INDONESIA

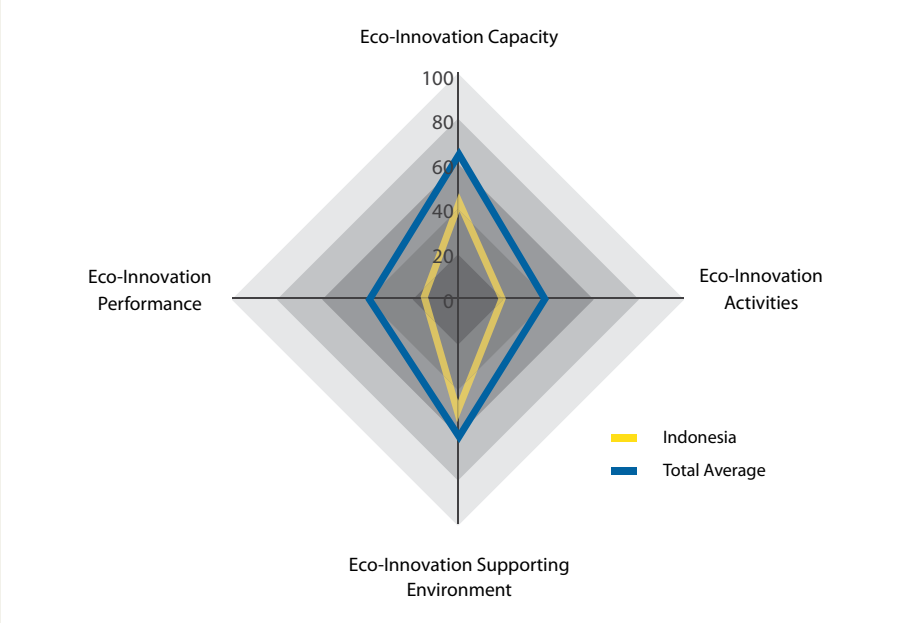

Fig. 13 Result analysis of Indonesia

Country Result & Analysis

Based on 20 indicators, which are aggregated into four criteria, the overall score for Indonesia is low (32/100) in ASEI. In the area of "eco-innovation capacity", the country's score low in the level of "country's economic competitiveness", "general innovation capacity" and "awareness on sustainability management". The country scores particularly low in "the total Value of Investment in Green Technology SMEs" and "number of jobs in green technology industry". In regards to "eco-innovation activities", the country demonstrates low score in "number of green patents", "number of commercialized green technology SMEs", "number of green technology SMEs at early stage", "level of environmental management" and "turnover of environmentally friendly companies". Indonesia's score on "eco-innovation supporting environment" is higher than the other three criteria examined for ASEI. Indonesia's week investment environment is proven by the low score in the level of investment maturity of green technology industry. The country falls below the average in its "level of environmental laws" and "country's commitment to international environmental agreed goals". Indonesia's level of "eco-innovation performance" is among the lowest. The country's green industry market size is small, and the result shows that the country needs to improve its environmental performance including "water consumption intensity", "CO2 emission intensity" and "energy sustainability levels". Overall, Indonesia ranks below the average in ASEI.

Indonesia's Key Eco-Innovation Environment

The Indonesian government pays attention to environmental concerns, but the concept of eco-innovation is just being introduced in Indonesia. The biggest concern for environmental challenges in Indonesia can be categorized into two areas: environmental pollution and destruction. Pollution and destruction of environment is being taken more seriously due to climate change, thus, in recent years, the government has been putting more efforts to reduce environmental impact and implement climate action at the national level. In 2010, an international conference on green productivity was held in Jakarta, with 16 participating countries

in the Asia-Pacific. In this forum, Indonesia announced its effort to work on practicing green productivity with a focus on low-carbon green growth.[54] There are signs that the Indonesian government is starting to understand the notion of green growth and is preparing to take a leap forward in putting the green growth at the heart of the national plan.

Policies to Support Green SMEs

In Indonesia, approximately 99.9 percent of the total companies account for SMEs with more than 97 percent of job contribution in the total workforce.[55] The Indonesian government understands that SMEs play a vital role in the Indonesian economy, thus the government pushes SMEs to promote cleaner production and the use of renewable energy, and reward them with green industry awards. According to the industrial policy, financial incentives are available to companies with strong R&D, companies in partnerships with SMEs and companies with efforts to preserve the environment. The government's effort to promote eco-innovation among SMEs goes beyond the national level. In collaboration with South Korea, Indonesia has founded green business center (GBC) in Jakarta, Indonesia. GBC is supported by ASEM SMEs Eco-Innovation Center (ASEIC), established in 2011 with the principal mandate of promoting Asia-Europe cooperation to create and enhance eco-innovation of SMEs.

