Solar Energy versus Nuclear Energy in Developing Countries

Prof. Dr. Nowshad Amin
Institute of Sustainable Energy,
***The National EnergyUniversity*, MALAYSIA**

Abstract

Many energy hungry developing countries are hurrying towards quicker solutions like nuclear for electricity production amid trauma of humankind. Needless to say, many wounds are yet to be healed caused by nuclear reactors' accidents either by natural disasters or human-errors in the recent history around the world. Many developed nations have already declared their roadmap on a "nuclear-free" electricity generation. Many of them are aligning themselves to alternatives to fossil fuels and nuclear in their energy roadmap due to the trust followed by the tremendous growth of renewable energy resources in recent times. Solar energy comes to the scenario of alternatives as the most potential solution even though workable solar cells were demonstrated merely 60 years ago. The so-called first generation solar cells that are mainly crystalline or multi-crystalline silicon that come from sand are still dominating since the inception in 1954, the quest for other options presented many other potential candidates such as amorphous silicon, cadmium telluride, copper-indium-sulphide, dye-sensitized, organic, perovskite etc. since early 70s. Ever since the second generation solar cells came into the scenario, the cutting edge technologies in layer deposition or device fabrication have led to successful commercialization of the 2nd generation solar cells like CIS or CdTe, both show a total of nearly 2 GWp of yearly production in recent years with the implementation of multi-mega-Wp level solar farms. This presentation will share on some comparison between electricity generating sources like nuclear and solar. Moreover, recent trends in solar photovoltaic energy options for large scale power production will be shared, which is believed to be capable of being incorporated into any developing sovereign nation's energy-independency roadmap.

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