River between the cities of Pimenta Bueno and Vilhena in the state of Rondonia, Brazil. The supply comprises three 25 MW vertical Francis units, penstocks, bifurcations, and inlet butterfly valves.

- Pend Oreille PUD (Public Utility District), State of Washington, USA signed a contract with VA TECH HYDRO USA for the rehabilitation and upgrade of the four 19.6 MW Kaplan units installed at its Box Canyon power plant. The plant, located approximately 50 km from the Canadian border, was commissioned in 1955. The scope of work includes the design, model testing, and supply of four new Kaplan runners, rewinding the four generators, supply of new governors and controls, and the field rehabilitation of all turbine and generator components.

- The Cengiz Group, a private Turkish investor, entrusted Andritz VA TECH HYDRO with the modernization of the complete secondary equipment for the Oymapinar power station, Turkey. The goal lies in the accomplishment of a fully automatic power station with the possibility of remote control. This order marks Andritz VA TECH HYDRO's entry into the developing rehabilitation market of Turkey.

- From Illwerke AG, Vorarlberg, Austria, Andritz VA TECH HYDRO received an order for replacement of two further rotors in Rodund I pumped storage plant, located in the Montafon region in the westernmost part of Austria. The renewal of the first two machines had been awarded to Andritz VA TECH HYDRO in 2004. The horizontal machines built in 1943 will be prepared for an output increase of over 20%, which can be achieved after future replacement of the stators. Rodund I provides an important contribution for the growing need of the European power grid for regulating and peak energy, caused by, among other things, the rapidly growing but inherently volatile wind power. With its pumped storage power plants, Illwerke is additionally making an essential contribution towards flood protection in this region.

- Regional utility company CVA (Compagnie Valdôtaine des Eaux), Italy entrusted VA TECH Escher Wyss S.r.l. in Schio, a member of the Andritz VA TECH HYDRO Group, with the contract for modernization of the 10.4 MW electromechanical equipment at Fauburg hydropower station. The decisive factor in this order award was the long-term, good experience that this customer has had with Andritz VA TECH HYDRO.

- The Order Intake for centrifugal pumps progressed well during 2007 and reached a new record. The total of pumps ordered amounted to approximately 5,600, including major orders from Germany and orders for medium-consistency pumps of the new MC series from China.

- To Navayuga Engineering Company Ltd. Multi-Disciplinary Construct. Eng., Hyderabad, India, the Business Area will supply five vertical large irrigation pumps.

RESEARCH AND DEVELOPMENT

In the field of hydraulic R&D, both order-related developments and basic innovations were carried out successfully. In the Tokke, Norway and Larona, Indonesia contracts (two Francis rehabilitation projects), the excellent performance of the new runner designs was the basis for receiving the contract awards for further runner deliveries. Hydraulic engineering studies were also initiated in other areas in order to provide clients with advanced and detailed information in a very early project stage (e.g. model test for a pump turbine upgrade in the UK; CFD analysis of a complete Kaplan unit on the Columbia River, USA; transient and safety analyses for a pumped storage plant in Switzerland prior to a planned increase of the dam height).

The progress in dynamic simulations of hydraulic machines has been impressive, both in the field of unsteady CFD as well as in dynamic structural analysis, and was presented at renowned international conferences.

For bulb units in the head range above 20 m, a new generation of 5-bladed runners has been developed and successfully tested on a model for a contract in China.

The excellent hydraulic performance of our new multi-jet Pelton designs was verified both on the model (Bassi contract, India) and on-site (Gerlos contract, Austria).

The development of large pumps for India and China, as well as the basic developments for new pump turbines, benefited from the synergies between the two product lines.

R&D activities in the field of hydrogenerator cooling focused on the optimization of several components of the ventilation circuits and on the enhancement of numerical tools for the ventilation design. Good results have been achieved by means of CFD analysis, particularly for rotor-driven axial flow fans.

Stringent health and safety legislations worldwide require low noise emissions in workplaces. In order to improve the precision of noise prediction, an initiative to assess noise sources as well as transfer paths in operating hydroelectric machines has been started.

Based on operating experience with the newly developed StrafloMatrix™ Generator, which has been running in an Austrian hydroelectric power plant for over two years, the special design of the high voltage stator winding, as well as the heat transfer from the end winding, were optimized.

In the course of cost reduction programs and the generator value-analysis project, a number of new technical concepts were analyzed. A concept for global impregnation of large diameter stator cores, a new plate-rotor design, and an alternative damper winding fixture are among the most promising concepts.

Investigations into concepts for cost and machine operation efficiency resulted in essential improvements of the bearing design.

Investigations for a considerable increase in bulb-type generator output led to a 'Thermo-mechanical Decoupled Stator Concept' for these generators. After detailed FEM simulations, a prototype generator was installed at the Freudenau hydropower station in cooperation with VERBUND-Austrian Hydro Power. Extensive testing of the new concept was carried out and showed excellent results.

The current main focus in the area of pumps is on the development of a pump series to convey medium-consistency liquids. The first milestone – proof of the functioning of unique features – was passed successfully. This development has already yielded the first order – for nine pumps. Following intensive trial stand testing in the laboratory in Graz, the first units were installed at the beginning of October to confirm series production capability.

Commercialization of a new process pump series marked an essential step forward in the extension of the existing product portfolio and the renewal of existing products in the pump sector; new product developments and advancements of the existing program will be continued in 2008.

A product value analysis project is being carried out for large pumps, from which clear improvements towards cost-effective designs can be seen to emerge.

One focus of R&D activities was on technologies in the field of hydropower plant automation. SAT250, the cutting-edge control center and operator station system, has been optimized in the low-cost range, functionally and ergonomically. The system now covers all man-machine interfaces in a hydropower plant, from small turbine governor panels to sophisticated multi-site control centers for power plant groups. In electrical protection and excitation, traditional fields of HYDRO Automation's R&D, two new devices have been introduced to the market; even more importantly, a very new platform, the first technologically unified protection/excitation platform in the world, has been defined. HYDRO Automation is deeply involved in the definition and implementation of the upcoming international standard for hydropower plant automation devices and systems, IEC 61850-7-410. ○

ROLLING MILLS AND STRIP PROCESSING LINES

Business Area Manager

[1] The annealing and pickling line for cold-rolled stainless steel strip that Andritz delivered to Shanghai Krupp Stainless (SKS), China handles strip thicknesses from 0.3 to 3.0 mm and strip widths of up to 1,340 mm at speeds of up to 120 m/min. Shown here is the upcoiler group (upcoiler operating speed up to 200 m/min, with simultaneous, crease-free feed of protective paper; upcoiling with exactly placed edges).

[2] The annealing furnace developed and constructed by Andritz Thermtec for SKS is one of the most advanced annealing plants for low-thickness stainless steel strip worldwide. At temperatures of up to 1,240°C, depending on the stainless steel grade, the strip's crystal structure is rearranged.

[3] The annealing and pickling line for cold-rolled stainless steel strip supplied by Andritz to Taiyuan Iron and Steel (TISCO), China, one of the largest worldwide, was taken over by the customer in 2007. The plant processes 500,000 metric tons of stainless steel strip per year (strip width: 800 – 1,320 mm; strip thickness: 0.3 – 3.0 mm). Shown here is the pickling section.


[1]


[2]


[3]

PROFILE

The Rolling Mills and Strip Processing Lines Business Area designs and builds complete lines for the production and further processing of cold-rolled stainless steel, carbon steel, and non-ferrous metal strips. These lines consist of equipment for cold rolling, surface treatment, strip coating and finishing, stamping and deep drawing, and acid regeneration. Key equipment is developed in-house and manufactured at the Business Area's own facilities.

The Andritz Group is one of the very few single-source suppliers worldwide capable of providing all technologies and processes involved in the manufacturing of stainless steel strip (cold-rolling, annealing, pickling, and finishing) on a comprehensive basis (mechanical, process, and electrical equipment). This ensures minimized interfaces and takes the interdependencies of the overall process into consideration.

MARKET DEVELOPMENT

In 2007, the market for carbon steel and stainless steel equipment developed very positively. Project activity was high in all major steel producing regions worldwide, especially in Europe, the USA, Russia, China, and India. Several orders for new plants and the modernization of existing steel mills were awarded. For the full year 2007, global crude steel production is expected to increase by approximately 8% compared to last year, to approximately 1,350 million tons.

