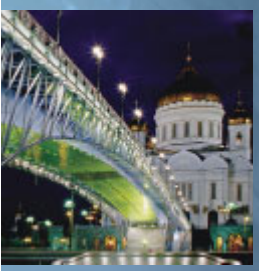
compact

1/2007 The company magazine of ThyssenKrupp Steel

www.thyssenkrupp-steel.com

Energy needs steel

ThyssenKrupp Steel makes electricity flow with high-tech



Expansion in Central and Eastern Europe
Steel goes East

New roller quench
Demand met

Thinking the future of steel

ThyssenKrupp Steel

compact

editorial 3

news

Hot forming made easy 4
Aluminum/silicon-coated manganese/boron steels will soon also be available from Finnentrop.

High-tech slab logistics 6
In future, ThyssenKrupp Steel will be shipping slabs from Brazil with RFID technology.

What RFID can also do 8
Radio waves detect objects and control drug applications in clinics.

Building bridges to the East 10
ThyssenKrupp Steel is entering the Central and Eastern European market and taking advantage of its market opportunities.

The column 12
The European economy is growing closer.

cover story

Energy partners 14
Modern societies are permanently electrified. A luxury which we do not always appreciate. As a partner for energy generators, ThyssenKrupp Steel contributes to electricity generation with high-tech products.

Commentary 20
Is the lack of planning in energy policy a detriment to German companies?

focus

Tailored blanks in door benchmarking 23
Comparison between 18 car doors used in current mass production vehicles.

New roller quench in operation 24
The Heavy Plate Profit Center is expanding its capacity for water-quenched strip.

The steel market in 2020 26
The Industry Division is thinking of tomorrow's customers.

More service, more quality 27
The Materials Center of Excellence gives an insight into its detailed database.

PLADUR® DOOR 28
Color Profit Center offers intelligent thin strip for garage doors.

Steel for industrial packaging 30
Schütz, a Westerwald company, is on course for expansion with industrial packaging.

News from Tagal in China 33
Joint venture is Peugeot supplier of the year 2006.

DAF Trucks on the move 34
ThyssenKrupp Steel Service Center delivers made-to-measure steel.

service

NewsFlash 22
Company information in brief

Agenda 36
Trade shows, exhibitions, events

info.steel@thyssenkrupp.com

www.thyssenkrupp-steel.com

About our cover picture:

View into the interior of a turbogenerator with coated magnetic steel laminations: Here, mechanical energy is converted into electrical energy. As a partner for energy generators, ThyssenKrupp Steel makes a long-term contribution to efficient electricity supplies with high-tech products. After all, one thing is clear: The demand for energy in modern societies is rising continuously. You can read more about this from page 14 onwards.

impressum

ThyssenKrupp Steel AG
Kaiser-Wilhelm-Strasse 100, 47166 Duisburg, Germany
Postal address: 47161 Duisburg, Germany
Phone: +49 (0)203 52-1
Fax: +49 (0)203 52-25102

Publisher:
Executive Functions/Marketing

Editorial team:
Rolf-J. Neumann (legally responsible)
Marketing
Phone: +49 (0)203 52-41003
Fax: +49 (0)203 52-41007
E-mail: rolf-juergen.neumann@thyssenkrupp.com

Christiane Hoch-Baumann (editor-in-chief)
Communication/Public Relations
Phone: +49 (0)203 52-24515
Fax: +49 (0)203 52-25707
E-mail: christiane.hoch-baumann@thyssenkrupp.com

Katharina Mette
Communication/Public Relations
Phone: +49 (0)203 52-25152
Fax: +49 (0)203 52-25707
E-mail: katharina.mette@thyssenkrupp.com

Photographs:
ThyssenKrupp Steel Fotografie; Sveto Service Moscow (pg. 4); Siemens (pg. 17 top); Taga (pg. 33); DAF Trucks (pg.34)

Design:
MERZ Werbeagentur, Düsseldorf, Germany

Printing:
ThyssenKrupp Printmedia GmbH, Duisburg, Germany

Publication frequency:
Three times a year, the next edition will appear in August

Issue 25:
1/2007 – April

"We are aligning our activities on an international basis and relying not just on size, but are concentrating on our strengths in high-quality flat steel products."

Dear Readers,

Steel is continuing to boom: The industry in 2007 is following on seamlessly from positive developments in past years and is on course for success with good prospectives for growth. Any company intending to achieve success in the long term needs to think on a global scale and align its activities internationally. In this process, ThyssenKrupp Steel is not relying on size alone but concentrating on its strengths in high-quality flat steel products.

Steel goes global: The process of building our steel plant in Brazil is continuing apace. From 2009 onwards, 5 million tons of slabs will be dispatched from the integrated steel facility every year for processing in Germany and North America. To ensure that the steel slabs from Brazil end up where they are intended, ThyssenKrupp Steel is the first steel manufacturer to employ radio frequency identification (RFID) for their transport and distribution. The system makes it possible to read and store data without a line-of-sight or contact, even over long distances.

At the start of this year, the European Union welcomed two more member states, taking its number to 27. This expansion in the European domestic market offers good export and investment opportunities for the German economy. ThyssenKrupp Steel is undertaking projects in Russia, Poland, Hungary and the Czech Republic, and its Central and Eastern European expansion policy is moving ahead on a clear basis.

Energy needs steel: This is undoubtedly the case. In our cover story, we provide you with detailed information about the German energy market, the continuously growing demand for energy and what the prospects are. As a partner for energy generators, ThyssenKrupp Steel with its high-tech and energy-efficient products is contributing to sustainable electricity generation. It is an approach that balances security of supply, environmental friendliness and competitiveness.

Steel is varied: Amongst other articles, we report on the growing market for special steels and the modern roller quench that the Heavy Plate Profit Center is using to meet major demand for water-quenched products. Furthermore, we present the possibilities offered by the new materials database in the Materials Center of Excellence, introduce you to our Tagal hot-dip coating plant operated as a Chinese joint venture and selected by Peugeot as its Supplier of the Year 2006. In addition, we show you the success achieved by DAF Trucks in the Netherlands which has increased its quality, particularly in the driver's cab, through becoming a partner of our Steel Service Centers.

Steel is enduring: This message is apparent in all of the articles in our customer magazine and is particularly important for our company. I hope you enjoy reading this magazine.

Yours,

Dr. Karl-Ulrich Köhler
Chief Executive Officer

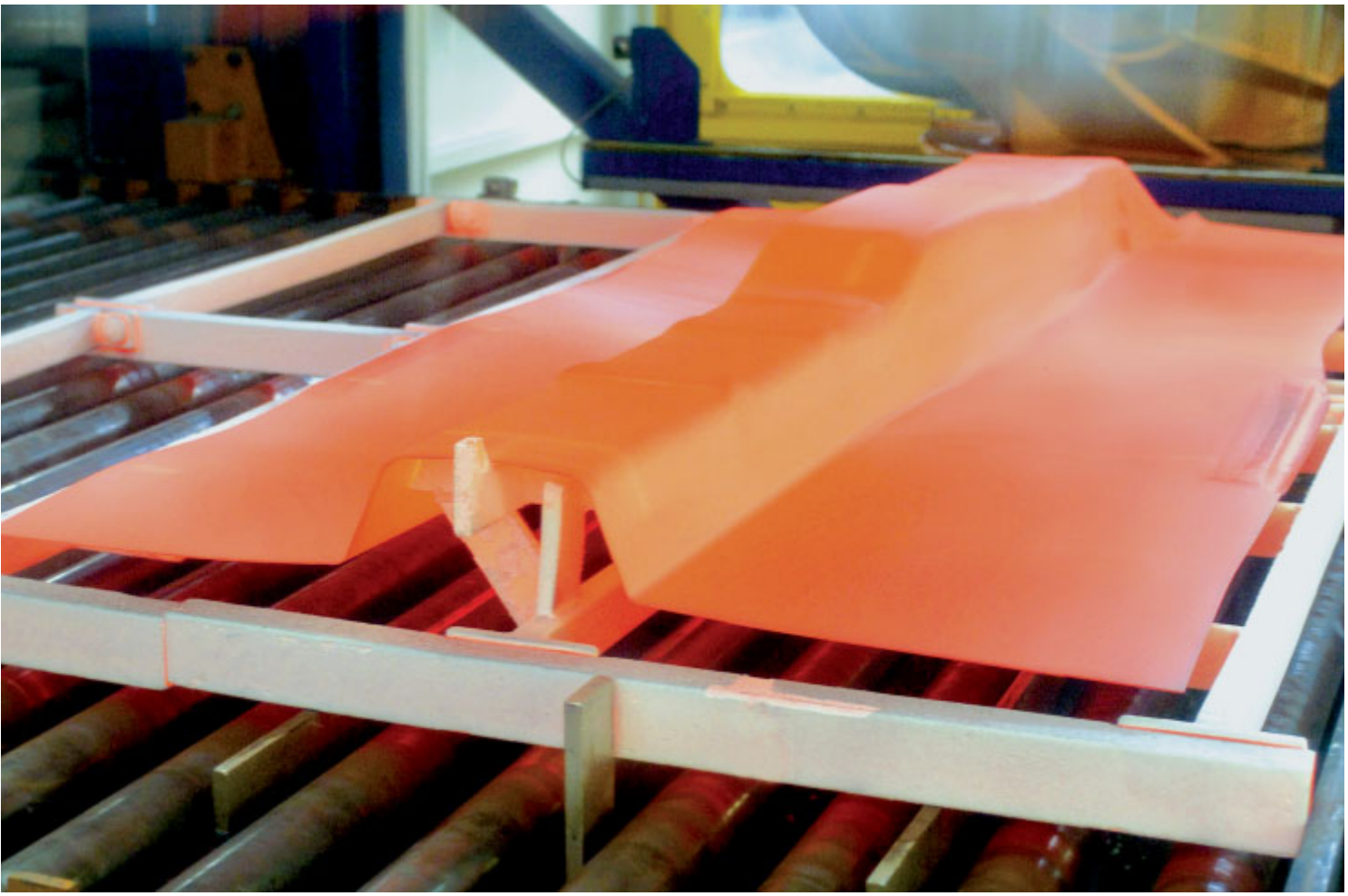
Dortmund is supplying expertise for volume production

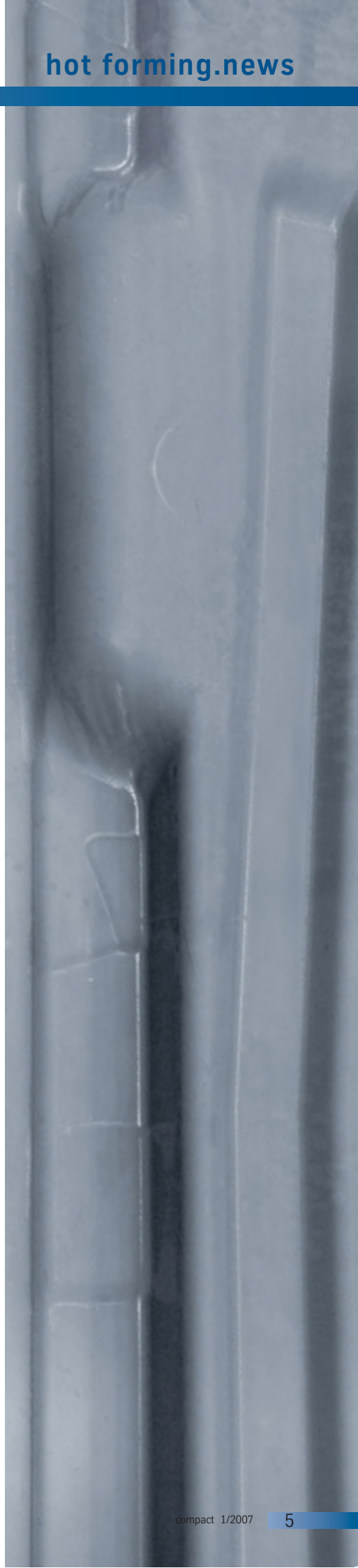
The car industry is the winner

From this fall, VW, Audi, DaimlerChrysler and others will be able to obtain aluminum/silicon-coated manganese/boron steels for hot forming not just from Duisburg as before, but also from Finnentrop in the Sauerland. With an investment of about 10 million euros, hot-dip coating line 3 has been made ready for volume production of MBW® 1500 + AS from ThyssenKrupp Steel. The expertise was provided by Dortmund.

