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Equipment Sales Will Fall 20% in 2008

SEMI anticipates global semiconductor equipment sales of \$34B this year, down 20% from \$43B in 2007, according to the 2008 SEMI Mid-Year Equipment Forecast.

Craig Addison, Senior Editor, Communications, SEMI, San Jose -- Semiconductor International, 7/15/2008 10:00:00 AM

SEMI (San Jose) anticipates global semiconductor equipment sales of \$34B this year, down 20% from \$43B in 2007, according to the 2008 SEMI Mid-Year Equipment Forecast.

The figures were released yesterday during the [SEMICON West 2008](#) press conference. The forecast is based on an analysis of capital spending announcements and current bookings and billings data, combined with input from some member companies.

Survey respondents see the equipment market growing 13% in 2009 to \$38.6B, and reaching just over \$41B by 2010.

In terms of regional markets, China will hold steady in equipment spending this year, but all of the other markets will be down from their 2007 levels. Taiwan, which was the largest equipment market in 2007, will drop 37% to \$6.7B in 2008, but is forecasted to bounce back next year with 53% growth. North America will decline 13% to \$5.7B, according to the forecast.

Looking at the forecast by segment, there is a similar downward trend, with wafer processing equipment falling 20.5% to \$25B. The market for test equipment is expected to decline by 20%, also, to just over \$4B this year, while the assembly and packaging equipment segment will fall 14% to \$2.4B. The "other" segment is mostly fab facilities, and this will experience the largest decline, down 23% this year.

The 2008 SEMI Mid-Year Equipment Forecast was presented by Stan Myers, president and CEO of SEMI, who also provided a market update during the press conference.



For unit sales, the semiconductor device market peaked in the third quarter of last year, and has declined on a quarterly basis since, according to Myers. “However, the good news is that average selling prices, or ASPs, have stabilized over the past three quarters — reversing a slide in ASPs that began in the fourth quarter of 2006. The general expectation is for modest, single-digit growth in global semiconductor sales in 2008,” he said.

“After declining slightly in the first quarter of this year, we saw a resumption in silicon shipment growth through May with three-month average shipments reaching record levels,” he continued. “Overall, shipments in 2008 will experience single-digit growth in the 4-6% range, though 300 mm wafer shipments will grow at above 20%.”

Over the past couple of years at SEMICON West, Myers has talked about the potential for a polysilicon shortage, which has been exacerbated by the explosive growth in the solar/PV market.

The supply imbalance has prompted new investments by established suppliers and new entrants into the polysilicon market. “The new production capacity will result in an improved balance between supply and demand, and will help fuel the continued growth in the solar market, which is becoming increasingly important for many SEMI members,” Myers said.

The materials industry is typically far less volatile than the equipment sector, and has seen a relatively steady increase in revenues going back to 1987, according to Myers. The one exception was the dot-com drop in 2001.

However, since 2001, the materials industry has had consecutive years of growth and will reach a forecasted size of \$46B this year. The market growth in materials reflects a combination of factors, including the ongoing transition to advanced materials, both in the fab and package/assembly, and firmer materials prices brought about by higher raw material and energy costs.

Looking at materials on a regional basis, the largest market is Japan, worth >\$10B, followed by Taiwan at ~\$8.6B and Southeast Asia at just over \$7B. In terms of growth, China is experiencing the highest growth rate at 25% YoY, but that is from a relatively small base. Japan and Taiwan are both healthy with ~10% growth in materials sales, which is slightly ahead of the global sales growth rate of 8% for this year.

During the press conference Myers also addressed the issue of a possible transition to 450 mm wafers.

“The semiconductor manufacturing industry is at an important point, and the decisions we make now will have a significant impact

on the future,” he said. “Many people in the industry seem to think that moving to larger wafers is necessary to keep on Moore’s Law and to ensure that the cost per transistor continues to decline. It’s a reasonable assumption, but before investing some tens of billions of dollars to make a change, it’s prudent to conduct a careful analysis of the facts and the myths around such a transition,” Myers said.

SEMI’s Equipment Productivity Working Group (EPWG) conducted such an analysis and came to the following conclusions:

- Because the semiconductor business has become a consumer-driven industry, it needs to handle short-run, rapid-change products to accommodate the short lifecycles of the consumer market. Smaller fabs are better suited for this.
- R&D dollars for device shrinks, new processes and new materials are highly constrained and must be invested where they will offer a positive return.
- The change to a larger wafer size in itself does not lead to significantly reduced costs. Intel (Santa Clara, Calif.) found this was the case in the changeover from 150 to 200 mm, and the same will be true in going to 450 mm.
- Overall cost reductions for 300 mm wafers were brought about by a higher usage of factory automation, the use of mini-environments or FOUPs, and savings brought about by stopping work on 200 mm node advancement.

Myers said, “At some time in the future, it may make economic sense for the industry to consider a move to larger wafer sizes. However, the EPWG report shows that now is not the time and that the industry should maintain its focus on smaller, faster and cheaper because it’s simply the better investment.”

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