



# OBJECTIVE ANALYSIS

## Semiconductor Market Research

### OBJECTIVE ANALYSIS ALERT!

May 20, 2008

#### Hynix China Fab Suffers Power Outage

Starting at 11:15 AM May 19 Hynix Semiconductor's Wuxi China fab underwent a 15 hour and 20 minute blackout, halting DRAM production. Reports indicate that this plant manufactures roughly half of Hynix's total DRAM output.

A power loss, no matter how brief, may force the company to scrap some of the wafers that were undergoing a high-temperature process at the time of the outage. Other wafers, for example those going through photographic processes, will simply need to be re-worked by backing up and starting at some prior step of the process. Short power losses tend to cause more minor difficulties than do longer interruptions. A power loss of 20 minutes or longer may require a longer period of downtime to allow furnaces to be brought back to a stable temperature.

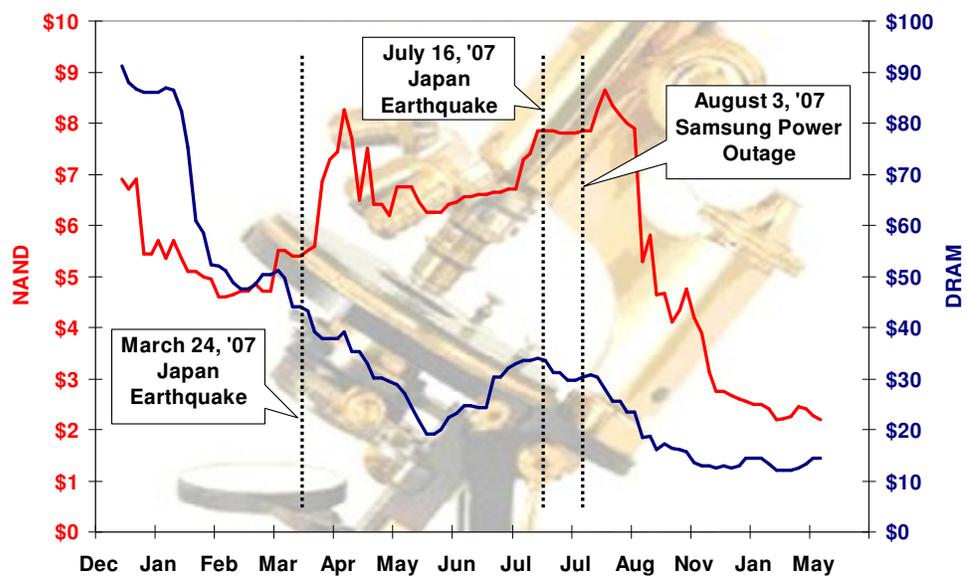
Hynix estimates a \$16-20 million loss resulting from the combination of lost chips and the anticipated 2-day delay to resume full production.

#### Will DRAM Prices Increase Because of This?

The first question on everyone's minds right now is whether this event will kick the moribund DRAM market into a long-awaited shortage. DRAMs and NAND flash have been oversupplied for several months, with subsequent price falls.

The charts of the figure below attempt to show the impact of similar events on pricing.

DRAM & NAND Spot Price Per Gigabyte



Note that NAND prices rose after the March earthquake but not after the July earthquake. DRAM, on the other hand, saw a price fall immediately following both of these events. We should point out that neither earthquake impacted either NAND or DRAM production, but the market noticed them nonetheless.

In the event of the Samsung power outage, which impacted a significant number of the company's fabs, a price rise did follow, but not until several days later. There was an immediate response in DRAM, but this price increase was short-lived and relatively minor in size.

What is important is whether there is a long-term over-capacity, and such a scenario exists today. A very high rate of capital spending in 2006 has resulted in an overcapacity that will endure through the rest of this year. For more on this see the Objective Analysis Brief *2008: Tough Year Ahead* (available at [www.Objective-Analysis.com](http://www.Objective-Analysis.com)).

As a general rule, an event like this can trigger a lasting price increase only if the market was on the brink of a shortage when the event occurred. This is not the case today, so the outcome of this power failure is likely to be either a small short-lived price increase if it makes any difference to prices at all.

Financial analysts have given estimates that this outage will reduce May shipments from 3-6%, but replacements are likely to come from inventory and other DRAM makers' excess capacity to mute the effect of this reduction.

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