

## SEMICON West Executive Outlook – June 7, 2007

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**E**nergy. How to save it? How to leverage it? How to collect it? Energy considerations are at the heart of every commercial discussion, every technology decision, every business plan. So at SEMICON West 2007, we can expect the energy theme to take center stage.



For those of us in the advanced substrate ecosystem — both as suppliers and as users — this is nothing new. We've been espousing this vision for over a dozen years. While chip manufacturers may have initially chosen to leverage the performance benefits of silicon on insulator (SOI), they did so with a strict eye on the power budget. What is heat but wasted energy?

Energy consumption is hugely expensive. If it's cut in half, as enabled by SOI, the savings are substantial. Whether it's in a server farm, living room, or a jacket pocket, or whether it's for an automobile, a light-

bulb, dishwasher or some other industrial machine: End users are doing the math. IBM's recently announced plan to double the capacity of its own data centers without increasing its energy budget is a perfect example of where we're headed as an industry.

Materials are the launching point for this revolution. The industry recognizes that the benefits of low power are cumulative. Whether they're moving to 45 nm and addressing gate leakage or using III-V materials for high power or high frequencies, manufacturers can afford to leave no stone unturned.

We see the proliferation of design tools and IP for SOI this year. ARM's expansion into the SOI ecosystem, for example, enables the fabless community to join the IDMs in transparently leveraging SOI for ASICs. In this new paradigm, energy conservation need not take a back seat to performance.