

# A giant recognizes his strength

Brazil: Fifth largest country on earth develops its economic power



**CIRB stands for the four big economic players of the future: China as “workbench”, India as “think-tank”, Russia as “filling station” and Brazil as “raw material warehouse”. On the one hand, these catchwords clearly pinpoint the respective basis, where these “emerging markets” can build up their future strategies. On the other hand: Brazil, for example, would have been strongly underestimated, if you wouldn’t take a closer look. That’s exactly, what A&D did in springtime 2007. As with the A&D research trips to China (2004) and India (2005), the focus is automation technology. But in a first step, general conditions have to be outlined.**

■ Volker Tisken

**L**et’s first compare “filling Station” and “raw material warehouse”: Russia is contributing a lot, to satisfy energy hunger of Western Europe and especially China. With its huge deposits of oil and gas, the country participates in the tremendous Chinese growth and earns a good dollar. In the meantime, however, Brazil is leading the way into future: The South American nation is already covering 50 % of its energy demand with biofuel.

This is based on a long-sighted, economical-driven decision, which has been settled more than two decades ago: The country certainly

had enough oil- and gas-deposits, to cover its own demand for many decades. But being the biggest sugar cane producer on earth, Brazil was in a one-sided, economically unsound dependence on world sugar market. Solution: Sugar is used to produce ethanol in a large scale to run vehicles in the domestic market. So, oil, gas and petrochemical products are available for the world market and achieve a better price, than sugar could ever have done.

This early entrance into bio fuel production provided Brazil with a noticeable technological lead as well. Obviously this can be seen

at today’s generation of vehicles. Their flexfuel engines can be powered with petrol or ethanol alone or in any mixing ratio.

## Government is taking a strong influence on economical development

Fiat do Brasil, market leader at present, even offers a mid-range car as tetrafuel version: Besides petrol of various grades and alcohol, it can be filled up with natural gas. The filling station network is being extended for natural gas to an

extent comparable to Europe. Also in plant engineering, a noticeable margin is evident: Brazil today is equipped with the worldwide most efficient plants for large-scale production of alco-

vendor-list”, Nelson Ninin says, president of Yokogawa América do Sul and vice president of the Brazilian federation of the electric and electronics industry, abinee.



**„We have about 20,000 engineering students per year in São Paulo - in private and several public high schools“**

*Prof. Dr. José Roberto Cardoso, Escola Politécnica USP*

hol. That results in beginning of biofuel exports to USA, where a growing demand reveals.

It's not only bio fuel to show the strong influence, the Brazilian government is taking on economical development. On the one hand, since the early nineties, Brazil is again attracting foreign companies with an open and secure investment climate. At the same time, the politics of the sixties is continued, to control industrial-

Most of the big mining companies, who exploit e.g. the copper, iron or bauxite mines at Minas Gerais, act the same way as Petrobras and make certain demands on companies who want to become a supplier.

Up to here, everything sounds quite normal for European companies. This is linked up with the fact, that many companies choose the federal state of São Paulo and its surrounding sta-



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*Dêcio da Silva, WEG*

zation and the development of the labour market by means of fiscal measures. Appropriate import duties ensure, that the market of about 190 million Brazilians is particularly open for companies, that are producing locally. So, Brazil shows 17 car manufacturers - most of them subsidiaries of international car companies.

### The domestic produced part of an Petrobras order must total 60%

And those, again, brought the corresponding supply- and mechanical engineering industries with their system- and component-subsuppliers into the country. Companies, that want to supply the state-owned oil company Petrobras, have to fulfil certain quotas: The domestic produced part of an order must total 60 percent. Petrobras not only extends its network of production plants, but also runs refineries and petrochemical plants. Besides, the state-owned enterprise is involved in the area of renewable energies. A company, planning to enter the Brazilian market for process technology and automation technology, must have this heavy-weight customer in focus and line up accordingly. “Petrobras sets high barriers to those, who want to enter their

tes as their bridgehead. These states seem comparatively acquainted for Europeans. But Brazil is the fifth largest country on earth - a dimension far beyond of our imagination. In addition to the already mentioned economic policy of the government, there is a system of incentives and tax allowances that should help to balance out the extreme economic divide of the giant country on a long-term basis. This triggers tremendous streams of goods. So, for example, parts of a production are located in the São Paulo region, other parts are seated in the free trade area of Manaus, Amazonia. A distance of 4,000 kilometres, that only can be bridged by aeroplane or on large detour by truck and inland waterway vessel: a challenge for logistics.

