



As an economic hub in western Guangdong province, Zhanjiang plans to offer supportive policies and investment environment for investors from home and abroad.

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Zhanjiang's investment boom takes off

Iron, steel and petrochemical projects to transform port city, **Li Wenfang** reports.

Eight projects related to the giant iron and steel complex on Donghai Island in Zhanjiang, Guangdong province, launched recently, with 42 more expected to follow from this month.

The 1.729 billion yuan (\$282.56 million) from the eight projects is just part of the huge investment boost received by the port city of Zhanjiang for the construction of mammoth steel and petrochemical projects.

The first blast furnace of the steel plant on Donghai Island, owned by the country's leading steel maker Baosteel Group, is scheduled to go into operation in September next year, said mayor Wang Zhongbing.

When complete the facility will have an annual capacity of 9.2 million tons of iron and 10 million tons of steel. It will focus on the South China and Southeast Asia markets in industries including automobiles, home appliances, construction, shipbuilding and machinery.

The petrochemical joint venture between Sinopec and Kuwait Petroleum Corp will include a refinery to process 15 million tons of crude oil a year and an ethylene facility with an annual output of 800,000 tons. Operation of the refinery is due to start in 2016 and the ethylene plant will go online in 2017.

The facility is the largest Sino-foreign petrochemical project to be built on the Chinese mainland.

The first phase of Guangdong Guanhao High-Tech Co's 7.6 billion yuan paper plant went into trial operation on Donghai Island in June.

China Paper Corp and Chenming Group also have massive paper-making projects in Zhanjiang.

The city government plans to create a 50 square kilometer petrochemical industrial park and a 30 sq km steel industry clustering park in Zhanjiang Economic and Technological Development Zone, which includes Donghai Island, Wang said.

Apart from the sectors along the industrial chains of the two mega projects, sectors expected to receive a boost also include port logistics, financial services, commerce and real estate.

The gross domestic product of the city, which is in the less developed western part of Guangdong, is expected to double from last year to hit 400 billion yuan in 2017 and grow further to 600 billion yuan in 2020. The government aims to achieve 12 percent GDP growth and 25 percent increase in fixed-asset investment this year.

To facilitate investment, the government has focused on upgrading the transport net-

10 million
tons of steel produced annually

400 billion yuan
expected GDP of Zhanjiang in 2017

60 percent
urbanization rate in the coming decade

work, with more highways and roads being built, Wang said.

As part of this, a relocated airport is expected to open in 2017. The construction of the remaining Shenzhen-Maoming section of the high-speed railway linking Shenzhen in the Pearl River Delta and Zhanjiang started in June.

It is expected to be completed in 2017 and will reduce traveling time between the two cities to two hours.

The construction of the high-speed railway between Zhanjiang and Hepu county in the Guangxi Zhuang autonomous region is expected to start later this year. The cargo through-



Leading steel maker Baosteel Group's project in Zhanjiang.

put at Zhanjiang port stood at 180 million tons last year and is expected to hit 300 million tons in 2016. The port handled 387,000 twenty foot equivalent units in the first nine months of this year, more than the total volume last year.

The major projects in the city are expected to help the port reclaim its ranking as one of the country's top 10 ports. Zhanjiang's 2023.6-km coastline and

ocean area of more than 20,000 sq km means it has natural berths deep enough to carry 300,000-ton vessels and plans are in place to raise the capacity to 400,000 tons.

The steel and petrochemical projects are estimated to create hundreds of thousands of jobs when they go into full swing, Wang said.

In July, more than 664 people, including farmers

living on Donghai Island, were recruited for a training scheme, which included a trip to Baosteel's headquarters in Shanghai, to work at the new steel complex.

Zhanjiang, which has a population of about 8 million, is expected to achieve an urbanization rate of 60 percent in the coming decade from the current less than 40 percent.

The central urban area of



the city will double to 300 square kilometers by 2020.

Focus on environmental efforts during industrialization

By **LI WENFANG**
liwenfang@chinadaily.com.cn

A circular economy park is being created covering giant steel and petrochemical complexes, which are 500 meters away and being built on Donghai Island, as Zhanjiang's government pledges to conserve the city's environment.

