KOREA

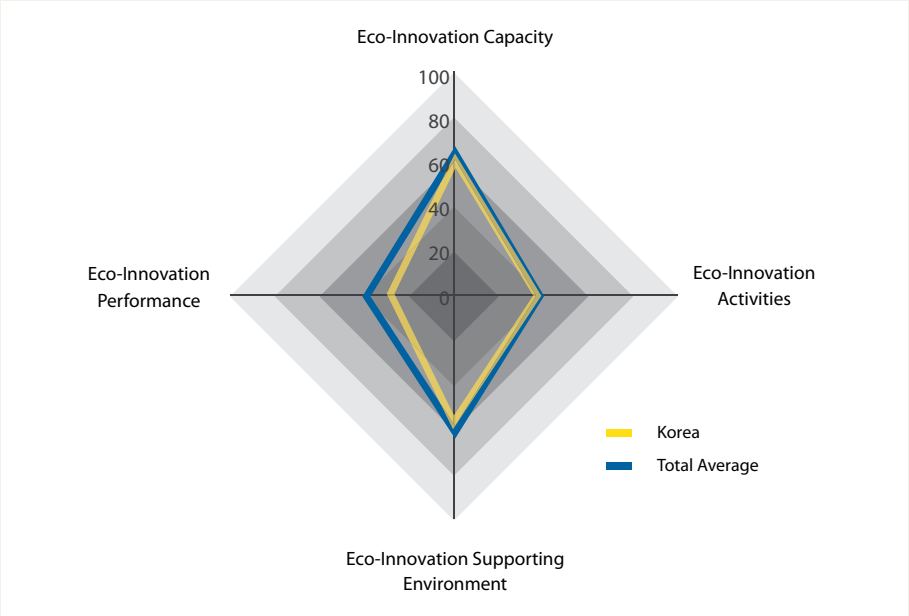

Fig. 16 Result analysis of Korea

Country Result & Analysis

The overall score of Korea in ASEI falls slightly below the average (47/100). As Korea is an emerging country in eco-innovation, the country shows more strength in "eco-innovation capacity" and "eco-innovation supporting environment" but scores far below the average in "eco-innovation performance". Korea demonstrates average "level of country's economic competitiveness", "general innovation capacity", "awareness level on sustainability management". Korea's score on "investment capital flow towards green technology" may be low, but "number of jobs in green technology industry" is high. In terms of "eco-innovation activities", Korea shows high score in the "number of green patents", "turnover of environmentally friendly companies", and "level of environmental management". However, Korea's overall score for "eco-innovation activities" is below the average pulled down by low "number of green technology SMEs at early stage" and low "level of renewable energy utilization". The "government's R&D expenditure in green industry" and the "level of environmental laws" is analyzed to be high in ASEI. Yet, the country still lags behind in the level of investment maturity of green technology industry and commitment to international environmental agreements. In regards to "eco-innovation performance", the country shows small "size of green industry market" and low score in "water consumption intensity", "CO2 emission intensity", and "energy sustainability". However, Korea performs respectively well regarding the "level of environmental impact on society". Overall, Korea ranks just below average on the ASEI index.

Korea's Key Eco-Innovation Environment

Korea's policy measures for eco-innovation is included as a part of the Korean government's green growth strategy (2009-2050) focusing on mitigation of GHGs emissions, development and diffusion of renewable energy, improvement of capability to respond to climate change, and other sustainable goals. Since the launch of the Low Carbon Green Growth Strategy, eco-innovation has been promoted as the central tool to achieve green growth. Eco-innovation strategies are implemented by various governmental bodies and research institutes; Ministry of Environment (MOE), Ministry of Knowledge Economy (MKE), Ministry of Education, Science and Technology (MEST), The Korea Eco-Products Institute (KOECO), Korean Agency for Technology and

Standards (KATS), Korea Institute of Environmental Science & Technology (KIEST). Under the Low Carbon Green Growth Strategy launched in 2010, Korea plans to invest 2 percent of its GDP, approximately KRW 107 trillion in transiting towards green growth.[70] Although it has been only two years since the adoption of the green growth strategy, Korea's eco-innovation strategy is setting a roadmap or model for developing countries to follow.

Encouraging Eco-Innovation via National Greenhouse Gas (GHGs) Target Management System

In 2009, being the world's ninth-largest carbon emitter, the Korean government declared its target to reduce GHGs emission by 30 percent by the year 2020 at the United Nations Climate Change Conference in Copenhagen (CCCC). This declaration puts the country on a tight schedule to make eco-innovative efforts to meet such target, speeding up the growth of eco-innovation practices. The Korean government has enforced a national level management system, GHG & Energy Target Management System since April 2010. The GHG & Energy Target Management System requires heavy emitters of GHGs and largest energy consumers to set targets for GHGs emission reduction, energy saving and energy efficiency. As a result, 490 companies, 80 percent of them in industrial fields, were designated to meet the set environmental targets.[71] Target Setting and GHG & Energy Target System Committee was initiated to set the allowance level for each business type and targets for individual companies. The companies that have successfully achieved the reduction level beyond the set targets will be able to take the advantage of GHG emission reduction in line with Carbon Emission Trading beginning in 2015. Several companies, especially companies with huge energy consumption and GHGs emission intensity in heavy industries and construction, have already implemented GHGs management system and made eco-innovative improvements in process and products to meet their targets. Such system is moving companies in Korea to act as drivers of eco-innovation by following strict environmental regulations.

