THAILAND

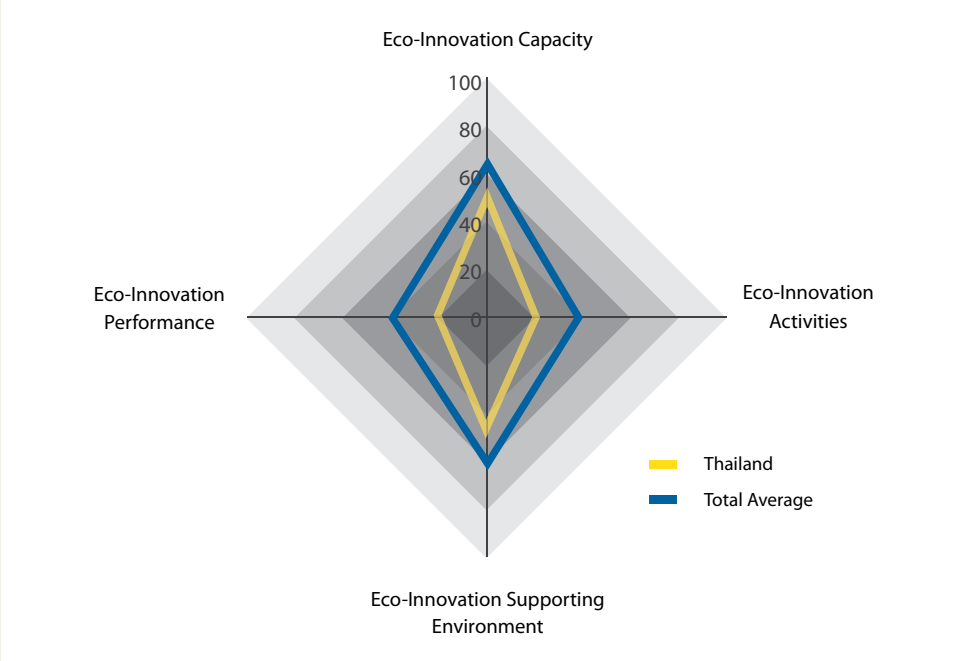

Fig. 19 Result analysis of Thailand

Country Result & Analysis

With an overall score of 33/100, Thailand falls below the average of ASEI. In terms of "eco-innovation capacity", Thailand shows an average level of "awareness on sustainability management", "general innovation capacity" and "country's overall economic competitiveness" but relatively low score on the "size of investment capital flow and number of employees in green technology industry". Regarding "eco-innovation activities", Thailand positions itself below the average in all six indicators behind the measuring criteria; "number of green patents", "turnover of environmentally friendly companies", "green technology SMEs at early stage", "renewable energy utilization level", the "level of environmental management" and the "level of commercialized green technology SMEs". In regards to "eco-innovation supporting environment," the country scores below the average in all of the indicators in the measuring criteria; low "level of environmental laws", small "size of government's R&D expenditure in green industry", low "commitment to international environmental agreements" and low "level of investment maturity of green technology industry". In the area of "eco-innovation performance", the country shows low score in "water consumption intensity", "CO2 emission intensity", "energy sustainability level", and "level of environmental impact on society". However, for the size of the economy and GDP, the country performs respectively well in the "size of the green market". Overall, Thailand ranks below average on the ASEI index.

Thailand's Key Eco-Innovation Environment

Eco-innovation is a less familiar term in Thailand. However, Thailand is placing multi-faceted environmental policy packages that eventually stimulate eco-innovation activities and initiatives. More than twenty government bodies are involved to overcome environmental concerns implementing various incentives, law and regulations and to promote eco-innovation at national level.

