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News from the Group

KRESTA – Agrana steel construction



GAW technologies
Pildner-Steinburg GmbH Nfg & Co KG, Graz
• Plant construction and engineering for the
- paper industry
- automotive industry
- chemical industry
- environmental technologies
www.gaw.at



MAW Styria Maschinen- und Anlagenbau GmbH & Co KG
Eisenerz
• Plant construction and engineering for the
- paper industry
- automotive industry
• Special purpose machinery
www.maw.at



KRESTA Anlagenbau GmbH Nfg & Co KG, St. Andrä
• Plant construction and engineering for the
- paper industry
- automotive industry
• Apparatus engineering
• Tank and pipeline construction
www.kresta.at



ENVIRGY
Environment Energy Engineering & Construction GmbH, Wien
• Flue gas cleaning technologies
www.envirgy.com



OSMO MEMBRANE SYSTEMS GmbH
• Membrane technologies



SPEDITION THOMAS GmbH, Graz
• Logistics and transport
www.sped-thomas.at



ThomLog GmbH, Graz
• Logistics and transport



GAW sistemas e tecnologia, Brazil
• Plant construction and engineering for the paper industry



GAW Paper Coating Systems Inc.
Chicago Illinois/USA
• Plant construction and engineering for the paper industry



CCI Modulbau GmbH, Eisenerz
• Modular construction



STYRCON GmbH, Graz
• Project development and consulting
in deregulated markets



IHR GmbH, Graz
• Agencies
• Trading with second-hand-equipment
www.ihr.co.at



ETM Environmental Technology Magdeburg GmbH, Magdeburg
• Plants and components for flue gas cleaning and dedusting

ADER Aerospace GmbH, St. Wendel
• Development center for advanced technology
www.ader-aerospace.de

RSE Entsorgung AG, St. Wendel
• Industrial water purification
www.rseag.de

editorial

The economic dynamo is humming along and with it there is also excellent progress in the Austrian job market, as the latest unemployment figures demonstrate. In May this year the number of people looking for work dropped below the 200,000 mark again for the first time in six years. The strong increase in demand for labour, however, means that shortages in certain skill areas are becoming evident, particularly in regions where industry plays a large role, and businesses are already unable to find the specialists they need. The criticism sometimes made, that industry has only itself to blame for the lack of skilled labour, because it is training fewer and fewer young people, simply does not tally with the facts. In 2006, the number of apprentices and trainees rose to 15,364, and there has also been an increase in the number of firms specialising in training.

And although industrial firms are looking for employees for well-paid and attractive jobs – currently there is an annual shortfall of 5,000 to 7,000 skilled workers – a hairdresser, car mechanic or sales assistant still remain the “dream jobs” of many school pupils. To make the training involved in becoming a skilled specialist more appetising for young people, industry is now gradually implementing some innovative training concepts, such as that of industrial technicians taking place in Styria, Austria (see the report on page 7); and this training programme is also on offer at GAW. Austria is one of the 20 richest countries in the world, so it stands to reason that adequate availability and skills in relation to specialist labour, together with focus on research and development, will in the future continue to be the major challenge facing us in ensuring our own prosperity.

There is some pleasing news to report on from the GAW Group. Our Automotive division has been developing along very positive lines, evidence of this being, among other things, a new contract with Audi; and Environmental Technologies is also growing from strength to strength. This is particularly so in that we are anticipating over the short term further enhancement of our competitive edge in know how and expertise, due to the acquisition at the beginning of the year of ADER Aerospace and RSE Entsorgung in the water management sector. It is pleasing to be able to report on behalf of GAW that another contract has been signed recently in China for four new coating colour preparation plants with one of our major customers, ensuring that we will be working to full capacity in the coming

months. In general, we can state unequivocally that the order books of all the Group's companies give cause for great satisfaction, and expansion of the Group continues, as planned, on a solid economic and financial footing. So we are not going to be short of work, and this summer is going to be a hot one, as its first harbingers have already indicated. It is with this thought that I wish all our readers a beautiful summer!