Demand for this high-strength product is growing steadily. The material is preferably used in non-visible areas of automotive bodywork where it functions as, amongst other things, B-pillars, bumper and tunnel reinforcements in order to provide extra stability at the same time as reducing weight. Dr. Franz-Josef Lenze from Hot Forming in the Auto Division at Dortmund, his colleague

▼ The team at the Dortmund test facility provides its expertise to support the automotive industry and components suppliers in all areas relating to hot forming, initiates developments and offers consulting during series production.





▶ Following hot forming, the aluminum/silicon-coated manganese/boron steel is especially strong and provides additional safety in cars when used as tunnel reinforcement or bumpers.

Sascha Sikora and the 7-strong team detected this trend at an early stage and have been taking a close look at the product in their test facility at the Westfalenhütte since the start of 2006.

"The objective was to make MBW® 1500 + AS ready for volume production at car makers," explains Lenze. "Hot forming makes it possible for our customers to manufacture complex geometrical components with absolute accuracy. The components can adopt an extremely wide range of shapes and are particularly accurate in terms of dimensions," he continues, describing the advantages. In fact, steel has been hot-formed for several decades and so the process is not a new one. "One problem in the production process, however, is scale formation on the components," explains Sascha Sikora. "The layer of scale that forms due to thermal treatment of the manganese/boron steel is brittle and increases die wear in production. In addition, these components then have to be sand-blasted, representing additional work."

For more than one year, the team around Dr. Lenze at the Dortmund test facility continued to develop the material and tested it under near-production conditions. And with success: "The solution is provided by an aluminum/silicon layer," says Dr. Lenze. "The evenly distributed surface treatment not only protects against corrosion but it also prevents scale formation during production, thereby allowing our customers to use it in production which offers advantages in terms of costs."

This means the car industry is the winner: "Starting production and moving to volume production are much more straightforward procedures thanks to our specialist knowledge," agree Dr. Lenze and Sascha Sikora. "We support our customers and their suppliers with our expertise, not only during the development period but also in a consulting role during production. This means we safeguard our material and process skills on the ground." The test facility in Dortmund will therefore not be stopping in the near future either. "We are going to continue our tests to achieve good material quality. Prototype production is even a possibility."

Kathrin Lorenz

www.thyssenkrupp-steel.com/auto

Finnentrop extends its delivery range

To date, ThyssenKrupp Steel has supplied MBW® 1500 + AS material, generally also known as 22MnB5 + AS, in widths ranging from 600 to 1,300 mm and thicknesses from 1.00 to 1.85 mm. Through extensive investments in hot-dip coating line 3 at Finnentrop, the delivery range is going to be significantly expanded from fall onwards. Then, widths up to 1,550 mm and thicknesses up to 3 mm will be possible. The latest machine and process technology is going to guarantee constant thicknesses of the aluminum/silicon layer and a high level of process stability during processing of the MBW® 1500 + AS. The high-strength, hot-formed parts will achieve strength values in excess of 1,500 megapascals.

Contact: **Dr. Franz-Josef Lenze,** Auto Division, tel. +49 (0)231 844-4465, e-mail: franz-josef.lenze@thyssenkrupp.com
Sascha Sikora, Auto Division, tel. +49 (0)231 844-4512, e-mail: sascha.sikora@thyssenkrupp.com

High-tech slab logistics at ThyssenKrupp Steel

Quick and safe over the world's oceans with RFID

◀ The unobtrusive RFID system manages complex logistical pathways.

ThyssenKrupp Steel relies on slab logistics with RFID technology. The company will be using radio frequency identification (RFID) technology for slab transportation and distribution logistics at its new steel mill in the Bay of Sepetiba, Brazil. From the start of 2009, five million tonnes of slabs every year will be dispatched from the integrated steel works for further processing in North America and Germany. Intelligent microchips will ensure that the slabs do not go astray during their long journey – a highly complex logistical process in which the slabs have to be identified several times over.

The radio system is an optimum solution for this. It makes it possible to read and save data over long distances without the need for visual or physical contact. In the version selected by ThyssenKrupp Steel, the microchip stores a ten-digit number code which can be used to unambiguously identify every slab produced by the company. The chip as well as an aerial unit is located in a plastic label referred to as an RFID tag. This label will be programmed and attached to the center of the slab sides in the harbor in Sepetiba.

▲ Logistics made easy: In future, RFID will be used at ThyssenKrupp Steel for reliable and traceable slab logistics. From 2009, five million tonnes annually will be shipped from Brazil across the world's oceans.

The slabs are identified by an RFID reader that sends the data to the central IT systems, where information is stored on the steel grade, dimensions, customer and destination of each slab.

The major advantage of the RFID system: In sea and domestic waterway ports, it detects the slabs right from when they are being loaded. The readers are permanently installed on the cranes and the crane operator receives information on where to unload the slab with hardly any delay. This is not all: For the final check directly ahead of the German hot strip mill furnaces operated by ThyssenKrupp Steel, RFID readers check that the right slabs are being processed.

In the pilot test that ThyssenKrupp Steel recently performed on 1,000 slabs, RFID technology proved to be the first choice for slab logistics. With a range of up to ten meters, RFID used by ThyssenKrupp Steel is far superior to barcode systems, for example where scanners need to be positioned much closer to the labels to function reliably. Optical image recognition systems cannot be considered because their efficiency would be impaired by dirt, scale or ice on the slabs.

Slab logistics is a completely new application for RFID. It has only been possible to use the technology on metallic objects reliably and over the required range for just over two years. Prior to that, there were problems with the electromagnetic waves being reflected from the metallic surfaces. The international consultants Accenture are supporting ThyssenKrupp Steel in the introduction of RFID with experts from Germany and France.

Bernd Overmaat

Contact: **Dr. Wolfgang Rasim,** Company Planning/Order Systems, tel. +49 (0)203 52-47777, e-mail: wolfgang.rasim@thyssenkrupp.com

RFID – radio detection without barriers

Small waves with a big impact

RFID is the name of the practical technology that detects objects with radio waves and manages entire logistics pathways. However, it can also control drug applications in clinics. RFID provides a wide range of benefits. However, data protection watchdogs are warning against the risk to consumer confidentiality.

Soon to become reality: Fresh milk and yoghurt delivered to your door. The supermarket has brought the items round. But not because the customer rang up to order them; instead, the refrigerator transmitted data about what household articles were missing or which had reached their use-by date. This is not yet part of everyday life, but the vision could become true with the help of radio frequency identification, RFID for short.

The technology works with a label that transmits waves. These are read by the associated receiver, passed on via a network and processed using software. The word "label", however, is too simple, because it is actually a mini-chip with built-in aerial. The chip is referred to as a transponder or tag and can store all kinds of information such as product type, price, use-by date and many more things besides, depending on the user. Location, data acquisition and evaluation are performed without contact or line-of-sight.

This is precisely what happens, even if only as a test system, in the intelligent fridge that has been developed by Liebherr. The foodstuffs kept in the fridge carry a transponder with product data, and the fridge has a reader unit. This receives the information and passes it on to the shop which delivers to the customer the articles that require resupply according to the electronic replenishment list. With RFID, even the average consumer will be able to manage his or her shopping and store cupboard requirements automatically in future.

This high-tech tool started life as a military application. It began to be used commercially for the first time in the 1980s in the USA, as a means of automating toll collections at bridges, tunnels and highways. "Even today, the range of applications for radio frequency identification is extremely varied. The vision is for car parts, for example, to automatically locate one another or for medicines to be transported to the patient automatically in a hospital," says Professor Michael ten Hompel of the Frauenhofer Institute for Material Flow and Logistics.

For example, consumer goods manufacturers such as Henkel or Gillette fit RFID

▼ In marathons such as in Vienna, Berlin or Boston, an RFID tag with the name, start time, etc. of the runner is attached to his or her running shoes. Then, high-tech posts distributed along the route record whether and when a runner has passed them. Taking a short cut or falsifying times is no longer possible.

▼ Transponder technology makes it possible: At ThyssenKrupp Steel, the barriers at some plant gates open and close automatically. However, each car driving in or out is subjected to a thorough check that takes only a few fractions of a second and does not require intervention by security personnel.

labels on entire goods pallets at the request of supermarket giants such as Wal-Mart and Metro so that the products make their way onto the shelves quicker than in the past. Right from when the truck carrying the delivery is driven through the plant gate of the company that placed the order, a reader device positioned there registers the new arrival and assigns it to the warehouse stock. Radio waves and software accelerate procedures, reduce stock levels and make the process chain from the manufacturer to the vendor a transparent one. However, it also enables the library at the University of Karlsruhe to design its logistics more efficiently. The library's books are provided with RFID tags, and are then automatically registered. In addition, lending and returns of the books are handled by the system.

The Detmold District Court handles its files in the same way. Also, the clinic in Jena provides its patients with RFID armbands, fits transmitter labels on their drugs and thereby ensures that no-one gets the wrong medicines. Car manufacturers provide car keys with RFID tags as part of the immobilization system. To make sure no children get lost in Legoland in the Danish town of Billund, they are provided with armbands containing RFID transponders. Receivers distributed throughout the park detect the location of the registered kids at any time.

Whenever customers in the New York store of the Italian luxury goods manufacturer, Prada, want to know whether a suit or dress is available in the required size or a different color, their request is rapidly processed with the mini chip. RFID expert ten Hompel: "The range of possible applications is by no means exhausted. For internet shopping, goods will in future be automatically input into the systems using their intelligent labels and will be transported to their destination automatically."

However, it is also necessary to clarify data protection issues when RFID is put into practice at the end-user. This is not just because some new electronic passports are equipped with an RFID chip. It contains biometric data for the passport holder as well as a photograph and transmits this information to the customs official via the reader unit. "Governmental bodies could upload additional data without the holder noticing it or giving permission, and even track the movement of people," criticizes Ulrich Sommer, a criminal lawyer based in Cologne. There are also fears that unauthorized eavesdroppers with reader units could take up a position at an airport, download passport information and then misuse the data. "The information deficits are very great in some cases," says Irmgard Jarosch, spokesperson of the RFID information forum, "the data on an e-passport is encrypted and therefore offers protections against unauthorized access and manipulation."

However, it does make a difference whether biometric data is being checked, patients monitored or goods movements managed in the retail trade. The situation could even be critical whenever the intelligent fridge transmits information to the shops. Stored accordingly and processed, patterns of consumer habits could be created. Jarosch: "The leading users have entered into a voluntary agreement to inform consumers in detail about RFID. This means telling them when they use the technology and providing information that the consumer can deactivate the chip."

Ulrike Wirtz, freelance journalist

www.info-rfid.com

Contact: **RFID information forum,** tel. +49 (0)30 206581-0, e-mail: info@info-rfid.de

▼ RFID increases the level of protection against car theft. Many international manufacturers equip car keys with a transponder and fit ignition locks with the corresponding reader units. When the driver takes the key out of the ignition, the electronic systems are locked, and it is even impossible to "hot-wire" the vehicle.

Projects for Central and Eastern European expansion

Building bridges with investments

By Christiane Hoch-Baumann

▲ It is above all Western European nations and companies that are building bridges into important growth markets of the future. ThyssenKrupp Steel has, for example, established a branch for roof and wall products in Moscow and is seizing its opportunities.

The European Union is growing. Its expansion to 27 states at the start of this year has created the largest common market in the world with 455 million consumers. As far as the German economy is concerned, the expanded European domestic market offers good opportunities for export and investment as well as increasing competitiveness in the global market. ThyssenKrupp Steel has taken account of these perspectives and intends to establish a base in the new member states of Central and Eastern Europe.

