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State-of-the-art process technology for improved use of resources

Comments by Peter Schenk

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The spoken word takes precedence.

Ladies and Gentlemen,

As we only get together every three years at the world's leading chemical engineering show, please allow me to introduce myself. I am a member of the Executive Board at GEA Group Aktiengesellschaft, and since March 2002 I have served as Chairman of the VDMA Process Plant and Equipment Association and Chairman of the VDMA Process Technology Forum.

Production in the German mechanical engineering industry continues to rise. Statisticians at VDMA expect that final results will show an increase in production by four percent during 2005. Growth was driven exclusively by exports. Domestic performance remained flat at best. Production is expected to be up again slightly in 2006. If growth reaches two percent, then the mechanical engineering industry will have expanded by an

inflation-adjusted twelve percent between 2003 and 2006. Export growth is expected to flatten out this year, but domestic demand could make a small contribution to growth again.

Following years of restraint, investments were up significantly in the chemical industry in 2005. Estimates of the Association of the (German) Chemical Industry (VCI) indicate that investment in Germany in 2005 was up by two percent to 5.3 billion euros, and investment is expected to increase again in Germany and the rest of Europe in 2006. This is good news for producers of process equipment. Producers of valves and fittings, compressors, pumps, packaging and pharmaceutical machines, thermal and mechanical process equipment and environmental technology along with companies which are involved in large project engineering will all benefit from the upsurge. Nearly 70 percent of production in these sectors goes to the chemical industry and associated industries which ordered goods worth more than 14 billion euros from German manufacturers in 2005. This figure does not even include large engineering projects. The export quota was 84 percent.

The 25 member states of the European Union constitute the largest export market. Nearly half of German production (47 percent) is exported to these countries. The Near and Middle East has replaced Asia as the second largest export market. 15 percent of exports are shipped to this region. When looking at the large volume of orders which are coming from this region for large chemical engineering projects, it is obvious that the Near and Middle East is making a concerted effort to build up its oil and gas processing capabilities in order to decrease dependency on revenue from crude oil sales. We are very aware of the fact that events in the region can be unpredictable, and we are keeping a close eye on the political and social situation.

Despite strong demand from China and India and the end of a period of stagnation in Japan, only seven percent of production was exported to Asia. Africa, Latin America and North America were fourth, fifth and sixth in the rankings, respectively.

The outlook is as follows. Improvement in the domestic market combined with strong demand for exports are expected to

generate modest growth in 2006. We expect turnover to increase by one percent for the process technology sector as a whole. Thus the moderate but sustained growth which we saw in 2005 will continue into 2006.

What are currently the hot topics in our industry? The major challenge today is to develop state-of-the-art process technology which makes even better use of existing resources. Producers have to ensure that their equipment, machinery and systems are as efficient as possible. It also means that we have to develop processes which make more efficient use of the available raw materials.

In the energy market, for example, there are a lot of opportunities for the process technology industry. In our view, the increasing demand for energy means that the outlook is bright for this market in 2006. The factors that are driving growth include an increasing tendency of liquefying natural gas for transportation and the increased conversion of natural gas to petrochemical products such as synthetic fuel. To cite one example, there is potentially a 500 million euro market for LNG (Liquefied Natural Gas) plants over the next ten years, and the figure is 600 million euros for GTL (gas to liquids) plants during the same period.

There is also significant growth potential in the power generation sector. The power generation boom continues unabated in China. In addition, about 30 percent of power stations worldwide are older than 30 years and will either have to be replaced or upgraded in the foreseeable future to improve efficiency. With regard to the replacement of plants, the medium term outlook is also good in Germany.

The biofuel sector is also expanding. Alternative fuels such as biodiesel and bioethanol will be used for blending or as a complete substitute, and experts believe that worldwide demand for these alternative fuels will increase significantly in the near future.

For the machinery and plant construction sector, this means that around 40 new biodiesel plants with an average annual capacity of 100,000 tons each and 60 new bioethanol plants

with an average annual output of 100,000 tons each would have to go online in Europe alone by 2010. This would correspond to a total investment of about three billion euros.

You will hear engineers use the term “process intensification” more frequently in the future. A holistic approach and interdisciplinary cooperation under the heading “process intensification” will provide an opportunity to conserve limited resources or, looking at it from another perspective, a way to increase yields.

We look forward to seeing you at ACHEMA.

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