Mag. Jochen Pildner-Steinburg

Editorial team edition 1/2007, June
From the left to the right (sitting): Andreas Mühle/GAW, Sigrid Tertinegg/GAW, Nina Pildner-Steinburg/GAW, Nicole Simon/ENVIRGY.
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• **Getting to know our companies better.**
companies of the GAW Group are presenting themselves.

getting to know our companies better

Expansion of the GAW Group

The ADER think tank and RSE converter

The GAW Group has grown again, now totalling 22 members with the addition of ADER Aerospace GmbH and RSE Entsorgung AG.

ADER Aerospace – Innovative solutions

ADER Aerospace is a developer of products and technologies in the field of water management for aircraft (grey water, night soil, filtration units, etc.) and is also involved in close cooperation with aircraft manufacturer, Airbus.

The company is characterised by its particularly pronounced innovation potential. Thus ADER acts as a "think tank" for individual solutions for special customer enquiries and is responsible for performance of all services from concept creation through to pilot testing.

RSE Entsorgung – New methods in industrial wastewater purification

The business of RSE involves the construction of industrial wastewater purification plants that require non-conventional solutions. Industrial and process wastewater is cleaned and recycled using processes that do not involve the use of chemicals. The methods used may be membrane-based (ultrafiltration, reosmosis), electroflotation and electrolytic processes, biological treatment plants or vacuum evaporation.

The company has a very close commercial link with ADER Aerospace, with the latter's project designs being implemented by RSE.

Synergies through close cooperation

Both of these new companies will profit from their incorporation in the GAW Group network, as will the current members. Thus, in future, GAW, MAW and KRESTA will be major manufacturing partners for ADER and RSE, and synergies with the membrane technology specialist Osmo will result, in terms both of the market and of technology. With the acquisition of the two companies another important step has been taken in our Environmental Technologies operations.



• **Technology made easily.**
Here, products or processes are explained comprehensibly for everyone.

lexica

Sorting of waste made efficient

A splitting plant

Sustainability

Sustainability is one of today's buzzwords and it is seen as the model approach for the enduring future development of the human race.

Protection and preservation of the environment is an essential aspect of the day-to-day work of companies in the GAW Group, either by developing products and processes that are more ecologically sound, or by their increased involvement in their Environmental Technologies operations, where the number of projects and contracts is on the increase.

On this occasion, in our "lexicon" section we want to describe the function of a so-called splitting plant, in whose construction the two companies MAW and CCI have played a significant role.

The principle of ecologically sound waste recovery

Splitting plants allow trade, commercial, and municipal construction site waste, as well as waste from mechanical processing, and waste containing metals, to be treated in an ecologically appropriate way. Recoverable waste fractions such as metal,

wood or plastic are separated here and sorted for taking to materials recycling or energy reclamation.

In this way, marketable materials and new energy are created (secondary fuels from the high calorific components), based on the principle of ecologically sound waste recovery. For this, the plant uses both physicochemical process stages, such as shredding, sieving, triage and separation, and biomechanical processes, such as fermentation drums or biomechanical treatment. Non-recoverable materials are taken to a waste incineration plant, or for landfill, once biological treatment has been completed.

• **Projects and orders.**
presentation of current projects/orders of the group companies.

proudly presents

Rebuild of the coating colour preparation plant at Mondi Paper

High-quality packaging board with GAW technology

In November 2006 GAW was commissioned by Mondi Paper in South Africa to carry out a full rebuild of the coating colour preparation plant with all its working stations, which had been supplied as long ago as 1989. The aim of this extension is that it should in future be possible to manufacture a wide range of different types of high-quality coated packaging board.

The MB6 board machine is located around 50 km north east of Johannesburg in Springs.

Scope of the project

The scope of supply covers the entire mechanical and electrical engineering, the supply of plant components

(tanks, pumps, filters, fittings, instruments, and all the pipework, etc.) right through to supervision of assembly and installation, start-up and on-site training. The plant is to be built in two stages:

1. Already in April the thermochemical starch preparation unit was converted to an enzymatic preparation unit, with simultaneous increase in capacity being effected.
2. The coating kitchen and the working stations are to be modernised during the period from June to August 2007.