When the steel project was approved in 2012, the National Development and Reform Commission said a circular economy must be created in the area and cooperation with the petrochemical project should be strengthened during the process.

A committee was set up by the city government and the operators of both the projects to build a State-level circular economy demonstration zone.

The project operators reached consensus in aspects including hydrogen production from coke oven gas, air separation, railway usage, circulating fluidized bed boiler slag, natural gas, towing vessel and waste lubricant treatment.

The steel project in Zhanjiang is an example of economic structural adjustment, industrial upgrading and innovation-driven development, said Xu Kuangdi, former president of the China Academy of Engineering (CAE), at a conference in Beijing in August.

He expressed the hope that the steel project would position itself as a producer of environmental and premium steel products, explore a new path to build a circular economy and recycle emissions from the heavy chemical industry.

The development on Donghai Island is a major breakthrough in circular economy in the country, said Xu Delong, vice-president of CAE.

The slag from the steel plant can be processed into cement capable of resisting seawater erosion and coal ash from the power plant can be used for making building materials, he added.

Gan Yong, former vice-president of CAE, suggested that a joint working group at a higher level should be established for



Conserving the natural environment is a priority for Zhanjiang.

industrial transformation, innovation, energy-saving and emission reduction for the circular economy in Zhanjiang.

He also suggested cooperation between the two projects and information technology giants in the country to jointly build industrial Internet and Internet of Things so that key systems and projects in the circular economy could be connected and included in the building of a smart city.

This way, flows of energy, information, values and legis-

tics will develop in a coordinated way, Gan said.

Hydrogen produced by the coke oven gas, which was wasted in the past, can be used by refineries and the two projects in Zhanjiang can realize reasonable distribution of the energy, said Yin Ruiyu, an academician with CAE.

The hydrogen-rich coke oven gas is the best starting point in building the circular economy, Yin said.

He added that the operators of the two projects considered

the prices and supply stability to achieve win-win results.

Cao Xianghong, a senior member of the technology committee of Sinopec and an academician of CAE, suggested the operators of the steel and petrochemical projects work together to calculate the recycling of coke oven gas so that the benefits and risks could be shared.

The circular economy plans should also include the treatment of liquid waste and should extend from individual enterprises and inter-enterprises to the entire society, with sewage and garbage treatment and residual heat usage to be planned in a systematic way, said Wang Yide, a CAE academician.

Waste plastics, for example, can become raw materials for the blast furnace.

The petrochemical and steel projects should shoulder their social functions and build up sound circular development relationships with the city and its residents to win their support, Wang said.

Synergy and energy exchange between the steel plant and the petrochemical plant is exciting and marks a milestone, said Cui Jian, deputy general manager of Baosteel Group. He said there were a lot of opportunities for cooperation, including producing new resources by mixing acid waste from the steel plant and alkali waste from the petrochemical plant and the potential to establish a joint venture.

Compared with many other Chinese cities, Zhanjiang is environmental friendly and its air quality ranks among the top in key environmentally protected cities.

The city's PM 2.5 readings, which measure air pollution, stay below 20 year round and the drinking water sources and offshore seawater meet quality standards, according to the city government.

The government said it strived to strike a balance between industry and environmental conservation.

In January, the government started to broadcast real-time PM2.5 readings from six public

monitoring points on the city's Environmental Protection Bureau website.

The first electronic board displaying real-time PM 2.5 and other environmental indices went into use in April with more expected to go online.

Zhanjiang should safeguard the environment while developing its industry, otherwise the city's agriculture, tourism and people's livelihoods will be affected, said Liu Huanbin, former president of South China University of Technology and a member of the Russian Academy of Engineering, during a trip to the city last month.

Apart from advanced technology, strict management of the projects would be necessary, he said.

Lu Yonggen, former president of South China Agricultural University and a CAE academician, said that Zhanjiang should also make efforts to retain its agricultural advantages, which are highlighted in the unique farming area in the Leizhou Peninsular.