

Book review

Palz, Wolfgang. 2014. *Solar power for the world. What you wanted to know about photovoltaics.* Pan Stanford, 2013. Hardback. \$29.95. Print ISBN: 9789814411875 eBook ISBN: 9789814411882

Review by Dieter Holm

The title says it. No less than 41 of the world's top personalities – including Franz Alt, Karl W Böer, Michael Eckart, Hans-Josef Fell, Adolf Goetzberger, Stefan Krauter, Hermann Scheer, to name just a few – contributed to this 774 page lavishly illustrated book.

Well, the book is actually about the PV revolution: its visionaries, pioneers, early business adopters, detractors, opponents, success stories and worldwide lessons learnt.

Wolfgang Palz's introduction stresses the phenomenal technical, social and legislative changes that have taken place in the last few years, showing the linkages between the semiconductor world, LED, PV, communication and democratisation of power generation. 'It has been shown for many countries that areas available on the existing buildings are more than enough to provide, when equipped with PV, all electricity needed in the country.' While Germany leads with a per capita PV installation of over 400W, he expects China to lead in the area production.

The technology leadership of the US in developing PV for space travel is contrasted with the actions of the Ronald Reagan administration. The life stories of the great global pioneers, written by themselves make fascinating reading. Hermann Scheer and Hans-Josef Fell describe the ups and downs of the successful German Feed-in-Tariff in vivid terms, including the devious moves by monopoly utilities and their lobbies. This is a remarkable piece of history showing governments in cahoots with big business and its vested interests, while ignoring the voters' needs and wishes.

Monica Oliphant presents the narrative of the International Solar Energy Society interwoven with personalities like Farrington Daniels and Adolf Goetzberger, founder of Fraunhofer ISE in Freiburg.

Michael T Eckard, ACORE President does not mince his words: '...[T]he people at the World Bank were sandbagging the study and setting up the outcome for failure'. His experiences in South Africa in the years 1997-2002 are quite illuminating. With reference to the Department of Minerals and Energy's solar home concession scheme, he writes: 'The whole enterprise of concessions that our Shell-Eskom joint venture spawned ground to a messy halt.'

'My last effort in South Africa was to rescue \$900 000 of funding that the US government had given to the South African government to renewable energy development but went unused.' He proposed an \$18 million revolving fund to finance PV in rural areas for 'productive uses' of energy. It was approved by all the relevant parties including the DBSA and ready to go, awaiting the formal approval of the DME Deputy Minister. 'With considerable flourish, the Deputy Minister with 6-8 staff in the room, folded her arms and said: 'No! You will not do this. You will not help those banks loan the money to my people. That money belongs to my people and was taken from them over the years by those banks. No, you will give the money to me and I will take care of it myself!'

Eckart left in silence. Years of work had been wiped out. On a holiday visit in 2008 he was '...saddened to see that forces of bureaucracy and corruption had mired the solar PV strategy into doom.'

On the more positive side is the story how he advised Hermann Scheer to extend the REFIT from 5 to 20 years.

Harry Lehmann discusses realistically updated scenarios showing Germany can phase out nuclear and have 100% RE by 2050, while reducing GHG proportionally. Interestingly, as a result of energy efficiency and other measures, the power consumption is expected to fall from 45 TWh to 25 TWh. 'There is no need for nuclear power' and '...The restructured system will not result in higher costs...'

In summary, a fascinating book, brimming with a wealth of material and presented in an entertaining way.