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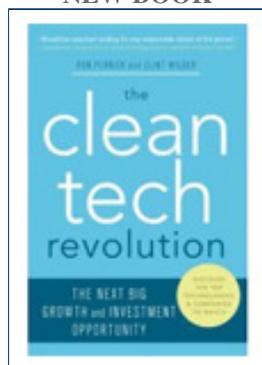
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Report Suggests That a New Model Is Needed for Renewable Energy Production

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On any given day, the solar energy falling on a typical oilfield in the Middle East is far greater than the energy contained in the oil extracted from it. However, while oil provides a highly concentrated source of power, solar energy is distributed over a wide area. According to a report to be published later this week by Cambridge UK analysts CarbonFree, collecting energy from a wide area is an activity usually associated with farming, and an agricultural model should be used for the harvesting of renewable energy.

The report, "Farming Renewable Energy", suggests that large areas of land will be used for energy generation over the next two decades, and highlights the opportunities energy farming will open up for the agricultural sector and next generation energy producers.

The report notes that some farmers are already active in the energy market: either selling biomass for conversion into electricity or fuel or renting their land to wind turbine operators. It predicts that this trend will continue and recommends governments encourage the development of a comprehensive agricultural energy strategy rather than merely subsidizing individual initiatives such as biodiesel production.

CarbonFree sees wind energy, which in some cases is already profitable, expanding steadily and highlights the trial in Dakota of a hydrogen refueling station powered by wind turbines as a potential application for energy farming in rural areas.

The report explains that improvements in the equipment used to farm solar energy depend on advances in semiconductor technology and that the market will therefore follow a boom-and-bust growth path similar to that of the IT industry. CarbonFree suggests the market will stabilize with the arrival of third generation photovoltaic devices constructed using advanced nanotechnology. It predicts that companies such as Konarka and Nanosolar will carve out a niche within this market and eventually drive down the cost of photovoltaic devices to the point where solar energy farms are self-financing. Nanotechnology-based materials that extract hydrogen from water when exposed to sunlight are identified as a technology that while still at research stage, will provide a step change in the farmed energy market.

CarbonFree suggests that the price of conventional polycrystalline silicon based devices remains too high for large-scale deployment. However, it does see large-scale energy farming trials -- sites with effective areas up to 1km² -- being worth in excess of \$600 million to manufacturers of thin film and polymer based photovoltaic technology.

The report recommends that renewable energy producers should aim to be competitive

market where oil is priced at \$30 per barrel. It warns that the current high price of oil will either trigger a recession or encourage radical energy conservation programmes. It also notes that oil producing countries are unlikely to invest in renewable energy farming, despite having access to large areas of hot arid land, while the activation cost of the equivalent of a barrel of oil per day of renewable energy is an order of magnitude higher than that of a barrel per day of extracted oil.

CarbonFree warns that while the farmed renewable energy sector will grow slowly over the next decade, it will eventually have both a political and geopolitical impact. The rural economies within countries will be empowered and global companies will move operations from Europe to countries within the solar belt, where they can take advantage of low cost renewable energy.

The report states that conventional energy companies, especially those with experience in chemical and agrochemical production, are well placed to exploit any wide-scale use of polymer based photovoltaic devices by the agricultural sector. It also suggests that, if the price of polymer based photovoltaic technology falls sufficiently, farmers could install it on their land in the same way as they deploy polythene to accelerate crop growth.

According to CarbonFree, a key driver for the farmed renewable energy market is the new generation provider who is currently unable to enter the energy market. The report suggests that these entrepreneurs, who are seeking a model that will provide them with a strategic advantage over incumbent providers, will be attracted to the distributed nature of farmed renewable energy.

The report "Farming Renewable Energy" is available from the CarbonFree website. <http://www.carbonfree.co.uk>

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