



# Arts at the STSP



## The Building of a Sustainable Green Science Park

Since the establishment of the “Sustainable Environment— Green Park Initiation Team” in May 2009, the STSP Administration has been actively pursuing low carbon emission energy programs and putting great efforts into turning the STSP into a world-class sustainable green Science Park. Since 2011, the group has focused on four core areas.

**Green Industry:** The green industry includes the integrated solar cell and LED industry clusters comprising 24 Park enterprises as well as relevant accreditation institutes (HCPV Accreditation and Development Center at the Kaohsiung Science Park's Institute of Nuclear Energy Research, Telecom Technology Center's Photovoltaic Modules Certification Center, and Metal Industries Research & Development Centre).

**Green Transportation:** The promotion of green transportation includes the free STSP shuttle bus, the transit bus to the Taiwan Railway's Nanke Station, and bike lanes. The free shuttle bus at Tainan Science Park, served 316,000 people, by the end of December 2011, the equivalent of reducing 918 tons of carbon emissions.

**Green Building:** Phase II of the newly built NNKIEH Senior High Department Building, E-ONE MOLI ENERGY CORP. Phase II Factory, and Motech's Phase VI Factory were certified as Diamond Level Green Buildings in 2011. At the STSP, there are a total of 6 certified Diamond Level Green Buildings, making it the only Science Park with the highest ratio of certified Green Buildings to non-certified buildings. The STSP Administration has continued to promote Green Building accreditation, water and energy-conservation, EEWH-EC diamond certification, the planting of an additional 7,500 trees (including plantation by Park enterprises), and the replacement of regular street lamps with LED street lamps (744 lamps on 14 lanes).

**Green Production:** This core focuses on the carbon footprint verification of the Environmental Protection Center and Resource Recycling Center, TMAH Accreditation of the Wastewater Treatment Plant at the Kaohsiung Science Park as certified by Taiwan National Accreditation, diagnosis and inventory consultation services for greenhouse gas emissions, green factory accreditation, and the promotion of clean production methods among Park enterprises.





▲ 2011 National Sustainable Development Award Ceremony (December 1, 2011)

### The Winner of the 2011 National Sustainable Development Award, the “Sustainable Environment and Green Science Park Promotion Program”

The STSP Administration has been continuously devoted to the “Sustainable Environment and Green Science Park Promotion Program,” which is based on three performance indicators: “the construction of a green energy technology industry cluster,” “rational land utilization,” and “promotion of local culture and environmental education.” Its aim is to build a Science Park that is “dedicated to reducing carbon emissions,” “sustainable and healthy,” and is able to “coexist with the local community.” On December 1, the STSP was awarded the 2011 National Sustainable Development Award. This award proves that the management of an industrial park can take a holistic approach that can focus on the economy, environment, and society in order to realize the philosophy of sustainable development. In the future, the STSP Administration will continue putting its efforts to make the STSP a sentimental, fun, and promising place.

### Solar Energy Utilization in Public Infrastructure at the STSP

Thanks to its location in Southern Taiwan and yearlong abundant sunshine, which has enabled it to promote the development of the local photovoltaic industry, the STSP Administration selected public buildings at the Tainan Science Park to install photovoltaic system in phases. By the end of 2011, three phases of the construction program had been carried out and currently supplies up to 356 kWp or an annual average of 39,000 kwh. This is the equivalent of a 240 tons carbon reduction.

The installation of the photovoltaic system supports green energy development policy of the government as well as reduces the actual costs of administrative buildings and relevant public infrastructure. In addition, under the leadership of the public sector, Park enterprises will follow by exploring the benefits of energy saving and carbon reduction programs and contributing to the development of a sustainable environment.



▲ Technology Media Journalists' Trip from Northern Taiwan on Taiwan Railway's Shalun Branch Line to the STSP (August 10, 2011)

### Official Operation of the “Shalun Branch Line of the Taiwan Railway” — Encouraging Public Transportation Use

After the Shalun Branch Line of the Taiwan Railway was officially opened, On January 2, the public transportation system (including the free shuttle buses and the railway at the Tainan Science Park) were effectively integrated. Park enterprises, four shopping districts and public parking lots are now smoothly connected and provide easy and comfortable transportation services.

