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Intel to spend $3 billion on Chandler fabs

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February 10, 2009 - 10:21AM

Vice President Josh Walden standing next to Gov. Jan Brewer talks about Intel's plans with its Chandler office at the press conference at the state capitol in Phoenix.

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Intel Corp. is going to spend $3 billion in the next two years revamping its Ocotillo manufacturing complex in south Chandler to make the next generation of computer chips.

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The project will not create any new permanent jobs, according to company Vice President Josh Walden. But Walden said it will enable Intel to maintain its 5,000 employees at this site.

And it will require about 1,500 additional people to do the retrofitting work, he said. These include technicians who install new tools, construction workers who reconfigure the factories and manufacturers who make the equipment.

Chris Mackay, Chandler's economic development director, said these are not standard construction jobs. She said the nature of the project requires highly skilled -- and highly paid -- people who make the specialized manufacturing equipment and "clean rooms."

Gov. Jan Brewer, who arranged the press conference at the state capitol in Phoenix Tuesday to make the announcement, said the investment provides much-needed good news for the state. And she sought to take credit for Intel's announcement.

"I don't know if the previous administration was involved in it whatsoever," Brewer said, referring to former Gov. Janet Napolitano.

"I think Intel, being the corporate business that they are, would look at the dynamics of who's driving the state, the legislature and who is governing,'' she continued. "And they have chosen to do that."

Walden, however, sidestepped the question of whether Intel made its decision based on Brewer becoming governor on Jan. 20.

"Actually, I think what we're announcing is our continued investment," he said.

Walden noted that Intel is not revamping solely its Chandler facility. He said similar announcements were taking place Tuesday regarding another $4 billion to be spent on similar work in Oregon and New Mexico.

Walden said the combined $7 billion is "one of our largest investments in a single technology ever.''

In essence, he said, Intel wants to build computer chips that are smaller, faster and consume less energy. Walden said that will lead to better electronic products for consumers.

He said that power-saving factor will help people who use laptop computers, where the ability to go a long time before having to plug in can be particularly important.

Walden said Intel's decision to invest in revamping its Chandler facility should come as no surprise. He said any company that hopes to remain competitive has to revamp its products every two years, whether to add features or speed or make them more efficient.

The plans call for combining two existing fabrication plants - called fabs - and installing updated equipment. The new facility will contain about 320,000 square feet of clean-room space.

The newer of those two plans, known as Fab 32, actually is only about three years old. And its construction helped trigger a special state tax break for all manufacturers.

In 2005, the legislature agreed to allow multi-state firms to compute their Arizona corporate income taxes in a way that would result in lower taxes for some of those companies. But that law had a trigger: It would take effect only if some company invested at least $1 billion in the state.

Intel's $3 billion investment in Fab 32 satisfied that requirement and resulted in what legislative budget analysts said was a $90 million tax break for some of Arizona's largest employers, including Intel.

Fab 32 is the latest of three fabs that Intel operates at the Ocotillo campus. Under the new project, Fab 22 and 32 will be retrofitted with new equipment and merged into a single mega-fab that will be designated as Fab 32. The original fab at the site - Fab 12 - will continue to be operated separately using older equipment.

The new fab will be able to make chips with circuitry and transistors that are 32 nanometers wide - down from the 45 nanometers that was the previous state of the art.

Thirty-two nanometers is down to the atomic level; semiconductors only a few atoms wide are etched into the silicon chip. Intel says 2,000 of those transistors would fit across the width of a human hair.

The extremely small size is what gives the chips their improved performance, allowing computers to perform ever more complicated tasks.

The increased computing power will enable faster Internet connections, more lifelike graphics and faster processing speeds, said Will Strauss, a Tempe-based market analyst.

"What people keep paying for is more performance," he said. "The greater capabilities are not in the traditional things like word processing. The demand is for higher speeds, faster access to the Internet and more and more audio-video entertainment things, Facebook and YouTube things. Most of the emphasis is on multi-media communications."

He added the smaller size of the elements in the chip decreases the manufacturing cost per chip, and that in turn holds down the cost of electronic products.

"Thirty-two nanometers means they can shrink the size of each microprocessor," he said. "You get more processors per (silicon) wafer, so you can make them cheaper per chip."

The first Intel processors to be built using this technology are codenamed "Westmere" and will initially be used in desktop and mobile computers, the company said.

Intel will try to minimize disruption to production at the complex as retrofitting work takes place, said John Pemberton, manager of Fab 32.

Work has already started to decommission and dismantle tools in the “old” Fab 22, and production using the new equipment will ramp up in the second half of 2010, he said. Employees of Fab 22 will be reassigned to the other two fabs in the complex, go to training in Oregon or help with the decommissioning and reinstallation of new equipment during the changeover, he said.

Only a portion of Fab 32 will be retrofitted with new equipment initially, with production continuing in other parts of that plant using existing equipment, he said. The entire Fab 32 will be converted to new tools over the next several years, he said.

Industry analysts said the company’s investment demonstrates the semiconductor industry’s need to keep investing heavily, regardless of the economic climate.

That will likely be a boon to companies that produce chip-making equipment, like Applied Materials Inc. and KLA-Tencor Corp., and is another example of how Intel’s deep pockets have kept rival Advanced Micro Devices at bay.

AMD, having lost nearly $7 billion over the past two years, wants to break off its factories into a separate company to unload debt and save money.

Every couple of years, chip companies make the multibillion-dollar switch to new equipment that enables smaller and smaller circuitry. The change is essential to maintaining Moore’s Law, the prediction by Intel co-founder Gordon Moore that the number of transistors on a chip will double about every two years.

Moore’s Law has been the industry’s benchmark for technological progress for more than 40 years, but chip makers are finding it harder to maintain because of physical limitations of the materials used in making microprocessors.

Intel Chief Executive Paul Otellini said Intel spent about $5 billion on the previous technological transition to the 45 nanometer size. A big reason for the higher price tag this time is the equipment for 32-nanometer production is more expensive, he said.

Otellini said that Intel is deploying the technology in facilities where the company already had lots of engineers and technicians, to speed the time to market.

“From our perspective this is a cheaper, better technology,” he said. “Spending this money will lower our costs and give us more competitive products. It’s something that’s fundamental to our business model.”

The investment comes as Intel is cutting up to 6,000 manufacturing jobs by closing plants in Malaysia and the Philippines and stopping production at facilities in Oregon and California.

Intel is also closing a factory in China, where 2,000 workers will have their jobs shifted to other cities.

Tribune reporter Ed Taylor and the Associated Press contributed to this story.