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lating technologies on a long-term basis through active technology exchange with Singapore and Israel for the introduction of surface water management technology of the former and desalination technology of the latter.

CHEN Yuqing

Hainan province is located in the southernmost area of China and has a subtropical oceanic climate. It has sufficient precipitation, with an average of 1,750 milligrams a year, though it varies much by region. The actual amount of water extracted from underground in the province totaled 4.92 billion

cubic meters in 2000, only 8.14 percent of the potential extraction capacity. It is used as household, industrial and agricultural water. The province is currently focusing its efforts on the development of bicarbonate water containing silicic acid and strontium. For sustainable development of Hainan's ground water resource, the province should improve its regulation system governing ground water, actively invest in infrastructure to treat ground water and develop a ground water compensation mechanism.

Policy Implications

Creation of values by utilizing Jeju's various water resources

- It is necessary to explore future-oriented tasks to utilize and maximize the values of clean ground water, spring water and magma based seawater.
- The water industry needs to accumulate advanced technologies through exchanges with other countries.

Systematic improvement of the quality of Jeju's ground water

- It is necessary to prepare for potential contamination of ground water due to continued changes in land use in the middle mountainous area.
- To increase Samdasoo production and to make it a premium brand, it is necessary to improve the system to preserve water quality and develop a compensation mechanism.

Examination of water export project from a long-term perspective

- Jeju Island needs to study the changes in the ecosystem resulting from the extraction of spring water and measures to secure the reliable quality of spring water.

- Exports of spring water have to be considered in terms of the feasibility of SOC (Social Overhead Capital) establishment.

Expansion of the scope of the magma based seawater business

- It is necessary to weigh the potentials of the magma based seawater business using health items such as spa therapy, traditional Korean medicine and healthcare materials from Jeju Island.
- It is necessary to set up a primary plan to build a city of the senary industry with the constituent elements of a community-oriented city.

A strategy to produce global brand out of water industry of Jeju Island

- Prerequisites for globalization of Samdasoo are its brand strategy and development of new water sources.
- With differentiated quality, Samdasoo may be able to enhance its brand value.
- A premium brand strategy should be developed by studying the successful cases of global brands such as Evian and Volvic.

The Future of the Carbon-Free Island, Quo Vadis?

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KANG Jin-yong

Background of the Pursuit of Carbon-Free Island

The global community's paradigm has shifted to a low carbon era, with both developed and developing countries calling for intensified climate actions. Countries have agreed to limit the average temperature increase of the world to below 2 degrees Celsius by upgrading the goal of each country every five years and to reach carbon neutrality in the latter half of the century.

It is expected that global competition to secure new growth power in response to climate change will intensify. Cities and local governments are required to play a greater role in responding to climate change.

The Status Quo and Conditions of Jeju Island

The population has kept growing since the 1980s and is expected to total 730,000 by 2030.

As the population and tourists increase, electricity use also keeps growing. Despite abundant renewable energy sources, the

province shows a pattern of consuming a great amount of energy with massive carbon emissions. Renewable energy sources are plentiful, including wind (yearly average wind speed of 6.2 meters per second at an altitude of 80 meters) and sunlight (yearly average sunshine of 1,960 hours).

Progress of the Project

In May, 2012, Jeju provincial government announced its "Carbon-Free Island 2030" project.

Three programs – electric vehicles, new and renewable energy, and smart grids – are being implemented. The province's distribution of electric vehicles and charging infrastructure is the highest in the country.

An upgraded plan of the "Carbon-Free Island 2030" was reported to the government in 2016.

- Based on the achievements thus far, the province will expand and diversify the coverage of its carbon reduction mandate and set up a specialized adaptation plan, ultimately to foster Jeju Carbon-Free Island as a Korean-type low-carbon success



LEE Ki-ho



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model.

- Through the collaboration of relevant agencies, green-house gas reduction will be accelerated in all sectors, including homes, buildings and waste treatment facilities, as well as power plants and transportation means.

The Vision of Jeju and Carbon-Free Island

Carbon-Free, clean island that the world dreams of.

- Goal: zero net emission of greenhouse gas and global expansion of the vision

Implementation Plan for Each Strategy

The island of energy self-sufficiency that runs on renewable energy.

- Expand distribution of renewable energy
- Improve energy efficiency
- Expand use of waste resources as new energy source

Rise as the capital of the world electric vehicle industry.

- Expand distribution of environment-friendly transportation means
- Battery recycling support program
- Operation of regulation-free zones for electric vehicles

Safe Jeju and preservation of the beautiful ecosystem.

- Provide customized climate change information
- Build infrastructure for climate change
- Preserve natural resources of marine and terrestrial ecosystems

Develop a nature-friendly, Carbon-Free global brand.

- Develop an eco-tourism model of Carbon-Free type
- Establish international partnerships for Carbon-Free Island
- Expand the Carbon-Free Island project at home and abroad

A campaign of low-carbon practice with entire community.

- Expand management scope over energy demands
- Offer incentives for low-carbon practice
- Spread low-carbon corporate culture

Implementation Structure

Establish a collaboration system between central government ministries and the Jeju provincial government.

Monitor progress and retool the management plan and pass special legislation.

PARK Chang-seok

As the scope of climate change-related policy is quite large, a clear vision must be suggested. The



Carbon-Free Island project requires efforts to secure funding and a careful consideration of relevant policies and regulations for its success.

LEE Young-ung

Carbon-Free Island is a meaningful plan that promotes Jeju to the world. What is important is not the mere fact that the local government declared the plan but whether the plan is accepted by the local community as meaningful.

The project to distribute 370,000 electric vehicles by 2030 has no concrete plan (it is unclear whether the province plans to replace all existing vehicles with electric ones). The feasibility of the wind energy plan should be taken into account. Energy self-sufficiency involves a measure to realize the public good and requires the participation of local residents.

KIM Tae-yoon

The Jeju Carbon-Free Island program is very important. Jeju is a treasured island of the world whose environmental value is globally recognized. The current organization has a limitation in achieving the goals of a Carbon-Free Island. Therefore, there should be another organization that can steadfastly push the plan.

KANG Hee-chan

To achieve the planned goals, a specific rationale is necessary to win support from the central government and residents of the province for electric vehicles.

- Why should Jeju pursue an electric vehicle policy? Globally, the automobile market operates around electric vehicles, yet Korea is lagging behind its competitors (particularly, China's electric vehicle industry is growing).
- Jeju has perfect conditions to be a test bed for electric vehicles.
- Jeju Island needs a plan and a rationale to lead the growth of Korea's electric vehicle industry.
- There should be a government website that disseminates accurate and detailed information about the project.

BYUN Byeong-soel

There should be indices featuring the major characteristics of a Carbon-Free Island. With regard to the establishment of international partnerships, technology transfer to the least developed countries might be meaningful, but the plan should designate an international organization for technological co-operation.