### Promoting Recycling of Industrial Waste and Resource Reuse

In 2011, in addition to the approved 20 projects of waste reuse, auditing and consultation on pollution prevention and control has been constantly promoted in an effort to increase industrial waste recycling as well the reuse of other resources. In 2011, waste generated by Park enterprises at the STSP was reported to be about 160,000 tons with the reuse amount of approximately 130,000 tons for the reuse rate of 81.7%.

### STSP Environment Report Audited and Certified by the Independent SGS Agency

In order to ensure the sustainable development of the STSP, the STSP Administration has followed GRIG3 requirements and compiled the “2010 STSP Environment Report” to collect information based on three aspects: society, economy, and environment for an objective presentation and analysis of the current status and performance and exposure of STSP information. On August 18, the STSP Environment Report was audited and certified by the internationally recognized independent SGS agency in Taiwan thereby confirming that the STSP Administration is indeed following through on its mission to promote environmental protection and sustainable development.

### Tainan Science Park, the Only Industrial Zone with a GHGS Emission Inventory Validated by an Independent Agency

In 2011, Tainan Science Park overcame the difficulties involved in data surveys and collection and completed an independent and comprehensive inventory of carbon emissions occurring in the Science Park. On December 19, the ISO 14064-1 "2011 GHGS Inventory Report Declaration" for Tainan Science Park was acquired making it the only industrial zone with a GHGS emission inventory validated by an independent agency. This not only demonstrates its determination to save energy and reduce carbon emission, but acknowledges the achievements it has made in promoting a sustainable environment.

### Utilization of Sewage Sludge Resources at the Environmental Protection Center in Coordination with the Public Work Demonstration Project

In order to promote waste resource utilization, the Environmental Protection Center coordinated with the "Sustainable Green Science Park" promotion group to manufacture brick products from treated sewage sludge in 2011. The bricks were used in a public work demonstration project, making the STSP the first Science Park in Taiwan to make use of recycled sewage sludge resources.

### Saving Energy and Paper with an Electronic Data Exchange

In order to make the STSP a sustainable green Science Park, the STSP Administration has actively promoted the "Electronic Data Exchange (EDI)" program to save energy and paper. Promotional seminars on the "G2B Government Data and Information Services System" were conducted at the Tainan Science Park and Kaohsiung Science Park on May 30 and 31. In the seminars, detail explanations were given by the system development team who received positive feedback from Park enterprises.

By the end of 2011, 22 Park enterprises participated in EDI

with the STSP Administration and in the future, the program will continue to be promoted to respond to environmental policy on energy and paper reduction and to create a beneficial environmentally friendly environment for Park enterprises.

### Award of Excellence Received for Environmental Protection Personnel at Kaohsiung Science Park

The sewerage system at the Kaohsiung Science Park uses a large-scale waste water treatment plant equipped with secondary biological treatment and tertiary sand filter treatment. Its management objectives are to prevent and control pollution as well as to improve its effectiveness. In addition to receiving ISO 14001 Environmental Management System and TAF Lab accreditation, in 2011, the Plant was the winner of an environmental protection award organized by the Environmental Protection Administration (EPA). The Plant was one of the winners of the first round competition recognized by the Environmental Protection Bureau of Kaohsiung City Government which made it qualify for the second round re-evaluation and on-site competition. After a fierce competition with other candidates representing cities and counties, on November 29, the Plant was recognized with the 2011 Award of Excellence for Environmental Protection Personnel, an important recognition for the Plant.

### Promotion Measures for Water and Energy Conservation

In 2011, the STSP Administration completed consultation on energy saving methods for 5 Park enterprises and saved approximately 19.658 kwh of potential energy and reduced CO<sub>2</sub> emissions by 12,031 tons. In 2011, consultation on water conservation with 7 Park enterprises saved approximately 1.652 million tons of potential water resources and reduced emissions by 342.04 tons. These efforts have demonstrated the determination of the STSP Administration to save valuable water resources for Southern Taiwan as well as its love of the earth.



▲ GHGs Emission Inventory Certification Ceremony (December 19, 2011)



▲ Seminar to Promote the Electronic Data Exchange (May 30, 2011)



▲ Beautiful Night Scene along Yinxi Lake at Tainan Science Park