

2019 TPRI R&D / Testing Wrap-up Presentation- A New Trend in Smart Electric Industry

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To deal with escalating system peak load, energy depletion, and awakened environmental awareness, numerous countries have engaged in promoting distributed energy and sought to increase the share of renewable generation. Under the aforesaid background, discussion of energy transition in Taiwan have thus heated up and accelerated.

Innovation Engine of Taipower

To cope with challenges of energy transition, Taipower has pushed forward the implementation of smart grid to achieve the goals set for electricity market reform and energy transition (to increase the share of renewable generation to 20% by 2025).

August 20th 2019, a yearly event of R&D/ Testing Wrap-up Presentation was held in TOPR Gongguan area. Taipower President Chung Bin-li and a number of honored guests including the company's board directors, representatives/experts from other electric institutions got together to celebrate and observe the R&D/Testing results of TPRI.

TPRI General Manager Dr. Nien-Mien Chung pointed out in his opening speech that "Energy transition will bring fundamental changes to power system, and the structure and behaviors of electric utility customers will dramatically change." Confronting with unavoidable trend of distributed generation, TPRI has actively engaged in R&D of smart grid and related technologies in recent years to maintain effective business operation, improve load forecast accuracy, and assist the government achieve the goals of energy transition.

Taipower President Chung Bin-li pointed out in his

speech that "As think tank of Taipower, R&D results of TPRI represent indicators of the company's technological progress. TPRI has constantly devoted to R&D, testing and innovation to promote technology and management level of the company to a higher place and to ensure stable power supply. Technology innovations has posed disruptive influence on the business-as-usual of the company. We have to keep up with the times."

Along with playing a crucial role in pushing forward smart grid policy, President Chung expected TPRI to provide strong backing to TPC re-organization in aspects of strategic thinking and systematic solution.

Besides posters and exhibitions, four topics aiming at smart grid supportive technologies, namely Smart Dispatch and Smart Generation, Grid Management, Energy Storage System, and Demand Side Management, were also presented to highlight TPRI R&D results.

Subtopics of the smart grid supportive technologies included Distributed Energy Resource Integration Platform, Analysis of the Impact of Grid-connected Renewables to Spinning Reserve of Power System, Renewable Energy Generation Forecast System, etc.

This year TPRI first time applied Augmented Reality (AR) together with virtuality and reality technologies to let visitors simulate drone driving, such as activities of transmission tower infrared thermometry, rustiness detection and ultraviolet discharge testing.

Tour in TPRI Shulin Area & Experiencing Smart Grid Multi-media Interactive Table

A tour to TPRI Shulin area was arranged to get the visitors familiar with smart grid equipment, e.g. storage

system demonstration platform, low pressure rotor 3D printing and recycling technology applied by HsinTa thermal power plant, and exhibition of smart electric utility.

To study and testify equipment effects on power grid, Shulin area has installed two energy storage systems, one energy-styled and the other power-styled. The systems are used to develop functions of load smoothing, peak shaving, valley filling, backup power, automatic demand response, etc.

For the same purpose, an exhibition area had been set up in TPRI Shulin area to display the new trends in smart electric industry from perspectives of supply and demand sides, demand and supply balancing, etc. A multimedia interactive table integrating 13 items of TPRI R&D results had been set up, so as visitors may

experience the related technologies in a much more intuitive way.

The table had 12 interactive cubes, each contained four topics (Power Plant, User, Circuit, and Microgrid) and eight constructions (Photovoltaic, Wind power, Energy Storage, and Smart Meter, etc) to help visitors experience the operation of electric infrastructure in a modern city from a number of interactive games.

Under global consensus of energy conservation and carbon reduction, development of renewable energy is an unavoidable trend, and smart grid provides a solution to effectively operate and manage the new energies.

We look forward to creating a new chapter for the electric industry in Taiwan through abiding and executing the government's smart grid policy.

Photo gallery



Dr. Chung deliver a speech.



Dr. Pu deliver "Introduction of R&D Activities"



Mr. Shen deliver "R&D in leading the smart grid plan and layout"



Guiding tour of exhibition



Experience drone AR activity



Technical meeting



R&D and testing presentation



Smart grid interactive table



Group photo 1



Group photo 2