Heavy Plate

The Heavy Plate Profit Center has been represented through its service centers and sales partners in the Central and Eastern European region for many years now. It has followed its major customers in the construction machinery industry and crane building which have numerous suppliers in that region. For example, the ThyssenKrupp Ferroglobus service center in Budapest supplies the Gödöllö Hungarian plant of the world's biggest construction machinery manufacturer, Caterpillar.

UnionOcel delivers material to the suppliers of Terex, the crane builder, as well as warehouse customers of the Heavy Plate Profit Center in the Central and Eastern European region. Since its foundation in 2001, UnionOcel has developed into a powerful and reliable supplier of high-quality heavy plate and semi-machined flame-cut parts for the entire Central and Eastern European market. At the end of 2006, it opened its central warehouse together with a machining operation in Kopřivnice. Up to 30,000 tonnes of hot-rolled heavy plate can be stored there. Two flame-cutting lines as well as a hydraulic shear are already guaranteeing that high-quality processing is possible. They intend to expand this position. "We are investing in construction of an administration building and another processing hall," emphasizes Kurt Bischoff, Managing Partner of UnionOcel.

Contact:
Dr. Matthias Gierse,
Heavy Plate Profit Center,
tel. +49 (0)203 52-75568,
e-mail: matthias.gierse@thyssenkrupp.com
www.thyssenkrupp-steel.com/plate

Steel service

At the end of May, the new ThyssenKrupp Stal-Serwis Polska in Dąbrowa Górnicza, near to Katowice, will be inaugurated. "Our investment is bringing us closer to our customers and directly appealing to consumers in Poland, Czech Republic, Slovakia and Ukraine," says CEO Dr. Bernd Danz. "These include numerous automobile manufacturers, components suppliers and press shops as well as manufacturers and suppliers of domestic appliances who have particularly exacting requirements for surface quality and dimensional accuracy of processed flat steel products."

Using a slitting line, this subsidiary of ThyssenKrupp Stahl-Service-Center GmbH will soon be processing slit strips from hot-rolled, cold-rolled as well as surface-finished thin strip, also in exposed panel quality. The latest materials developments such as trip steels and dual-phase steels can be processed. Planned annual capacity: 125,000 tonnes.

As well as Stal-Serwis Polska and ThyssenKrupp Stainless Poland, the largest steel, logistics and service center in Eastern Europe has been created under the roof of ThyssenKrupp Energostal, with a total surface area of about 75,000 square meters. ThyssenKrupp Energostal is a Polish subsidiary of ThyssenKrupp Services.

Contact:
Dr. Bernd Danz,
ThyssenKrupp Stal Serwis Polska Sp. z o.o.,
ul. Torunśka 7, 41-300 Dąbrowa Górnicza,
Tel. +48 (0)32 6395620
www.thyssenkrupp-stal-serwis-polska.pl

Construction elements

The construction element group of ThyssenKrupp Steel is also orienting itself more significantly to its target markets in the East: "By building a sandwich plant in Hungary, we are safeguarding and improving our good market position and increasing our development opportunities and profitability," describes the CEO of ThyssenKrupp Hoesch Bausysteme, Dr. Horst Dieter Schultz. The plant at Felsölajos, about 60 kilometers from Budapest, will start supplying the Central and Eastern European market with up to 16,000 tonnes of sandwich elements per year from October onwards. The primary material comes from the Color Profit Center in Kreuztal-Eichen. "The most important thing for us is to optimize our product portfolio, not least in order to open up new applications for building with steel."

In the Moscow region, the construction element center is opening its first branch for roof and wall products: "Our new office allows us to seize market opportunities in Russia and build up a new sales area," observes Leendert Dorjee, CEO of ThyssenKrupp Hoesch Bausysteme. "The emphasis is on civil engineering and cold room manufacture. The objective for the next few years is to achieve a sustainable share of the Russian construction element market."

Contact:
Leendert Dorjee and **Dr. Horst Dieter Schulz,**
ThyssenKrupp Hoesch Bausysteme,
Tel. +49 (0)2732 599-1599,
e-mail: info@tks-bau.thyssenkrupp.com
www.tks-bau.com

The European economy is growing closer

Linked by a shared culture

15 years after the collapse of the communist Eastern Block, ten countries became members of the European Union (EU), eight of which had previously been command economies of Central and Eastern Europe. Establishing democratic political systems, the transition to a market economy and integrating their economy in the world market represented major challenges for Estonia, Latvia, Lithuania, Poland, Slovenia, Slovakia, the Czech Republic as well as Hungary. The fact that Western European countries and companies above all were the first to build bridges was due not least to their geographical proximity. However, a shared way of thinking, culture and general affinity to the European body of thought promoted this development.

The entry of Bulgaria and Romania at the start of this year was the 6th expansion of the core EU-6 formed in 1957. Whereas the first Eastern expansion resulted in an increase of about 5% in the overall EU gross domestic product (GDP), the most recent entry increased this figure by 0.9%, 0.2 from Bulgaria and 0.7 from Romania. Taking the euro zone, the nominal GDP of the new member states in 2005 amounted to 654 billion euros, representing about 8% of the GDP of the euro zone. Entry to the EU meant two things above all both for the Central and European nations of the first and second expansion waves – the end of a lengthy and painful process of adjustment and reform, as well as the return to Europe and hope for economic wealth. One example of the integration work that had to be achieved by the Central and Eastern European countries is that they needed to adopt the legal corpus of the EU, referred to as the acquis communautaire, amounting to 14,500 legal files and about 85,000 pages in the Official Journal of the EU.

The gulf in the standard of living is indicated above all in terms of buying power: the per capita income of the new member states measured on a buying power parity basis is less than 50% of the old EU average. Also, significant income differentials are apparent within the group of countries: Slovenia has 70% of the average level for the EU-15, therefore putting it ahead of Portugal and Greece already, whereas the per capita income of Latvia is only about 40%. Harmonizing living conditions is of major importance for European integration. The largest item in the EU budget concerns funds for regional and structural policy. In addition to transfers of funds at governmental level, there is also an adaptation of wealth through economic channels, in particular through foreign trade policy – the trade in goods and services, financial and capital markets and the migration of labor.

German companies are now selling more goods in the new member states than they do in the USA and Canada put together. In total, the share of German goods exports purchased by Central and Eastern European countries is around 9%, a good three-quarters of this trade being accounted for by the three largest countries, Poland, the Czech Republic and Hungary. At the same time, the trading structure has changed significantly during the past decade: In the mid 1990s, textiles and clothing still played a key role in imports and exports, whereas the front runners now are above all goods from the machinery and automotive industries as well as the electrical industry.

Germany plays a key role in overall EU exports to Central and Eastern European countries, with a share of about 40%. This is firstly to do with the wide range of Germany companies in the capital goods business that the countries need to meet their modernization requirements. Secondly, it is explained by the high capital exports from Germany to these countries, above all in significant direct investments.

These are mainly in the form of investment capital used for establishing and expanding subsidiaries in production

and services as well as for taking shareholdings in privatized companies such as through mergers and buy-outs.

The assets invested directly by German investors (for which information is available up to and including 2004) amount to 677 billion euros. About half of this was channeled into the 14 "old" EU countries and 30% into the United States; this still left 6% for the 10 new member states of the 2004 expansion. Also, another figure shows the importance of investments in Central and Eastern European countries for companies of the old EU even before these countries joined the organization: From the period 2001 to 2003, 7.1% of all foreign direct investment went into the new member states, whereas only 1.6% was invested in China and 0.4% in India.

The correctness of the locations selected by German companies in their diversified go-east strategy has been verified by a league table published by the EU in its 2005 annual economic report, entitled "offshore location attractiveness ranking, 2004": this ranking with a scale from 0 to 8 placed India out in front with 7.2, followed by China with 5.7 and Malaysia with 5.6 – equal with the Czech Republic which was even ahead of the top-placed countries in the "business environment" parameter. This was followed by Singapore, the Philippines, Brazil, Canada and Chile and then Poland with 5.3 and Hungary with 5.2. The first "old" EU countries were Portugal in 19th place and Spain in 22nd.

From the perspective of Central and Eastern European countries, incoming capital flows from the EU-15 states account for about 80% of total direct investments into their countries. These amount to a very significant share of their economic potential, although one that varies from country to country, namely 20% of Poland's and Slovenia's GDP, and up to 80% in Estonia. These financial investments are financing the balance of payments deficits, which are in some cases very considerable, and, in the form of long-term investments, also making a permanent contribution to economic growth. Furthermore, they help to stabilize labor markets and the income situation of public spending rounds.

The recent survey by the Association of German Chambers of Industry and Commerce on investments by German companies indicates that they are made predominantly out of sales considerations. Primarily, companies are involved in the processing industry, although there are also direct investments in wholesale and retail businesses, power and water supply as well as transport and data transfer. However, cost benefits in production also play a role: lower labor and unit costs combined with well trained workers and lower corporation taxes make these locations attractive.

The consequences of this international fragmentation of the wealth creation chain, also referred to under the heading of "bazaar economy", are lower prices for consumers and companies, higher productivity and real wages in the companies in question as well as an increase in international trading volumes. The question is whether there is also a negative side to the coin, namely that investments and jobs are lacking in the countries and companies making these investments.

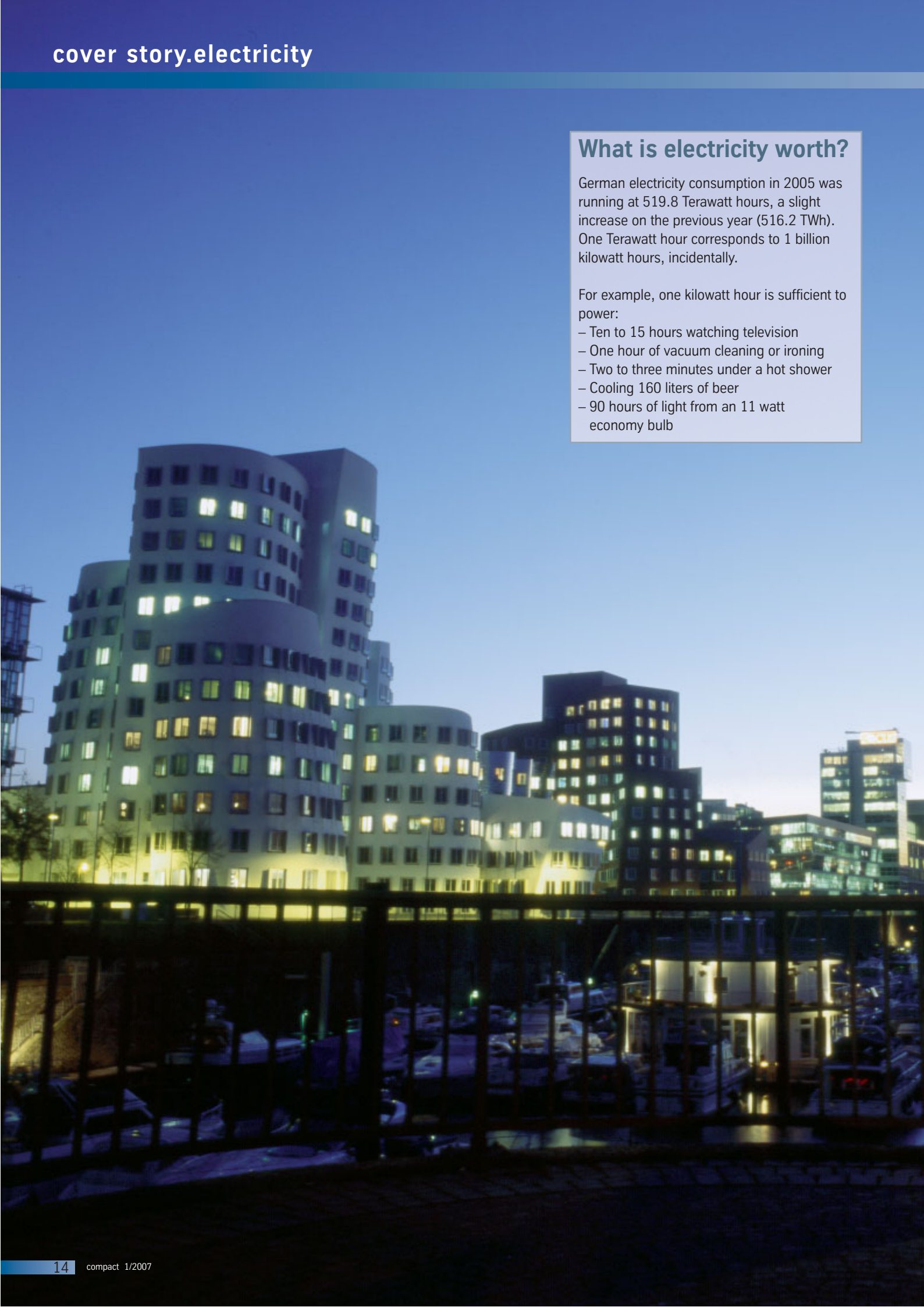
A study by the German Bundesbank in autumn last year came to a different conclusion, however: direct investments – even when made primarily in order to reduce costs – do have positive effects on domestic employment. There are no substitution effects, even for domestic plant investments. Instead, the German central bank said that its results indicate a long-term favorable influence on domestic investments from the direct investments abroad. Investments, trade and migration of labor (to date only to a limited extent) has promoted the integration of Central and Eastern European countries into the European Union. At the same time, the German economy has been able to build bridges to important growth markets of the future.

