

Silicon Wafer Shipments Rise as Revenues Slip

TEHCET Forecasts 2016 Wafer Volumes Up 6.8% to 11.1 BSI Si

TEHCET CA—the advisory service firm providing electronics materials information—today announced that the 2015 market for semiconductor silicon wafers fell 5.3% to \$7.2B on a record 10.4 billion square inches (BSI) Si shipped. Silicon demand for 2016 is expected to increase by 6.8% to 11.1 BSI, largely due to a strengthening memory market. Regardless of overall wafer consumption, issues with wafer supply will likely continue, as demand for 300mm polished wafers increases beyond capacity. In contrast, 300mm epitaxial wafer supply remains in excess. Certain 200mm wafers are also in tight supply given strong demand growth from the discrete device fabs coupled with limited supplier capacity, as explained in “Silicon Wafers Market & Supply Chain 2016, a TEHCET Critical Materials Report” by Mike Walden.

Although the decline in silicon wafer shipments recovered after 2009, prices have remained below 2008 (pre-US housing / global financial crisis) levels. Silicon area shipments were relatively flat from 2010 through 2013 before rising 10% in 2014. Meanwhile, silicon revenue peaked in 2010-2011 before declining sharply in 2012 and 2013 to begin 4 stagnant years. TEHCET expects aggregate Si ASPs to fall slightly in 2016 before firming or modestly increasing in 2017. Also noted by Walden, “China will have a major influence on this market in the years to come.”

SOI wafer price increases in 2014 due to a temporary supply-demand imbalance have stabilized as new capacity has come online. Some pricing pressure is anticipated in 2016 as the new players vie for market share.

The timeline for 450mm wafer pilot has been pushed out to 2019 with a ramp in 2020. While Intel remains bullish, TSMC, Samsung and GlobalFoundries have not yet joined the 450mm investment track. As a result, only Shin Etsu Handotai (S.E.H.) and SUMCO have invested in 450mm wafer development to date.

The top 5 silicon wafer producers account for roughly 97% of 300mm polished and epitaxial wafers sales (by revenue). S.E.H. and SUMCO together account for over 55% of that 300mm revenue and more than 60% of total sales by the top 5.

ABOUT TEHCET: TEHCET CA LLC is an advisory service firm focused on process materials supply chains, electronic materials technology, and materials market analysis for the semiconductor, display, solar/PV, and LED industries. Since 2000, the company has been responsible for producing the SEMATECH Critical Material Reports, covering silicon wafers, semiconductor gases, wet chemicals, CMP consumables, Photoresists, and ALD/CVD Precursors. For additional information about these reports or CMC Fabs membership please contact Lita Shon-Roy or Michel Walden at info@cmcfabs.org +1-480-332-8336, or go to www.techcet.com or www.cmcfabs.org

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