

Excerpt from The Economist, November 18, 2006. cover story.

Citing Michael Liebreich, a Co-Manager of the WilderHill New Energy Global Innovation Index (NEX);
(Also citing an Index (ECO) Advisory Board Member, Dr. Charlie Gay).

Investing in clean energy

Tilting at windmills

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The clean-energy business is turning into the next big investment boom, in which risks are lightly brushed aside

UNTIL recently, recalls Charlie Gay, a 30-year veteran of the solar-power business, venture capitalists were far too busy catering to captains of the information-technology industry to waste time on “hippy-dippy treehuggers” like himself. But now the tree-huggers are in the ascendant and the IT barons are busy investing in clean-energy technology.

Among them is Vinod Khosla, a celebrated Silicon Valley financier. He is touting ethanol as the next big thing.

Applied Materials, where Mr Gay works, has branched out from flat screens and computer chips into solar cells. Sun Power, the solar subsidiary of Cypress Semiconductor, is now worth almost as much as its chipmaking parent company.

Investors are falling over themselves to finance start-ups in clean technology, especially in energy.

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The share of venture capital going into clean energy is rising rapidly (see chart 1). New Energy Finance, another research firm, reckons that investment of all sorts in the business will reach \$63 billion this year, compared with just \$30 billion in 2004. The lure of big money is leading investment banks to ramp up their analysis of the latest boom industry.

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Eventually, the proponents of clean technology maintain, renewable energy will become competitive with fossil fuels, allowing governments to end subsidies. Mr Gay thinks solar power will be as cheap as that from big

coal-fired power stations within a decade. Something of the sort has already taken place in Japan, where last year subsidies for solar were phased out. When these were introduced in 1994, says Chris O'Brien of Sharp, the world's biggest maker of solar cells, a system typically cost some \$16,000 per kilowatt, of which the government paid half. About 500 systems were installed in the first year. A decade later, the cost had dropped to \$6,000 per kilowatt and 60,000 systems were fitted. Nowadays, he says, Japan is the first market "where customers have continued to buy solar systems without subsidy". However, all this is somewhat misleading. Retail electricity prices in Japan are among the highest in the world, making it much easier for solar to compete. In most places, concedes Michael Liebreich, of New Energy Finance, renewable power and fuels will be more expensive than the dirtier sort for the "foreseeable future".

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In Mr Liebreich's view, oil-prices below \$50 a barrel would undermine the momentum of clean energy. Mr Khosla, the venture capitalist, warned delegates at the conference in San Jose that they needed technologies that are "unconditionally cheaper" than fossil fuels: "If it ain't cheaper, it doesn't scale."

For the time being, however, keeping pace with demand is more of a worry. Most manufacturers of wind turbines have full order books for the next few years. Executives at Neste, a big Finnish refiner, doubt Europe's output of biofuels can expand fast enough to meet the EU's target. The EU has also had to reduce its target for renewable power, since the industry could not grow fast enough to meet it.

The growth of solar firms has outpaced the supply of high-grade silicon needed to make their panels.

Investors are now rushing to finance factories to produce the necessary silicon. Goldman Sachs expects output to double by 2010—raising fears of an eventual crash in prices. In the meantime, solar firms seeking financing are trying to distinguish themselves, either through contracts that assure their future supplies of silicon or through technology that reduces their consumption of it.

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