



PHOTOS PROVIDED TO CHINA DAILY

Using its well-established industries and rich resources, the city aims to become the "Silicon Valley" of marine technology.

'One zone, one belt and one park'

By XIE CHUANJIAO in Qingdao
xiechuanjiao@chinadaily.com.cn

Shandong province aims to develop its "blue economic zone" into a powerhouse of marine science and technology, and the city of Qingdao has its sights set on becoming the world leader in marine technology innovation.

When the blue economic zone was integrated into the national development strategy in January 2011, the Qingdao government initiated its plan to turn itself into a "Blue Silicon Valley".

Jiang Daming, the governor of Shandong, said the province had made turning Qingdao into a Blue Silicon Valley a priority in its report to the provincial congress in February, and the Qingdao Blue Silicon Valley Development Plan, which was launched that month, featuring a total area of 576,000 square kilometers, comprising 351,000 sq km on the land

and 225,000 sq km of ocean.

The land area is described as "one zone, one belt, and one park". The zone is the Blue Silicon Valley Core Area. The belt is a long strip of land from the core area to Laoshan Mountain in the south, and the park is Jiaozhou Bay North Park of the High-Tech Zone.

According to the plan, the Blue Silicon Valley will be an environmentally friendly new town with comprehensive planning, comprehensive infrastructure, and sophisticated urban services. It will be an international marine science education center with a cluster of top oceanographic research institutes with leading marine technology scientists and specialists, both domestic and foreign.

The first economic zone to specialize in indigenous innovation in marine science and technology, it will be an incubator for breakthrough technologies and will nurture deep-sea technology innovation

and commercialization.

Jiang said great efforts are being made to enhance the quality of Qingdao's ongoing development and to accelerate the adjustment of the industrial structure and that indigenous innovation is being encouraged to boost Qingdao's core competitiveness.

"Apart from its rich reserve of marine resources and advantages in scientific research and education, developing a Blue Silicon Valley will be a linchpin for Qingdao to grow into a leading marine city," Li Qun, Qingdao Party chief and member of the standing committee of the Shandong Party committee, told China Daily in a recent interview.

"The Blue Silicon Valley will boost Qingdao's core competitiveness, raise the development level of the Shandong peninsula's 'blue economic zone' and strengthen China's overall oceanographic innovation capability," he said.

He explained that developing a Blue Silicon Valley would exploit Qingdao's advantages, such as its concentration of marine research institutes, its deep talent pool in ocean science and technology, its connecting of technological research at all levels, to establish a national hub of research and development into marine technology, and create an incubation center for technicians and scientists.

The city has 28 marine research institutes, or just over a third of China's total and 20 key laboratories at the ministerial level. It has 19 academics including the Chinese Academy of Sciences and Chinese Academy of Engineering; a third of the country's oceanographic experts and 70 percent of China's academicians specializing in ocean research live in Qingdao. It's been home to 23 oceanographic vessels and six ministerial and one national marine scientific observation stations.

Li said that Qingdao was already

in position to become a Blue Silicon Valley. It is the bridgehead to Shandong peninsula's blue economic zone and it has already made major breakthroughs in artificial breeding technology for kelp, edible seaweed, prawn and scallop cultivation.

It also has competitive emerging industries, beyond the traditional fields such as fisheries, harbor logistics, shipbuilding, and tourism, in marine life and biomedicines.

In 2011, Qingdao's marine-related industries had an output value of 189 billion yuan (\$29.62 billion), an increase of 12.3 percent year-on-year, and it is targeting 200 billion yuan and a growth rate of 15 percent this year.

By 2020, the Blue Silicon Valley is expected to be in the vanguard of international scientific research into marine resources, especially those hidden in deep-sea waters. By then, it is hoped, Qingdao will be the place to transform cutting-edge research findings into commercial successes.



FACTS

Location: East China's Shandong province

Size: 10,645 sq km

Population: 8.5 million

GDP in 2011: \$105.03 billion

QINGDAO MONTHLY

Driver for a leading marine economy

By XIE CHUANJIAO in Qingdao
xiechuanjiao@chinadaily.com.cn

A 443-square-kilometer swathe of land to the north of Laoshan Mountain and its adjacent seas will soon evolve into the eco-friendly Blue Silicon Valley Core Area, which will provide continuous support for the overall development of Shandong's blue economic zone.

Covering two traditional administrative units, Aoshanwei and Wenquanzhen in Jimo county, the core area accounts for 77 percent of the total area of Blue Silicon Valley. It comprises a land area of 218 sq km and sea area of 225 sq km, 100 percent of the Blue Silicon Valley's sea area.

"The Blue Silicon Valley core area is the most central point of the Blue Silicon Valley, and it will drive the development of a marine economy," said Li Qun, Qingdao Party chief and member of the standing committee of the Shandong Party committee.

"The prioritized goal of the core area is to attract leading marine sci-



The prioritized goal of the core area is to attract leading marine scientific research institutes, high-end new marine industries, and the elite in marine science and technology."

LI QUN
QINGDAO PARTY CHIEF

entific research institutes, high-end new marine industries, and the elite in marine science and technology," said Li.

Construction of some of the major sites for marine innovation are already under way, including the national deep-sea base, the national laboratory for marine science and

technologies, and the Qingdao branch of Shandong University.

