Crowds at 2005 eChemExpo Briefed on Capital Spending Hike At Eastman Chemical Company

Engineers and Chemists Come Together
At Conference on Using Technical Innovation
To Lower Total Cost of Plant Ownership

Exhibitors and attendees got two pieces of good news in the keynote address at the 2005 eChemExpo March 17 in Kingsport, Tenn. They learned that locally based conference anchor Eastman Chemical Co. has decided to boost its capital budget to $360 million for 2005 and plans to spend 92% of that money in North America.

The spending increase comes on the heels of several years "in the hunker-down mode," Bill Wetherholt, Eastman capital planning and real estate manager, told a crowd of about 75 attendees and exhibitors gathered in a theater at the MeadowView Conference Resort and Convention Center near Kingsport. The event's 17 breakout sessions and over 70 exhibit booths attracted about 450 engineers and chemists, about three quarters of them employed by Eastman. Two hundred exhibitor personnel explained their wares.

Much of Eastman's increased funding will cover the costs of three projects: the first commercial scale PET resin plant based on Eastman's IntegRex technology, already under construction in Columbia, S.C.; a CHDM expansion at the Kingsport plant; and a demonstration plant at Kingsport, Wetherholt said. Smaller portions of the budget will fund projects at Eastman facilities in Texas, Arkansas and Pennsylvania, he added, with some going to the Eastman Division and some to the company's Voridian Division.

"This is really a breakthrough with our three growth projects," Wetherholt said. "We're showing a substantial increase in the amount of capital we plan to spend as a company this year."

Wetherholt showed his audience a graph of the ups and downs of the company's annual capital budgets over the last 17 years and characterized the undulating curve as a "roller coaster." One previous high point corresponded to a globalization effort that brought PET plants to sites abroad, and another blip occurred when shutdowns forced some plant upgrades in Kingsport, he said.

The annual budget was reduced about the time Wetherholt, a 25-year Eastman veteran, joined the capital planning department in 1996, he noted jokingly. Until 2005, he said, "we've just basically been trying to get by and spend the least that we possibly can."

Regardless of the level of spending, Eastman conducts quarterly capital budget reviews to make adjustments, Wetherholt says, a careful approach that falls in line with the theme of this year's eChemExpo. The slogan for the conference was "Minimizing Total Cost of Plant Ownership."

That theme of reducing costs becomes critical to Eastman and other companies striving to reduce costs, increase margins and maximize shareholder value, Sador Black, Eastman director of polymers and research labs, said in her introduction to the conference's keynote address. Engineers and chemists can reduce costs by capitalizing on innovation, Black said, citing changes in recent years in the computer industry and process technology.

"In the analytical area we have seen improvement in sensitivity [and] lower detection limits as well as improvements in specificity," said Black. "We've seen optimization of a lot of hyphenated techniques in the lab. We've had this combined with the push for miniturization [and] high throughput analysis as well as that whole idea of a lab on a chip."

Black also spoke about the merger of process control and analytical techniques, saying the two are combined in a lot of Eastman labs. "So that's going to be one of the major themes of our work today – think about how those two areas can come together and what the innovations we would see in the future," she urged the audience.

The show's exhibitors are bringing on the next waves of plant innovation, according to Dick Grese, a research associate in the Eastman R&D Group and co-chair of the eChemExpo event. "As the manager of an analytical lab here at Eastman, I recognize that it's the innovation – the new technology, the instrumentation that's developed by the vendors that helps us provide our support to our customer who we provide analytical data to," Grese told the audience.

The first of those vendors to address the conference, Richard Schmidt, director of customer partnerships for Rockwell Automation, said that innovation provides the surest way to cut costs in today's chemical industry.

Moving plants to the lowest-cost locations no longer represents a panacea for cost cutters, Schmidt said. So many facilities have already been relocated to take advantage of lower labor costs, reduced taxes, and less stringent environmental rules, he said. Besides, changing conditions can raise or lower costs once a plant has been established, he noted. "The lowest-cost place you move to today might not be the lowest-cost place tomorrow."

What's more, technology reduces the need for labor, thus wiping out the advantage of moving to a location with lower wages, Schmidt told the conference. "You're not going to save very much because there are not many labor hours in each unit of production," he said.