In the stainless steel sector, project activity for the modernization of existing plants, as well as for new plants, also developed positively. The continued strong demand for stainless steel, especially from the fast growing economies like India and China, was the main driver for this development. For the full year 2007, market researchers expect global stainless steel production to increase by approximately 9% compared to 2006.

Sources: ISSF, IISI, MEPS

KEY FIGURES ROLLING MILLS AND STRIP PROCESSING LINES

MEUR	2007	2006	2005	2004	2003
Sales	**408.0**	450.5	275.9	235.4	173.1
Order Intake	**636.4**	401.9	444.8	266.7	287.6
Order Backlog as of 31.12.	**631.6**	403.7	458.9	293.1	265.4
EBITDA	**32.1**	32.8	18.2	14.3	6.6
EBITDA margin	**7.9%**	7.3%	6.6%	6.1%	3.8%
EBITA	**29.7**	30.6	15.9	12.1	4.4
EBITA margin	**7.3%**	6.8%	5.8%	5.1%	2.5%
Capital investments	**3.2**	2.3	2.2	3.2	1.4
Employees as of 31.12.	**880**	819	749	736	533

BUSINESS DEVELOPMENT

The Business Area's Sales amounted to 408.0 MEUR, which is a decrease of 9.4% compared to 2006 (450.5 MEUR). Many large orders have been in their initial processing stages, especially during the Second Half of 2007, thus making low Sales contributions. Despite the decline in Sales, EBITA, at 29.7 MEUR in 2007, was practically unchanged compared to last year (2006: 30.6 MEUR). As a result, EBITA margin surged to 7.3% (2006: 6.8%).

Order Intake in 2007 developed very favorably. At 636.4 MEUR, it surged by 58.3% compared to 2006 (401.9 MEUR), thus reaching a new record level. Orders were received from customers in all major steel producing regions, confirming the strong competitive position of Andritz as a leading global supplier to the international steel industries.

During the reporting period, the following important projects were successfully finalized:

- Andritz successfully finished the rebuilding and rehabilitation of the stainless steel annealing and pickling lines of ThyssenKrupp Nirosta, Krefeld, Germany. These lines, supplied and installed by Andritz in 2003, had been damaged in a fire. Rebuilding was finished six weeks ahead of schedule and with even better technological parameters. By placing the order with Andritz, ThyssenKrupp Nirosta has confirmed its satisfaction with the installations and underlying services provided by Andritz.

- Wuhan Iron and Steel (WISCO) signed the final acceptance certificate for the hydrochloric acid regeneration plant supplied by Andritz. The scope of supply consisted of two regeneration plants, one silica reduction plant, and one waste acid purification plant. The total capacity is 15,200 l/h. The customized technology meets all the contractual guarantee figures for the highest quality of purified iron oxide on the market.

- Vacuumschmelze GmbH (VAC) in Hanau, Germany signed the final acceptance certificate for the engineering, erection, and commissioning of a 20-high mill, which was delivered on a turnkey basis including all necessary hydraulic, coolant circulation, and filtration systems. The customized mill technology meets all the contractual guarantee figures for the highest operational reliability and productivity of the mill as well as flatness, thickness, and quality of the product.

- Taiyuan Iron and Steel (Group) Co. (TISCO), China's largest stainless steel producer, signed the final acceptance certificate for one of the world's largest annealing and pickling lines for cold-rolled strip supplied by Andritz. The line processes stainless steel in the thickness range from 0.3 to 3.0 mm and up to 1,320 mm wide, with an annual capacity of 500,000 metric tons. In addition, Andritz received the acceptance certificate for a tension levelling line from the same customer. The strip to be treated with the tension levelling line is stainless steel in the thickness range from 0.2 to 2.0 mm and up to 1,300 mm wide; annual capacity is 200,000 metric tons.

- From voestalpine, Linz, Andritz received the acceptance certificate for an inspection line, dimensioned for a strip width of 700 – 1,759 mm. The line is equipped with two uncoiler sections, a rotating cut-to-length line in the entry section, a laser welder, side trimmer and center-cut shear, and a strip oiling system in the exit section, as well as a horizontal strip inspection cabin.

MAJOR ORDERS

- An electrolytic galvanizing plant for steel strip with an annual capacity of 300,000 tons will be delivered to Baosteel Ltd., Shanghai, the largest steel producer in China. This is the second electrolytic galvanizing plant that Andritz will supply to Baosteel, which confirms the customer's satisfaction with the performance of the Andritz system already installed.

- Baosteel Shanghai No. 1, China ordered a cold-rolled strip annealing and pickling line for stainless steel, including inline and offline skin pass mills. This is the second annealing and pickling line that Andritz will supply to Shanghai No. 1, after having received an order for a hot-rolled strip annealing and pickling line from the same customer last year.

- North America's largest integrated stainless steel producer, North American Stainless, a member of the Acerinox Group, awarded Andritz a contract for one of the world's largest annealing and pickling lines for hot-rolled stainless steel. With a capacity of approximately 1.2 million tons per year, the plant will process strip in the thickness range from 1.5 to 14 mm and up to 1,600 mm wide. In addition to the mechanical equipment, Andritz will supply the annealing furnace and the complete pickling section with all ancillary equipment.

- Several orders were received from the Russian steel company NLMK, Lipezk:

  - A complete hot-dip galvanizing plant with an annual capacity of approximately 300,000 tons. This is the second hot-dip galvanizing plant that Andritz will supply to NLMK.

  - A combined four-high/S6-high reversing cold-rolling mill for silicon strip for Lipezk, and a four-high reversing cold rolling mill for silicon strip for NLMK's affiliate Viz Stal, Jekatarinenburg. Andritz will supply the complete mechanical systems as well as all electrical and ancillary equipment.

  - A complete high-tech color coating line for applications in the automotive industry. This is the second complete line of this kind that Andritz will supply to NLMK.

- The Business Area obtained the second order for a Pyromars Mixed Acid Recovery plant from Lianzhong Stainless Steel Corporation, China, an affiliate of E-United Group, Taiwan. Each plant has a capacity of 6,500 l/h of waste mixed acid, making these two the biggest Pyromars plants ever built worldwide.

- A precision-strip 20-high cold rolling mill was sold to Luoyang Copper, the largest Chinese producer of copper and copper alloys. Andritz Sundwig will supply the rolling mill, including the complete automation and drive packages. This mill will be the first of its kind in the Chinese nonferrous industry.

- To VOSTA Stahlhandel GmbH, Germany, Andritz Sundwig will deliver a cut-to-length line, including a multi-roll leveller for a maximum thickness of 20 mm. The strip to be processed is carbon steel of up to 2,100 mm width. In addition to the mechanical equipment, Andritz will supply the complete electrical system.

- Andritz Sundwig received an order from Outokumpu Stainless AB Thin Strip, Nyby, Sweden for the supply of a grinding line for high-alloy austenitic and Duplex steels for up to 6 mm strip thickness and strip widths of up to 1,600 mm. This system will be the second Andritz Sundwig line in the Nyby mill and will have an annual capacity of 120,000 tons.

- Andritz Sundwig also received an order from ThyssenKrupp AST, Terni, Italy for extending an existing annealing and pickling line for hot-rolled stainless steel strip of up to 1,600 mm width and up to 7.0 mm thickness. The scope of supply includes two-high tandem rolling mills in the patented S6-high configuration with the complete inlet section for direct rolling of the black hot strip. With this order, Andritz has again demonstrated its leading position for this kind of cold-rolling application.

- Andritz Sundwig received an order from TPCO Yuantong Stainless Steel Ware Corp., Ltd. for the engineering, erection, and commissioning of a tension levelling line. The material to be processed is in the thickness range from 0.15 to 2.0 mm and up to 1,350 mm wide; annual capacity is 160,000 metric tons.

- ThyssenKrupp USA ordered an annealing and pickling line for cold-rolled stainless steel strip of 1,890 mm maximum width and 3.5 mm thickness with an in-line skin pass mill. The line is designed for an annual production of 500,000 tons.