Building National Foundation for Eco-innovation to Emerge

Thailand has showed rapid industrial development and urbanization in the past decades, but as the country developed, more environmental concerns have emerged. Although Thailand has enacted its first national level law, the Improvement and Conservation of National Environmental Quality Act in 1975, the country took some time to set up implementable environmental policies until it was replaced by the Enhancement and Conservation of National Environmental Quality Act in 1992. Under this new act, Pollution Control Committee, Environmental Fund, National Committee on Climate Change and the Ministry of Science, Technology and Environment (MOSTE) were established in the 1990s. Recently, the government announced the Eleventh Five-year National Economic and Social Development plan (2012-2016), and under this plan, the government has included an environmental master plan. The Ministry of Natural Resources and Environment and the Ministry of Energy and National Innovation Agency (NIA) established during early 2000 are recently starting to rethink the ways to protect the environment. For example, NIA states that it currently focuses on three strategic areas related to eco-innovation such as Bio-Business and Eco-industry. NIA supports SMEs with "Good Innovation projects" offering incentives. Recently, the Royal Thai Government selected alternative energy as a national agenda, 15-year Renewable Energy Development (REDP) 2008-2022, to enhance energy security. Such active national agenda will encourage companies to research, develop and promote eco-innovative solutions that reduce environmental impact and enhance energy efficiency. Rethinking the emergency of environmental protection, the Thai government, is slowly forming a firm foundation for eco-innovation activities to evolve and accelerate. Gradual recognition of the urgent importance of protecting the environment by the Thai government will eventually provide a larger room for companies to find multi-faceted eco-innovation solutions.

New Incentives to Create Eco-innovation Solutions

New policies for Investment for Sustainable Development 2010-2012 have been introduced by the Thailand Board of Investment (BOI) which is operated under the Ministry of Industry. The BOI is the principal government agency for encouraging investment. BOI supported by the Ministry of Industry and the Ministry of Energy introduces special incentives for companies manufacturing eco-friendly materials and products, energy saving and alternative energy, and high technologies e.g. biotech and nano-tech. These are part of activities to support eco-innovation activities within the country. In 2007, the Thai government decided to grant tax incentives to auto manufacturers that produce energy efficient eco-cars. Companies producing eco-cars may receive the incentive of excise tax rate set at 17 percent compared with the typical 30-50 percent and eight years of exemption from corporate income tax payments and machinery import duties. In 2012, the BOI launched an industrial fair under the theme of "Going Green for the Future" to promote green industry and encourage investment in eco-innovative products while offering "maximum" tax breaks for investors. Increasing government initiated incentives aims to grow the green market, increase awareness of environmental concerns to customers and to reduce environmental impact during manufacturing, consumption, utilization and disposal stage of products. At the same time, while increasing incentives to promote the development of eco-innovation solutions, the government is increasing fines for any environmental damages.

Green Public Procurement Policy to Stimulate Eco-innovative Products

In 2008, Thailand introduced green public procurement policy in collaboration between the Ministry of Natural Resources and Environment, Green Labor Program and Green Leaf Program. This policy encourages all governmental agencies to purchase green products within four years. This policy is significant as public procurement covers about 20 percent of consumption in Thailand. This policy can act as a powerful driver of green purchasing, greening of supply chain and promoting sustainable production and consumption

in Thailand. The Thai government is creating an enabling environment and market for eco-innovation and encouraging eco-labeling products to emerge and get commercialized through government oriented mandatory green procurement. In 2012, the Thailand's Pollution Control Department and German International Cooperation worked together to launch the "Sustainable Consumption and Production for Low Carbon Economy – Low Emissions Public Procurement and Eco-Labeling" (SCP4LCE) project that will run until June 2015 to further promote eco-labeling and eco-innovative products. This project is financed by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and executed by German International Cooperation and key partners including the Pollution Control Department (PCD), the Thailand Environment Institute (TEI), The Federal of Thai Industries (FTI) and the Thailand Greenhouse Gas Management Organization (TGO). This project expects to influence the private sector in Thailand, encouraging companies to produce more eco-innovative products. Furthermore, it is expected that green consumption and production patterns will emerge in Thailand. Such international cooperation represents an encouraging sign that the government intends to work collaboratively with countries advanced in this area.

