LCD Panel Market Shows Resilience after Japanese Earthquake

Although some facilities operated by liquid crystal display (LCD) panel and component suppliers were impacted by the Japanese earthquake of 2011, it's apparent one year later that the overall effect of the catastrophe on the market was minor, due to the country's limited presence in the display business as well as a serendipitous overhang of inventory, according to the IHS iSuppli Display Materials & Systems at information and analytics provider IHS (NYSE: IHS).

"A decline in a major country's market share and a buildup in excess inventory normally are regarded as unfavorable developments for a technology market," said Sweta Dash, director of LCD research at IHS. "However, in the LCD market of 2011, Japan's limited presence in the global supply chain—combined with excess stockpiles in the channel—helped soften the blow of the manufacturing disruptions caused by the disaster."

Only 5 percent of large-sized LCD panel manufacturing capacity and just 18 percent of small- and medium-sized LCD manufacturing capacity was located in Japan in the third quarter. In comparison, Taiwan accounted for 40 percent of large-size capacity and 55 percent of small and medium. Because of this, disruptions to Japan's manufacturing and shipments had only a minor impact on the global LCD market.

The figure attached presents the percentage of global large-sized and small- and medium-sized LCD panel manufacturing by region.

Inventory saves the day

Panasonic, Hitachi and NEC were the only three panel suppliers whose fabs were impacted because of their proximity to the earthquake's epicenter, while Sharp's eighth- and 10th-generation fabs were not impacted at all.

Meanwhile, although LCD component supply was affected, panel vendors already had four to eight weeks of inventory in stock, which helped to ride out shortages in supply. Before the quake there already had been an inventory buildup of panels and television sets in the channel, which also reduced any potential negative consequence due to supply disruptions.

For facilities that suffered minor impairment from the quake, production resumed by the end of March and April; other facilities that suffered more substantial damage resumed production by the May or June time frame. Some facilities also were impacted by power shortages or rolling blackouts due to the shortages, but by summer Japan had fewer rolling blackouts or power cuts.

Not made in Japan

Another factor that limited the impact of the earthquake was that Japan accounts for less than 10 percent of the world's LCD TV production.

Among those companies with TV production facilities in Japan—Panasonic, Sony, Sharp and Toshiba—only Panasonic sources the majority of its LCD TV products from Japan. Sony, for its part, produces only a very small percentage of its TVs in the country.
Even before the disaster, most Japanese-branded manufacturers already had established production facilities outside the country in places like China, Malaysia, Brazil, Poland and Mexico, serving those regional markets or operating as outsourced original design manufacturers (ODMs).

For these reasons, the earthquake disaster in Japan had only a very minor impact on TV production restricted to some power outages, with the majority of Japanese TV assembly plants remaining unaffected by the disaster. Many Japanese TV manufacturers also have decided to increase their outsourcing of TV production to ODMs since then.

Components a bigger concern

On the LCD component side, the biggest concern related to worries about supplies of anisotropic conductive film (ACF) and indium tin oxide (ITO) materials—areas that Japanese suppliers dominate.

Hitachi and Sony Chemical, for instance, control 80 percent of ACF material supply. Fortunately, those suppliers were able to restart production by March.

In the case of ITO materials, JX Nippon, Mitsui and Tosoh together accounted for 80 percent of that market. JX Nippon's facilities were impacted by the earthquake, but some production had resumed by April and full production was restored by June. Among suppliers with four to eight weeks of component inventories, very little impact was felt. And for many components, other suppliers also increased their production, helping to reduce the deleterious effect of the disaster.

Other component shortages—such as in bismaleimide-triazine-resin (BT resin), hard drives and batteries—also upset panel demand by impacting the production of notebooks, tablets or other consumer electronic products. For BT resin, Mitsubishi Gas Chemical Co. Inc. held a 50 percent share, while Hitachi Chemical had a 40 percent share of supply.

By April one month after the tragedy, Mitsubishi Gas had recovered 25 percent. .For its part, Hitachi Chemical resumed production on March 17, 2011, but power outage issues continued for some time, and a full recovery didn't come until the second half of 2011. Meanwhile, other companies in Taiwan, South Korea and China geared up to develop BT resin materials in order to reduce the impact of the shortage.

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