Dr. Bettina Wieß, financial journalist

What is electricity worth?

German electricity consumption in 2005 was running at 519.8 Terawatt hours, a slight increase on the previous year (516.2 TWh). One Terawatt hour corresponds to 1 billion kilowatt hours, incidentally.

For example, one kilowatt hour is sufficient to power:
– Ten to 15 hours watching television
– One hour of vacuum cleaning or ironing
– Two to three minutes under a hot shower
– Cooling 160 liters of beer
– 90 hours of light from an 11 watt economy bulb



Permanently electrified

Who will cover our increasing need for energy?

By Christiane Hoch-Baumann, photos: Rainer Kaysers

Modern societies are permanently energized. It is a luxury that we are not always aware of. We take it for granted that electricity is there, wherever and whenever we need it. A cornucopia which we can tap as we need. Is this really the case?

Our everyday life would be unthinkable without electricity. Even the small things make this apparent: A hot shower in the morning, coffee and toast for breakfast, the metro that brings us to work. And not forgetting: modern medicine, industry and our economy which would not function without electricity. The extent of our dependency on electrical energy is made apparent whenever the supply stops functioning: take for example November 2006 when a collapse in the German grid and that of Western European countries caused a state of emergency lasting several hours. One year before, the Münsterland was hit by major snowstorms and dozens of electricity pylons collapsed under the load of snow and ice. In both cases, innumerable people were suddenly plunged into darkness, metro trains stopped in their tracks, elevators failed – many aspects of our life were simply put on hold for several hours or even days.

The amount of electricity required by modern societies is gigantic, and is growing steadily. It is above all the growing demand from economically developing nations such as China and India that is massively influencing international energy markets. For example, leading energy bodies estimate that global electricity consumption will double during the next 25 years, thereby reaching almost 30,000 Terawatt hours in the year 2030. This corresponds to an annual growth of about 2.7%, although the growth rate in developing countries will be three times as high as in industrialized nations.

But where does electricity actually come from? Electricity generation in Germany is currently significantly dependent on limited resources. Fossil fuels such as brown and hard coal remain the most important energy carriers – accounting for a total of about 46% in 2005. However, whereas brown coal is chiefly obtained from domestic mining, a large proportion of the hard coal is already being imported. On January 30, the federal government decided to cease hard coal mining in Germany by 2018. In order to free itself from this growing dependency, the national electricity market is increasingly relying on a balanced mix of energy generation: Increased use of natural gas, currently running at about 12%. 27% comes from nuclear energy, but this is planned to be phased out by 2023. How the resulting gap is going to be made up is something that has still to be decided.

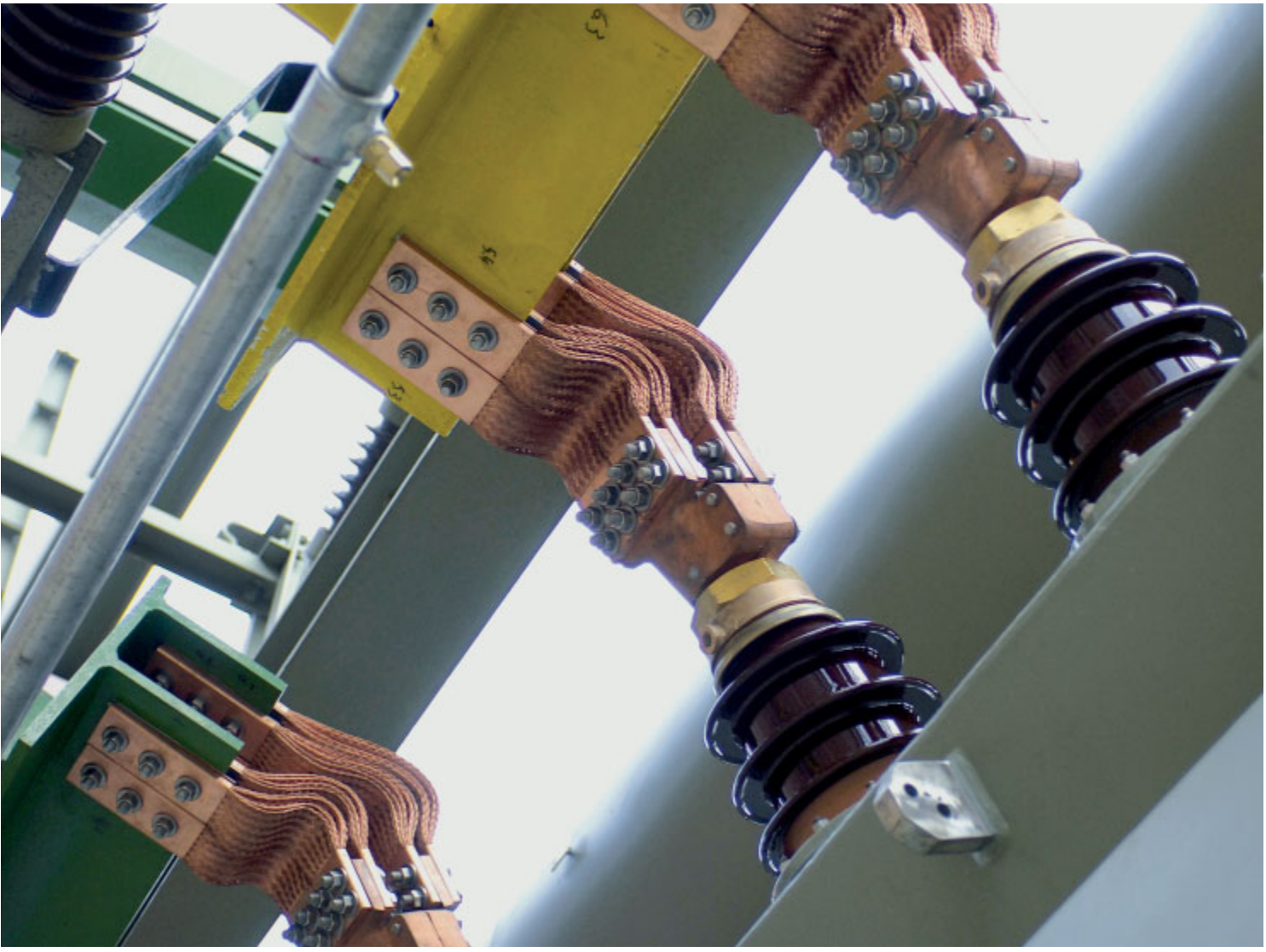
Great hopes are being placed in renewable energy resources such as solar energy, wind power and hydro electricity. Biomass can also be used for generating electricity: For example, tons of manure are generated in large-scale livestock farms on a daily basis, and this could be used for generating electricity. In total however, only about 10% of our electricity is being generated from renewable resources. This will have to be increased to 12.5% by 2010 – an objective set by the European Union.

The particular problem is that electricity cannot be stored, and therefore has to be produced precisely in the quantities that are being consumed at any particular moment. At peak times such as early morning or on long winter evenings, Germany buys in millions of kilowatt hours from other European countries, in order to supply the national grid. Germany is in the midst of the European composite grid and electricity is continually being exchanged between neighboring countries. However, this is not a long-term solution.

◀ Düsseldorf in the evening: The hustle and bustle is reaching its climax on the Rhine. Electricity consumption is rising. Illuminated cities are part of the everyday picture of modern societies. A luxury which we do not always appreciate.

ThyssenKrupp Steel: partner for energy

Power plants make electricity flow with high-tech



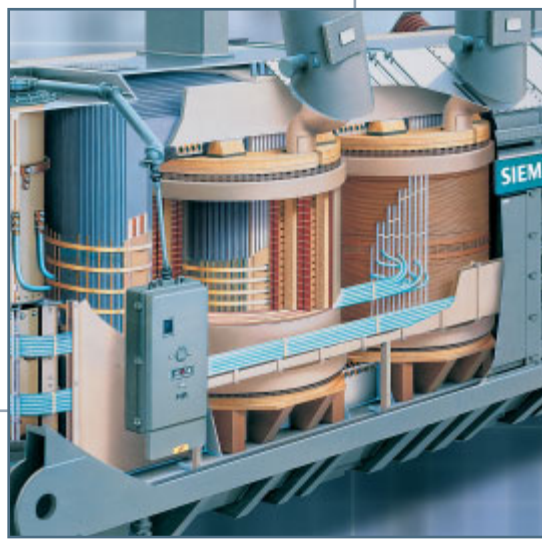
▲ Everyone needs electricity. Products from ThyssenKrupp Electrical Steel ensure that it finds its way from the power plant to the consumer with as little loss as possible.

Power plants play a central role in electricity generation, and their importance increases with every additional kilowatt hour that is consumed. To meet constantly growing demand, about 1/3 of the existing power plant output will have to be replaced in Germany by 2020 – this represents 50,000 megawatts, representing the output of 20 atomic power plants of the size of Biblis.

PowerCore® provides movement

PowerCore® magnetic steel strip from ThyssenKrupp is at work wherever energy is generated, converted, transported, distributed or consumed. For example, up to 350 tonnes of the high-tech product can be used in the iron core material of every single generator transformer. Grain-oriented electrical steel from ThyssenKrupp Electrical Steel is also used in all power and distribution transformers in the energy supply chain from transformer sub-stations in cities and communities right through to the power point.

In generators, non-grain-oriented electrical steel from ThyssenKrupp Steel in Bochum converts motive energy into electrical energy. It is used in motors, which also consist of non-grain-oriented electrical steel, for driving machines and appliances in industry and households. The important aspect concerns the good magnetic properties of the material.



RWE Power is currently building a new brown coal power plant in Grevenbroich, Neurath. “It will be the biggest and most modern brown coal power plant in the world,” emphasizes Dr. Johannes Lambertz, the responsible Executive Director of RWE Power. The two-unit plant representing an investment of 2.2 billion euros features optimized plant engineering, and its output of twice 1,100 megawatts is planned to come on line in 2010, providing sustained benefits for the economy and the job market. “Our new technology increases the efficiency of electricity generation based on brown coal by more than 30%, at the same time as reducing CO_2 emissions in relation to comparable plants by 6 million tonnes per annum.” The appearance of the former gray giant has also changed. The huge steel structure of the power plant, an area of more than 200,000 sq. meters, will be clad in shimmering metallic blue, white and gray wall elements from ThyssenKrupp Hoesch Bausysteme.