Other key projects are also under construction that will form a cluster of facilities for key corporations. These include the No 725 Branch of the China Shipbuilding Industry Corporation, the National Marine Measurement and Equipment Test Center, the Aoshan Marine-related Comprehensive Experiment Base of the First Institute of Oceanography under the State Oceanic Administration, the National Under-water Culture Heritage Preservation Qingdao Base and the Qingdao Technological Park of Harbin Institute of Technology.

According to Han Shouxin, director of the administrative committee of the Blue Silicon Valley Core Area, it is positioned to grow into a first-rate urban district with low-carbon emissions, a high concentration of top talent and research institutes and incubator centers for emerging marine industries.

"We will build up more public platforms for marine technology

development, ramping up incubators and cultivating mechanisms, thus create the best environment to attract global talents, institutes and investors to work together on a more vibrant Blue Silicon Valley Core Area," said Han.

Major platforms for marine scientific research, education, commercialization and academic exchange will be set up in this area to accelerate the comprehensive development of marine high-tech industries.

The belt consists of four valleys — the Phoenix Mountain Innovation & Education Valley, Darenhe CBD Valley, Wenquanhe Residence and Resort Valley, and Gaoyuhe Scientific Tourism Valley, each of which will be managed independently, although the links between them are expected to be very strong.

According to the plan, the core area will begin to take shape in 2015 and it is due to blossom into an international marine scientific education center and become a driving force of Shandong peninsula's blue economic zone in 2020.



Design of what will be China's largest oceanographic lab.

National oceanographic lab to be unveiled in Qingdao

By XIE CHUANJIAO in Qingdao
xiechuanjiao@chinadaily.com.cn

China's largest oceanographic research center is under construction in Qingdao, East China's Shandong province, which marks the country's latest effort to become a leading force in maritime research.

Qingdao National Oceanographic Science and Technology Laboratory is expected to grow into a leading oceanographic research institution within 10 years, competing with the top-notch ones such as the Scripps Institution of Oceanography and the Woods Hole Oceanographic Institution in the United States, and the National Oceanographic Center of Britain.

Located in Qingdao Blue Silicon Valley Core Area, it covers an area of 42.67 hectares. Financed by the Ministry of Science and Technology, and the Shandong and Qingdao governments, it is a joint program launched by five universities and scientific research institutions in Qingdao, including the Ocean University of China.

Pan Kehou, director of the preparatory office for the National Oceanographic Science and Technology Laboratory, said the project will focus on six major research areas, such as marine environmental science and technology, and marine resource exploitation and protection.

"It will establish a total of 15 functional laboratories related to ocean and global climate change, marine biotechnology, marine pharmaceutical and biological products,

marine mineral resources, coastal and offshore engineering and marine environmental protection," Pan told China Daily.

"Five major platforms for different scientific fields such as deep-sea research, large-instrument testing equipment, sample databases and eight engineering technological research centers for the comprehensive use of seawater, marine meters and instruments and anti-corrosive and anti-fouling are also planned," he added.

With an investment of 100 million yuan (\$15.67 million), the laboratory will be developed in three phases.

The first phase including a building complex and a high-performance calculating and simulation platform have been finished and will come into use soon.

The second phase will start in August of this year. It consists of three public technological platforms and four engineering technological research centers.

The third phase, starting at the end of this year, will cover marine biotechnology, a public technical service platform, three engineering technological research centers, a marine and scientific museum, as well as facilities for working and academic exchanges and accommodation.

"The laboratory will attract outstanding scientists all over the world and serve as a platform for scientific and technological exchanges and training. We hope it will be one of the world's leading marine research institutions within 10 years," Pan said.

Home of the nation's deep-sea research

By XIECHUANJIAO in Qingdao
xiechuanjiao@chinadaily.com.cn

Garlanded with triumph and glory, *Jiaolong*, the manned submersible returned to Qingdao on July 16 after its record-breaking 7,000-meter dive. It returned to discover that a state-of-the-art deep-sea base, due to be completed at the end of next year, will be its new home.

Located in Aoshan Bay, Jimo, a county-level city north of downtown Qingdao, the National Deep-Sea Base Project is expected to cover a total land area of 26 hectares and a sea area of 62.7 hectares. It will rank the fifth of its kind in the world when completed next year.

According to the project's administration department, all the pre-

paratory work including the land acquisition, has been finished, and construction is due to start by the end of this year.

The base will spearhead China's deep-sea scientific research and provide a national technology service platform.

"We will conduct explorations for resources and study and sample living marine resources. We will seek to commercialize the results of these activities and provide technical support for other industries," said Liu Baohua, head of the base's management team.

"We will also cater to all the major oceanographic vessels operating in international waters, manage large equipment, and develop new equipment," Liu added.



Artist's rendering of the national deep-sea base in Aoshan Bay, which is scheduled to be completed at the end of next year.

In addition, the base will be responsible for selecting and training new oceanauts, and it is expected to attract top domestic and overseas talent specializing in deep-water research, which will enable it to be a center for international cooperation.

"The deep-sea base will consolidate Qingdao's status as a marine scientific city, and deepen its deep-sea research talent pool. At the same time it will boost Qingdao's marine technology competitiveness and enhance its global image," said Liu.