Driving Forces for Renewable Energy Technology

As of 2010, the share of electricity supply from renewable sources was only about 4.7 percent in Indonesia. However, as the Indonesian government seeks low-carbon and green economy, Indonesia is expected to shift towards more environmentally friendly and sustainable energy source, renewable energy. In fact, the Indonesian government targets to reduce its reliance on fossil fuels from 47.6 percent of its share in the energy mix to 20 percent and increase the share of renewable energy to 15 percent by the year 2025.[56] The national plan to increase renewable energy production is expected to reduce greenhouse gas emissions, which is one of key environmental challenges in Indonesia. The Indonesian government provides supporting policy and incentive programs to encourage eco-innovation activities in the energy production industry. Companies that provide and utilize new renewable energy are eligible to receive incentives from the government for a certain period of time until it reaches economical development stage. In addition, the government provides tax exemptions on value-added tax and import duty for equipments and machinery used in renewable energy production. To increase the production and consumption of renewable energy, the country will need to catalyze the development and adoption of better renewable technologies; this will then bring more room for eco-innovation activities to emerge.

Eco-innovation through Information-based Incentives

Recently, 'information disclosure' on environmental impact of companies has become a part of the environmental policy. The Indonesian government collects companies' environmental information including pollutants emissions and publicly disclosed information, and this pressurizes companies to take action to reduce environmental damage. The ultimate reason behind this regulation is to improve environmental

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[54] *http://www.uncsd2012.org/index.php?page=view&nr=296&type=99&menu=20*

[55] *APEC (2011), Identifying Policies to Support Green SMEs*

[56] *International Trade Administration (2010) Renewable Energy Market Assessment Report: Indonesia*

performance of the companies. In Indonesia, a national public environmental reporting initiative, Program for Pollution Control, Evaluation, and Rating (PROPER), has been in practice since 1995[57]. This regulatory program works as a tool to promote industrial compliance with environmental regulations and adoption of clean technology to improve environmental management. Indonesian companies have significantly improved their environmental performance since the start of PROPER, which implies that PROPER plays a key role for companies to rethink about how they do business and how they can improve their environmental impact in novel ways. Although PROPER is a regulatory measure, it provides opportunities to help Indonesian companies integrate eco-innovative ideas into company practice, which eventually raises awareness on eco-innovation at the industrial level.

Eco-Innovation Case Studies

CASE STUDY 1

PT. Space Technology

PT Space Technology (Space Tech) is a whole sale supplier of mechanical equipment, electrical equipment, machining centers for punching, engineering equipment, mining equipment, diesel power plant, water filer system and conveyor systems. Like other numerous SMEs in Indonesia, Space Tech used coal-fired boilers in their facilities. The problem with using coal-fired boilers was the wasted cost spent for drying the low rank coal with high moisture content. In order to solve such problem, Space Tech decided to adopt the Waste Heat Recovery System for drying low rank coal to an upgraded coal with low moisture content and high caloric value. The Waste Heat Recovery System basically collects heat released from the chimney of the coal-fired boiler and re-uses the waste heat to dry low rank coal on the ground. The system allows increased efficiency of the boiler, reduction of energy use and carbon emissions by 20 percent. In other words, on every 100,000 USD spent per year on coal consumption, 20,000 USD is expected to be saved with reduced CO2 emissions by 2,000 tons.

Source: http://www.spacetechid.com

[57] *http://news.chosun.com/site/data/html_dir/2008/03/14/2008031400971.html*

CASE STUDY 2

PT. Hasura Mitra Gemilang

PT. Hasura Mitra Gemilang (Hasura), established in 2003, manufactures plastic components for electronics and automobiles. Hasura is a good example among a number of companies in Indonesia to adopt and implement cleaner production. Cleaner production, first introduced by the UNEP in 1990, refers to "the continuous application of an integrated preventative environmental strategy to processes, products and services to increase efficiency and reduce risks to humans and the environment." The three main criteria considered in cleaner production of Hasura are energy efficiency, resource efficiency and waste management. In order to increase energy efficiency, Hasura brought natural sunlight in the factory to reduce its dependency on electric lights. In addition, the company adopted the coolant filtration system in the cooling water system to enhance resource efficiency. Hasura's effort for better waste management began with proper disposal of wastes, which involves separation of wastes by their nature with designated separate areas for different types of waste. Hasura's work put into pursuing cleaner production is compensated with saved costs of 2,920 USD, reduced electricity consumption and water consumption by 30,444 kWh and 1,800 tons respectively, and lowered GHGs emissions by 24 tons of CO2.

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

CASE STUDY 3

PT Srikaya Maha Restu

PT Srikaya Maha Restu (Srikaya) is a package manufacturing company based in Jakarta, founded in 2004. The company is the first company in Indonesia to provide the environmentally friendly packaging which can be recycled naturally. Srikaya's product can be used for all kinds of packaging in electronic industry, fast food and catering, household, shoes, pharmacy, doctoral, hospital equipment, airlines, and etc. Srikaya's packaging is not only eco-friendly but also cost competitive. Srikaya's packaging product is sold globally, and the company's volume of total annual sales amounts up to around USD 2.5 million.

Source: http://www.alibaba.com/member/smrpulppackaging/company_profile.html