

Summer Solstice

June 21, 2009

FACT SHEET

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Applied Materials, Inc.*

In the northern hemisphere on summer solstice, the longest day of the year, the Sun reaches its farthest north arc before beginning its journey southward again. This year the summer solstice begins with sunrise on June 21st at approximately 5:45 a.m. and then ends 15 hours later when the sun sets around 8:45 p.m.

SUN FACTS

- Every day, the Sun beams 970 trillion kWh (killowatt hours) of energy to the Earth.
- Enough sunlight hits the Earth every minute to satisfy the energy needs of everyone on the planet for a year.
- Over the course of a day, the Sun generates an average of 4-6 kWh of power per square meter across the Earth's surface. That means in the U.S., with its area of 9,158,960 square kilometers, we will receive approximately 36.6 trillion to 55 trillion kWh of solar power each year.

ENERGY MARKET OVERVIEW

- Approximately two billion people, or about 1/3 of the world's population, are without a reliable electricity supply.
- The worldwide energy market is about \$US 1 trillion each year, with the U.S. accounting for about \$US 300 billion.
- Solar generated energy is currently estimated to be less than 0.01% of the total worldwide supply.
- The U.S. could supply its entire energy needs by covering 1.6% of its land (120 miles squared) with solar cells.
- Affordable, scalable solar is ready now for a wide range of commercial, residential, and utility-scale applications.

THE CASE FOR SOLAR

- In many of the world's markets, solar is at grid parity with natural gas in peak power generation today and is expected to become price-competitive with coal and nuclear power within the next decade.
- Unlike fossil fuels, solar is not subject to fuel price volatility or uncertainty. Solar energy can also be added incrementally, when and where it is needed.
- Solar moves energy generation to a manufacturing model where declines in cost are predictable, driven by innovations and productivity gains. Beginning in the mid-1990s, solar cell and assembly production doubled roughly every two years. For each doubling of solar installations worldwide, the cost per watt of solar energy has been reduced by 20%.
- In response to the financial crisis, governments are directing economic stimulus funding toward creating jobs in the renewable energy sector.
- Climate change and energy security remain two of the main drivers of the renewable energy sector.

GOVERNMENT SOLAR POLICIES

- In 2008, new solar photovoltaic (PV) subsidy programs were adopted in Australia, China, Japan, Luxembourg, Netherlands, and the U.S. The U.S. administration has committed \$US 150 billion of investment in renewable energy over ten years.
- City and local government policies were the fastest growing segment of the policy landscape in 2008, with several hundred cities and local governments around the world actively planning or implementing renewable energy policies and planning frameworks linked to carbon dioxide emissions reduction.
- Today, U.S. consumers in 44 states can install solar power systems to displace the electricity typically delivered by the local utility company. Through a practice known as “net metering,” utility customers can net their electricity production and consumption over time, reducing their utility bills and supplying excess energy into the grid during peak hours.
- New and expanded federal tax incentives have made solar more affordable in the U.S., and some states provide additional financial incentives. California, Colorado and New Jersey are among the state leaders in solar system deployment because of targeted programs, including the “California Solar Initiative,” under which solar systems have been installed at more than 15,000 sites since 2007. Total installed solar PV capacity in California is more than 500 megawatts, or enough power capacity to meet the annual electricity needs of more than 150,000 households.

APPLIED MATERIALS Solar Strategy

Applied Materials is the world's leading supplier of equipment to manufacture semiconductors, flat panel displays and solar panels. Using its 40-years of engineering innovation it has driven down the cost of transistors by a factor of 20 million and enabled ultra-large TV screens to become more affordable. The Company's solar strategy is to bring significant change to the industry by enabling lower cost-per-watt solutions for solar cell manufacturing—with the goal of making solar a more meaningful contributor to the global energy supply.

Since entering the solar market in 2006 Applied has established itself as the world's largest supplier of solar PV manufacturing equipment and has received several prestigious innovation awards for solar technology including the Platts Global Energy and Wall Street Journal Technology Awards.



THE APPLIED SUNFAB™ THIN FILM LINE

The Applied SunFab Thin Film Line produces the world's largest solar panels using 5.7m² glass substrates and defines a new standard for the solar industry. Four times the size of traditional panels and covering an area about the size of a garage door, SunFab panels are ideally suited for large scale applications such as power plants and building integrated photovoltaics (BIPV).

A single line Applied Materials' SunFab solar panel factory is capable of producing 80 MW of panels each year, enough to power over 35,000 homes.

A customer's SunFab factory built in close proximity to a utility-scale solar farm, with an established long-term agreement to purchase and install the output of the SunFab, can result in a total installed cost of <\$3.50 per watt. For a medium-scale utility, that would mean solar power at less than \$1.00 per month increase per rate payer. With federal and state tax incentives and economic development assistance, panel prices can be further reduced over time.

Key Benefits of a SunFab include:

SunFab factory: 850 construction jobs, 1.2 GW of clean energy over 15 years, generating 500 permanent jobs (direct and indirect)

Rate payer: <\$1 per month incremental cost increases, positive contribution to climate change and energy security

Governments: incremental tax base, avoided services (unemployment, medical services); 'green collar' job training programs at local junior colleges

University/R&D: investments in industrial partnerships and bolstering of economic development

Utility-owned solar farms producing <\$3.50 per watt installed cost of clean, free energy past 2030, will result in 170,000 metric tons of CO₂ avoided per year, 2,000 local solar installation jobs (direct and indirect) and a significant step toward achieving RPS (renewable portfolio standards) goals.

Ultimately, building a SunFab in the community where the utility's solar farm is located creates more than \$2 billion in potential economic development, and creates more than 2,500 direct and indirect jobs.