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Future of Solar Energy

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Abstract

The solar market is currently booming with growth driven by government programs, particularly in Germany. Of major solar technologies, water heating is the most established. Concentrating Solar Power (CSP), with electricity generated by focusing sunlight to drive heat engines, has been of rapidly increasing interest in Spain and the USA. However, the most vibrant solar sector has been photovoltaics, with electricity generated directly by shining sunlight onto solar cells. With ongoing cost reduction and technological innovation, the photovoltaic industry could become one of the largest of this century, providing the majority of the world's primary energy by its end.



Martin Green

Martin Green is currently a Federation Fellow and Scientia Professor at the University of New South Wales and Executive Research Director of the ARC Photovoltaic Centre of Excellence. He is also a Director of CSG Solar, a company formed specifically to commercialise the University's thin-film, polycrystalline-silicon-on-glass solar cell. His group's contributions to photovoltaics are well known including the development of the world's highest efficiency silicon solar cells and the successes of several spin-off companies. He is the author of six books on solar cells and numerous papers in the area of semiconductors, microelectronics, optoelectronics and, of course, solar cells. His work has resulted in several major awards including the 1999 Australia Prize, the 2002 Right Livelihood Award (also known as the Alternative Nobel Prize), the 2004 World Technology Award for Energy, the 2007 SolarWorld Einstein Award, the 2009 Zayed Future Energy Prize (one of two finalists) and the 2009 ENI Award for Renewable and Non-conventional Energy.