



### **EETD Inaugural Weekend Talk: Power Networks – Past Present and Future A Perspective.**

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#### **Power Networks – Past Present and Future**

IEM Electrical Engineering Technical Division organised a technical talk on “Power Networks – Past Present & Future” on 9<sup>th</sup> January 2016 at Wisma IEM, Petaling Jaya, Selangor. A total of 63 participants attended the event. The speaker was Ir. Rocky Wong, an experienced Electrical Engineer who has 50 years’ experience in the field of energy, power and environmental engineering. Ir. Rocky Wong started with his presentation by giving an overview of the development of electrical power networks from its infancy to the present and in the future. Ir. Rocky Wong explained that the electrical network began with direct current (DC) when the Edison Electrical Light Company lighted up parts of the New York City with the electric bulb which was successfully developed by Thomas Edison. However, the Edison’s DC system could only be supplied in short distance. Thomas Edison’s greatest rival was G. Westinghouse who invented alternating current (AC) system which was capable of transmitting current at longer distance.

Speaking about the electrical grid in Malaysia, Ir. Rocky recalled that the first thermal power station in Kuala Lumpur was fuelled by coal. Generation of AC was at the Bangsar Power Station in 1964 which eventually displaced the Gombak Mini-Hydro Power Station. He then described the revolution of the Malaysian electrical networks where the Bangsar Power Station was eventually decommissioned and replaced with a Regional Control Centre to supervise and control the central area’s distribution network. Ir. Rocky further elaborated that, a massive exercise to retrofit the older generation of switchgears was implemented in order to upgrade the local controller to remote controller at the control room.

Ir. Rocky explained that 132 kV Western Grid was introduced during the development of Cameron Hydro Station. The expansion of Western Grid later included 275 kV network and now, the 500 kV electrical grids is the single largest transmission system to be ever developed in Malaysia. Furthermore, Ir. Rocky recalled the challenges faced by the utility company in the past old days especially related to the protection scheme of overhead lines. In and over time, due to urbanisation, feeders were installed underground to provide a less “visual pollution”. Apart from these, Ir. Rocky also explained in detail the history of the electric grid formation.

In this event, Ir. Rocky emphasized the National forth fuel policy. He explained that this policy was formulated with the objective to diversify the type of fuel used in the power generation. In the year 2000, the 5<sup>th</sup> Fuel Policy was incorporated into the Malaysian Plans to encourage renewable energy generation. He also highlighted that the protection and control schemes of the networks have migrated from electromechanical types to microprocessor based schemes. In the future, electrical network is very likely to evolve to smart grids or microgrids that include the embedded renewable energy sources as well as combined heat and power generation. Ir. Rocky also raised the awareness of engineers on what will the electrical networks looks like in order to support the trend of things, i.e smart buildings and smart cities. He also highlighted that with more and more networks' essentials being supervised and controlled via cyberspace, engineers should also look at the supply security as well.

Q&A session was held at the end of the talk before the chairman of EETD, Ir Yau C.F presented a souvenir to Ir. Rocky Wong.



EETD Chairperson, Ir. Yau C.F (RIGHT) presenting souvenir to Ir. Rocky Wong (LEFT)