- Andritz Sundwig is to supply a hot-dip galvanizing plant to voestalpine Stahl GmbH in Linz, Austria, as part of the Linz 2010 project. This plant will produce strip ranging from 800 to 1,750 mm in width, with thicknesses between 0.4 and 2.0 mm. The product quality and output of 400,000 tons p.a. are geared to producing top-quality surface finish, as well as new high-strength steel grades for the automotive industry, the household goods sector, and for steel profiles/building components. This is already the third hot-dip galvanizing plant for voestalpine supplied by the Andritz Group.

- Andritz received an order from Salem Steel, a subsidiary of SAIL-India, for an annealing and pickling line for stainless steel strip with a maximum width of 1,300 mm and a maximum thickness of 6 mm. Included in the contract is an acid recovery plant based on the Pyromars technology (the first plant of this kind to be implemented in India).

- Andritz Kaiser received an order from Gutbrod Group, Germany, a subsidiary of voestalpine AG, Linz, Austria for delivery of a 2,500-ton press to manufacture parts for the automobile industry. This will be the largest press built by Andritz Kaiser to date.

RESEARCH AND DEVELOPMENT

In 2007, the Business Area's R&D activities focused mainly on new coating technologies using electro-galvanizing and CVD (Chemical Vapor Deposition) technology. Pilot plants for both processes produced material that is used for application tests at potential customers.

In HCl recovery systems, the iron oxide by-product is important for the economy of the process. New process routes were investigated in order to produce iron oxide for the pigment market.

The delivery program of new-generation punching and metal-forming presses was extended. The new generation of presses features a modular design, which allows flexible adaptation to customer demands. ○

ENVIRONMENT AND PROCESS

Business Area Managers

COMPREHENSIVE PRODUCT PORTFOLIO FOR MECHANICAL AND THERMAL SOLID/LIQUID SEPARATION.

Johannes Kappel | Graz | Austria
Separation Technologies

Werner Hölblinger | Graz | Austria
Thermal Process Technologies

[1] The five HBF pressure filtration lines, each with 168 m² filter surface, supplied by Andritz to Alunorte do Brasil, Barcarena, Brazil were started up in 2007 and are in full operation. The plant dewaters over 700 m³ of bauxite suspension per hour, from between 50 and 60% to over 85% dry solids.

[2] Palm oil has become one of the most popular oils for cooking and for industrial food processes. Andritz palm oil filter presses are used to separate olein and stearin to meet different product specifications.

[3] Andritz built the world's largest sludge dryer for the cement industry, in Karlstadt, Germany. The waste heat from the cement factory is used for drying, and the dried sludge is used as fuel in the factory. The entire mineral portion is integrated in the cement. Thus, the sludge is sustainably reused, leaving behind no waste.

[4] The belt dryer developed by Andritz 3Sys is designed for optimum recovery of waste heat. The photo shows the plant in Karlstadt.

PROFILE

The Environment and Process Business Area covers a comprehensive range of technologies, products, and services for mechanical and thermal solid/liquid separation for municipalities and major industries, such as coal and mineral processing, chemical/petrochemical, and food processing.

The Business Area is a global leader in this field and offers comprehensive support, from design to the manufacture of key components for thickening, dewatering, drying, and incineration, as well as erection and start-up of turnkey plants, including automation and safety engineering.

The large installed base of Andritz products and systems, including more than 10,000 centrifuges, more than 10,000 filter presses, and over 100 sludge drying lines worldwide, is serviced from more than 15 dedicated Andritz service centers in Europe, the Americas, Asia, South Africa, and Australia.

MARKET DEVELOPMENT

During 2007, the market for sewage sludge dewatering equipment developed very solidly, especially in Asia and the USA.

Project activity for industrial applications for the petrochemical, minerals, mining, and food processing industries was very high in most regions of the world. In parallel, the demand for dewatering equipment to treat industrial sludges remained at a very high level.

Project activity for sludge drying plants mainly focused on the UK, Turkey, the Arabic States, and Southeast Asia. Due to rising fuel prices, the demand for refurbishments of drying plants with combined heat and power solutions, heat recovery, and plants with combined incineration has developed favorably.

The rising demand for alternative fuel sources has resulted in orders for dewatering of residues from bioethanol production and in high project activity for equipment and systems to dry various sorts of biomass, specifically wood chips and sawdust, as well as sugar cane bagasse for the production of pellets.

BUSINESS DEVELOPMENT

In 2007, Sales of the Business Area amounted to 364.5 MEUR, which is a slight decrease compared to 2006 (366.5 MEUR). In particular, the Separation Technologies Division showed a very solid Sales development during the reporting period.

EBITA of the Business Area increased to 25.3 MEUR in 2007, up 23.4% compared to 2006 (20.5 MEUR).

Order Intake in 2007 reached 346.9 MEUR, practically unchanged compared to the high level achieved last year (344.2 MEUR). While orders in the Separation Technologies Division continued to show good organic growth, Order Intake in the Thermal Process Technologies Division declined compared to 2006.

KEY FIGURES ENVIRONMENT AND PROCESS

MEUR	2007	2006	2005	2004	2003
Sales	**364.5**	366.5	289.2	217.9	110.4
Order Intake	**346.9**	344.2	340.1	200.7	110.2
Order Backlog as of 31.12.	**161.1**	179.3	202.2	138.3	113.8
EBITDA	**30.3**	25.6	22.0	12.6	3.3
EBITDA margin	**8.3%**	7.0%	7.6%	5.8%	3.0%
EBITA	**25.3**	20.5	17.7	9.9	1.5
EBITA margin	**6.9%**	5.6%	6.1%	4.5%	1.4%
Capital investments	**4.9**	6.5	6.6	7.9	1.5
Employees as of 31.12.	**1,350**	1,324	1,213	926	428

MAJOR ORDERS

Separation Technologies

- Two large filter presses will be delivered for a titanium dioxide plant in the Ukraine.
- A total of six large filter presses for dewatering of kaolin was ordered by customers in Brazil.
- Four Hyperbaric Filters (HBFs) for fine coal dewatering will be delivered to the Ukraine and China.
- Three centrifuges with a diameter of 1,100 mm were sold to a customer in Saudi Arabia for dewatering of HDPE (High-Density Poly-Ethylene).
- Nine large centrifuges will be delivered to various plants worldwide for the production of melamine; four centrifuges were sold for a potash plant in Russia.
- A customer in Korea ordered four large centrifuges for the production of bisphenol. A similar plant in Taiwan will use the same type of centrifuges.
- The Division was awarded a contract to deliver six large screens for the storm water overflow system of the city of Detroit, USA.
- A gold washing company in Russia decided to look for a new filter press supplier and bought two large Andritz filter presses due to their superior reliability.

Thermal Process Technologies

- Sodawerke Staßfurth, Germany ordered a 1,000 t/d fluid bed plant for conversion of light soda ash from the Solvay process to dense ash using Andritz's monohydrate process.
- The Division was awarded a contract to deliver a sludge drying plant with a water evaporation capacity of 4.9 t/h for the city of Antalya. This will be the first plant of its kind in Turkey.
- Schwenk Cement, Germany placed an order for a belt dryer plant with a water evaporation capacity of 10 t/h for Bernburg, Germany; this customer had ordered an 8 t/h plant for the Karlstadt, Germany factory in 2004.
- Ticona Germany, a company of the Celanese Group, ordered two fluidized bed dryers for POM, a specialty polymer. The planned extension of Frankfurt Airport contributed to this project as this is part of Ticona's plant relocation from Kelsterbach to Hoechst Industrial Park.
- A belt dryer plant with a water evaporation capacity of 3 t/h will be supplied for Radom, Poland; this is the first belt dryer order from Poland.
- A belt dryer with 8.15 t/h water evaporation capacity was sold to Nuh Cimento, one of the largest cement producers in Turkey.
- A major PVC producer in the USA placed an order for a turnkey fluid bed drying and cooling system for Suspension-PVC (S-PVC), including mechanical dewatering with Andritz Bird solid-bowl decanter centrifuges; the plant will be located in the Midwest of the USA.
- The city of Cape Coral, Florida, USA, ordered a drying system (2 lines with 5 t/h water evaporation) for its new wastewater treatment plant expansion. Similar plants have been constructed by Andritz in Florida at Jacksonville, Pinellas County, Hillsborough County, and Bonita Springs.