The time components – a particular challenge

The particular challenge of this project is to be found in the extremely short downtime of the board machine in mid-July 2007 – an incredible 7 days. An additional complication is that the machine itself is being extensively rebuilt by Voith. During this period, the three existing working stations must be dismantled, and eight completely

new working stations set up and brought into commission. To be able to manage this amount of work within the time available, 160 machine fitters will work in a 24-hour shift operation. In order to prepare for the downtime work, and then undertake the subsequent finishing work, GAW has been allowed by Mondi Paper a certain amount of time for each, where work can be carried out while the board machine is in operation. On the days in question the customer will be producing uncoated paper.

Already since May work on setting up the new coating kitchen is in progress while production is running; and this must now be integrated and tested by August.

Mondi, one of the largest producers of paper and packaging in the world, employs 35,000 people in 35 countries. The factory in Springs, which is in the packaging sector, manufactures high-quality packaging board, used in the food industry and elsewhere.

GAW – dosing station



GAW chemical preparation plant for Thailand

High-quality copier and offset paper

GAW won the contract from the Phoenix Pulp and Paper Public Company Limited (part of the Siam Cement Group) to supply a chemical preparation plant for a new paper machine for manufacturing high-quality copier and offset paper. The plant will be set up around 500 km to the north east of Bangkok in Khon Kaen.

Scope of the project

In view of the wide variety of products manufactured at the site, a chemical preparation plant of highly complex design has to be installed. This consists of

- A filling station for liquid products
- A storage tank
- Preparation plants for various starch powders
- Mixing stations and emulsification plants for the manufacture of the necessary chemicals.

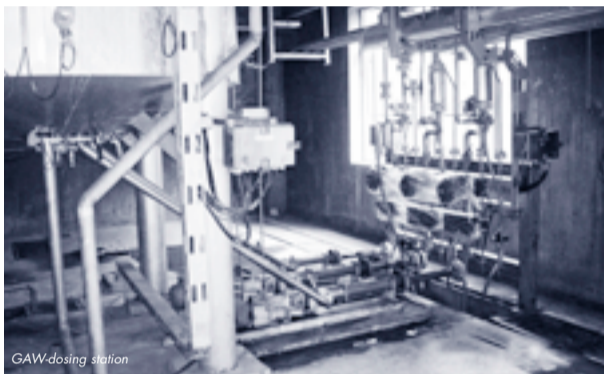
The scope of supply covers everything from design through to on-site training. All plant components (tanks, pumps, stirrers, fittings, and instruments, etc.), and the entire pipework, as well as the pneumatic manifold, are provided by GAW. In addition, supervision of assembly and installation, as well as start-up and on-site training are carried out by a GAW team. Instrument control is state-of-the-art, via Profibus.

All plant components are being delivered at the end of 2007; the plant will be assembled and installed in winter 2007/2008 and commissioned in March next year.

Phoenix Pulp and Paper

Phoenix Pulp and Paper was formed in 1975, and in 1982 production of cellulose was started in Khon Kaen Province. Nowadays Phoenix Pulp and Paper operates two production lines with an annual capacity of 200,000 tonnes, and is the only factory in the world that manufactures cellulose from bamboo and kenaf, raw materials regarded as being particularly environmentally friendly. Currently the factory is being extended to include a paper machine for the production of copier and offset paper.

1. Kenaf is the name of an annual, fast-growing fibrous plant, as well as the name of the fibre that is extracted from it. The fibre is suited to the manufacture of paper as well as fabrics or cellulose for industrial applications.



