

Investment Prospect and Risk Analysis of Energy and Power Sector in Greece

Ruan Wenjing^{1, a}, Feng Xinxin^{1, b} and Xiao Hanxiong^{1, c}

¹State Grid Energy Research Institute . Beijing 102209, China

Abstract. Greece's superior location advantages make it a key gateway for global energy enterprises to open the European market. At present, the consolidation of energy security in Greece provides investment opportunities for Chinese energy and power companies. However, it also faces risks such as the strengthening of the EU's foreign investment review. This paper proposes that policy should be further strengthened at the national level, in order to guide domestic energy. At the same time, the enterprises must improve investment strategies and strengthen the construction of transnational operation capacity.

1 Introduction

Under the "Belt and Road" cooperation framework, China and Greece are pragmatically promoting bilateral economic and trade cooperation and power cooperation. At the government level, in 2018, China and Greece signed a memorandum of understanding on "Belt and Road" cooperation, which provides a broader platform for cooperation between the two countries in the power and energy fields. At the enterprise level, the successful examples of cooperation between Chinese and Greek enterprises in the fields of trade, transportation and energy in recent years have further strengthened the confidence in bilateral cooperation. On December 30, 2020, the leaders of China and the EU jointly announced that the China-EU investment agreement negotiations have been completed as scheduled. The EU-China Investment Agreement is expected to provide a fairer market environment for Chinese companies to invest, and they can use the dispute settlement mechanism to fight for legal rights when they encounter unfair treatment. The policy environment for Chinese companies to expand investment in Europe is expected to improve.

2 Current Status of Energy and Electricity in Greece

On the whole, Greece's oil and gas resources are relatively scarce, energy and electricity are highly dependent on each other, energy and electricity reform is imminent, power grid infrastructure lags behind, and it is difficult to achieve the goal of low carbon energy transformation in 2030. Therefore, consolidating energy security, achieving low-carbon development and boosting the country's economy are the most important demands of the Greek government, and also provide

more investment opportunities for China's energy and power enterprises.

2.1 Greece has a high degree of external dependence on energy, and energy reform is imminent.

From the total energy level, Greece's traditional energy is relatively scarce, high degree of external dependence. The energy structure of Greece is similar to that of China, showing the characteristics of "rich coal, lack of oil and less gas". In addition to producing a small amount of oil and natural gas in China, oil and gas are highly dependent on imports, and the external dependence of oil and gas is as high as 90% in 2018. Greece is rich in lignite resources and is the largest coal producer in Europe, but high quality coal is also highly dependent on imports, and the external dependence of coal is about 6.4%. As the European Union restricts the development of coal power, the scale of electricity imports in Greece is also increasing. In order to deal with the domestic debt situation and consolidate energy security, Greece has adopted a series of reform measures, including the privatization of national power assets, the development of new energy to replace fossil energy imports, electricity to replace traditional energy, and so on. These reforms are conducive to the consolidation of Greek energy security and provide an important opportunity for foreign investment to participate in Greek energy cooperation. (Table1)

* Corresponding author: 278163784@qq.com

Table 1. Energy consumption and import trade in Greece in 2018.

	Consumption	Import trade volume	Imports (US \$10,000)
Coal	9.613 million tons	460,000 tons	4901.65
Crude oil	16.128 million tons	2497 tons	1242626.27
Natural gas	4.1 million tons of oil equivalent	3301443.31 tons	126931.40
Electricity	53.8 TWh	9080143 kW	49945.89

Data sources: according to Global Data, 《BP World Energy Statistics Yearbook (2019) collated and calculated.

2.2 There is an urgent need for the construction of power infrastructure and difficulties in cross-border and cross-island networking.

One of the key points of power grid construction is the construction of Eurasian power connection network. However, Greece, on the one hand, has not fully emerged from the impact of the European debt crisis, its own economic base is not stable, unable to independently complete large-scale infrastructure investment. On the other hand, Greece does not have an advantage in the field of trans-sea transmission networking. China's power grid and energy enterprises, relying on the core technologies and power grid operation and management advantages in the fields of ultra-high voltage and smart grid, have the foundation to promote bilateral cooperation. They can explore a new mode of integrated cooperation in "investment and construction" and actively participate in the construction and operation management of Greek power infrastructure.

2.3 Targets for renewable energy generation is too high , but the progress in the transformation of low-carbon energy sources is slow.