RESEARCH AND DEVELOPMENT

Research work in the Separation Technologies Division continued to concentrate on the optimization of the centrifuge product range in order to further enhance performance and/or reduce manufacturing costs. Another focus area was the standardization of the filter press product family in order to shorten delivery times and reduce costs.

Driven by increasingly stringent requirements for highly efficient odor control systems, further efforts and tests have been conducted to minimize odor and TOC (Total Organic Carbon) compounds in the offgas from sludge drying plants. Especially for sewage sludge with its unpredictable range of odorous substances, extensive R&D work is done to develop a reliable and ecological odor control system that – unlike thermal oxidizers – does not consume further primary energy and cause additional pollution by CO_2.

Based on the strong market demand for biomass drying, the development of a large-scale belt dryer for biomass with an evaporation capacity of up to 16 t/h has been started with the target to achieve utmost energy efficiency by heat recovery from drying gases. This dryer will operate with nearly closed drying air loops and also recover the energy from the minimized dryer offgas stream. It will be able to run on waste heat or offgas from other processes as well as from combined heat and power plants (CHPs).

Also with respect to biomass drying, intensive pilot tests were carried out with a pilot-scale drying plant to obtain design and feasibility data for belt drying on various biomass materials such as sawdust for pellet mills, spent grain from breweries, rejects, sugar cane bagasse, and bark from the pulp and paper industry. ○

FEED AND BIOFUEL

Business Area Manager

[1] Andritz Sprout has supplied four hammer mills, type Multimill 1400, to the Belgian energy company Electrabel. The hammer mills are used to grind wood pellets to dust, which is burnt with support of coal dust in the power station boiler, thus replacing fossil fuel and helping to reduce CO_2 emissions. Successful operation of the machines installed has prompted Electrabel to place an order for another four units.

[2+3] Andritz Sprout has supplied the grinding and pelleting lines as well as the associated conveying equipment and controls for production of 125,000 tons of wood pellets per year to be exported to Europe by Appling County Pellets, LLC, a fully owned and operated subsidiary of Fram Renewable Fuels, LLC of Savannah, Georgia, USA. Pictured below are [2] the line of five Andritz Sprout 26LM pellet mills with CM901 conditioners and [3] the cooler and the Andritz Sprout Roto-Shaker that is used to remove any fines from the pellets after cooling and prior to load-out. Wood fuel pellets play an essential role in generating electricity and reducing fossil fuel emissions.


[1]


[3]


[2]

PROFILE

The Feed and Biofuel Business Area is a global market leader for supplying process machines and systems, pellet mill consumables, such as dies and rolls, and other technical services to the animal feed industry, the pet food industry, and the fish and shrimp feed industries. The Business Area also holds a leading position in the fast-growing markets for wood fuel pelleting and for pelleting of agricultural and industrial by-products.

The Business Area has four main sites: Esbjerg, Denmark; Geldrop, the Netherlands; Muncy, PA, USA; and Humenné, Slovakia. It operates globally from ten regional sales and service offices and five manufacturing sites, being supported by a strong network of distributors and sub-suppliers.

All companies of the Business Area operate worldwide under the brand name of Andritz Sprout.

MARKET DEVELOPMENT

In 2007, the investment activity in the animal feed sector continued to develop favorably, with Eastern Europe, Russia, Asia, and Central and South America being the most active regions. The positive development was mainly driven by expansion projects of large international vertically integrated meat producers, as well as medium-sized regional companies.

Project activity in the aquatic feed industries also continued its strong development. In particular, South America and Asia have been very active markets, with projects focusing on both plant expansions and greenfield mills. The pet food industry also developed positively; the most active regions were Western and Southern Europe and South America.

The renewable energy sector showed very good project activity during the reporting period. The wood pelleting industry released several new projects for greenfield mills, as well as for the modernization of existing plants, both in Northern Europe and North America, as well as in the 'new regions' for wood pelleting: Southern Europe, South America, and Southeast Asia.

BUSINESS DEVELOPMENT

The Business Area's Sales in 2007 amounted to 137.8 MEUR, which is an organic growth of 14.3% compared to 2006 (120.6 MEUR). EBITA and profitability were also higher than in 2006. EBITA, at 13.3 MEUR in 2007, increased by 25.5% compared to 2006 (10.6 MEUR), thus surpassing the Sales growth. As a result, EBITA margin was further enhanced to 9.7% (2006: 8.8%).

Order Intake also developed very favorably, achieving a strong organic growth. It increased to 143.7 MEUR (2006: 127.1 MEUR). Order Intake was particularly strong for animal feed plants, aquatic feed extrusion lines, and wood pelleting systems.

KEY FIGURES FEED AND BIOFUEL

MEUR	2007	2006	2005	2004	2003
Sales	**137.8**	120.6	93.6	99.6	99.2
Order Intake	**143.7**	127.1	101.2	92.0	102.0
Order Backlog as of 31.12.	**35.3**	30.2	23.6	16.0	24.5
EBITDA	**15.2**	12.9	9.8	5.1	7.4
EBITDA margin	**11.0%**	10.7%	10.5%	5.1%	7.5%
EBITA	**13.3**	10.6	7.2	2.2	4.8
EBITA margin	**9.7%**	8.8%	7.7%	2.2%	4.8%
Capital investments	**1.7**	1.7	0.9	1.6	6.6
Employees as of 31.12.	**553**	531	489	482	549

MAJOR ORDERS

- Based on its strong market position and the favorable market conditions, the Business Area was able to book several orders for large animal feed lines from customers in Asia, Central and South America, Eastern Europe, and Russia.

- A significant number of orders for fish feed extrusion lines was received from aquatic feed companies in South America, Asia, Northern Europe, and the Mediterranean region. Customers in South America and Western Europe placed orders for pet food extrusion equipment.

- In the biofuel sector, the Business Area won a large number of orders for large greenfield processing lines, as well as expansion orders for wood pelleting plants from customers in North and South America, Russia, Europe, and Asia.

RESEARCH AND DEVELOPMENT

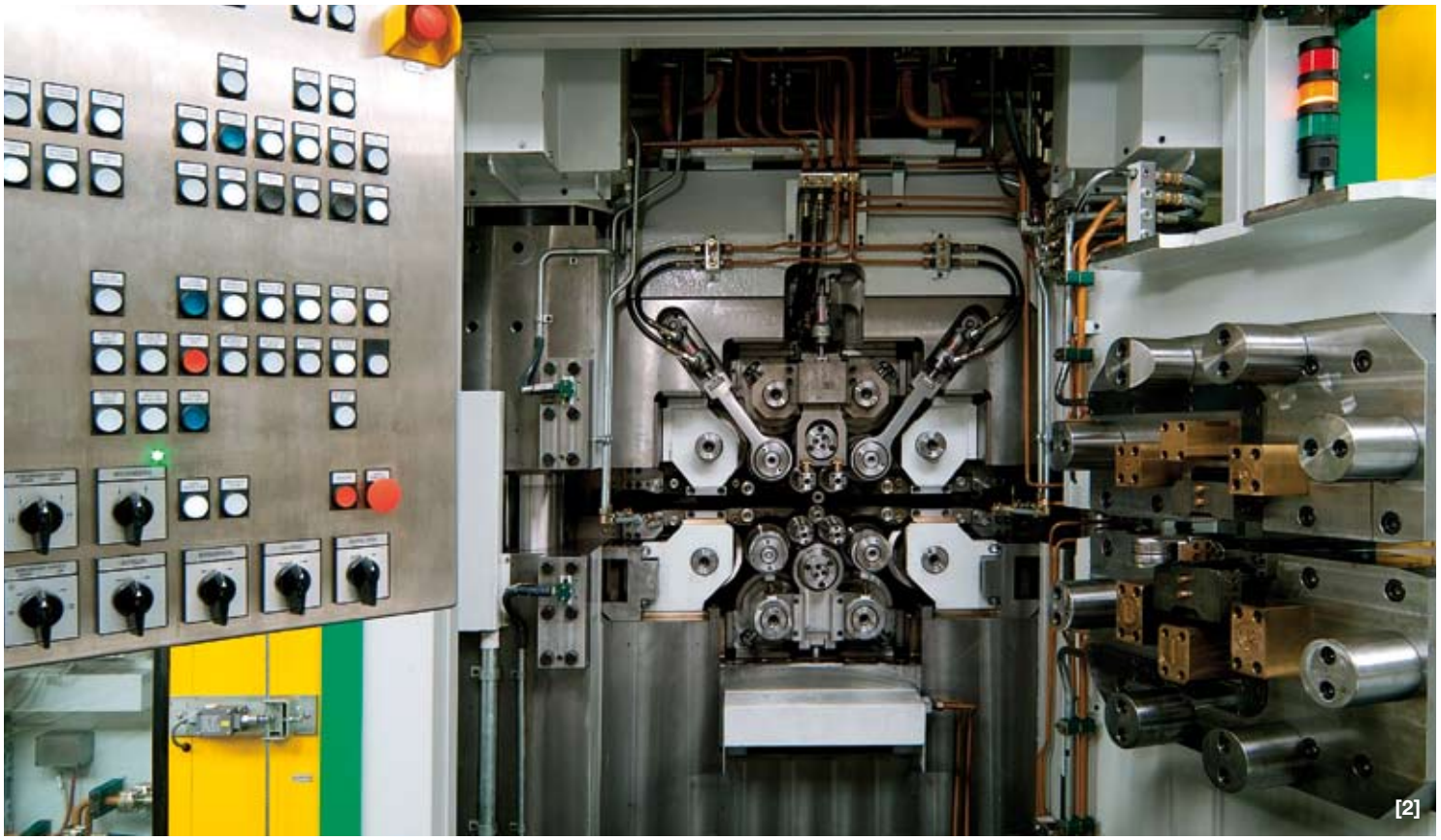
The Business Area successfully launched a new-generation process control based on touch screen technology, for its small and medium-sized pet food and aquatic feed extruders.