New customer in China

GAW awarded contract by the Wanlida paper mill



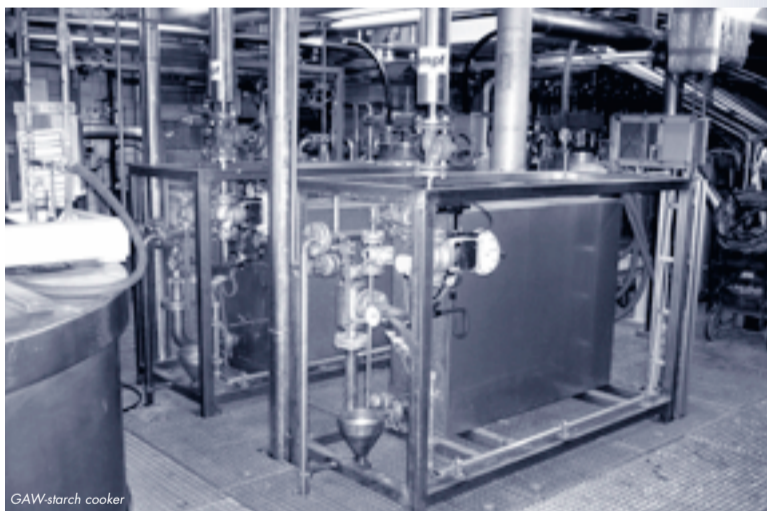
Our focus on the Asian market, and here, specifically on China, continues to bear fruit. And so it was at the end of last year that the contract for the starch adhesive preparation unit and working stations for the PM1 and PM2 cardboard machines at the Wanlida paper mill in Guangdong province (China) was won.

To demonstrate the quality for which GAW is well known, particular attention is being paid to project realisation (achieving deadlines and flexibility), as well as to manufacturing quality.

Scope of the project

The scope of supply involves design, supply, mechanical and electrical assembly supervision, start-up and on-site training.

The assembly and installation operations – both mechanical and electrical – are performed by Chinese personnel, suitably inducted by GAW supervisors. Start-up, jointly with Wanlida, is provisionally set for October 2007.



Starch slurry station, ECO-R filter, and hydrosulphite plant

Increase in capacity and conversion at UPM Kymmene Augsburg

At the UPM Kymmene paper mill in Augsburg, the existing dextrin/starch preparation unit has been enlarged from 500 to 1000 kg/h, so as to be able to ensure continuous operation of the plant. In addition, the entire starch silo area, which constitutes a dust explosion hazard, has been converted in line with ATEX directives¹.

ECO-R filter system for coating unit at Baiersbronn Frischfaser Karton

GAW has supplied the coating colour store tank for an additional Combi Blade coating unit, as well as the complete working station with integrated ECO-R filter system, and the feed system for the

working station. In addition, online viscosity measuring has been incorporated at the working station and at the coat application unit. Since the new ECO-R filter system has shown itself to be excellent in operation, the customer has now also ordered this filter system for the metering bar coating unit.

Hydrosulphite plant for MD Albruck

GAW has been commissioned by MD Albruck to supply a continuous hydrosulphite dissolving station. Hydrosulphite is primarily used in the paper industry for bleaching groundwood pulp. System capacity is 330 kg/h at a solution concentration of 150 g/l. Metering is performed continuously to 4 different consumers.

GAW products score market successes

In cooperation with the product supplier, BASF, GAW has perfected the dissolving plant so that it is state of the art. The plant is available in single container or double container design. Because hydrosulphite power constitutes hazardous material – it is flammable when combined with a damp environment – it has been above all the safety precautions that have received the greatest attention. Over recent years, more than a dozen hydrosulphite dissolving plants have been delivered to this customer.

1. The ATEX designation stands for the abbreviation for the French "Atmosphère explosible" and is used as a synonym for the two directives of the European Community in the field of explosion protection, in other words the ATEX Product Directive 94/9/EC and the ATEX Workplace Directive 1999/92/EC. The purpose of the directives is to protect individuals working in potentially explosive environments.

• Projects and orders.