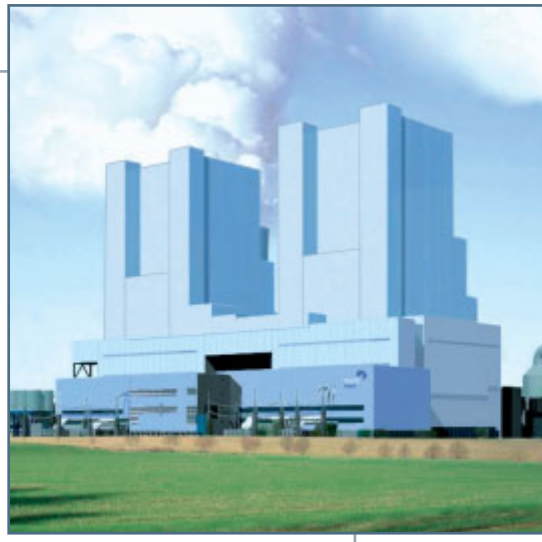
Most power plants function using the same principle: Thermal energy is converted into motive energy. This is achieved by burning fossil fuels, in this case brown coal. The resulting heat is used for heating water in the combustion chambers of the boilers, until it is converted into steam. The steam flows at high pressure through systems of pipes into turbines and sets them in motion. The turbine is connected to the generator via a shaft, in order to convert the mechanical energy into electricity.

Finally, generator transformers containing grain-oriented electrical steel of the PowerCore® brand from ThyssenKrupp Electrical Steel, make sure that the electrical current is transported through high-voltage cables into the European grid with low levels of loss. Before it reaches domestic power points with exactly 220 volts, it must be stepped-down accordingly using high-capacity and distribution transformers.

All eyes on the facade.

Modern power plant facades are increasingly made from two-shell steel strip – the days of heavy brick facing and cement panels are definitely over. The facade of the Neurath II power plant is therefore completely in line with the trend. At the same time, it is the biggest order ever received by ThyssenKrupp Hoesch Bausysteme: The company based in the Siegerland will start supplying more than 200,000 sq. meters of shimmering metallic blue, white and gray wall elements for the new structure starting from the end of this year.

Advantage: The high structural strength of the steel strip units makes it possible to span large distances. In addition, the mineral fiber panels in between the steel strips absorb sound extremely well and provide acoustic insulation in accordance with legal requirements. However, the general public also benefit from the new appearance: The corrosion-resistant, sky-blue surfaces look harmonious against the horizon and make the facade into a striking eye-catcher.



Contact: **Rolf-J. Neumann,** Executive Functions/Marketing, tel. +49 (0)203 52-41003, e-mail: rolf-juergen.neumann@thyssenkrupp.com

Interview with Clemens Iller

“Targeted investments reinforce market position”

“Over recent years, we have made extensive investments in order to increase our capacity. We are continuously developing our product to maintain and expand our leading position. We are concentrating on improving the high level of quality and optimizing production processes.”

Clemens Iller, CEO ThyssenKrupp Electrical Steel

Mr. Iller, ThyssenKrupp Electrical Steel is the largest manufacturer of grain-oriented electrical steel in Western Europe, and is one of the global leaders in this market segment. What makes your product so valuable for the energy market?

Our PowerCore® brand grain-oriented electrical steel is characterized by its high quality and particularly low hysteresis and eddy current loss. In other words, it operates as efficiently as possible. It converts more than 99% of the total energy input into a high-capacity transformer, which means it makes a major contribution to the sustainability of energy resources. Its secret lies in the arrangement of grain crystals in the strip and the special magnetic properties that cause the current to flow in a particular direction.

In total, 12 companies are supplying this product to the market at present. ThyssenKrupp Electrical Steel and the market leader, Nippon Steel of Japan and the US company AK Steel are amongst the leaders. We are permanently developing our product in order to maintain and expand our leading position. We are concentrating on improving the high level of quality and optimizing production processes.

What does that mean specifically?

As part of this specialization campaign for grain-oriented electrical steel, we have already made extensive investments in expanding our capacity over recent years. These have brought success: During the last two business years, our sites at Gelsenkirchen and Isbergues in France have chalked up production records. Today, we are producing more than 250,000 tonnes, just as much as we did only a few years ago at three sites. We will also be continuing our expansion strategy in the current business year and pushing sales of the higher quality PowerCore® H brand. For this purpose, we are expanding our decarburization capacity that reduces the carbon content in the material.

The recommissioning of a shut-down stress-relieving furnace at Isbergues will provide the capacity expansion we need. In addition, the infrastructure has been expanded in order to be able to cope with the increased production quantities for transport. For example, by installing a second weighbridge, we will be able to handle 500 trucks every month instead of the current 400.

Europe remains the core market for ThyssenKrupp Electric Steel. Which other sales markets are interesting for you as part of your internationalization?

We supply significantly more than half of our products to European customers. In addition, there is significant demand for material from China and India. However, I wish to emphasize that we currently sell PowerCore® electrical steel to more than 260 customers in 56 countries on all continents.

The boom in demand has been triggered by the enormous efforts made by China, India and other developing countries to build up new infrastructures, which include new power plants and the corresponding energy generation and distribution systems. At present, Asia requires much more material than local manufacturers can produce. Currently, about 40% of the world's available grain-oriented electrical steel is being used in Asia. The market is characterized by a significant undersupply. Analysts are assuming that global demand will grow by 4 to 5% year on year. However, some competitors have announced that they will be increasing their capacities during the next few years, and Baosteel will soon join the market as an additional vendor. The higher level of supply to be expected in this case means that the market will once again come under pressure.

How do you propose to maintain your top position in the market in future?

In order to improve our leading position in the international market further, we are working intensively on optimizing our production processes in the long term. A new technology for our top PowerCore® H brand was initially developed in the laboratory and has now already been tested in industry: We are continuously pursuing the objective of optimizing the magnetic properties of our product further in order to offer our customers additional benefits. Significant features in this regard are integrating the continuous casting line of ThyssenKrupp Steel in Duisburg and integrating a nitriding facility into the decarburization annealing plant for increasing the nitrogen content of the cold strip.

After having tested the process successfully last year in our Isbergues plant, we are now ready to start using the new technology in Gelsenkirchen as well.

Contact: **Werner Auerswald,** ThyssenKrupp Electrical Steel, tel.: +49 (0)209 407-50843, e-mail: werner.auerswald@thyssenkrupp.com

A detriment to Germany companies?!

Lack of planning in energy policy

Is the Federal Republic of Germany well on course to a cleaner, but increasingly unsuccessful national economy? Interim successful growth figures such as the 2.7% gross domestic product increase of last year could be deluding us. Germany must not be allowed to collapse into self-satisfaction repeatedly warns Joaquín Almunia, the EU Commissioner responsible for economic and currency policy. The potential growth, by which is meant the long-term growth rate at which overall economic expansion does not create inflationary pressure, is running at just over 1%, which is much too low compared to international competitors. The weak trend growth is due to an inadequate employment rate, lack of competition and, not least, national imbalances in energy and environmental policy.

Germany is leading in disciplines that currently have a low level of wealth creation or which are heavily subsidized activities. Being ranked as the global number one in wind farms is a mere distraction from the fact that this electricity is expensive for consumers and does not flow continuously. The boom in solar industry expansion is set to swallow up billions of euros over the next few years. At the same time, competitive contributions from nuclear generated electricity are being lost because the political establishment has set the traffic lights to red. Premature closure of reactors means that electricity gains amounting to 30 to 35 billion euros cannot be achieved. Even during the next decade, bottlenecks in capacity will make electricity markets even tighter.

The brown coal industry will suffer if the German government pursues excessively ambitious reduction targets for CO_2 emissions unilaterally. At the same time, energy-intensive industries such as steel, chemicals or aluminum will increasingly fall out of step because Berlin places so much emphasis on the nation acting as a pioneer for climate protection without international coordination, and because no competitive regime for supplying energy through the grid has been implemented. The German government has failed to set a framework for an energy policy that could produce an energy concept the nation can bear. The coalition government is unable to offer either a balanced evaluation of its basic objectives in terms of competitiveness, reliability and environmental friendliness of supply or a guiding principle for free-enterprise coordination that adds up. The governmental declaration at the outset of the Grand Coalition declared "we must dare to be more free." However, to date, there is no sign that the freedom for acting on one's own initiative or for investment campaigns has been increased.

On the contrary: the German Minister of the Environment is demanding that climate protection measures should take precedence and, accordingly, that other energy policy objectives must take a back seat. At the same time, he is promoting an ecological industrial policy. Only the state is capable of safeguarding industries with a future in Germany in the long term. To what extent these activities will become competitive in the long-term and, above all, when these new approaches can be achieved on a profitable basis are factors that are being decided on the basis of reports commissioned from "green" experts and used as empirical evidence. Environmental politicians use this information to draw the conclusion that it is possible to force the pace of progress in energy saving and using resources efficiently, and that German production sites will actually derive competitive advantages from this.

The energy summits between politicians and business leaders have made it clear that there are unbridgeable conflicts on the government side and that industry can look in vain for calculable basic data. The contradictions are obvious: The German social democrats intend to abandon nuclear energy generation (which does not generate CO_2 emissions) by the beginning of the decade after next, at the latest, at the same time as achieving particularly ambitious CO_2 reduction targets by 2020 – ideally 40% less than 1990 by 2020. Use of coal with its relatively high CO_2 emissions is under threat because attempts are being made to introduce very ambitious efficiency-based benchmarking requirements for coal-fired power plants. The vision of a commercially viable CO_2-free coal-fired power plant from 2020, which has already been proposed as feasible, still remains a political dream which does not represent a competitive option which widespread applicability to the German energy supply market.

The (Arab) oil trap is therefore threatened to be followed by a (Russian) gas trap. The risks of sourcing gas will increase all the more as Germany shuts down nuclear and coal-fired power plants thereby ratcheting up its dependency on international natural gas supplies. The major entry by the Russian state monopoly, Gazprom, in the German energy industry that is soon to take place – downstream gas and possibly also in the electricity industry – represents a challenge for which the

Biographical information

Dr. Heinz Jürgen Schürmann is an experienced energy expert. From 1970 to 1986, he worked at the Institute of Energy Economy at the University of Cologne. He has written several books on the topic of energy economics and policy. In 1973, he completed his diploma entitled "economic approaches to a rational environmental policy". Since 1987, he has been the managing editor of the Handelsblatt newspaper and, last year, published the Energy Information Service.

German government also has absolutely no response. The higher demand for gas grows due to the abandonment of nuclear generation, the less Berlin will be able to achieve a balanced conclusion in negotiations with Moscow.

The mutual reciprocities in opening up the energy markets of Russia and Germany that appear to be necessary in order to limit one-sided dependencies are being put on the back burner because the German government is going to have less and less to argue with against Russia. Recently, the government has repeatedly announced its readiness to surrender free-market principles in European energy charters as part of negotiations for a Russo-European partnership agreement – these including the mutual reduction of market access barriers, sweeping away cable monopolies and guaranteeing energy transit, investment guarantees and unfettered owner commitment. The danger posed by a "gas OPEC" is something that no-one in Berlin has taken account of.

Another factor that has been rather marginalized in the national energy debate concerns establishing the conditions for a functioning internal energy market. In order to achieve this, it will be necessary to overcome transmission bottlenecks at national frontiers and discrimination potential to the detriment of newcomers in Germany's energy grids. Cautious optimism is appropriate based on regulatory experience with the Federal Network Agency. However, the time taken to obtain approval for grid and pipeline infrastructure work will have to be massively shortened for both cross-border and domestic projects. It is necessary to improve the transparency and increase the overall level of gas and electricity liquidity for a stock market organized on a Europe-wide basis. And finally, it is necessary to limit state intervention in supervising free-market pricing processes as well as siphoning off the profits from industrial and private energy customers. In return, Germany's companies should commit more to energy research, but without political taboos. The energy generators have already offered to channel 200 to 300 million euros per annum into research providing they would be allowed to continue using their nuclear power stations for a longer period. Germany can be made more attractive as an energy generation and production site in general assuming ecological restructuring on similar basis would take place internationally.

