

# Korea's Green Leadership

*by Greg Scarlatou (gs@keia.org)*

As it focused on rapid industrialization and accelerated economic growth, Korea had little leisure to worry about environmentally sustainable growth, with severe consequences: Korea is one of the top ten carbon dioxide emitters, and ranks 51st on the Yale Environmental Performance Index—measuring environmental sustainability in 146 countries. Even though the environment may have been sacrificed to accomplish the “Miracle on the Han River,” Koreans have never ceased to be great admirers and keen observers of nature: legions of hikers climbing up steep mountain trails are a trademark of weekend outings in Korea, and leaf peeping during Korea’s spectacular fall foliage is almost a national sport.

Korea’s current commitment to Green Growth relates to the concern over the environment, which Koreans fundamentally share, but chose to put on the back burner for decades. This green pledge was articulated in President Lee Myung-bak’s New Green Growth Formula, summarized in his August 15, 2008 address on the 60th Anniversary of the Republic of Korea. Noting that, after the agricultural, industrial, and information revolution, the world is about to enter the age of an environmental revolution, President Lee presented low carbon Green Growth as a “new national development paradigm” that will create new growth engines and jobs in the 21st century, with the advent of green technology and clean energy.

President Lee’s Green Growth paradigm created enthusiasm, but was also met with skepticism. As several Korean businesses showed reluctance to implement far-reaching Green Growth standards without the proper preparations, skeptics criticized the new commitment to Green Growth as merely rhetorical, excessively focused on infrastructure projects—including the revitalization of rivers and the construction of nuclear power plants— and more recently as simply reactive to the new U.S. commitment to Green Growth.

While criticism of President Lee’s Green Growth paradigm may point to some areas that need more time on the drawing board, such as implementation of necessary policy changes at the local level, disapproval of this model as rhetorical, excessively focused on infrastructure, or reactive to the projected “greening” of the U.S. economy would fail to account for Korea’s commitment to Green Growth, firmly stated in Seoul in 2005, when Korea affirmed its regional leadership on environmental matters at the fifth Ministerial Conference on Environment and Development in Asia and the Pacific.

As far back as 2005, Korea’s commitment to Green Growth was indisputable, and the 2005 Ministerial Conference launched the Seoul Initiative, proposed by the Korean Ministry of Environment, and endorsed by the 61st Commission Session of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). The Initiative addressed the sources of the load on environmental carrying capacity in the Asia and Pacific region, including: the exponential growth in industrial production, agricultural expansion and intensification; the rising demand for water, energy and raw materials; rapid and unplanned urbanization; and growing consumption and changing consumption patterns. The Seoul Initiative vision accounted for the need for further economic growth, as 670 million people were still living on less than \$1 a day (PPP adjusted) in the ESCAP region in 2004. The Seoul Initiative identified three targets of environmentally sustainable economic growth in the region: improving eco-efficiency for environmental sustainability, enhancing environmental performance, and promoting the environment as an opportunity for economic growth and development.

Korea’s version of a “Green New Deal,” announced in early January 2009 does involve massive development projects, amounting to \$32.7 billion over the next four years, aiming to create up to one

million jobs over the same period. One of these projects will enhance the use of Korea's four major rivers by building dams, reservoirs and various other water management facilities, while creating 280,000 jobs. The plan also includes the creation of low-carbon emitting railways, other "green" transportation systems, and the most visible of all "green" projects, a bicycle path around the country. Such "green" transportation networks will create an estimated 160,000 jobs. In Seoul, another project aiming to enhance the visibility of Korea's "green" commitment is the renovation of the main artery between the Gyeongbok Palace and the Han River, by converting it into a symbol of eco-friendly growth.

Development of sustainable infrastructure is an integral part of UNESCAP's suggested five track approach to green growth, together with eco-tax reform, demand-side management, "greening" the market and green business, and developing eco-efficiency indicators. While "green" infrastructure development is a significant part of Korea's New Green Deal, the project also involves significant investment in renewable energy.

Technologically, Korea's shift toward eco-friendly solutions began a few years before the announcement of the New Green Deal. In July, as MIT's Dr. Suh Nampyo assumed leadership of the Korea Advanced Institute of Science and Technology (KAIST), scholars who had worked on raising Korea's shipbuilding, automotive, and electronic industries to superpower status, decided to transform Korea's engineering innovation powerhouse along the Energy, Environment, Water and Sustainability (EEWS) paradigm. President Lee's very confidence in the New Green Deal may have been boosted by his commencement 2009 visit to KAIST, when he witnessed the debut of a new generation of electric cars created by the prestigious academic institution, operating on a lightweight battery supplemented by an underground electric cable, a hybrid between an electric car and an electric train, called OLEV (one line electric vehicle), a system that is cheaper to operate than other battery-operated cars and does not require recharging stations.