Promoting SMEs' Eco-innovation

Under the national plan for green growth, several governmental programs and funding schemes were set up to support green SMEs. Small & Medium Business Corporation (SBC) provides SMEs green growth support developing both green technologies and green management system to increase their level of green competitiveness in the global market and to go further to establish a new market. To enhance the level of environmental management of SMEs, a group of experts make visits to production sites and help implement systematic environmental management strategies to respond to legal mandates and climate change. The project also helps SMEs develop more enhanced green technology solutions by offering services such as product performance evaluation, testing and certification, consulting and on-site facilities diagnostics. In 2010, Small Business Association (SMBA) of Korea made an announcement to foster 1,000 green SMEs by the year 2013.[72] The plan includes support measures to increase domestic production and exports of greener components and materials. SMBA's project encourages the establishment of green technology ventures via close collaboration with universities and research institutions and aims to build 'green clusters' in Korea. SMBA announced that it would invest in green growth related sectors with approximately 1.1 trillion KRW by the year 2013.[73] Such support for green SMEs' R&D activities will bring more green jobs and increase exports within eco-industry market.

---

[70] *Presidential Committee on Green Growth (PCGG), http://www.greengrowth.go.kr/*

[71] *Presidential Committee on Green Growth (PCGG), http://www.greengrowth.go.kr/*

[72] *Small Business Association (SMBA), http://www.smba.go.kr/*

[73] *Small Business Association (SMBA), http://www.smba.go.kr/*

Financial Support for Development and Commercialization of Eco-innovative Technology

In 2009, the Korean Government set the 'Roadmap for Core Green Technology and Commercialization' to foster green R&D efforts and investments in the related field. Korean Government increased investment in green technology and R&D for related industries from 1,400 billion KRW in 2008 to 2,800 billion KRW in 2011, and chose 27 key green technologies for further promotion.[74] Following the government's green growth vision, the Ministry of Environment started the Next-generation Eco-Innovation Project in 2011. As part of this project, the Ministry of Environment disclosed its plan to commit KRW 15 trillion for the next ten years in fostering development of green technologies.[75] The Korean Ministry of Environment also launched Environmental Venture Funds to support promising environment-related start-ups in collaboration with investment banking institutes. Korea's green industry may still be at the early stage, but national effort to expand financial support for green R&D and technologies is expected to work as a great tool in fostering eco-innovation in Korea.

Eco-Innovation Case Studies

CASE STUDY 1

Kaon Media

Kaon Media (Kaon) is a set-top box manufacturing SME established in 2001. The company has been proactively responding to national and international environmental regulations as large share of its revenue is brought from exports to European regions. Stricter international regulations increasingly set barriers in exporting its products. The company puts effort to meet strict regulations on products such as RoHS, WEEE, and ERP. And to overcome this challenge, the company participated in SMEs' Green Supply Chain Management System project supported by the Small Business Association and Small & Medium Business Corporation. As a result of the project, Kaon, its business partners and suppliers were able take precautionary actions against environmental risks and meet the environment related international standards. Finally, the company's eco-innovative effort to overcome trading barriers via collaborating with supporting governmental organization has placed the company in a good position to expand its market share abroad.

Source: http://nbiz.heraldcorp.com/view.php?ud=20111220000658,
http://www.kaonmedia.com/main_new/index.htm

[74] *Presidential Committee on Green Growth (PCGG), http://www.greengrowth.go.kr/*
[75] *http://www.keiti.re.kr/action.do?mid=1010101010*

CASE STUDY 2

Kyungdong Ceratech

Kyungdong Ceratech manufactures ceramics used for semiconductor components, machine parts, heat-resistant parts, and electrical insulation parts. In 2011, the company's high-efficiency thermal insulator was named the winner of the National Green Technology Award. The National Green Technology Award is given to outstanding green technology developing companies, universities, or research institutions that have solutions with high technical performance and economic benefits. Kyungdong Ceratech was the first SME to receive such award. The award winning product of Kyungdong Ceratech demonstrates enhanced insulation performance by 14 percent and will enable the GHGs emissions reduction of 8.45 percent by the year of 2020.

Source: http://www.koita.or.kr/kfile/guide/ebook/12/ebook/EBook.htm, http://en.kdceratec.com/main

CASE STUDY 3

Energy Solutions Company

Energy Solutions Company (Energy Solutions) is an energy service company (ESCO) established in 1998. The company makes investment to build energy-saving system for organizations and companies and collects saved energy costs as the company's profits. It is actually a 'win-win strategy' for both Energy Solutions and its customers, because Energy Solutions can earn profits from its successful projects and its customers can reduce energy consumption without any upfront expenses. The annual saved energy cost through Energy Solutions' projects is summed to be approximately 1.9 billion KRW. Since 2009, the company has expanded its business in waste heavy metal incineration, and with a strong interest in alternative energy field, the company is also expanding its business into the renewable energy sector. Energy Solutions holds the second largest market share in the ESCO business and was named an excellent ESCO company for two consecutive years in 2009. ESCO is a business that receives governmental support for its business features. As the Korean government announced to increase its current financial support by 300 percent in 2011, the future of Energy Solutions seems more promising than ever.

Source: http://www.ecoroko.com/603