NewsFlash

New BONDAL® for car bodies

ThyssenKrupp Steel has continued the development of its BONDAL® composite material specifically for car body applications. BONDAL® CB, CB standing for car body, is characterized by significantly improved noise insulation in the low-frequency range below 200 hertz. The product is ready for volume production and has already been successfully trialed by several customers. The vibration-damping material consists of two steel covering sheets and a thin, viscoelastic core layer. It significantly reduces the creation of structure-borne noise as well as the radiation of airborne noise from sheet metal structures. It is chiefly used in automobile construction, as well as for garage doors and glass recycling containers.
www.thyssenkrupp-steel.com/auto

EBA 2 back in operation

The electrolytic strip coating plant (EBA 2) operated by ThyssenKrupp Steel in Duisburg-Beeckerwerth was returned to operation in time for the end of 2006. It was rebuilt in only 9 months after large parts of the electrolytic coating system, electrical systems and the shop roof had been destroyed in a fire in September 2005. With its two modules, the electrolytic coating system and the thin-film coating system, it will be possible to produce 180,000 tonnes of corrosion-resistant thin strip per annum.

New service center in Finland

The heavy plate sales partner of ThyssenKrupp Steel in Finland, Oy Flinkenberg AB, has opened a new steel service center in Valkeakoski. Representing an investment of about 7 million euros, a new production shop with direct railway connection was taken into operation on the 6.5 hectare site. Oy Flinkenberg AB has been the sales partner for ThyssenKrupp Steel in Finland for 10 years now and took responsibility for Sweden as well this year. With the larger service center and the expanded processing options, it will be possible to respond to increasing demand in the Scandinavian market for flame-cut and plasma-cut parts as well as for XAR® and PAS® strip.
www.flinkenberg.fi

Looking for a site in Alabama and Louisiana

ThyssenKrupp Steel and ThyssenKrupp Stainless are jointly planning to build a new plant in the USA. Investment volume: about 2.3 billion euros. The preferred site will be in the states of Alabama and Louisiana. This greenfield project is intended to reinforce ThyssenKrupp's position in North America. The NAFTA market is one of the highest volume markets for flat carbon steel in high-quality grades. ThyssenKrupp Steel already has an established position as a producer in this market with its cold strip plant in Mexico and sales bases in the USA.
www.thyssenkruppnewusplant.com

DAVEX® for innovative architecture

The training center of suissetec nordwestschweiz in Liestal, Switzerland has been given a new expansion with facade supports from ThyssenKrupp DAVEX. The 3-floor building with a useful area of 185 sq. meters is called SPIRIT and is based on a "hybrid construction" with a delicate wood facade, and offers good structural and acoustic properties. The project has recently been presented to the Swiss construction industry at the SWISSBAU in Basel. The apprentices of suissetec itself assembled SPIRIT for the trade show. Following the show, the building was constructed in Liestal and will be used by the training center from now on.
www.suissetec.ch

BAU 2007 in Munich

At the BAU trade show in January, ThyssenKrupp Steel shared a booth with ThyssenKrupp Hoesch Bausysteme, Hoesch Bausysteme Wien, ems Isoliersysteme, ThyssenKrupp DAVEX, the Color Profit Center and ThyssenKrupp Nirosta. ThyssenKrupp Hoesch Bausysteme presented its new Hoesch matrix facade system to the public for the first time and attracted a great deal of interest. Overall, the stand was very well visited, with potential customers from Germany and abroad coming to find out about the wide range of products. The technical symposium at the BAU steel customer day was also well attended. BAU Munich is held every two years and is the largest construction show in Europe.
www.thyssenkrupp-steel.com

Architects have been chosen

The ThyssenKrupp Group have chosen the design by Chaix & Morel et Associés, Paris/JSWD Architekten und Planer, Cologne for its future headquarters in Essen. The design was the first prize winner of the architectural competition open to worldwide applications that the Group launched last year. Completion of the first section of the building, including buildings for the ThyssenKrupp Academy, is planned for 2008. Construction of the buildings for segment management companies and operating units should be finished in fall 2010. The Group is building the ThyssenKrupp Quarter to house the workplaces of more than 2,000 employees in Essen on an inner-city site spanning more than 20 hectares.
www.thyssenkrupp-competition.com

Extension for ThyssenKrupp Steel and JFE

ThyssenKrupp Steel and JFE Steel Corporation, Japan's second largest steel producer, are extending their cooperation agreement for the shared development of flat steel products for the automobile industry by a further five years following its first signing in 2002. At the same time, JFE has agreed to grant ThyssenKrupp Steel a license to use JAZ technology. JAZ is the abbreviation for JFE Advanced Zinc, and refers to an environmentally friendly, galvanized steel strip with good forming properties. The intention is to establish delivery networks in Europe and Japan for galvanized steel strip, and to establish JAZ as the global standard.

Tailored blanks in door benchmarking

Comparison between 18 doors used in current mass production vehicles

In a unique benchmark test, ThyssenKrupp Tailored Blanks and ThyssenKrupp Steel took a close look at car doors. The team led by Lukas Korves established a basis for comparing doors from a wide range of manufacturers in terms of properties such as design and shape, function and cost.

"In 2005, we started thinking about what factors would promote the use of tailored blanks in door construction for cars. Naturally, its easy to think of advantages such as lower cost, less material and higher physical loading, but we wanted to prove this," explains Korves. The results of the investigation were presented to customers one year ago.

Korves: "In order to define the use of material, we took a close look at car doors and subjected them to various tests." The body-in-white doors were tested with the corresponding production hinges and checkstraps. To make the tests comparable, the team designed a virtual factory with equivalent manufacturing parameters for each door. Therefore, the production volume of 200,000 units and costs of material used are always the same. The door was tested on the test rig for various load situations such as door sag, window frame and panel rigidity as well as excessive opening. "Our investigation makes things clearer for OEMs," explains Korves. "The direct comparison makes it possible to discover optimization potential for the specific production conditions at a particular manufacturer."

During the project, the team at Tailored Blanks worked with various departments such as Simultaneous Engineering in the Auto Division of ThyssenKrupp Steel as well as Bertrand, a development service provider. Korves is particularly happy that doors with tailored blanks performed better than average in the benchmarking. "This proves the benefits of our product." However, the company is not just looking to convince customers with its tailored blanks, but also through its expertise: "We provide our knowledge and, as well as this, our material and productions expertise as well as our knowledge of forming technology in order to develop a door that is adapted to the needs and requirements of the customer."

Kathrin Lorenz

www.tailored-blanks.com

▶ Doors with tailored blanks performed better than average in the benchmarking. And ThyssenKrupp Tailored Blanks is a leading player in terms of expertise as well.

Contact: **Lukas Korves,** ThyssenKrupp Tailored Blanks, tel. +49 (0)203 52-40557, e-mail: lukas.korves@thyssenkrupp.com

Roller quench taken into operation

More heavy plate for a growing special steel market

▲ The new roller quench at the Heavy Plate Profit Center in Duisburg-Hüttenheim has expanded capacity for water-quenched products by 30%, thereby responding to strong demand for special steels.

Wherever steel encounters hard resistance, for example in excavator buckets and construction machinery, it has to be particularly hard and resistant to abrasion. Wherever steel is exposed to significant mechanical loads, such as in crane construction, the material additionally needs to prove its toughness. Hardened and tempered steels are essential here. The construction of a new roller quench at the Duisburg-Hüttenheim site has expanded the capacity of the Heavy Plate Profit Center for water-quenched heavy plate, therefore responding to increasing market demand for special steels.

◀ High safe working load with low inherent weight: High-strength XABO® steel for use in mobile crane construction.

▶ Wear-resistant XAR® steel is used in construction machinery. This permits a longer service life and gives the customer significant cost advantages.

"We sell our water-quenched heavy plate all over the world," explains Peter Kruchten, head of heavy plate production. "The plates are heated in the fournace to about 900°C and then quenched with water. That makes the steel particularly hard." XAR® special steels are used wherever significant wear is to be expected. They prove themselves particularly resistant to abrasion when used in excavator buckets, allowing hard coal and ore to be mined without difficulty. Tipper bodies used for transporting the rock are also made from this material. The steels are used not just for mining and transport, but also in ore processing, such as the interior lining of breaker machines that pulverize the raw material. "The materials are exposed to extremely aggressive wear during mining of abrasive oil sand in Canada. Here too, our XAR® steel prevents the tool components from wearing excessively," reports Dr. Hans-Jürgen Kaiser who is responsible for technical marketing of special steels.

When the quenched steel is heated to temperatures of about 600°C, this is referred to as tempering. Kaiser: "This processing step increases the toughness of the heavy plate, making it optimum for crane construction." This is an application which places particularly high demands on the steel: High strength and adequate toughness at the same time as a low inherent weight. "The N-A-XTRA® and XABO® brands have properties that meet these requirements and rule out the danger of a sudden breakage if the crane is overloaded," continues Kaiser. The steel is also used in concrete pumping vehicles.

At inaccessible building sites, cement used to be barrowed by hand from the cement mixer to where it was required. Nowadays, it is pumped through a flexible boom made from annealed heavy plate. This is possible above all because the heavy plates can withstand the extreme vibrations and significant wear otherwise occasioned when pumping the raw concrete.

The new roller quench has increased the previous capacity for water-quenched heavy plate by 30% and additional expansion stages are planned up to 2008. "Only in this way will we be able to satisfy the steadily growing demand for this high-quality plate, because the trend towards lightweight construction and longer utilization intervals of machinery and plant will continue," observes Kaiser. However, the modern roller quench also makes it possible to enter new markets. "The roller quench delivers a better surface quality than the former stationary quench which we are continuing to use," explains Peter Kruchten. This means that the steels will in future be able to be used for visible parts of commercial vehicles to an increasing extent.

By taking the new roller quench into operation, the Heavy Plate Profit Center is reinforcing its already strong market position for water-quenched steels. Consumers are not just to be found in Europe; more and more quenched and tempered steels are heading overseas. South America has a large number of ore mines, and therefore has a significant demand for wear-resistant XAR® steels. The future market of Asia is also one that this company based to the south of Duisburg is keeping firmly in its sights. Cooperation with steel service centers is providing global sales channels. This also benefits the customer: The plate is processed in the service centers and delivered to the end-users just in time.

Kathrin Lorenz

www.thyssenkrupp-steel.com/plate

Contact: **Peter Kruchten,** Heavy Plate Profit Center, tel. +49 (0)203 52-75599, e-mail: peter.kruchten@thyssenkrupp.com
Dr. Hans-Jürgen Kaiser, Heavy Plate Profit Center, tel. +49 (0)203 52-75114, e-mail: juergen.kaiser@thyssenkrupp.com

A look into the future

The Industry Division is thinking of tomorrow's customers

How far ahead do you think? Tomorrow? Next year? The Industry Division of ThyssenKrupp Steel thinks even further. With its Project 2020, the sales and technical customer consulting departments conducted a customer survey to find out how to adapt themselves to the requirements of the market out to 2020.

"From 1,500 customers, we selected 74 from nine areas to conduct a benchmark test. They represent about 70% of IDS total sales: All customers took part, from the service center and electrical steel through to large pipes," smiles manager Dr. Peter Biele remembering the readiness to cooperate. "It was essential to have a good relationship with one another. The above average result rate therefore speaks in our favor."

Biele: "We wanted to estimate the market development and investigate our customers' entrepreneurial targets and strategies. We were interested in knowing what industry the steel that we supply actually ends up in. Using this information, we can draw conclusions about the quality requirements on our products." And, as expected, they were exacting. "More than half of IDS customers are looking for medium to high quality and about 30% of the quantity increase at IDS can be expected to be used in innovative processes," he summarizes.

Another result came to light: About 68% of customers have their production facilities in Germany, in close vicinity to the supplier. The answer to a questions about viability of production in Germany was therefore surprising: 75% of the survey population is not planning to move to lower cost production sites. Even companies planning new sites, chiefly in Eastern Europe and China, are not going to reduce their current production quantities in Germany.