To further strengthen the product range targeting the renewable energy sector, a new-generation hammermill for wood powder production in power plants was introduced to the market. ○

[1]

[1] Andritz delivered advanced process control to CMPC Santa Fe, Chile for the cooking, brownstock, and bleaching processes. The delivery included BrainWave® equipment for stabilizing control and ACE™ software for supervisory control and optimization. This helps the customer to reach the target pulp quality with minimum chemical input.

[2] Detail of an Andritz Sundwig European-standard 20-high cold-rolling mill, including process optimization, static process control, and advanced flatness control for high-precision stainless steel and carbon steel strip.



[2]

ANDRITZ AUTOMATION

PROFILE

Andritz Automation is a global network consisting of the electrification and automation specialists of Andritz's Business Areas and the fully owned affiliates IDEAS Simulation & Control and Universal Dynamics Group. In 2007, this network was strengthened by Sindus Human Technology, a company specializing in maintenance of instrumentation and electrical equipment for pulp, paper, and other industries in Brazil. With almost 1,000 engineers, Andritz Automation has a presence at 55 locations in 24 countries worldwide.

By combining automation know-how with in-house expertise in process and mechanical design, Andritz Automation develops unique customer-oriented automation products that meet customers' technical and economical requirements. Complete automation systems from one source enable short start-up times and the smooth operation of Andritz plants and technologies. Simulation models, advanced process control technologies, and special sensors are used to improve customer plants as part of the comprehensive lifetime services offered by Andritz Automation.

PRODUCT DEVELOPMENTS

In 2007, Andritz Automation successfully developed and implemented BrainWave® and Advanced Process Control solutions for the pulp and paper, mining, chemicals, and glass industries. Advanced Control Expert (ACE™) is the common Andritz software platform for all process optimizing solutions in the pulp and paper industry. ACE™ is based on the patented BrainWave® technology, which is a PC-based advanced controller that allows customers to optimally control various processes during operations. It helps to reduce process variabilities by more than 50% and provides tools for comprehensive mill data analyses, thus achieving higher production rates, increased quality, and lower energy and operating costs. The supervisory functions optimize the controls and provide a full-scale autopilot for the operators to maximize customer profitability.

IDEAS Simulation & Control received orders from Visy Paper, Australia and Aracruz, Brazil to supply BrainWave® solutions for digesters. The BrainWave® technology installed at the Veracel pulp dryer, Brazil proved so successful that the customer has implemented a complete Pulp Dryer ACE™. BrainWave® solutions for bleaching have been implemented at CMPC and Arauco in Chile, and Weyerhaeuser in the U.S., with several installations underway in Brazil. The BrainWave® refiner solution now also integrates the newly developed Andritz MIS online consistency and freeness sensors.

The Kiln ACE™ solutions that have been installed at the sites of Domtar, Georgia-Pacific, and Weyerhaeuser, all in the USA, and at the Cenibra and Aracruz sites in Brazil, are particularly noteworthy. Kiln ACE™ ensures that the lime kiln produces top-quality lime at all times at the lowest possible cost.

Pulp Automation received an order for the delivery of a comprehensive ACE™ solution for the fiberline of CMPC Santa Fe 2, Chile, covering the cooking, washing, oxygen delignification, and bleaching process areas. Further orders for Cooking ACE™ were placed by customers in China and Australia.

Development activities for ACE™ solutions for soot blowing and combustion optimization in recovery boilers have continued. A pilot project has been agreed upon with a Finnish customer. Tiger Paper Group's Huaihua mill in China ordered a Recovery ACE™ along with the evaporator and recovery boiler plant.

More than 20 SRS packages (SRS: Safety-Related Systems) have been ordered for recovery boilers, lime kilns, and power boilers since development of this product was started in 2003. These SRS products are highly standardized and modularized, thus providing maximum benefit to customers and users during all engineering and execution phases. Andritz engineers follow a predefined procedure that covers steps from risk evaluation through safety control planning up to testing, start-up, and regular operation. The product concept is widely appreciated by customers all over the world.

The development of online sensors for Andritz processes is a permanent part of Andritz Automation's R&D activities. Online sensors based on photometric spectroscopy for various pulp parameters were successfully tested in industrial installations. →

IMPORTANT ORDERS

HYDRO Automation engineers are experts in the design, installation, and commissioning of hydropower plant automation systems for new stations and rehabilitation or upgrade projects. The integrated hydropower plant automation solution NEPTUN includes all devices and systems for control, excitation, protection, monitoring and diagnosis, power plant management, synchronizing, and digital turbine controllers. Research activities of HYDRO Automation are focused on the development of digital protection systems, excitation systems, and SCADA systems (Supervisory Control and Data Acquisition) with ergonomically optimal solutions for operators.

For the Environment and Process Business Area, specific control modules were developed to lower the energy consumption of the dewatering and drying equipment. Experience from start-up and operating phases was used to improve the SCADA systems in view of easier and more efficient equipment operation.

Andritz Automation further strengthened its position as a leading supplier of complete automation systems in 2007. Orders including process control, electrification, and instrumentation were received from customers in Austria, Brazil, Chile, Portugal, Spain, Sweden, and Uruguay. Hebei Yongxin Paper Co., Ltd., China awarded an order to supply an automation system for a board machine including stock preparation and air engineering systems.

Electrical and automation equipment for wood processing plants was supplied to customers in South America and Europe. At Myllykoski Plattling, Germany, a new grinder feeding system with automatic level control and two LogScan lines for automatic log sorting went online. Norske Skog Bruck, Austria also ordered two LogScan lines and an upgrade of the DrumMatic system. A major order received from Price Maryvale will mark Andritz Automation's entry into the Australian market. Start-up is planned for 2008.

HYDRO Automation received orders for turnkey and rehabilitation projects in Europe, Asia, America, and Africa. In Turkey, a large rehabilitation project for a 540 MW hydropower plant was awarded. The overall automation solution will be based on NEPTUN and include the control system with SCADA, digital turbine controllers, redundant excitation systems, and the protection system for all units and electrical lines. HYDRO Automation has successfully expanded the existing excitation business with one of the leading suppliers of thermal power plants worldwide.

Andritz Automation very successfully continued to supply automation solutions for rolling mills and strip processing lines in China, India, and Russia. All Andritz stainless steel plants were equipped with Andritz software packages including mathematical models for process optimization. Rebuilding of the two lines in Krefeld, Germany, which included implementation of the latest Andritz technology for process automation and automation models, was completed in minimum time. From Russia, orders for two complete rolling mill plants including all technological controls were received from NLMK and VIZ Stal. The plants will be equipped with process optimization (POS) and pass program calculation and optimization modules.

