



South Korea

1 Which bioeconomy-related policy strategies exist?

In 2008, as one of the first countries in Asia the government published the “Low Carbon, Green Growth Strategy” which focused on the reduction of greenhouse gas emissions and the development of green innovation and technologies. Renewable energies, including bioenergy, have been considered important for reducing emissions and were subject to considerable infrastructure investments under the Five-Year Green Growth Plan (2009–2013). However, the current Second National Basic Energy Plan 2014–2035 mainly defines a stronger reliance on nuclear power.

Biotechnology, biobased materials and chemistry have been gaining momentum in recent years. In 2006, the “**2nd Framework plan for Promotion of Biotechnology**” (“**Bio-Vision 2016**”) was adopted with clear targets for the biotech industry and the development of a bioeconomy. The second stage of this biotechnology promotion framework was initiated in 2012. The second stage specifically embraces bioindustries and the pharmaceutical market. In the area of bioindustries, the Ministry of Trade, Industry and Energy subsequently released

a separate “**Strategy for promotion of industrial biotechnology**” (biochemistry) in December 2012.

Since 2013, the new administration has reinforced the political focus on innovativeness. The “**3rd Basic Plan for Science and Technology**” was accordingly designed to achieve Korea’s vision of becoming a “creative economy” which is based on excellence in thirty designated key technologies. Besides the guiding Ministry of Science, ICT and Future Planning, the Ministries of Trade, Industry and Energy, of Agriculture, Food and Rural Affairs and of Oceans and Fisheries have also developed plans to foster the required innovation in their fields of competence. One example is the “Plan of Economic Innovation in Agriculture”.

South Korea is additionally a leader in marine biotechnology policy. In 2008, the government issued the **Blue-Bio 2016 Plan**, a comprehensive support strategy for marine biotechnology. In 2012, as part of its effort to systemically develop marine biotechnology, it enacted the “Preservation, Management, and Utilization of Marine Bioresources Act”.

2

Is the term “bioeconomy” or “biobased economy” used in the strategy documents?

Yes No

X

In Korea the term “bioeconomy” generally relates to the biosciences, medical biotechnology and the health sector. For a few years, however, bioenergy,

green chemistry and bio-electronics have also been attributed to the bioeconomy.

3

Who is the author of the strategies?

The cabinet approved the Green Growth Strategy and the National Basic Energy Plan. After the change of government in 2013, the importance of a green growth strategy was confirmed.

The government formulated “Biovision 2016” in 2006 for a period covering ten years and published the second stage plan of Bio-Vision in 2012. The Ministry of Science, ICT and Future Planning was created in 2013 and since then has coordinated the innovation strategies relating to the vision of

establishing a “creative economy”. Biotechnology is one of the key technologies considered important. The National Science and Technology Council is responsible for developing the relevant Basic Plans for Science and Technology.

The Ministry for Land, Transport and Maritime Affairs issued the “Blue-Bio 2016 Plan”. Since its creation in 2012, the Ministry of Oceans and Fisheries has had responsibility for marine biotechnology and the blue economy.

4

What are the key goals of the strategies?

As a global industrial player, South Korea seeks to become more competitive in the biobased economy and to enter promising growth markets in this field. In the context of the “creative economy” strategy, the Korean government has continued its strong support for new technologies, especially for IT and biotechnology, which are expected to have multiplier effects and create new markets. For example, the “Plan of Economic Innovation in Agriculture” seeks to transform agriculture into a “6th industry” which uses IT and biotechnology and by means of which farmers also become integrated producers of higher-value products and service providers, e.g. ecotourism.

“Bio-Vision 2016” aims to provide Koreans with a “healthy life” and to develop a “prosperous bioeconomy”. The main economic goal is to become one of the leading seven nations in biotechnology

by 2018. The industrial biotechnology plan also sets quantitative targets, such as to become one of the top five biochemistry locations by 2020. Biobased chemicals should reach a market share of 10 percent domestically and 5 percent globally. The support measures should contribute to creating 43,000 jobs by 2020 and to reducing the CO₂ emissions by about 10 percent.

The Blue-Bio 2016 Plan defines the overall objective of becoming one of the leading seven nations in marine biotechnology and of developing an array of marine-inspired industrial and healthcare innovations. The plan defines four intervention objectives as the sustainable development of a blue-economy, specifically the sustainable use of marine organisms, the construction of a responsible marine society, the implementation of a rich marine economy based on a healthy marine ecosystem.

5

What are the priority areas of the strategies?

The “creative economy” strategy in general focuses on further increasing R&D expenditure for key technologies, also from private companies, on reforming the R&D system and on promoting interdisciplinary technology combinations in creative industries, for example combining brain-, nano- and biosciences.

The “Bio-Vision 2016” strategy seeks to promote an efficient and coordinated management of R&D support programs, infrastructure investments and support systems for the bioindustry, bioclusters including technology innovation centers, and the training of world-class experts. The Ministry of Science, ICT & Future Planning (MISP) funds a majority of biotechnology-related R&D.

The “Industrial Biotechnology Plan” supports technology transfer and market development. It promotes cross-sectoral alliances between large and smaller companies, mainly from the chemical and the life sciences industries. Furthermore, it tries to generate synergies by building and providing common infrastructure for these industries. In

the area of market development, it encourages the development of standards to ensure global compatibility and a preferred procurement program for biobased materials.

The marine biotechnology strategy “Blue-Bio 2016” sets priorities in R&D promotion as well as in developing the relevant innovation system including infrastructure. For example, an International Marine Science Research and Support Center with a special focus on developing the creative marine biotechnology industry was inaugurated on Jeju Island in 2015. Research and development support targets the discovery and production of marine organisms as well as the development of innovative marine-based materials and the conservation of the marine ecosystem.

In the agricultural sector, the government focuses on modernization to establish a high value-added industry based on IT and biotechnology. Priorities further include developing a highly trained workforce, expanding exports and making rural communities attractive for the young and well-qualified.

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