Eco-Innovation Case Studies

CASE STUDY 1

Mitr Phol Sugar Corporation Limited

Since 1994, the government of Thailand has put efforts to promote small power producers (SPPs) to employ biomass as fuel in the energy generation process through Renewable Energy Promotion project. Under this project, one of the largest sugar producers in Thailand, **Mitr Phol Sugar Corporation Limited (Mitrphol)** started the project of new boilers installation at Dan Chang Mill in 2002. It is common for a company with large sugar mills to operate its own steam and power generation plants by using their by-product, bagasse, as a main source of fuel, but Mitrphol was able to enjoy a lot more benefits along with the implementation of a new generator. Through this project, Mitrphol received pricing subsidies via Electricity Generating Authority of Thailand (EGAT) as the government's Energy Conservation Promotion Fund. EGAT also allows SPPs to sell any excessive power demand to the country's power grid through a contractual agreement. The new generator's efficiency is four times better than the old one, and it provides more reliable electricity supply. Since the power is generated by recycling of by-products and waste from sugarcane, its production process promises zero waste with the recycling of power and water. Mitrphol received the carbon label for its natural mineral sugar products from Thailand Greenhouse Gas Management Organization. The award was granted for its ability to reduce carbon emission and global warming. Mitrphol's syrup was also awarded for the Best Creative Food Product of the Year, and it was praised for saving time, energy and cost. In addition, the company won the Project of the Year Thailand ICT Excellence Awards in 2009 for the second time in a row.

Source: http://enviroscope.iges.or.jp/contents/APEIS/RISPO/inventory/db/pdf/0136.pdf
http://enviroscope.iges.or.jp/contents/APEIS/RISPO/inventory/db/pdf/0136.pdf
http://www.thaipr.net/products/296645

CASE STUDY 2

Thai Num Choke Textile Co., Ltd.

Thai Num Choke Textile Co., Ltd. (Thai Num Choke) is a textile company that produces fabrics for apparels, home textile, shoes, bags and packaging. Thai Num Choke takes an eco-innovative approach to produce eco-friendly fabrics by blending with banana fiber, galangal fiber and pineapple fiber. In addition, Thai Num Choke dyes its fabrics in a natural way using tea, betel nut, lac and tropical walnut, and it uses natural color cotton. The supporting institutes behind the company's eco-innovation products are National Innovation Agency (NIA), Thailand Textile Institute (THTI), and National Science & Technology Development Agency (NSTDA). Thai Num Choke's eco-friendly fabric is sold in domestic and international market such as ASEAN countries, Japan and EU, and its future potential market includes North America. Thai Num Choke has been recognized for its creativity and environmentally friendly products. The company was named the winner of the Design Innovation Contest, DIC 2011 in Eco-Friendly Design category, Thai Creative awards from the Office of Knowledge Management & Development (OKMD) and DeMark award from the Ministry of Commerce.

Source: http://www.thailand-innovativecompanies.com/ttd_bizenterprise/companyFeaturesTTIC.aspx?dirid=97&cocode=20111046, http://fabricwoven.com/about.php

CASE STUDY 3

Thai Motor Chain Co., Ltd

Thai Motor Chain Co., Ltd (TMC) is a leading motorcycle chain manufacturer which has been in the business for over 30 years. A problem that TMC faced in its production process was its high energy cost brought by the cooling system of heat treatment for its products. The company's eco-innovative effort started with eliminating a factor of 'waste of unnecessary processing,' which involved simplifying its cooling system. TMC's cooling system runs with water using two water pumps, and one of the two pumps was removed to prevent the excessive use of water. In addition, the load on the electric heater for heating of the washing water was reduced through recycling of waste heat from the heat treatment. This kind of systematic changes in its production line brought successful outcomes to TMC. Through elimination of a pump, the company is able to save 2,557 USD from saved energy consumption and reduce GHGs emissions by 11.1 tons of CO2. Furthermore, the recycling of waste heat brings saved annual cost of 9,673 USD and reduction of GHGs emissions by 35.6 tons of CO2.

Source: ASEIC (2011), ASEM Eco-Innovation Consulting Projects for SMEs Best Practices in Thailand