

# Talk on Solar Photovoltaic Technology

ELECTRICAL AND ELECTRONICS TECHNICAL DIVISION



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**THE** newly-enacted Renewal Energy (RE) Act 2010 and the recent launching of the Feed-in Tariff (FiT) for RE resources in December 2011 have generated overwhelming interest especially in the Solar Photovoltaic (PV) installation sector of RE. This was reflected by the reasonable attendance of about 35 participants at the talk on Solar PV Technology held on 12 May 2012 organised by the EETD.

The speaker, Mr. Jonathan Kan, is an entrepreneur with a tertiary engineering honours degree in mechatronics from the University of New South Wales. He obtained accreditation from the ISPQ and Pusat Tenaga Malaysia for the design and installation of grid connected PV systems, and certification from Bosch and SMA to provide technical and warranty support for the numerous inverter installations for off-grid and hybrid solar PV solutions. ERS Energy Sdn Bhd, a company which he founded, has provided consultancy services for the first solar PV farm in Malaysia.

The talk commenced with an overview of the energy output of 49 cities worldwide and several major cities in Malaysia from solar PV resources. It continued with the typical components of the building integrated PV (BIPV) system and the difference between grid connected and off-grid connected PV systems. A brief introduction to the related standards on solar PV (e.g. MS 1837, IEC 61215 and IEC 61727) was also given.

The design and installation aspects of solar PV systems were explained through discussions on the different types and performance characteristics of solar PV modules together with some indication of their respective expected warranty periods. The typical capacities of solar PV systems for residential, commercial and solar farms with their respective voltage and other requirements were also provided.

The discussion then moved on to "off-grid" solar PV installations and, in particular, the applicable standards (such as MS IEC 62257 and MS IEC 62124) for such systems, and hybrid components including backup batteries and related charging controllers. Illustrations were provided using schematic diagrams and photographs.

The concept of the FiT was discussed with some indication of the average cost trends of solar PV installations for economic viability considerations. The talk concluded with the speaker highlighting future technologies and trends in solar PV installations and their components, and some of the incentives offered for solar PV installations.

In the question and answer session that followed, there was active participation and interaction with the audience. The programme ended with the presentation of a token of appreciation to the speaker by the EETD Session Chairman. ■

