

SEMATECH Council Seeking Ways to Forestall Looming Polysilicon Shortage  
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SAN FRANCISCO, CA--(MARKET WIRE)--Jul 20, 2005 -- Responding to rapidly rising demand for polysilicon from the booming photovoltaic market, the SEMATECH-led Critical Materials Council (CMC) will investigate strategies to help improve the short-term supply of polysilicon for the semiconductor industry.

The CMC's response grew out of a meeting last week at SEMICON West, in which polysilicon producers described operating at maximum capacity, and predicted shortfalls of semiconductor-quality polysilicon starting this year and extending into 2008. The CMC meeting was sponsored by SEMATECH and SEMI.

"Basically, everyone is running everything they have" to keep up with silicon demand, said Dave Keck, vice president of Advanced Silicon Materials, LLC. While the chip industry currently consumes about two-thirds of manufactured silicon, photovoltaics takes one-third and its appetite is growing about 30 percent a year.

"There is not enough polysilicon to support the growth of the photovoltaic industry after 2008," much less the increased needs of the semiconductor industry as it converts to 300 mm wafers, Keck said. He and other meeting participants predicted a polysilicon shortage of 4,000 metric tons this year, increasing to 6,000, 12,000 and 20,000 metric tons over the three years following.

Gary Homan, marketing vice president at Hemlock Semiconductor Corp., said the silicon industry's options for dealing with the oncoming crunch include incremental expansion of existing facilities; building new plants; identifying new materials for customer use; and forming consortia to tackle the issue on a unified basis.

"There is a lot of activity going on in the industry to try to address the polysilicon shortage, but there's still a lot of work ahead," Homan said. "We are probably underestimating the polysilicon demand" from 300 mm wafer conversion, he added, in which case "there are people who will not get supplied [with polysilicon] in the future." He also indicated during subsequent meeting discussions that the supply chain that supports polysilicon production is also facing capacity challenges.

The world's ravenous demand for silicon was quantified by Dan Tracy, Senior Director Industry Research & Statistics at SEMI, who estimated that producers will turn out 26,000 metric tons of polysilicon this year and 29,000 metric tons in 2006. "There is strong demand out there for polysilicon" just from the semiconductor industry, which could have forty 300 mm fabs in production around the world by 2006, he said.

Neil Gayle, a SEMATECH manager and CMC coordinator, said it's crucial for SEMATECH member companies -- which represent about half the world's semiconductor production -- to have access to remedies for a polysilicon shortage that some are already calling inevitable. He said the CMC, which provides a forum for SEMATECH members to assess the semiconductor supply chain and help assure a robust supplier base, is a natural vehicle for seeking such solutions.

"We'll investigate the possibilities for expanding the supply of polysilicon, and work with suppliers and manufacturers to try to develop a coordinated response," Gayle said. "Even if a polysilicon shortage is unavoidable, we may be able to find ways to soften the impact on our member companies and the industry."