Presentation of current

projects and orders of

the group's companies.

proudly presents

- **Projects and orders.**
presentation of current
projects/orders of the group
companies.

proudly presents

GAWGROUP – Success in environmental technology

Major contract for Papirnica Vevče in Laibach

Over the last two years GAW has specialised with great success in the business sector of environmental technology, which includes the construction of filtration plants, among others. After the successful realisation in recent years of projects in China and in Marburg, a consortium under the lead management of the GAWGROUP has been successful in outbidding competitors in an international call for tender at Papirnica Vevče in Laibach.

Papirnica Vevče is a 100% subsidiary of Brigl & Bergmeister AG – an important customer of GAW in the Pulp & Paper field.

Scope of the project

The project contract covers expansion of the existing wastewater treatment plant for coating wastewater by using a biological stage. 375m³ of wastewater per hour are cleaned up at the filtration plant. After pre-sedimentation in the sedimentation tank, the treated water is enriched with oxygen in a second stage, with subsequent initiation of organic matter decomposition in the secondary sedimentation tank. Before the treated water can be piped off into the river, the data must be compiled in a measuring station, allowing readjustments to be made if necessary.

The following are included in the GAW scope of supply and service:

- Engineering
- Supply of the machinery plant
- Supply of the electrical, measuring and control engineering equipment
- Assembly and installation

The size of the contract amounts to 2.4 million Euros. Start-up is scheduled for the end of April 2008. As main contractor, GAW is working together with Dausser on the engineering, with Hereschwerke on the electrics, and with BVS in terms of installation and assembly. Once again the know how and expertise of the GAWGROUP as a plant manufacturer has proved to be crucial.

Continued successful partnership with AUDI

Another contract for GAW at the AUDI Works in Neckarsulm

Ever since the kick-off meeting at the beginning of March 2007, preparation and planning has been in full swing for the rebuilding and extension of production-specific assembly stations (in German, "produktionsbedingte Fertigungsplätze", or PBF in short), as well as for the relevant adaptations of the conveyor technology. The Audi A6 saloon, the Audi A6 Avant, the Allroad Quattro, and the Audi A8 are all produced on the Neckarsulm site, as well as a few derivatives.

Optimisation of the work processes

Along with the modifications to the skid conveyor technology, the challenge is to design, con-

struct and manufacture so-called "Hubdrehrichtungen" (rotating/lifting units) in as short a time as possible. The rotating/lifting units are used at the production-specific underbody assembly stations, lifting and turning the body parts to make access to the prescribed weld points easier for the relevant welders, and thereby to optimise the work processes. The project is split into sections and will be dealt with in 14 stages. The first installation deadline was at the end of May.

Installation while production is in progress

Since series production must not be compromised, the new plant components have to be pre-

assembled during the working week, so that the "gaps" in the existing production line can be filled at the weekend.

Each partial start-up must be carried out seamlessly so that continued undisturbed series production can be ensured on the Monday immediately following.

Rebuilding of the engine line in Győr/Hungary

Since mid-June work has also been in full swing for the Audi Works in Győr Hungary. The pallet conveyor at the Győr engine plant (A4 model and derivatives) conveys the assembled engines from the six assembly areas to the loading bays. The plant is being rebuilt and modified by GAW in two construction phases to meet the new requirements.

The first extension phase is due to be completed on 7 August, with completion of the second phase on 21 October 2007. Project completion is set provisionally for the beginning of November.



GAW supplying AVL Graz

Successful start-up thanks to flexibility and readiness for action

Since December 2006, the development group and global player AVL, with headquarters in Graz, has also been one of GAW's customers, being the recipient of plants and plant equipment in the fields of test bench technology and media supply. Subsequent to a call for tender based on very detailed contract specifications, after a brief negotiations phase, GAW won the contract for assembly and start-up of two flow test benches.

Because the start-up deadline was very tight, it has once again been necessary to demonstrate the flexibility and capability for rapid planning and action on the part of GAW staff. In the early part of this

year, both test benches were erected by a GAW team and successfully brought into commission.

The technology involved

The test items mounted in the test benches' are blasted with air via pipe systems using high-performance fans, which switch from extraction to blower mode as required.