The success story of the IDEAS simulator was continued with the VCP Horizonte project, deliveries for the Suzano Mucuri project, the Klabin 1100 CTMP project, all in Brazil; the CMPC Santa Fe delivery in Chile, and Fray Bentos for Botnia in Uruguay. 2007 saw the first simulation sale in South Africa for Sappi and also the first project delivery for Marusumi, Japan.

IDEAS Simulation & Control secured the first FiberVision order in Europe with a sale to SCA. FiberVision, online sensors for pulp quality control, were also installed at Bowater and Augusta Newsprint mills in the USA and at customer mills in Brazil and China.

In the mining business, IDEAS Simulation & Control had a strategic success with multiple licenses sold to BHP Billiton, the largest diversified resources company in the world. BHP Billiton decided to standardize their steel business on IDEAS software; this means that in the future, BHP Billiton and the engineering companies working with it will all be using IDEAS software to design new processes. IDEAS was also chosen by Antofagasta Minerals to simulate its entire new Esperanza copper concentrator in Chile.

Oil sand treatment in Canada continues to be a strong business for IDEAS, with companies choosing to use the simulator to assist in the design of several new plants. ○

MANUFACTURING, PROCUREMENT, AND QUALITY

MANUFACTURING

The Andritz Group operates 51 manufacturing and service sites in Europe, North America, South America, and Asia. These sites produce and assemble the key components for Andritz equipment and systems. In total, Andritz employs approximately 5,400 people in manufacturing worldwide. This highly qualified workforce with long-term experience, as well as state-of-the-art means of production and continuously improved processes, ensure the highest product quality and reliable, on-time order execution.

Manufacturing strategy

In order to remain successful and competitive in the global markets, Andritz pursues a targeted strategy to continually enhance its manufacturing competence and presence. The focus is on expanding Andritz's manufacturing presence in the growth markets of China, India, and South America, and on further developing well-established sites in Europe and North America.

All process-relevant key components for Andritz plants and machines are manufactured and assembled at Andritz's own workshops. Less critical and simple components are sourced from qualified suppliers, who are subjected to regular quality checks and on-time performance monitoring.

Capacity and delivery management

The high order backlog and difficult situation in the material and semi-finished goods markets have presented a great challenge to Andritz Manufacturing. Short lead times and on-time production require precise planning as well as committed and flexible employees. Internally, Andritz uses flextime contracts and also temporary workforce to cope with fluctuations and peaks in workload. In addition, handling of the sourced portion is continuously improved by efficient supplier management; the pool of suppliers is permanently enlarged with new, qualified companies. The make/buy ratio is approximately 1:1.

Professional project management ensures that contractual milestones are met over the entire process chain, from order intake to start-up.

Major developments in 2007

Due to the high order backlog, the focus in 2007 was on maximum utilization of existing manufacturing capacities and on further expansion of manufacturing sourcing. The tight situation in supply markets entailed great challenges with regard to availability and prices of goods.

Procurement management was further reinforced and the semi-finished goods inventory was optimized in accordance with the demand. In addition, investments were effected to modernize manufacturing technologies, to adapt capacities at bottlenecks, and to further automate process steps where suitable.

The program initiated to achieve the global target of establishing World Class Standards at all sites was continued in 2007, and additional individual projects in support of this target were implemented. For instance, at Lenser Filtration's headquarters in Senden, Germany, the manufacturing and logistics processes were successfully reorganized. In electromechanical manufacturing in Weiz, Austria and Bhopal, India, the manufacturing process for generators was optimized and task assignments were modified. For the VA TECH HYDRO sites in Central Europe, an integration and improvement project for manufacturing sourcing was initiated and partially implemented in 2007.

Highlights in 2007

In Foshan, China, manufacturing capacities were increased by 35% at the main facilities as well as through an enlargement of production area in nearby Sanshui to meet the rising demand for local production. The new stainless-steel foundry established in Foshan by Andritz together with Swiss Wolfensberger Group has started operations and successfully delivered its first products.

At the Group's headquarters in Graz, investments focused on the extension and modernization of the manufacturing technology and the entire logistics process was revised.

The Group's manufacturing network was further strengthened with a new important site through the acquisition of Hungarian machine construction company Tigép. →

WELDING OF A REFINER FILLING FOR A CONICAL LOW-CONSISTENCY REFINER AT ANDRITZ PILÃO'S WORKSHOP IN VINHEDO, BRAZIL.

ASSEMBLY OF AN IMPELLER FOR A DOUBLE SUCTION PUMP AT ANDRITZ TECHNOLOGIES' WORKSHOP IN FOSHAN, CHINA.

GRINDING OF A KAPLAN TURBINE BLADE AT ANDRITZ'S WORKSHOP IN GRAZ, AUSTRIA.

1,500 KG OF LIQUID STAINLESS STEEL BEING TAPPED INTO A CASTING LADLE AT THE NEW ANDRITZ-WOLFENSBERGER FOUNDRY IN FOSHAN, CHINA.

PROCUREMENT

The main purpose of the procurement organization is to secure the supply of all goods and services required for running the business processes on time and at competitive prices. These goods and services are to be purchased at the most favorable terms and conditions, are to meet our quality standards, and must be available at a specific date. In addition, procurement is to contribute to strengthening Andritz's competitive position through systematic cost reductions in process costs and procurement costs.

Andritz's procurement policy focuses on markets, suppliers, procurement processes, and resources. It aims to achieve optimum synergies between the Group's different locations and to improve efficiency in the supply chain.

The procurement function of the Andritz Group is decentralized and performed individually by the different project, manufacturing, and service locations. Coordination and cooperation within this decentralized structure are ensured by the global procurement organization. The goal is to achieve substantial cost savings by the pooling of demand, benchmarking, and negotiation of Group-wide contracts. For specific regions (e.g., China, India), the regional sourcing/subcontracting activities are coordinated and supported by special, regional purchasing organizations.

The most important countries for purchases of the Andritz Group are the member states of the European Union, the USA, Brazil, China, and India. The biggest production sites of Andritz are also located in these countries.

The importance of countries for procurement can change quickly due to required local contents, especially for EPC contracts. This fact challenges all procurement organizations in analyzing new procurement markets and in cooperating with new, local suppliers.

QUALITY

The high technical level of Andritz's products and systems requires the highest manufacturing standards, systematic organization, clearly defined business processes, and well-trained employees. Andritz Quality Management plays a major role in implementing operating standards for products, process and personnel management, and in providing continuous feedback on the effects and fulfillment of these standards. Human resources have been considerably enlarged in step with the strong growth of the Andritz Group.

In 2007, the focus of Andritz's quality management activities was again on product quality, with a two-fold approach for quality assurance in the engineering phase and in Andritz's own, and outsourced, manufacturing. A key role is played by product transfers between different sites, as consistent quality assurance in this field can prevent loss of know-how and enable more efficient contract handling.

To support Group growth, a Group-wide function for all quality management and quality assurance activities was created in 2007. Definition and implementation of a Group-wide quality policy contributes to standardizing the internal requirements for products and business processes, and to further enhancing the integration process of newly acquired companies. A Group-wide network of quality managers and engineers has been implemented, and a concept for expansion, particularly in South America, India, and China, has been established.

Special focus was placed on risk management. In the early stages of a customer project, when decisions of great relevance for the outcome of a project are made, it is particularly important to utilize the entire experience available in all relevant units. The business processes have been optimized to this effect and an intensive training program was organized.

By deploying more resources in supplier assessment and management, efficiency in the cooperation with important suppliers has been further increased and Sourcing is supported in the search for and qualification of new suppliers. ○

HUMAN RESOURCES

To remain successful in a highly competitive global environment, companies need to constantly develop their personnel resources. In 2007, Andritz again hired a large number of new, well-trained, and highly qualified employees to match the continued strong growth of the Group. Using a series of targeted measures including attractive coaching programs, interesting career opportunities, and incentive plans, Andritz has been able to further strengthen its image as an attractive employer for new candidates and to promote identification of existing staff with the company.

Continued staff increase

The number of employees continued to increase in 2007, mainly due to organic growth. This increase was particularly pronounced in China as a result of the very favorable business development of Andritz's companies and the establishment of a new foundry, Andritz-Wolfensberger. As of December 31, 2007, the Andritz Group had a total of 12,016 employees, an increase of 17.6% over 2006 (10,215). New acquisitions (Sindus Human Technology, Tigép) also contributed to the staff increase.