By late 2010, the first Korean tidal-power station is scheduled to become operational at Lake Shihwa in western Gyeonggi Province, generating a capacity of 254,000 kWh. Hyundai Heavy Industries will cooperate with the North Cheolla provincial government to build a massive Aeolian energy farm. The Green New Deal also aims to spur the recycling and renewable industry, in particular through investment in facilities converting trash into fuels and bio-gas. With 75 percent of its renewable energy coming from waste, Korea already has a few years experience in this field, in particular through efforts by the Daesung Group, which has been recycling methane gas emanating from trash dump sites. Korea's first bio-gas power plant has already been built, by Daewoo Engineering, and began operating in 2008.

Korea's automakers are also bound to play a key role in the Green New Deal. Hyundai Motor technicians have already test-driven a hydrogen fuel cell powered Tucson crossover across the United States, and Hyundai intends to begin commercializing a hydrogen fuel powered car by 2012. Anticipating concerns regarding the infrastructure demands that hydrogen power will require, GS Caltex Corporation, one of Korea's top refiners, began testing a hydrogen fuel station in Seoul, in 2007. What appears to be a distinctive feature of Korea's "green" auto industry is interest in developing LPG-electric, rather than gas-electric hybrids, due primarily to the fact that Korea has over a decade-long tradition in LPG-fueled cars, and has more such vehicles than any other country. In addition to "green" automotive technology, the New Deal also targets energy-efficient LED illumination, production of solar cells for photovoltaic power generation and hydrogen fuel cells for heating and lighting. Even Korea Telecom (KT) has joined in this race toward the Green New Deal, transcending its status of telecom giant by unveiling the "Green KT, Green Korea" project. This endeavor includes the use of geothermal heating and air-conditioning systems for KT buildings and equipment, and the use of solar-powered base stations for KT wireless technology.

Korea's Green Growth has also become part of the country's economic diplomacy agenda. On the sidelines of President Lee's recent Asia-Pacific tour, the Macquarie Group, Australia's largest investment

bank agreed to join forces with Korea's Woori Bank to set up a \$1 billion fund to develop green energy projects.

The beginnings of a genuine grassroots environmental movement in Korea may have been hampered by the confrontational culture fostered by many environmental activist groups. For years, numerous environmental groups in Korea were so entrenched in anti-establishment protests that they failed to connect with the scientific community and policymakers. Nonetheless, signs of a constructive, creative grassroots environmental movement have also become apparent, and the Daejeon Green Forum is testament to such development. Begun in early 2008 as a small gathering of researchers and scholars concerned about the environment, the group has expanded its membership and gained visibility by networking internationally and spearheading an effort to establish an association of eco-friendly cities, including Daejeon and possibly Tsukuba in Japan, and Palo Alto in California.

Korea's opportunities to engage in environmental international cooperation are ample and go beyond the regional scope of UNESCAP, where Korea has already assumed a leadership role. The fact that both the United States and Korea are now on the verge of implementing a "Green Deal" does not imply that the "greening" of Korea is reactive to the direction chosen by the current U.S. administration, but rather opens up possibilities for cooperation in a whole array of energy and environment-related areas. General Motors has picked Compact Power, a subsidiary of LG Chemical, to build lithium ion battery packs for the Chevy Volt, meant to replace both the old-style lead-acid batteries used in most vehicles today and the more recent nickel-metal hydride batteries used in hybrid vehicles. Korea and the United States could consider collaborating on innovation in reducing carbon dioxide emissions through low-carbon technologies, and engage in discussion on the standardization, specifications, and safety of plugs used to recharge next-generation vehicle batteries.

Through its Green New Deal commitment, Korea appears poised to strengthen its regional leadership in the promotion of environmentally sustainable growth. As "green" economic stimulus packages are being offered by governments worldwide, the UN Environmental Program (UNEP) estimates that South Korea is the only country that is currently spending enough of its stimulus on green investment in renewable energy, energy efficiency, and low-carbon technologies to reduce the costs of climate change later. Declaredly in support of the global vision of reducing greenhouse emissions by 50 percent by 2050, Korea is now making a bid to the United Nations to host the 2012 UN world environmental summit.