Different arrangements of measuring systems (pressure, temperature, flow, etc.) and shut-off devices are integrated in different circuits and con-

trolled via a PLC and its control units. The results form the basis for further development and optimisation of the item on test.

To reduce the test bench technicians' noise exposure to the minimum, and maintain it at that level, additional pipe silencers have been installed, and all pipework in the operating area has been soundproofed.

1. A test bench is a device or assembly by means of which a technical item can be tested for its characteristics in a reproducible way. AVL provides its customers with measuring and testing technology for the entire drive train development process.

ENVIRGY – Top bidder for Line 3 of the Dürnrrohr Waste Incineration Plant

Increase in capacity for the existing plant

AVN Abfallverwertung Niederösterreich Ges. m.b.H. is planning to extend its Dürnrrohr thermal waste reclamation plant, which was commissioned in 2004, by the addition of a third incineration stage. As a result, the output of the plant is set to rise from its current 120 MW level to 210 MW by 2010.

The additional incineration line will also be used for energy reclamation of waste and for generating steam, which will be used in neighbouring Dürnrrohr power station for the generation of power and district heating.

In the bidding process for the multi-stage exhaust gas cleaning unit, ENVIRGY was able to offer the most competitive bid, and in April 2007 was awarded the contract for the pre-engineering of all three lots: Dry, wet and catalytic flue gas purification.

Once there has been a positive outcome to the ongoing environmental impact assessment procedure, which is expected in July 2007, AVN can start construction work and exercise the option on supply, installation and start-up of the plants.

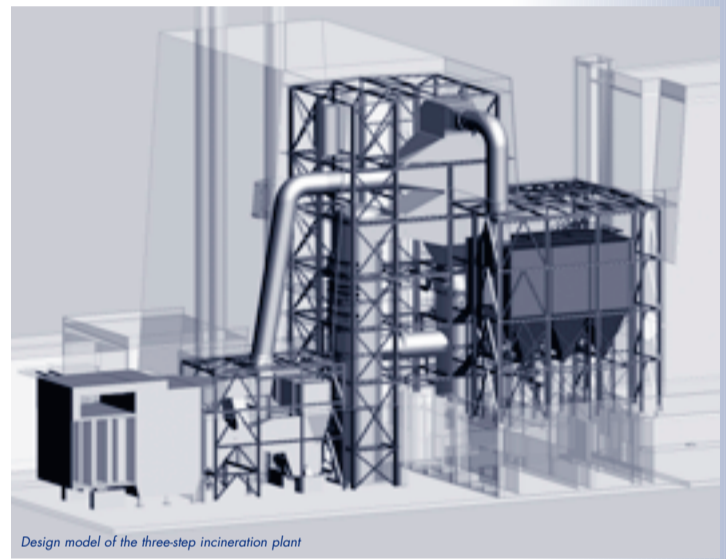
The three-stage process

The key component of dry flue gas purification is the fibrous filter, to be designed and supplied by ENVIRGY's Magdeburg subsidiary ETM. Wet flue gas purification consists essentially of a gas/gas heat exchanger, a parallel current HCl scrubber for purifying the flue gases of halogenated hydrocarbons and mercury, and a counter-current SO₂ scrubber.

In the third stage of the exhaust gas purification, the DeNO_x plant, there is catalytic reduction of the nitrogen oxide into nitrogen (N₂) and steam, using the SCR process

Unlimited operation of the plant

Up until scheduled completion of the third line in December 2009, lines 1 and 2 of the existing plant must be able to continue in full operation unimpeded by construction work and component deliveries – which is a major challenge for the ENVIRGY project team and the AVN team on the Dürnrrohr site.



Design model of the three-step incineration plant

Heavy work for KRESTA

1,500 tonnes of structural steel work for AGRANA

KRESTA has been commissioned by AGRANA Bioethanol GmbH with complete supply and erection of the structural steel work and the tank and column structures for the Pischelsdorf plant in Lower Austria.

In the field of structural steel work, this covers drawing up detailed structural calculations, as well as the engineering, fabrication and erection of the steel structures to a total contract volume of 1,500 tonnes. Completion was in May this year.