"Our assumption has been confirmed, mainly to invest more in the areas of service and customer care in future. Innovation is taking place in the higher quality levels, and in this respect our objective and that of our customers is the same," summarizes Biele. "During the coming years, we will check the result by taking random samples," he continues, looking to the future, "not least in order to satisfy the highly exacting customer requirements."

Kathrin Lorenz

www.thyssenkrupp-steel.com/industry

◀ "We are on the right track", is the result of the intensive discussions that Dr. Peter Biele and his team held with customers.

Contact: **Dr. Peter Biele,** Industry Division, tel. +49 (0)203 52-41166, e-mail: peter.biele@thyssenkrupp.com

Materials Center of Excellence offers original solutions

Materials database for improved customer service

Not just a steel manufacturer but also an innovative system partner – that's ThyssenKrupp Steel. The latest solution for even better customer service is called the Materials Database.

"This is a unique offering in Germany," explains project leader Dr. Hans -Peter Schmitz. "Our customers from the automotive industry are very satisfied." The database has been developed in the Center of Materials Excellence and has been used in its current form since the end of 2006. The slightly obscure term "materials database" refers to a repository of about 100 material cards summarizing a range of key values. "They have been tested and are updated daily," comments Schmitz. "In peak times, 30 employees generate and check the data."

▶ Dr. Michael Borsutzki, responsible for checking the data, Dr. Udo Paul, responsible for programming and project leader Dr. Hans-Peter Schmitz (from l.) know that the materials database is unique in Germany. They are coordinating the entire team and the work on various measuring instruments.

The specifications include the material identification, key figures from the tensile test, structural and dynamic flow curves, forming limit diagrams and cyclical key figures. In addition, the database corresponds to steel/iron test sheet SEP 1240 – a directive agreed between the Verein Deutscher Eisenhüttenleute (German Iron and Steel Institute) and the Verband der Automobilindustrie (German Association of the Automotive Industry). "Irrespective of whether the material is from cold strip or hot strip," assures Schmitz, "the customer only needs to ring up his contact from the key account and the required data can be sent immediately via e-mail." The material cards are also available in English. They are an essential basis for digital simulation. For example, the database does not just offer a central list and assessment of key figures as well as an efficient search and export function, but also features interfaces to other database systems. "In future, we intend to offer a kind of internet portal with material key figures so that customers can access it themselves at any time," reveals Schmitz, talking about his plans, "although of course our telephone service will still be available." He is working together with his team under high pressure to get the portal ready during this commercial year – "For high-quality customer service of the kind that is expected nowadays."

Daria Szygalski

www.thyssenkrupp-steel.com/auto

Contact: **Dr. Hans-Peter Schmitz,** Materials Center of Excellence, tel. +49 (0)203 52-42447, e-mail: hans-peter.schmitz@thyssenkrupp.com

Color Profit Center creates individual solutions

Intelligent thin strip for garage door elements

Eye-catching garages: Neutral white or cool metallic? Or what about sky blue? The Color Profit Center of ThyssenKrupp Steel AG supplies the necessary organic coated PLADUR® door thin strip for garage doors, allowing almost any color wish to be granted.

◀ The finger trapping guard is essential to avoid finger injuries.

"The secret is in the manufacturing, the coating systems," knows Rasmus Nilles, the team leader for garage door sales at the Color Profit Center. The hot-dip finished thin strip is coated by the coil-coating process: To make the material resistant to corrosion and aesthetically attractive, it is generally first coated with metallic coverings made from zinc and aluminum before the required color is applied, then it is rolled into a coil. "The coil is therefore ready for delivery and has already been painted, meaning that the garage door manufacturer does not have to worry about this expensive production step."

The garage door manufacturer processes the painted coil into various elements, principally the double-walled sectional door elements with their PUR foam filling. They've even thought about this process at the Color Profit Center: "The innovative coating system applied during the coil-coating process makes the thin strip surface flexible and resilient. This means the further processing at the sectional door manufacturer cannot damage the material, and the paint remains undamaged," explains Nilles.

Once arrived at the customer, the product from the Color Profit Center reveals another obvious advantage. Nilles is very enthusiastic: "The brilliant colors we supply, whether brown, red, blue, green, yellow or sky blue, simply

▲ The Color Profit Center of ThyssenKrupp Steel has thought of young people in terms of the garage door: The range includes everything from finger trapping protection through to anti-graffiti coating.

shrug off the effects of wind, weather and increasing environmental pollution; they retain their quality and the garage door is attractive to look at for many years to come."

On request, a clear varnish coating on top of the standard paint ensures that the garage door will be particularly easy to clean and even insensitive to graffiti – in case the kids should attempt to reveal their creative abilities. The clear varnish is an invention by ThyssenKrupp Steel and contains an additive with hydrophobic (water repellent) effect so that spray paints cannot adhere to it. Artists have to find a different "canvas".

It is also important to avoid children or grown-ups suffering finger injuries when spray-cleaning, wiping, opening and closing the garage door, which is why the doors feature patented finger trapping protection. Its characteristic feature is a tongue and groove connection with a rounded tongue that is also longer than conventional sandwich elements. This shape prevents a gap forming between the elements during closing of the door which could represent a risk of injury. Further benefits: The trapping protection also functions on the inside, and its special shape means that the hinges can be attached particularly sturdily with two additional, directly adjacent steel legs.

However, the development of PLADUR® did not just concentrate on the eye, young artists and safety, but also on the environment. "The material is completely recyclable," emphasizes Nilles. "After use, it can be shredded and smelted to create steel again – a closed material cycle for intelligent environmental protection.

To guarantee the high standard of our product, the Color Profit Center is conducting ongoing quality assurance checks and has entered into permanent cooperation with paint manufacturers in order to develop and optimize the paint systems further," he assures. About 500,000 tonnes of organically coated thin strip are produced every year on four strip coating lines in Duisburg and Kreuztal – more than 10% of this is already being delivered to the garage door industry and the trend is rising.

Daria Szygalski

www.thyssenkrupp-steel.com/color

Contact: **Rasmus Nilles,** Color Profit Center, tel. +49 (0)2732 599-4124, e-mail: rasmus.nilles@thyssenkrupp.com

From Westerwald into the wide world

Schütz makes large containers with skill

From its base in the Westerwald region, the Industrial Packaging Business Unit of the Schütz Group has successfully conquered the world market for industrial packaging. This medium-sized company is on course for expansion and is significantly increasing its steel requirement.

The new administration building is located on the crest at the highest point of the factory site. It is from here that Schütz GmbH und Co KG aA manages its international business. Glass and aluminum are the defining features of the outside of the building, giving it a modern, open appearance and a lightness belying its size. The skillful, unfussy architecture catches the eye amidst the gently sloping hills of the Westerwald. The Schütz Group is based in the small town of Selters, deep in the provincial Rhineland Palatinate. A closer look reveals that the design of the building reflects precisely what has made Schütz successful: The company manufactures transport containers.

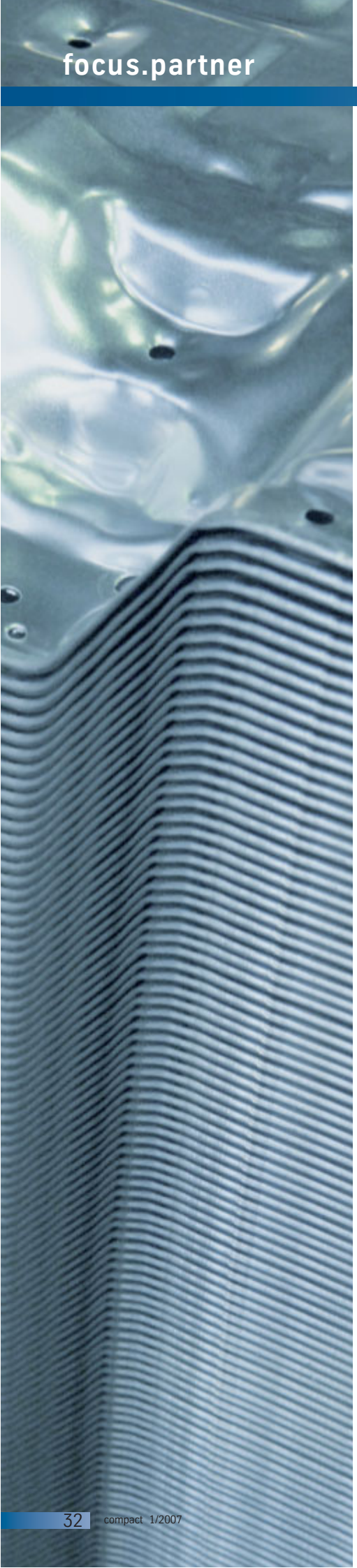
Specifically, these are intermediate bulk containers, IBC for short. "We have a global market share of a good 50% for IBCs," emphasizes Managing Director Winfried Heibel. The Schütz Group also produces steel and plastic barrels for sale around the world. Not only sales, but also manufacturing is on an international basis. The company produces in Selters as well as in the USA and China. In total, the global player has 23 sites worldwide, employs 2,500 people and achieved sales of 700 million euros last year after 600 million euros in 2005. Heibel: "We are growing steadily because IBCs are capturing more and more of the market."

This represents a continuation of the successful history of this family firm that started almost 50 years ago. The company was founded by Udo Schütz in 1958 to manufacture steel heating oil tanks, and Mr. Schütz remains the CEO of the group. In 1970, he changed over production completely to plastic tanks. In 1975, Schütz launched its first combination container of steel and plastic onto the market for large industrial packaging, and has since then continued making the blow-molding machines for plastic processing itself. Since the 1980s, the company has also been involved with reconditioning used IBCs, collecting these from the customers, repairing them and returning them to circulation.

The IBC developed by Udo Schütz formed the basis for rapid growth that has continued down to this day and is set to continue beyond. The company is active in three business areas in total: industrial packaging, energy systems and industry services. It manufactures space heating systems as well as special components for the automotive and aviation industries, in particular Cormaster Nomex honeycomb. This brilliant product is extremely strong but very light, and is therefore installed in the Airbus, for example. However, IBC remains the most important product. "We achieve 76% of our total sales with industrial packaging," says Winfried Heibel.

The impressive sales figures are linked above all to quality. This is because the packaging fulfils the most exacting requirements. To keep things this way, the medium-sized company works continuously to achieve improvements, using processes for development and manufacturing which are both innovative and efficient. Major customers in the chemicals and foodstuffs industries appreciate this expertise when it comes to cleanliness and safety. Not only BASF but also Bayer and Wacker are part of the worldwide customer base, which also includes Coca Cola with bottling plants on all continents. "Our containers offer a very high standard and satisfy even the most exacting certification criteria of

◀ The intermediate bulk container, IBC for short, is the major specialty of the Schütz Group. A steel cage houses the plastic insert that holds the goods, however a complete steel jacket can be used depending on the sensitivity of the material being transported. The containers offer the right quality for global clients who place great value on safety and cleanliness.



demanding clients," declares Harry Kaiser, Purchasing Director at Schütz.

The special features of the IBC are firstly its combination of steel and plastic. This is because steel tubes enclose the plastic containers (which have a volume of up to 1,250 liters) like a cage and give them the required strength. IBCs are even robust enough to be transported on container ships. Secondly, they can be stacked without gaps, thereby saving loading volume and noticeably reducing customer's transport costs, particularly as their inherent weight is very low.

The attainment of high quality standards is due in no small part to the steel from which the entire cage is made. Schütz obtains a good 50% of its requirement from ThyssenKrupp Steel. The business relationship has existed since Udo Schütz founded his company in 1958. ThyssenKrupp Steel supplies various grades and thicknesses of flat steel to Industrial Packaging at Selters, while the ThyssenKrupp Steel joint venture, Tagal, delivers to Schütz's production facility in China. The worldwide annual demand of Schütz per year is 220,000 tonnes of hot-dip galvanized thin strip and 20,000 tonnes of cold strip.