Activities in 2007

In spite of the high demand for workforce almost worldwide, the Andritz Group has been able to fill vacancies with qualified persons. To recruit highly talented junior staff, Andritz further intensified its participation in job fairs at universities and vocational schools. The number of apprentices trained in the company to meet the future demand for skilled workers was increased.

The proven Andritz Management Challenge training program for future executives and also specialized staff was held twice in 2007, enabling numerous employees of companies acquired in previous years to participate. The new training modules, which were also offered repeatedly, received very positive feedback from participants, who described the modules as highly relevant for everyday work. Offering more of these modules on a Group-wide level has supported fast integration of newly acquired companies. As international participation in these trainings increases, so does their contribution to strengthening intercultural competence. Cooperation with St. Gallen Management Center, Switzerland was continued and intensified.

At Andritz's site in Graz, Austria, a company kindergarten was newly installed to align working life with family life of Andritz employees. Its opening hours take into account the needs of working parents. The new kindergarten aims at supporting the work/life balance of employees and also attracting more women for technical jobs. The kindergarten, which was largely financed from company funds, is located in the immediate proximity of the company's premises and is managed by a professional operator with ample experience in child and youth care institutions.

Group-wide survey yields positive feedback

A Group-wide survey involving approximately 400 executives yielded positive feedback regarding intercultural cooperation and communication throughout the Group. With their answers, employees gave a clear picture of the values prevailing in the Group. The attitudes and approaches described comply nicely with the company's goals and objectives.

Internal career opportunities

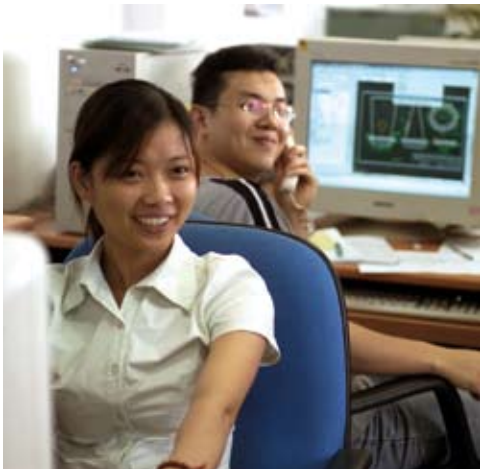
Employees who took over new challenging positions in recent years have successfully proved themselves, thus confirming the company's strategy of filling vacant managerial positions predominantly internally. In addition, new candidates with international experience have reinforced the Andritz Group's staff since 2007. Three positions in Business Area/Division management were filled with external candidates, and for other managerial positions new employees were recruited to maintain a stable pool of experienced managerial resources within the company. In addition, excellent candidates were newly hired for several specialized functions.

Incentive strategy

Incentive compensation programs are used Group-wide on the management level, and also locally by most affiliated companies. Incentives are based on the fulfillment of clear targets set for each business year. These programs were continued during the reporting period. As in previous years, Andritz employees in Austria were offered to be remunerated with Andritz shares instead of cash incentives in 2007. Since many employees opted for this model, which also generates – although limited – tax benefits, the number of Andritz employees holding Andritz shares continued to increase. ○

HIGHLY QUALIFIED AND COMMITTED EMPLOYEES ARE KEY TO THE ANDRITZ GROUP'S SUCCESS.

THE NEW COMPANY KINDERGARTEN INSTALLED BY ANDRITZ AT THE SITE IN GRAZ AIMS AT SUPPORTING EMPLOYEES' WORK/LIFE BALANCE.



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TECHNICAL GLOSSARY

Advanced Process Control
Generic term for different control strategies; Andritz mainly uses model-based controllers (e.g. BrainWave®) for complex control tasks.

Annealing
Process in which metal is heated, retained at a suitable temperature, then cooled rapidly or slowly to reduce internal stress. As a result, the metal becomes softer and more workable, particularly in cold processes.

APMP/P-RC™
Alkaline Peroxide Mechanical Pulping/ Preconditioning Refiner Chemical
APMP is a refining process preceded by multi-stage impregnation with alkaline peroxide bleach liquors. The wood chips are compressed and destructured prior to the addition of the bleach liquors. APMP systems can operate without a post bleach plant since bleaching takes place up front in the process. P-RC™ APMP is a technology that distributes chemicals between the impregnation steps in a small interstage bleach tower located between the primary and secondary refining stages.

Approach flow system
Feeding system that provides stable feeding conditions for the paper/board machine.

A-Stage™
Mild acid treatment stage prior to pulp bleaching. In the A-Stage™, part of the bleaching chemical consuming hexenuronic acids is removed, which enables savings in bleaching chemical consumption of up to 20–35%. The A-Stage™ is used for hardwood, especially eucalyptus, pulp.

Black liquor
Mixture of spent cooking chemicals and dissolved wood material remaining after sulphate cooking. Black liquor is recovered during pulp washing, concentrated by evaporation, and burned in the recovery boiler to regenerate the cooking chemicals and also produce energy for the mill.

Brownstock
The pulp obtained directly from the cooking process, before intercellular materials and cooking liquors have been removed.

Calender
In paper, nonwovens, and textile production, machine with one or several rolls, which causes certain profile and surface properties in web materials (gloss, strength, roughness).

Chemical pulp
A generic term which describes pulp produced by chemical (as opposed to mechanical) processes. These chemical processes include kraft (sulphate) and sulphite processes.

Chemical recovery
In chemical pulping, the collection, recovery, and regeneration of cooking chemicals so that they can be utilized again in the process.

Chipping
A process in a woodyard in which the debarked logs are converted into chips for pulping or refining processes. Chipping is typically done by horizontally or gravity-fed disc chippers.

Coating
In paper production, process through which the surface of paper or board is closed by chemical substances or a color coat. This improves certain properties (e.g. the printability of paper) significantly and prepares the material for certain uses.

Creping dryer (Yankee cylinder)
Creping dryers are used in the drying section of a tissue machine. They are steam-heated, with diameters between 3 and 5.5 m, widths between 2.5 and 6.5 m and weights of up to 125 tons. They run with circumferential speeds of up to 2,200 m/min. The paper is pressed onto these cylinders, dried, and when dry creped by a special doctor.

CTMP
Chemi-Thermo Mechanical Pulping
A pressurized refining process which is preceded by the addition of sulphite in a single impregnation stage. The refining pressure for CTMP is usually lower than for TMP since the sulphite treatment lowers the softening temperature of the wood lignin. By altering the parameters of the process (chemical concentration, temperature, etc.) it is possible to customize the pulp for particular end uses. CTMP may be bleached, in which case it is known as BCTMP.

CVD
Chemical Vapor Deposition
A coating process which generally uses a gas-phase precursor to deposit thin films on the surface of a substrate. Metal-organic precursors can be used to deposit corrosion resistant coatings on metals' surfaces.

DD Washer
The Drum Displacer® (DD) Washer can be used in all fiberline process stages to separate the waste liquor that is generated during cooking and that contains dissolved wood and chemicals from the stock. It is a pressurized multistage washer which can include as many as four stages.

Deinking
A process in which most of the ink, filler, and other extraneous material is removed from printed and/or unprinted recovered paper. The result is a pulp which can be used in the manufacture of new paper, including tissue, printing, writing, and office papers.

Delignification
Removal of lignin from wood fibers. This is performed primarily in the cooking process and further carried out in the washing and bleaching process. In bleaching, ECF pulp mills use chlorine compounds (chlorine dioxide) for this process, although it can be achieved with oxygen, hydrogen peroxide, or ozone (which do not create organo-chlorines).

Digester
A pressure vessel, typically cylindrical, used to treat wood chips or other cellulosic materials with chemicals under elevated pressure and temperature, so as to produce pulp for papermaking.

ECF
Elemental Chlorine-Free pulp
Pulp bleached without the use of any elemental chlorine. However, chlorine compounds (e.g. chlorine dioxide) may be used in the bleaching process.

EPC
Engineer Procure Construct
A project delivery where one supplier assumes total responsibility for product and project engineering, equipment and construction procurement, and on-site construction.

Extrusion
A continuous process in which animal feed components are cooked under pressure in a combination of frictional and steam heat in order to expand the resulting product and convert it into feed granulate. This process is very common in the production of pet food, fish feed, and cereals.