Scope of the project

A total of 26 tanks of 75 m³ to 5000 m³ capacity were fabricated. The dimensions ranged from 6 to 24 m in diameter, with double casing (ø26 m) and double bottom. The weight of the individual tanks was up to 300 tonnes. KRESTA also fabricated 6 columns and 1 heat exchanger. The length of the columns is between 7 and 44 m and the diameter between 0.5 m and 3.4 m. At peak times up to 110 people were employed on the site. Total erection time amounted to 80,000 hours.



OSMO – Contract for treatment of flexo ink water

Success at Rondo Ganahl thanks to experience and expertise

At the end of 2006 OSMO Membrane Systems GmbH carried out a contract for Rondo Ganahl in St. Ruprechts for a combined membrane plant for the treatment of printing ink wastewater.

To reduce the considerable quantities of wastewater that have to be disposed of externally, a combined membrane plant has been installed by OSMO. By means of ultrafiltration and nanofiltration the previous amount of wastewater has been reduced to around 15% of residual concentrate. The NF permeate created is of discharge quality and is reused in production, and the remaining amount is disposed of at considerably lower cost.

Reduction in pollutants and in costs

The main purpose of membrane plants is to treat printing ink wastewater arising in production for colour dyes, and extract the residual printing ink so as to reuse this in the printing process. OSMO plants have been successfully employed with

paper bag manufacturers and corrugated cardboard processing firms throughout Europe for over 10 years.

The ultrafiltration used works according to the cross-current principle with a cut-off point (pore size) of approximately 0.01 µm (1 µm = 10 – 6 m). This means that all components of the ink water that are larger than the cut-off point can be filtered out, and the ink water can be reconcentrated until printing ink consistency is attained, i.e. a solid content of around 35%. Under good conditions ("homogeneous treatment") this concentrate can be reused as printing ink.

For the purposes of a cost-effectiveness analysis, a rule of thumb borne out by experience is that around 10% of the amount of printing ink used annually enters the wastewater due to ink changes and washing processes. This means that where 100 tonnes of printing ink are used per year,

around 10 tonnes of recycled ink can be recovered. As well as the massive cost savings, there are also sustainable improvements in terms of the environment.

The contract was awarded to OSMO due to its many years' experience and good references for plant installation in the printing sector. The prefabricated plant parts were delivered at the beginning of March and assembled by MAW on site, and here too good use has been made of cooperation within the group.



Ultrafiltration system

proudly presents

• **Projects and orders.**

Presentation of current projects and orders of the group's companies.

- **Projects and orders.**
presentation of current projects/orders of the group companies.

proudly presents

ETM – Electrofilter for biomass combustion plant

Application-specific research for the benefit of companies

As part of a major contract under the lead management of the Fraunhofer Research Institute in Magdeburg, a biomass combustion plant has been erected in partnership with Kohlbach KCO Co-generation und Bioenergie GmbH, and this was

brought into operation in May 2007. For this pilot plant, equipped with an OCR process¹ and fluidised bed combustion, ETM-Environmental Technology Magdeburg supplied the electrofilter for dedusting of the flue gases, including the discharge systems,

and the instrumentation and control technology. The project has been brought to a successful conclusion and is a further addition to ETM's list of references in the field of combustion plants.

1. An OCR (Organic Rankine Cycle) process is a process involving operation of steam turbines with a working medium other than steam.



Delivery of the electrofilter



Crane in of the filter housing



Built-in electrofilter

ENVIRGY – Success in the Far East

Lucrative licence agreements

Over the past months, the team from ENVIRGY Vienna, supported by ENVIRGY Taiwan, has been able to bring a number of negotiations with Chinese partners to a successful conclusion.

Lucrative licence agreements

Sinosteel Tiancheng Environmental Protection Service & Technology Co., Ltd has been acquired



as a licence holder for the SDA (semi-dry absorption) process. Sinosteel Tiancheng is a member of the internationally active Sinosteel Group – one of the two major state steel businesses in China.

