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View Point

Solar power moves towards grid parity

By Rupert Walker, | 2 April 2008

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Technological improvements and cost reductions mean a bright future for polysilicon.

In a Green Wave Panel discussion on the future of solar power at Credit Suisse's Asian Investment Conference, an underlying theme emerged that “grid parity” with rival energy sources must be attained to make it a cost-effective choice for governments. It also became clear that this might be sooner rather than later.

Frank Haugwitz, EU renewable energy manager of the European Union-China Energy & Environment Programme, gave a presentation which focused on the impressive development of solar power in Germany, the world’s largest market, and Spain, one of the fastest growing at a rate of 200% to 300% a year.

Yet, even in Western Europe, governments are becoming reluctant to provide large subsidies for this nascent industry and, in Germany, are debating whether tariffs are too high. If the industry is worried about these developments, it has yet to see any effect on bottom-line profitability. Besides, said Haugwitz, German companies were only able to meet 50% of domestic demand last year. Of course, the balance of supply is coming from Asia.

Asia, however, has been slow to adopt the technology that it has become a dominant exporter in. Haugwitz said Asian companies exported around 90% of their modules last year. China, as Haugwitz has learned first-hand, is particularly cost-sensitive and has preferred far cheaper fossil fuels. Though “China is a sleeping giant”, he added and it only needs the decision of an influential individual for solar power to climb up the agenda. Already China plans to install capacity of 300MW by 2010, which represents an increase of more than 300% on the 70MW installed by 2005. Elsewhere in Asia, Japan, Malaysia and South Korea have all set targets for expanding solar power capacity. Solar power remains small, however, even compared with other renewable energy sources.

Andreas Widl is executive vice president-global R&D and Asia president of Oerlikon, which is a Swiss-based company that provides turnkey mass manufacturing solutions for “thin-film” silicon-based solar modules. The company made over SFr5 billion ($4.98 billion) in sales last year and employs 19,000 people. Widl confirmed that clean technology offers great potential for profits, but he reiterated the theme that the big challenge for all manufacturers is to reduce what he calls “the cost of ownership”. He believes that political support will help towards that end.

That doesn’t necessarily mean subsidies, however. Haugwitz said costs are normally passed on to willing consumers who, especially in Western Europe, have been educated in green issues since the late 1960s.

Woo Hyun Lee, senior executive vice president at DC Chemical, said polysilicon production was the most recent business for his South Korean company, which was set up 50 years ago. The company originally used polysilicon as a raw material for semiconductors in the late-1990s before “ramping up” production for use in the photovoltaic or solar industry during this decade. He pointed out that a huge amount of capital was required for the venture, so they chose the Siemens technology over rival processes to minimise operational risk.

The future is likely to lie with companies such as DC Chemical and Oerlikon because, as they develop and improve on new technologies to compete with rivals at the various points of the solar power value chain, then production costs will fall. An enthusiastic environmentalist, Haugwitz is optimistic that grid parity for polysilicon could be achieved by 2015, and perhaps even earlier for the thin-film technology deployed by Widl’s company.

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