"We would like to sell more than just this 50% to Schütz in Europe. However, we are currently running at the limits of our capacity," explains Friedrich-Walter Düllmann, Sales Director at ThyssenKrupp Steel. The volume of business with this expanding steel fabricator could soon be set to rise once production from the new ThyssenKrupp Steel mill in Brazil comes on line.

The global demand for IBCs is estimated by Schütz's CEO Heibel at eight to nine million per annum. Particularly favorable sales opportunities are expected from Asia. Schütz is therefore planning to build a second production facility in China. The first has been operating since 2004 in Shanghai. Schütz also started production in Malaysia in 2006, and the company is set to increase its presence in India shortly: This will be in the form of in-house production or a joint venture for Industrial Packaging. Europe remains important as well. In autumn 2007, the new IBC production facility in Moerdijk, between Rotterdam and Antwerp, will get under way.

But this is not all. The medium-size company has recently started offering flat steel fabrication services for external clients. In the new Steel Service Center, up to 100,000 tonnes of flat steel can be processed into semi-finished parts for various industries every year. In this way, Schütz is generating new business from its own lengthy experience in steel fabrication and is benefiting from its high level of in-house production. Udo Schütz has increased this systematically, for example the steel tubes for the IBC including steel legs, base trays and reinforcement plates are produced in-house. "Starting from the raw material delivery, we currently produce almost all of the components ourselves so that we can increase quality and productivity," emphasizes Kaiser. "When it comes to process optimization and increasing efficiency, Schütz is very single-minded," he continues.

There is no doubt that the company boss also takes a systematic approach to improving steel properties, and relies on the expertise of his major supplier, ThyssenKrupp Steel, for this. "The thickness of the strip should be reduced, but the properties improved. We are currently looking at the reinforcement sheet for the cage," explains Detlef Michalak of ThyssenKrupp Steel who is responsible for technical support to Schütz. It goes without saying that the steel quality is not allowed to suffer, because these are high-quality products. Schütz works with rugged IF steel that can be formed well without losing strength.

Incidentally, a 5,000 sq. meter building is arising for the steel center in Selters. Its designer is the same architect as the new office building: Thomas Schütz, son of the company founder. And this will not be the last expansion that the plant will see.

Ulrike Wirtz, freelance journalist

◀ Base pans and reinforcement plates made from steel make IBCs from Schütz particularly stable. The global player based in Rhineland Palatinate makes these itself, alongside other components.

www.schuetz.de

Contact: **Schütz Group,** tel. +49 (0)2626 77-0, e-mail: info1@schuetz.net

Successful in China

Tagal is Peugeot Supplier of the Year 2006

The ANSC-TKS Galvanizing Company (Tagal) based in Dalian, China was presented with the "Automotive Supplier of the Year 2006" award by Dongfeng Peugeot Citroën Automobiles (DPCA) at the start of this year. "We are very pleased to have won this award," emphasizes Kai Mahnke, General Manager of Tagal. "It expresses our successful cooperation."

The cooperation has endured since 2004 and the delivery quantity is growing steadily: last year, it was 30,000 tonnes of thin strip, whereas about 50,000 tonnes are planned for this year. DPCA is one of the most important clients for Tagal and one of the major automobile manufacturers in China. The automotive industry is not the only segment in Tagal's portfolio. The hot-dip coating line is used for producing thin strip for domestic appliances, computers and the construction industry. "The automotive industry is developing most successfully," explains Mahnke, "so the production share is going to increase from 30 to 50% in future."

The joint venture between ThyssenKrupp Steel and the Chinese ANSC Angang New Steel Co. was founded in 2003 and has grown to become a model supplier in China within only three years of production. "The most modern machine technology and qualified personnel provide quality and deadline-keeping round the clock," says Mahnke. The customers include well-known foreign producers such as BMW, Nissan, VW, GM and Ford as well as Chinese auto brands such as Brilliance and Zhong Hua.

"The Chinese automobile industry is a huge growth market," analyzes Mahnke. "3.6 million cars rolled off the assembly lines in the first half of 2006." By 2010, China wants to be the third largest manufacturer in the world. A second line is already under construction to satisfy this enormous demand. The first coil is planned to be galvanized in July 2008. "It is almost a carbon copy of the first line," explains the CEO, "and will produce exactly the same amount." The current volume is 480,000 tonnes every year. However, there is one small difference: The new line will also be capable of coating the thin strip with zinc/magnesium surfaces. "This provides even better corrosion resistance," he emphasizes. After all, the Chinese automobile industry also has high quality requirements.

Daria Szygalski

www.tagal.com.cn

▶ The galvanizing line in Dalian, China has only been operating since 2003, but Tagal has already become a model supplier.

Contact: **Kai Mahnke,** CEO, Tagal ANSC-TKS, tel. +86 (411) 8751 8888, ext. 1000, e-mail: kai.mahnke@tagal.com.cn

ThyssenKrupp Steel Service Center delivers made-to-measure steel

DAF Trucks on the move

DAF Trucks has reason to be happy. The new truck range from the Dutch company, the XF105, was awarded the title of "International Truck of the Year 2007" at the 61st International Motor Show (IAA) Commercial Vehicles 2006 in Hanover. This is a major award. Almost 20,000 units have been sold since production started last year.

▼ The DAF XF150 truck was selected as Truck of the Year 2007.

▶ Jörg von Prondzinski (left) and Christian Leske (right) of the ThyssenKrupp Steel Service Center rely on teamwork.

DAF Trucks stands for the highest production standards. High-quality materials are essential, therefore the company relies on products from the ThyssenKrupp Steel Service Center, amongst others. This is good news for Jörg von Prondzinski, technical consultant in the Service Center and his colleague Christian Leske, who is responsible for sales: "The Bochum Service Center delivers hot and cold-rolled panel material, hot-dip aluminum and zinc-plated thin strip as well as special steel," they summarize. "Last year, the volume was around 10,000 tonnes."

But this is not all: "If we have questions, the Service Center helps us with their technical expertise," praises Rob Zelders, responsible for steel purchasing at DAF Trucks. "In this way, we co-operated to address forming issues for the current XF105 driver's cab, and used tailor-made materials for the rear walls and side panels."

The roomy cab sets new standards: "Our development work was focused on the driver and his or her requirements," remembers Zelders. "After all, drivers spend many hours in their cabs. A driver's cab is an office, living and sleeping area all in one." The panel material from the ThyssenKrupp Steel Service Center provides the necessary stability and safety for structural parts of the driver's cab. "Our materials are even used in the fuel tank," explains von Prondzinski. "The hot-dip aluminum-coated flat carbon steel supplied by ThyssenKrupp Steel was individually tailored to the needs of DAF Trucks and is essential for fuel tanks. These containers are exposed to extreme loads: they have to withstand varying temperatures and weather conditions, must not crack even under difficult road conditions and the interior of the material must not be attacked by the fuel. Therefore, DAF Trucks needs a material with a very good surface property and high resistance to corrosion."

DAF Trucks has its headquarters in Eindhoven in the Netherlands, and is a subsidiary of the American PACCAR Group. Driver's cabs and axles are made at Westerlo in Belgium, while engines and components are produced at the Eindhoven plant. In 2006, 44,250 trucks in the XF and CF ranges and almost 12,000 in the LF range were sold. Zelders: "The truck industry is booming. We are going to expand our production further." At present, 170 heavy and medium trucks per day roll off the assembly line in Eindhoven, and this number is set to increase up to 180 by the end of the year. In addition, 22 per day are being built by Leyland in the UK.

Success and quality are rooted in history: DAF Trucks was founded by the brothers Hub and Wim van Doorne in 1928 as a small design company in the Netherlands. Over the years, they specialized in developing transport solutions and developed several innovations setting standards and improving quality in the industry. And this continues to be the goal of the company. The ThyssenKrupp Steel Service Center has been on board for two years now. Even though the cooperation is still in its early stages, it has been successful: "The ThyssenKrupp Steel Service Center provides first-class steel technology and expert consulting on materials and processing issues, service and production," says Zelders. "This should stay the same in the future," emphasize Leske and von Prondzinski.

Daria Szygalski

www.daftrucks.com
www.thyssenkrupp-stahl-service-center.com

Contact: **Jörg von Prondzinski,** ThyssenKrupp Steel Service Center, tel. +49 (0)234 95912-16, e-mail: joerg.prondzinski@thyssenkrupp.com

Visit us in Berlin
at the **CWIEME 2007**
from 22 to 24 May, 2007
in hall 2.2, booth 3323

Agenda

Auto Shanghai
12th International Automobile & Manufacturing Technology Exhibition
22 – 28 April 2007, Shanghai
To increase its recognition in China and strengthen its image, ThyssenKrupp Steel is attending this exhibition in Shanghai for the second time exhibiting together with ThyssenKrupp Technologies, in order to display products from companies operating in China. True to the motto of "technology and nature in harmony", the message is being communicated that "our production in China is as green as in Germany".

BAUMA 2007
28th International Trade Fair for construction machinery, building material machines, mining machines, construction vehicles and construction equipment
23 – 29 April 2007, Munich
The BAUMA is the biggest tradeshow of its kind in the world. About one quarter of all visitors come from abroad. ThyssenKrupp Steel is represented with its Heavy Plate Profit Center and is showing XAR® special construction steels and N-A-XTRA® and XABO® annealed steels. The highlight of the presentation will be a customer event on 26 April.

Technology presentation Hyundai
8 May 2007, Rüsselsheim,
Hyundai Development Center
31 August 2007, Korea, Nam Yang Development Center
ThyssenKrupp Steel and ThyssenKrupp Technologies will be displaying the automotive expertise of both company areas by means of selected automotive components and assemblies as well as technical papers.

CWIEME 2007
Coil Winding, Insulation & Electrical Manufacturing Exhibition Conference
22 – 24 May 2007, Berlin
The European Union is the world's biggest market for electrical appliances, fixtures and applications. The electrical industry is almost as large as those in North America and Japan put together. The world's biggest trade show for this industry is the CWIEME in Berlin. ThyssenKrupp Steel and ThyssenKrupp Electrical Steel will be taking part. They will be presenting products made from grain-oriented and non-grain-oriented electrical steel.

New Steel Service Center in Poland
31 May 2007, Dąbrowa Górnicza
Going East – ThyssenKrupp Steel Service Centers are also following this motto and are opening the ThyssenKrupp Stal-Serwis Polska in Dąbrowa Górnicza under the same roof as a 75,000 sq. meter ThyssenKrupp service and logistics complex close to Katowice. The new service center processes flat steel products from hot strip as well as cold-rolled and surface-finished thin strip. Opening is on 31 May.

Blechexpo 2007
13 – 16 June 2007, Stuttgart
The new Stuttgart exhibition center is ready. This is the first year that the Blechexpo will be held on the site by the A8 motorway in the immediate vicinity of Stuttgart airport. As well as ThyssenKrupp Steel and ThyssenKrupp Materials, presentations will be also given by the Steel Service Center, ThyssenKrupp Nirosta, ThyssenKrupp DAVEX and Agozal surface finishing. A customer event will be held on 13 June in the Mercedes Benz museum at Untertürkheim.

International Body Congress
17 – 19 June 2007, Berlin
ThyssenKrupp Steel is presenting itself with a paper on lightweight use of steel in bodywork. The following products will be on show, Thyssen Tailored Tubes®, Thyssen Tailored Strips®, ThyssenKrupp Patchwork Blanks® and hot-formed, extra-strength tailored blanks.

International Motor Show (IAA) Cars
13 – 23 September 2007, Frankfurt
On a 700 sq. meter booth, ThyssenKrupp Steel and ThyssenKrupp Technologies will be presenting the areas of their portfolio relevant for automobiles. In addition, there will be a broad-based campaign to attract young talent: school children and students from ThyssenKrupp partner schools and colleges will be invited to attend the IAA for a day. After presentations of the products and services for modern automobile construction, the kids will have the opportunity to enjoy a unique visit to the trade show.

Contact: **Dr. Jens Jordan,** Executive Functions/Marketing, tel. +49 (0)203 52-45560, e-mail: jens.jordan@thyssenkrupp.com

Thinking the future of steel

ThyssenKrupp Steel