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ARUBA CENTRE OF EXCELLENCE FOR
SUSTAINABLE DEVELOPMENT OF SIDS

THE PATH TO A CARBON-FREE ISLAND



JEJU - REPUBLIC OF KOREA

SUSTAINABLE
DEVELOPMENT **GOALS**

IN COLLABORATION WITH:



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SYNOPSIS



This case study presents the measures the Republic of Korea is taking to reduce its dependence on fossil fuels and become home to the world's first carbon free island. To overcome its energy shortage, Korea imports more than 95 percent of energy resources from abroad. In 2016, Korea ranked 8th among the biggest energy consumers and 7th among the largest greenhouse gas emitters in the world. As part of the solution to its greenhouse gas emissions, the Korean government announced at the Paris Climate Conference that it would join international efforts to reduce greenhouse gas by lowering its emissions by 37 percent by 2030. To act on its commitment, the government selected Jeju province, the largest island off the coast of the Korean Peninsula to serve as a test-bed for clean energy solutions. The aim is for the Island to convert 100 percent of its vehicles and 100 percent of its electricity generation to renewable energy. In addition, the government has designated Jeju to be a demonstration site for a smart grid project that tests the development of smart grid business models and the most advanced smart grid technologies and related research and development (R&D) results.

If the project is successful, its full-scale commercial applications would be transferred to the entire country. The participating companies have begun to commercialize their green technologies globally. However, it is an ambitious plan because currently, renewable energies are only about 5% of the total electricity supply on Jeju Island.

Despite these challenges, the reforms Jeju is taking include measures to replace fossil fuels with power generated by wind via land and sea turbines; plus that from solar energy, small hydropower and electrical storage facilities. The Island is also installing smart grid technologies that collect data on energy use and demand to improve efficiency in energy production and consumption. The key drivers of this transformation are new partnerships by which government agencies and private sector companies collaborate to turn Jeju into a carbon free island. The benefits are projected to include the creation of 40,000 jobs and the reduction of Jeju's greenhouse gasses by 90 percent. Inhabitants are experiencing a dramatic reduction in electricity costs; the number of tourists has increased as has the number of youth attracted to the island by increasing jobs. The project is implemented in three interrelated phases. The first phase consists of experiments on wind and solar power generation conducted on the smaller Gapa Island. The second phase experiments on raising the share of renewables on the energy market, while the third phase is focused on turning Jeju into a carbon free island and a green growth city by 2030.

After the Korean government shared information on the Jeju project during the Paris Climate Change Conference and at the Davos World Economic Forum, as many as 2,400 cities around the world have expressed interest in its replication. The smart grid technologies tested in Jeju are also spreading to markets in developed and developing countries around the world.

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RESOURCES

<http://www.kier.re.kr/eng/>

<https://www.visitjeju.net/en>

http://www.investkorea.org/jeju-do_en/industry/new_industry01.do

<http://www.korea.net/NewsFocus/Sci-Tech/view?articleId=144885>

https://en.wikipedia.org/wiki/Jeju_Smart_Grid_Demonstration_Project_in_Korea

<http://82.199.33.32/renforus/site/?p=2768>

<https://earthjournalism.net/stories/6775>

Jeju, 'Green' Island

- Eco-friendly International Convention Center
- Smart-grid Testbed Facility
- Use of Solar, Wind, Water and Wave Energy
- Use of Electrical Cars
- Deep Aquifers, Pure Water
- Carbon-free Model: Gapa Island (outlying)
- Goal: Entire Island Carbon-free by 2030
- Goal: "Environmental Capital of the World"





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