The New Development for Low Carbon Technology

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In the oil depletion and global warming trends, it is no doubt that governments are actively promoting the development of various energy conservation measures and renewable energy technologies. The development of energy conservation technology will focus on smart green building based on advanced air-conditioning and LED lighting technology. In the renewable energy part, the efforts will put on the promotion of solar and wind power generation system or other low carbon energy supply.

Because LED lighting has the advantage of high efficiency, long life, and environmentally friendly, so the technology development has been moved from luxury goods or display into the functional lighting (such as traffic lights, indicate lights ... etc.) As technology advances, the replacement of traditional incandescent bulbs, mercury vapor lamps will be the highlight in the short term. It will also gradually enter the general lighting purposes and combine with the consideration of human factor in the long term.

Due to its low-carbon or carbon-free power generation characteristics for solar and wind power generation, it has become the main flow for low carbon power generation systems. Every country has set up the long term policy and objective for these two power generation systems. In the wind power part, due to the land-based wind power technology has become mature, so the focus has gradually shifted to the development of offshore systems. In the solar power part, due to the policy of subsidies or incentives by Government, the installed capacity is push to a new high and most countries have more than 30% of growth rate in 2009. Based on this deployment trend, the technology development will also shift from the pursuit of high-efficiency for PV cell and

module to the requirement of overall system stability, reliability, and the reduction of power generation cost.

In order to implement the low-carbon technologies, every government has set up the strategy to develop the so-called zero-energy building (or zero-emission building) or energy smart community as the major mission. APEC also funded a low carbon model town project to launch the low carbon town mission in APEC region through the development of low carbon town concept. It aims to integrate the energy conservation technologies (building envelop, high-quality air-conditioning, lighting and DHC), building load simulation and energy management systems, smart grid, renewable energy and energy storage technologies into a structure for so-called smart green building/community. The living laboratory with all these facilities will also be constructed to demonstrate the real function and contribution for energy conservation and carbon reduction.

Reference

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