Fiberline
The machines and process systems involved in converting wood chips into pulp. Process steps can include cooking, washing, screening, knot separation, refining, and, if required, bleaching.

Fluid bed drying
Thermal process causing free-flowing products such as plastics, chemicals, etc., or sludges to float due to gas or air infeed and to dry by intensive material and heat transfer between the fluidizing gas and the product.

Green liquor
Aqueous solution of the smelt resulting from the burning of thickening waste liquor in the recovery boiler. Mainly consists of sodium carbonate and sodium sulphide.

Kraftliner
Top layer and/or intermediate layer of corrugated or solid board.

Lime kiln
A long, slowly rotating kiln used to reburn lime mud (calcium carbonate) to form calcium oxide, which can be reused in recausticizing.

Linerboard
Top layer of corrugated board.

LMD-Filter™
The LMD-Filter™ is a lime mud precoat filter designed to achieve optimum dry solids with excellent washing efficiency for lime mud. The filter ensures efficient lime kiln operation at low heat consumption. LMD stands for Lime Mud Drying.

Market pulp
Pulp produced from wood and sold on the open market, as opposed to that which is produced for internal consumption by an integrated paper mill or affiliated mill.

MDF
Medium Density Fiberboard
Board made of mechanical pulp from the refiner process.

Mechanical pulp
A generic term describing pulp produced by a mechanical (as opposed to a chemical) process. Also known as 'high-yield' pulp as the processes utilize a higher proportion of the raw material (wood) than the chemical processes. Mechanical pulp is produced using either grinders or refiners. It is principally used in the production of newsprint, magazine papers, printing papers, specialty papers, tissue, towelling, paperboard, and wallboard.

NBSK
Northern Bleached Softwood Kraft
The industry's benchmark grade of pulp for pricing and inventory data. Produced primarily in Canada and the Nordic countries. Some NBSK is also produced in the Northwestern USA and Russia.

Nonwovens
Flat textile structure consisting of single fibers bound together by such processes as thermal bonding, solidification by water jet, chemical bonding, or ultrasonic solidification. Nonwovens contrast with paper in that they lack the hydrogen bonds that give paper its strength.

OCC
Old Corrugated Containers
Used corrugated board and/or packaging paper.

Pickling
Process for chemical treatment of oxidized steel, applied to obtain a clean metallic surface. Here, the steel is dipped into a hot bath of diluted sulphuric or hydrochloric acid.

Recausticizing
A process by which green liquor from sulphate pulping is converted to white liquor, thus allowing the cooking chemicals to be reused. In recausticizing, sodium carbonate of green liquor is converted to sodium hydroxide by using calcium oxide. Lime mud, which is formed in recausticizing reactions, is reburned in the lime kiln.

Recovery boiler
An important process step in the production of kraft pulp. A special boiler, where the black liquor from the cooking process is burned, after concentrating it in an evaporation process. The residual carbon is burned and the inorganic sodium salts are melted and recovered.

Refiner
Machine used to grind pulp between two discs. Refiners can operate at low consistency or at higher consistencies. At low consistencies, the material is fed to the refiner using a pump. At higher consistency levels, conveying devices are used. Other refiner types are used for breaking down wood chips into fibers.

TMP
Thermo-Mechanical Pulping
A refining process in which wood chips are refined in a pressurized refiner. The process can involve from one to three refining stages in the mainline; however, two stages are most common. The higher temperatures help soften the chips, which results in higher pulp strength compared to atmospherically refined pulps (RMP). TMP relies on mechanical energy rather than chemicals to convert wood into pulp. TMP pulps are most commonly used in newsprint and magazine papers.

White liquor
A strongly alkaline solution used in the cooking (digesting) process. Mainly consists of sodium hydroxide and sodium sulphide.

Yankee
See 'Creping dryer'. ○

FINANCIAL GLOSSARY

ATX
Austrian Traded Index
Price index calculated by the Vienna Stock Exchange, containing the most actively traded shares on the Vienna Stock Exchange. The ATX comprises approximately 20 shares, weighted in the index according to market capitalization and free float.

ATX Prime
Price index calculated by the Vienna Stock Exchange and containing all the shares of the ATX Prime Market segment.

Authorized capital
Authorization by resolution of the Shareholders' Meeting allowing the Managing Board to increase the share capital by a maximum of 50% within five years by issuing new shares.

Chart
Graph showing the daily, weekly, or monthly prices for a particular share for a certain period.

Continuous trading
Continuous handling of all orders where price and quantity requested match up. Transactions can be concluded at any time during the opening hours of the Stock Exchange.

Corporate Governance Code
The Corporate Governance Code represents a set of rules for the responsible management and control of a company.

Dividend
That part of a company's profits paid out to the shareholders. The amount of the dividend is proposed by the Managing Board of a company and approved in a resolution by the Shareholders´ Meeting.

EBIT(D)A
Earnings before Interest, Taxes (Depreciation), and Amortization of goodwill
This earnings measure is of particular interest in cases where companies have large amounts of fixed assets which are subject to heavy depreciation charges or in the case where a company has a large amount of acquired intangible assets on its books and is thus subject to large amortization. EBITDA is a good measure of comparing companies within industries.

EBIT
Earnings before Interest and Taxes
The EBIT is part of the profit and loss accounts; also often called 'operating profit.'

Ex-dividend
The price of the share is lowered by the amount of the dividend paid a few days before the day a dividend is paid out.

Free float
Portion of a company´s shares that is held by a large number of private and institutional investors.

IFRS
International Financial Reporting Standards
IFRS are international accounting standards drawn up by the International Accounting Standards Board (IASB). Complying with IFRS should enable investors and other relevant stakeholders to better compare annual accounts presented by companies from different countries.

IPO
Initial Public Offering
Admission of a company to list its shares on the Stock Exchange by selling company shares to the public.

Investor Relations
Interface between the company and the financial community. An Investor Relations department should regularly provide transparent, comprehensive, and up-to-date information on developments within the company to shareholders, financial analysts, and investors.

ISIN
International Securities Identification Number
Individual identification number of a security, enabling computerized international registration of a security.

Market capitalization
Market price of a listed company. This is calculated by multiplying the current share price by the number of company shares.

MEUR
Million Euros

Net liquidity
Cash and cash equivalents minus interest-bearing financial liabilities.

No-par value share
Share with no-par value, referring to a certain interest in the company without stating a fixed amount.

Par value
Face value of a security. This is the amount the shareholder has contributed to the nominal share capital of the company. The par value gives no indication of the actual value of the share.

Prime market
Market segment of the Vienna Stock Exchange which contains stocks that are admitted to listing on the Official Market or Semi-Official Market and meet special additional listing criteria.

Road show
The management of a listed company presents the company's activities, strategies, and long-term prospects to national and international institutional investors and retail shareholders.

Share
Certificate that represents a certain stake in the nominal capital of a stock company.

Shareholders' Meeting
Body of a stock company which usually meets at least once a year and takes resolutions on important company matters according to company law.

Share capital increase
Increase in the nominal capital of a stock company. Equity capital is paid into the company.

SPO
Secondary Public Offering
Selling of further shares of a company that is already publicly listed.

Stock Option Program
A company grants options to a defined group of executives for the purchase of shares of the company, which may be exercised at an agreed price after agreed performance criteria are met.

Volatility
Measure of the average fluctuation of a share price over a certain period. In statistics, the volatility is equal to the standard deviation.

WBI
Wiener Börse Index
(Vienna Stock Exchange Index)
The WBI contains all shares listed on the Official Market and the Semi-Official Market. The WBI, as overall index, reflects the development of the Austrian stock market as a whole. ○

Disclaimer:

This Annual Report contains assumptions and forecasts which were based on the information available up to the copy deadline on 19 February 2008. If the premises for these assumptions and forecasts do not occur, or risks indicated in the chapter 'Corporate Risks' in this Annual Report and in the Status Report of the Annual Financial Report 2007 do arise, actual results may vary from the forecasts made in this Annual Report. Although the greatest caution was exercised in preparing data, all information related to the future is provided without guarantee.

The online version of this Annual Report as well as the online version of the Annual Financial Report 2007 are available on the Andritz website (www.andritz.com) or directly on **http://reports.andritz.com/2007/**

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