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INNOVATION AND DEVELOPMENT: FROM INCANDESCENT TO FLUORESCENT TO LED

China Electric (CE) is the first private enterprise of Kuomintang (KMT), and had just celebrated its 60th anniversary in Taiwan. In 1955, CE started manufacturing incandescent light bulbs, and sold under TOA Lighting brand. Since then, there was no significant technological breakthrough in the lighting sector until fluorescent lamp was introduced to the public. The fluorescent lamp offers dramatic improvements in efficiency and energy use. The main difference is that while incandescent bulbs emit light by heating the filament present in the bulb, fluorescent lamp generate light by sending an electrical discharge through an ionized gas. Japan was one of the leading nations in the development of fluorescent lighting technology. In order to seek for better lighting technology and improve efficiency, CE seeks to develop cooperation with Mitsubishi Electric and became its first oversea investment company until today. CE offers a comprehensive line of lighting fixtures and fluorescent lamps. More than 2/3 of our clients are operating as independent hardware stores. This sets us apart from our competitors as it allows us to engage in the retail sector directly. In 1989, CE established a new fully automated lighting manufacturing facility in XinYin to reduce labor costs and minimize production expenses. T5 fluorescent lamp became an increasingly popular development in the early 1990s. From T9 (9/8 inches in diameter) fluorescent to T5 (5/8 inch in diameter) fluorescent, CE has overcome many technical challenges and was able to increase its production rate by producing one unit per second while maintain the defective rate under 0.5%. In the earlier days, CE focused on improving productivity; from coating, vacuuming, to temperature management, every process could alter the performance of our fluorescent lamp. As a result, we depended on our technician working round the clock to monitor and improve our production processes to make sure all our production requirements are met. As the fluorescent technology continues to evolve, the demand for energy-efficient light bulb began to rise. CE introduced compact fluorescent lamp (CFLs) and soon occupying a relatively large market share in the lighting sector.

COOPERATE TO COMPETE GLOBALLY

Since 2008, CE begins its international expansion by setting up branches in Vietnam, Suzhou (China) and Xiamen (China). This process is very time consuming and we are certain that there will be many obstacles to overcome in the future. CE plans to engage in oversea markets by focusing on building brand awareness in emerging markets and aim to maximize sales through channel partners. In addition, we will continue to improve our productivity and research and development of Lithium iron phosphate battery.

Currently, CE is interested to engage in developing countries such as Philippine, Vietnam and Burma. Based on our expertise in the lighting sector and retail experiences in Taiwan, CE will continue to seek for opportunities to grow and diversify our business by expanding and engaging in oversea markets. Recent studies have shown that the rising cost of China labor has been setting off alarms among foreign investors. Since most of CE's lighting products are made from our fully automated production facility in Taiwan, and the fact that labor costs continue to rise in China, CE currently has no intention of moving our manufacturing into China.

PROBLEMS IN ENERGY

The decline in fuel cost is only soothing an expense on consumers, decreasing storage of fossil fuel energy is still an issue that cannot be ignored. With the sense of eco-friendly green energy over the world, that how to save energy is what we looking for. In this case, the most direct relation between light usages is electric, and CE has a rather strong technical background on this, hence, for years we work on combination between light and electric, also arranging the region in electric heat. As for energy saving, in theory, if power stations could generate electric based on demand, there would not be any wasting. However, with most power plants excessively generating, how we save these excess is a crucial issue. For instance, how to combine generator with storage system, effectively save excessive energy, maximize the lifecycle of batteries, making consumers will not abandon batteries before running out, causing energy waste and higher cost. This could be reduced by developing rechargeable batteries. In other countries, every charging station's battery has a detectable IP, when it is been detected as low efficiency, it will automatically be recycled; this is something that worth for us to follow, saving energy. Even if using solar energy, it requires procedures to maximize efficiency.

AUTHORITY'S SUPPORT IN ELECTRIC AND GREEN ENERGY

Governments play a crucial role in setting the regulations and requirements for energy efficiency. Such policies can help to stimulate investment in energy efficiency from the private sector and accelerate implementation. However, up until this point, we have not yet seen any clear policy from our government authorities and we are struggling to move forward. We believe the term "energy saving" should focus on helping cut down electric and other utility bills rather than just promote energy-efficient labeled products. The lack of energy awareness among general public has been the main obstacle when it comes to energy savings in Taiwan. This is mainly because the average cost of electricity is considerably low in comparison with other countries. The price difference between on-peak and off-peak hours is not significant and therefore, authorities as well as general public remain hesitant to whether implementing new energy efficiency policy is necessary. Currently, Taiwan has sufficient electricity supplies to meet its demand. On contrast, country such as Philippine is experiencing power shortage. As a result, perhaps creating an energy saving environment is much more needed in these countries that lack of power.