



OBJECTIVE ANALYSIS

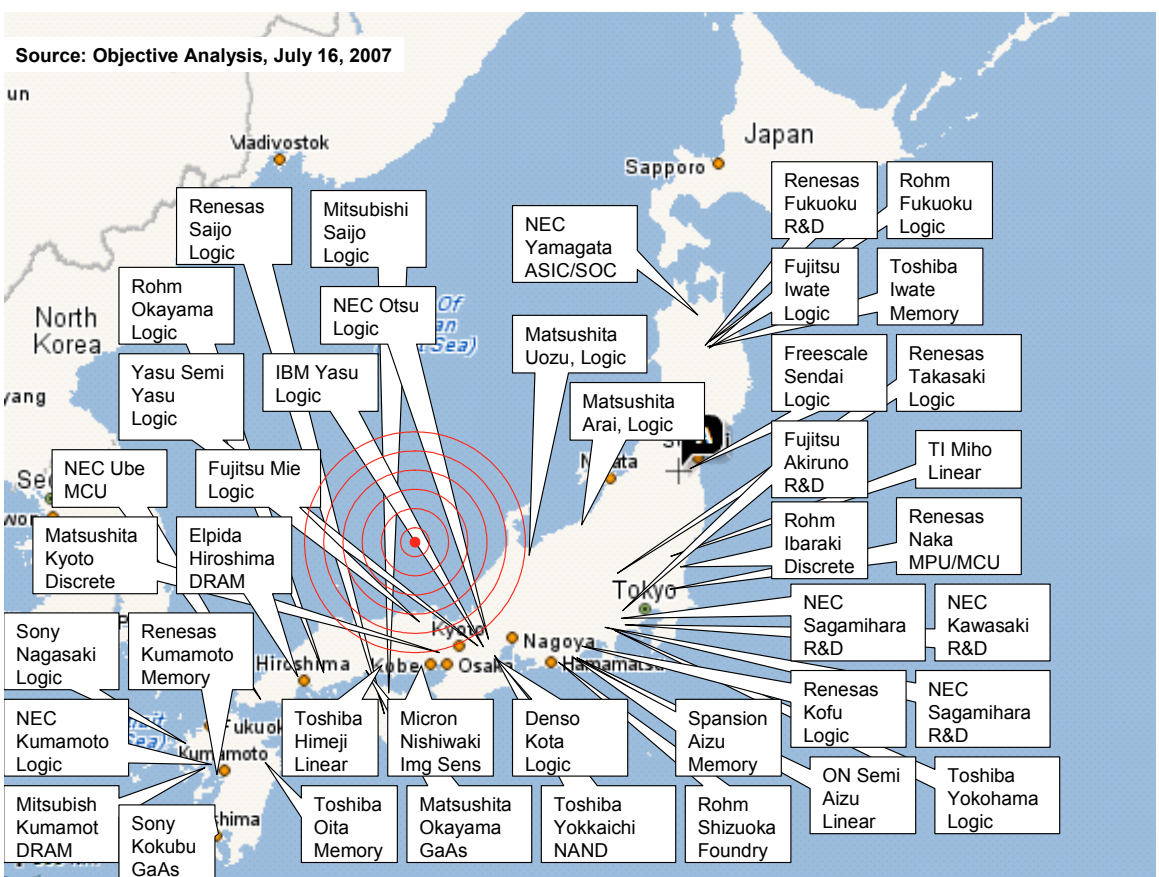
Semiconductor Market Research

OBJECTIVE ANALYSIS ALERT!

July 16, 2007

EARTHQUAKE IN JAPAN—LITTLE FAB IMPACT EXPECTED

Two earthquakes of magnitudes 6.0 and 6.8 on the Richter scale (“Greater than 6 degrees” on the Japanese scale) struck off the coast of Japan shortly after 10:00 AM Monday morning causing damage to areas in central Japan, killing five people and injuring as many as 900 others. Several homes collapsed, and a fire triggered at a nuclear reactor caused a minor contaminant leak. Although the earthquake was felt in Tokyo, damage was limited to the western side of the island of Honshu, but the very small scales involved in semiconductor manufacturing make fabrication extremely sensitive to vibration.



Objective Analysis put together the map shown above to illustrate the locations of Japan’s wafer fabrication facilities (fabs) in comparison to the epicenter of the earthquake. Data is taken from a database of the world’s semiconductor fabs assembled by analysts at the firm.

The map makes it clear that there is little likelihood of significant impact upon any of Japan's fabs since most of the country's capacity is built on the southern or eastern side of Honshu Island. We are told that most fabs in Japan automatically stop operation at the 5 degree level, so there is a likelihood that some fabs in the southern part of the island will interrupt operation for a day to check the status of their work in process or WIP.

It highly possible for an earthquake to disrupt the processing of any wafers that are on a photolithographic tool at the time that the earthquake struck. Although a very large earthquake in close proximity to a fab can cause physical damage to the structure that is greater than the damage the building is designed to sustain, most fabs are designed to accommodate the kind of earthquake that is typical to the area. Fabs are built on special floating floors that isolate the internal equipment from external vibration ranging from tiny earth tremors or vibrations from a passing truck to minor earthquakes. Greater earthquakes may not cause damage but their vibrations can result in incidental damage to the products being processed.

If there is a power loss, no matter how brief, wafers in a high-temperature process may have to be scrapped. If the power loss lasts 20-30 minutes or longer there may also be a period of unexpected downtime as furnaces are brought back to a stable temperature. Another potential difficulty is posed by possible breaches in the clean environment. Earthquake damage may even require recalibration and further losses of work in progress (WIP) than are spelled out here. Losses could run into multiple days, stopping product flow for a week or more.

Our expectation is for the results of this particular earthquake to be negligible to Japan's semiconductor production.

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