### Government supports every production destined for export with cheap money

“It's difficult to understand the incentive and tax system and to see the opportunities it gives”, Luis Fernando Giacobbo says, specialist in tax optimization at the accounting and tax counseling firm PricewaterhouseCoopers in Brazil. But you must face the system, if you want to competitively produce and trade in Brazil. >

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The government also supports every production, destined for export. Therefore it issues extremely attractive credits and this is of great relevance, because the banking system of Brazil works completely different and credits are actually quite expensive. This is rooted in the

nical and electronic products: "China's focus is export. The focus of Brazil is, to produce goods for the domestic market in our own country." With car production, Brazil already made it and there are quite some examples in the branch of mechanical engineering, that Brazil is producing

ployees belongs to the biggest employers. The high vertical range of manufacture is striking: Enamelled copper wire for motors is manufactured in-house. Cabinets are assembled in own workshops. The company, abroad well known as manufacturer of electric motors, makes only half of its turnover with motors. For the domestic market, it produces big electric generators and switchgear systems as well as power electronics and control electronics for drive technology and PLCs.

In 2006, turnover was 1.6 billion US dollars and shall reach almost 1.8 billion US dollars in 2007. Chief executive officer Décio da Silva: "Brazil has technologies and well skilled people. It can achieve a slow but steady growth." Training is very highly rated. On the one hand, by companies - WEG has 150 trainees at present. On the other hand, by government - attending a technical college, people can train to be skilled worker. Many people do so in Santa Catarina - and noticeably many women. They also represent a greater percentage among engineers, than is usual in Europe. Engineers in Brazil belong to



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*Luiz Carlos Gustava, SEW-Eurodrive Brasil*

high inflation, which made the whole country tremble in the eighties. Until a few years ago, the Brazilian Real showed considerable exchange fluctuations against the US dollar. Only since three years, the exchange rate is stable and the Real is gaining strength against the US dollar what, in the countermove, worries the Brazilian exporters. From the gross domestic product of 893 thousand million US dollars, a stake of 218 thousand million US dollars is related to foreign trade (export share: 130 thousand million USD). The German Brazilian Chamber of Commerce in São Paulo specifies the high level of interest rates and taxes as primary drawback for the country's development.

for home and abroad in a balanced ratio. But automation technology, which is increasingly demanded in both segments, is predominantly imported. Of 1.2 billion US dollars, having been spent in automation technology, 912 million US dollars belong to import. The growth forecast for the Brazilian automation market in 2007 is 14%. From 2005 to 2006, growth was 25% (ac-



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### 14% growth expected for industrial automation

Automation technology is a clear growth market in Brazil. "Components and systems, used in Brazil, are only to a small extent domestic", Ninin says, who sees a main duty of his federation, to support domestic production of electro tech-

counted in US dollar, before adjustments for exchange variations and inflation).

The biggest manufacturer of industrial electro technical and electronics products is WEG in Jaraguá do Sul. In the 100,000 residents city located in the smallest federal state of Brazil, Santa Catarina, the company with its 15,000 em-

an important elite - the education is corresponding sought-after. "We have about 20,000 engineering students per year in São Paulo - in private and several public high schools", says Prof. Dr. José Roberto Cardoso, Vice-Dean of Escola Politecnica of São Paulo university (SPU). Almost 700 graduates in the Department of Electrical Engineering and about 60 graduates in the 1990 newly founded Department of Mechatronics yearly complete their education and leave the institute.

Engineers, that e.g., develop applications for customers in the Brazilian automotive industry at SEW. The German drive technology company has set up its Brazilian production in Guarulhos near São Paulo. Here, primarily, geared motors are assembled. A team of application engineers develops solutions for the demands of industry, based on the whole SEW portfolio: "The requirements of the Brazilian automotive industry have strongly served SEW in developing a system solution for the electrified monorail system", declares Luiz Carlos Gustava, SEW-Eurodrive Brasil.



#### at a glance

### Megacity in traffic chaos

São Paulo is the strong motor of the Brazilian economy - and belongs to the megacities of the world: 12 million residents in the city. It is said to be 17 millions, together with its satellite towns. Long since, this major industrial city and its satellites have merged into a vast ocean of tower blocks. Biggest problem of the city: She hasn't got a local public traffic system worth mentioning. 6 million cars are registered in the city and the vast majority of them are on their agonizingly slow way through an endless traffic jam - "probably on their fruitless search for a tiny little parking space", as the Paulistas, the residents of the city say in their own special sense of humour. Needless to say they love to be there.



**Daily traffic jam at Brazil's economic motor: In the 12 million city 6 million cars are registered**

São Paulo is also the economic metropolis of Brazil. 40 % of the GDP of Brazil are generated in and just around the city. In General the Southeast contains only 11% of Brazil's land, but 43% of the population lives there. The South is distinct not only because of its temperate climate, but also because it was primarily settled by European immigrants in the late 19th century, giving the region a culture that is more European than other areas of the nation. By the way: São Paulo is said to be the largest German industrial town of the world - over 800 German companies have settled here.

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