The semi-dry absorption process of ENVIRGY for separation of acidic pollutants is the perfect complement to the existing product portfolio of Sinosteel Tiancheng. The great order potential of the new partner leads us to anticipate high licence revenues in the future. The first joint project in Zhejiang is characterised by a very productive and friendly working atmosphere.

A licence agreement for DeNO_x plants has been signed with the Hangzhou Boiler Group Co., Ltd, one of the top five Chinese boiler man-

ufacturers. As well as the complete SCR system, the licence also covers the ancillary ammonia storage systems and patented ENVIRGY technology for catalytic convertor regeneration.

In the first joint contract, two waste heat boilers for a CCGT power station in Taiyanggong are to be equipped with DeNO_x plants. This new power station is to generate the power and heating supply for the Olympic village for the Summer Games of 2008. The project also covers induction and training on site.

In April ENVIRGY was also able to welcome eight technicians from its licence partner to Vienna, where they were trained in process technology and how to use the dimensioning programs.

Waste incineration plant in Taiwan

An impressive reference project

Red-hot news comes in the form of the contract for catalytic convertor regeneration at a waste incineration plant in Mucha, Taiwan. In a multi-

stage bidding process, ENVIRGY Taiwan, supported by the Vienna team, has been successful in qualifying. During contract execution in Taiwan

the company will build its own scrubbing and regeneration plant, which will also be used for future contracts.

- **Branch relevant research.**
product and operation developments and optimizations are carried out by GAW with the most modern technologies.
Concrete examples are given.

GAW – Coating colour mix feeds for curtain coater for test coating plant

Innovative product and process developments

The Papiertechnische Stiftung (PTS) in Munich provides its customers from the paper industry with services in research and development, consultancy, measuring technology and in-service training. In addition, customers have access to a test plant for carrying out coating tests, designed to trial new base papers, pigments, bonding agents and other aids, as well as developments in process and measuring technology.

Why are pilot trials needed?

It is because the results of new products and

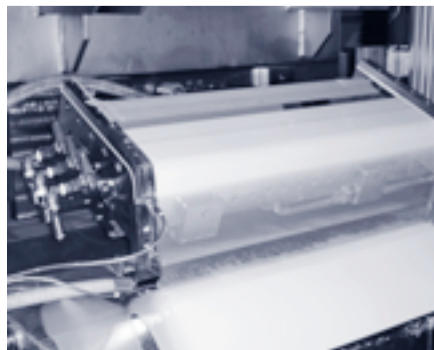
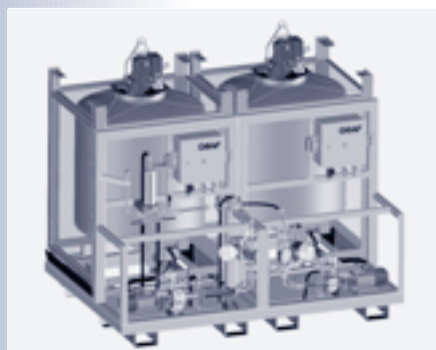
processes tested under laboratory conditions are generally non-reproducible in an industrial context that trialling using pilot test plants is offered. Pilot test plants simulate industrial conditions so well that reliable predictions on later behaviour in a day-to-day working context are possible. This means that unpredictable costs and time wastage can be reduced to a minimum when products are later launched on the market.

The scope of the GAW project

VESTRA awarded GAW the contract for mechanical, instrumentation and control technology design, as well as supply, assembly and start-up of coating colour mix feed units for the new curtain coater. Curtain coating is a direct method of application for coating films, giving higher quality and accuracy. The coating medium is applied using a specially shaped application unit to form a free-falling curtain of liquid that meets the surface to be coated.

In addition, a coating colour venting system and hot water preparation unit have been implemented by GAW.

The services provided also include the new documentation for the full hardware design of the instrumentation and control technology, supply of the control and I/O cabinets, as well as creation of the software for the entire rebuild, including the curtain coater.



high tech