

ENVIRONMENT AND PROCESS

Business Area Managers:

Werner Hölblinger, Graz, Austria
(Thermal Process Technologies)



Johannes Kappel, Graz, Austria
(Separation Technologies)





Andritz membrane filter presses dewater sludge from all types of industries to the highest dry solids possible. A special filter cake scraping device helps meet customers' demand for fully automatic operation. Optimum results are achieved with minimum energy input.

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 sludge 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 and over 100 sludge drying lines worldwide, is serviced from dedicated Andritz service centers in Europe, the USA, and Asia.

Market development

During 2006, the market for sewage sludge dewatering equipment developed very positively, especially in Western Europe and the USA. In China, project activity has also been high. Project activity for sludge drying plants focused on the UK and Asia. Due to rising gas prices, the market for refurbishments of drying plants with combined heat and power solutions and plants with combined incineration is on the rise. The trend in the US towards pathogen elimination in bio-solids prior to reuse on land has continued, thus driving the demand for sludge treatment systems.

Project activity for industrial applications for the petrochemical, minerals, mining, and food processing industries was very high in most areas of the world, but especially in China. Demand was on the rise again in the US, where there had been quite low investment activity during the past few years. Also, the demand for dewatering equipment to treat industrial sludges, in particular from the steel industry and from flue gas desulphurization plants, remained at a very high level.

Business development

In 2006, Sales of the Business Area increased to 366.5 MEUR, which is 26.7% higher than in 2005 (289.2 MEUR). Both Divisions of the Business Area, Separation Technologies and Thermal Process Technologies, showed a solid Sales development during the reporting period.

EBITA, however, did not fully match Sales growth. At 20.5 MEUR in 2006, it increased only by 15.8% compared to 2005 (17.7 MEUR). This is mainly due to cost-overruns for some projects in the Thermal Process Technologies Division, offsetting the continued positive development of the Separation Technologies Division.

Order Intake in 2006 reached 344.2 MEUR, slightly above the high level achieved last year (340.1 MEUR). In particular, the Separation Technologies Division showed a solid increase of new orders, with the number of centrifuges and filter presses sold reaching another record level in 2006.

Acquisition of a service company in the USA

In October 2006, Andritz signed an agreement to purchase CONTEC Decanter Inc. based in San Leandro, CA, USA. CONTEC specializes in the repair and maintenance of centrifuges and separators for various industries. The company has annual Sales of approximately 3 MEUR. With this acquisition, Andritz has added a service center for centrifuges and separators on the West Coast of the USA to its network of existing service centers in the USA, Europe, and Asia. This will enable Andritz to serve local customers better and faster and to strengthen its leading position in servicing centrifuge installations.

Major orders

Separation Technologies

Alunorte, Brazil awarded Andritz another contract for five large hyperbaric disc filters for the dewatering of bauxite.

Clark County, USA ordered eight large centrifuges to dewater the sludge from the City of Las Vegas.

Three special censor centrifuges were sold to Entec, USA for separating the various synthetics which are used for carpets to obtain pure products for recycling.

American Power, USA awarded a contract for five (2 x 2 m) filter presses to dewater the sludge from flue gas desulphurization at two locations.

Three large centrifuges will be supplied for an HDPE plant in Saudi Arabia.

A number of orders were received from the Baosteel Group, China to dewater various sludges from steel production.

The Division will deliver large filter presses for three drinking water preparation plants in Northern Ireland.

Thermal Process Technologies

Beijing Drainage Group, China ordered a sewage sludge drying plant for its Qinghe wastewater treatment plant. The drying plant is based on the fluid bed technology and comprises two lines, each with 6.5 t/h evaporation capacity.

Four lines of a drum drying system (DDS) for the biggest sewage treatment plant in Europe on the island of Psytalia, Greece were ordered by the general contractor J/V Actor Athena (joint venture of the companies Actor S.A. and Athena S.A.) for the municipality of Athens. This plant will dry 385,000 tons of sludge per year.

The municipality of Bilten, Switzerland ordered a sewage sludge drying plant, based on Andritz's proven belt drying technology.

Manatee County, Florida, USA awarded a contract to design and build a bio-solids drying system for three wastewater plants. The plants will utilize the successful Andritz Drum Drying System (DDS); they will be located on a county landfill site and will process 200 t/d of bio-solids using landfill gas to fulfill energy requirements.

Ortec Industries SA, France ordered a belt drying system for municipal sludge.

For Xin Jiang Zhongtai Chemical Co. Ltd, China, Andritz will deliver a large fluidized bed drying system with a capacity of 30 t/h for S-PVC powder.

A fluid bed dryer for solidification of 5,500 t/a of calcium chloride brine, a by-product of soda ash production, was ordered by Tangshan Sanyou International Industry Co. Ltd., China.

The fifth system for sludge drying was ordered by Southern Water Services for its Ashford, Kent wastewater treatment plant. The drum drying system will have a water evaporation capacity of 7,000 l/h and will process a total of 75.000 t/a of dewatered sludge.

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.

In connection with the EcoDry Process for sludge incineration, the Thermal Process Technologies Division conducted a research program including tests on an industrial installation to minimize ammonia emissions after an SNCR (Selective Non-Catalytic Reactor) off-gas cleaning system. Similar investigations on emissions were carried out with analysis and process optimization for the off-gas cleaning systems on belt dryers using bio-filters and chemical scrubbers.

A combined drying plant using a belt and a fluid bed dryer was developed and a patent filed. The target is to use process synergies of both systems to achieve the best energy efficiency.

Intensive pilot tests were carried out with pilot-scale drying plants to obtain design and feasibility data for fluid bed drying on various products such as polymers, salts, minerals, and waste from bio-ethanol production. ■

Key figures Environment and Process

MEUR	2006	2005	2004	2003	2002	2001
Sales	366.5	289.2	217.9	110.4	122.8	135.3
Order Intake	344.2	340.1	200.7	110.2	147.7	140.6
Order Backlog as of 31.12.	179.3	202.2	138.3	113.8	122.6	99.7
EBITDA	25.6	22.0	12.6	3.3	2.8	9.0
EBITDA margin	7.0%	7.6%	5.8%	3.0%	2.3%	6.7%
EBITA	20.5	17.7	9.9	1.5	1.0	7.2
EBITA margin	5.6%	6.1%	4.5%	1.4%	0.8%	5.3%
Capital investments	6.5	6.6	7.9	1.5	1.9	1.9
Employees as of 31.12.	1,324	1,213	926	428	439	435