The answer, he suggested, lies in lowering costs by improving efficiency with the help of innovative approaches. “The right collection, selection and implementation of technology products drives production efficiency, which lowers total cost, which improves profitability for your company,” Schmidt said.

Some specifics on how innovation is lowering costs were provided in an address by another vendor, Tim LeFevre, national sales manager for Honeywell Industrial Measurement & Control. He cited recent trends in sensors, networks, control systems and applications.

Sensors are employing microprocessors to improve memory, networking and ability to support multiple control points and multiple loops, LeFevre told the conference. “You’re able to bring a lot more diagnostics and information back into the system,” he said. “From a maintenance standpoint, there’s a savings in reduced downtime.”

Advanced diagnostics include fault models based on eight or ten parameters from the 70 or 80 that sensors or controllers are providing, he said, Meanwhile, equipment from various vendors is communicating with each other better now than in the past. Software and databases are becoming more integrated, too, he said.

Many sensors have a common design and can be assigned different functions by changing cards, LeFevre said, thus eliminating the need to pull equipment out of the process to make a change or a repair.

In networks, the wireless revolution is paying off in significantly reduced plant costs, LeFevre said. Battery-powered wireless devices eliminate the need for costly wiring, he said, providing the example of a refinery that avoided $1.2 million in wiring costs for 100 transmitters. Instead they spent between $50,000 and $100,000 to install wireless equipment. The cost of the devices came to about $100,000, he said.

Another advantage of the shift to wireless is seen in mobile stations that allow workers to monitor processes and enter data while roaming the plant, rather than at stationary work stations, LeFevre said.

In control systems, standard off-the-shelf hardware is replacing the more expensive proprietary gear, bringing down costs dramatically – typically by 60 percent to 70 percent, LeFevre said.

Companies now replace control systems gradually, he continued, sparing themselves the concentrated effort, high one-time capital costs and aggravating interruption of ripping out and replacing everything at once. He cited the example of a plant that is taking five to seven years to change out the system, and he notes that Honeywell offers lifecycle management contracts and charges on a quarterly basis. To help with gradual replacement of a control system, information from old and new sensors and controllers are integrated into the same databases, he said.

In applications, the trend is toward integrating asset data, smart device diagnostics, analog devices, mobile diagnostics and process data, LeFevre said. Plants no longer need "separate servers, separate boxes and separate software packages," he said, noting that "you're seeing significant cost reductions."

Another speaker at the gathering Gene Skates, a chemical engineer working in the Procurement Department of Eastman's Voridian Division and also chairman of the Process Technologies Track of the conference, acknowledged the work of three technical organizations that served as Supporting Organizations of the conference and exhibition: the American Institute of Chemical Engineers, the American Chemical Society, and the American Society of Mechanical Engineers.

Other professional societies that contributed to the event were the Institute for Supply Management, the American Society for Quality and the Institute of Industrial Engineers, Skates said.

He also thanked the Gold Sponsors of the event, Rockwell Automation and Siemens Energy and Automation.

Bruce Lyttle, chairman of the Analytical Technologies Track of the conference and a 34-year Eastman employee before joining Superior Industries, introduced speakers from the event's Silver Sponsors, who then took to the podium for brief remarks on what their companies were presenting at the show.

Ray Mindrup of Supelco mentioned new bonding technology for low-bleed characteristics for HPLC/MS, as well as a new line of flexible SPME fibers. Curtis Bookwalter of Agilent Technologies said his company was demonstrating a new multimode source for LCMS that accomplishes APCI and electrospray simultaneously as well as a flight instrument with walkup software. Randy Curls of Thermo Electron Corp. cited a new linear ion trap mass spectrometer and innovation in FTIR. Peter Muller of Perkin Elmer LAS said his company was offering innovation in traphead space and liquid handling for automation.

Jill Harris, eChemExpo co-chair and member of the Eastman procurement group, thanked Eastman executive sponsors Jim Harlan, vice president of operations support for the Voridian Division; Greg Nelson, senior vice president and chief technology officer, and Rick Witt, vice president of worldwide operations support, who worked on the Eastman-Voridian split. Harris also acknowledged the work of the planning time, including Lyttle, Skates and Grese.