The European Union's Renewable Energy for All package, The bill sets new targets for low-carbon development in the EU, That is, renewable energy accounted for 32 per cent of primary energy consumption in 2030, energy efficiency increased to 32.5 per cent and carbon emissions decreased by 40 per cent compared with 1990. To achieve the goal, The EU calls on member states to develop a series of measures to encourage energy conservation, improve energy efficiency, develop renewable energy and limit the development of coal and electricity. As requested by the EU, March 2019, Greece has a National Energy and Climate Plan, Energy low-carbon transformation as an important direction of energy development. According to the National Energy and Climate Plan developed by

Greece, By 2030, Renewable energy generation will account for 56.1% of total power generation. This target already exceeds the EU target of 50 per cent of total electricity generation by 2030 for renewable energy. (Table 2)

Table 2. Energy Generation Objectives of the Greek National Energy and Climate Plan

Energy generation targets	2020	2025	2030
Biomass power generation	0.07 GW	0.12 GW	GW 0.32
Hydropower	GW 3.42	3.72 GW	3.86 GW
Wind power	GW 2.83	4.04 GW	6.62 GW
Photovoltaic power generation	3.54 GW	GW 5.33	6.76 GW
photothermal power generation	0GW	0.07 GW	0.07 GW
Geothermal power generation	0GW	0GW	0.08 GW

Data sources: Report of the National Energy and Climate Plan of Greece

Greece is rich in renewable energy resources such as solar and wind energy. However, at present, from the point of view of energy structure, in 2018, Greece's renewable energy generation was 15.1 TWh, accounting for 27.9 percent of the total power generation, which is much lower than the average level of 32.3 percent of the EU's 28 countries' renewable energy generation. It is a serious challenge for Greece to complete a substantial power transformation within 10 years.

3 Prospects of China-EU Energy and Power Cooperation

According to the energy resource endowment of Greece, the main problems facing the energy industry, the energy development strategy and the advantages of China's energy enterprises, the Sino-Greek energy cooperation has broad prospects in the following key areas:

3.1 The privatization of Greek power assets provides an opportunity for Chinese power enterprises to invest in Greece.

Greece will continue to privatize state-owned distribution assets, transmission assets and power generation assets in order to ease fiscal pressure and continue to seek IMF and EU assistance. China's electric power enterprises have capital, technology, management advantages, cooperation potential is huge. According to the results of the second debt assessment negotiations between Greece and creditors, advancing energy reform will be the focus of the next reform, mainly to break the monopoly of the state public power company on the electricity market. The Greek privatization fund

disclosed that the state public power company has been included in the next privatization project. This provides a favorable opportunity for Chinese power enterprises to participate in its privatization process.

3.2 The advantages of wind power and new energy of Chinese enterprises will contribute to the development and construction of new energy technology cooperation and projects in Greece.

Greece, as a member of the EU, needs to implement the EU's low-carbon development goals and will achieve the goal of 32 per cent of primary energy consumption by 2030 for renewable energy, 32.5 per cent for energy efficiency and 40 per cent reduction in carbon emissions compared with 1990. Therefore, the development of photovoltaic, wind power and other new energy sources to replace coal and electricity with new energy is the most important measure to achieve the goal of low carbon development in Greece. China's wind power, new energy and other areas have significant advantages, in line with Greece's domestic demand for new energy development. At present, Chinese power enterprises have invested in photovoltaic and wind power projects in Greece, laying a business foundation for further expansion of cooperation.

4 Conclusions

4.1 Enhanced policy coordination and guidance at the national level

4.1.1 Further strengthen energy policy and energy planning docking. Actively communicate the experience of the two countries in energy transformation, overcome the energy structure of "rich coal, lack of oil and less gas", and timely introduce energy development plans, key development areas and list of key projects to enterprises in the two countries. Strengthen energy technology and energy standards cooperation and exchange, reduce energy cooperation technical standards barriers. Put energy cooperation in the more important areas of capacity cooperation between the two countries, and cooperate in the introduction of fiscal, financial and customs facilitation measures.

4.1.2 Strengthen communication and coordination with the European Union to properly resolve the investment conflict caused by the third Energy Act of the European Union. The progress of the reform of Chinese state-owned enterprises is introduced to the European Union through the Chinese and Greek governments, which shows that Chinese state-owned enterprises participate in the Greek energy market as independent entities.

4.1.3 Strengthen the synergy between China's energy and power enterprises. Cooperate with China's energy and power enterprises, especially the upstream and

downstream enterprises in the power industry, to avoid the internal vicious competition among Chinese power enterprises, and to guide Chinese enterprises to avoid the risks caused by the third Energy Act.

4.2 Improving investment strategies and capacity-building at the enterprise level.

4.2.1 Around the Greek energy development focus on the rational distribution of Greek energy market. Consolidating energy security, promoting low-carbon energy transformation and promoting energy infrastructure connectivity are the main directions of energy development in Greece. Enterprises participating in Sino-Greek energy cooperation should focus on Greek energy development and select potential and sustainable development cooperation areas.

4.2.2 From the overall point of view of energy development, comprehensive technical and economic analysis, project selection process. Considering the process of energy transformation, the substitution of clean energy to traditional energy, the downward trend of new energy cost and the price comparison of different energy sources, the technical economy of the project is considered comprehensively.

4.2.3 Around the Greek energy market to strengthen project risk prevention. Focus on the Greek economic recovery process uncertainty, business environment, energy transformation uncertainty, energy costs rise and other risks, prepare ahead of time risk response plan.

4.2.4 Integration into the local economic and social development of Greece, actively fulfill social responsibilities. To respect the role of Greece as an important regional influence country in leading the regional energy transformation and promoting the interconnection of energy infrastructure in South-Eastern Europe, to actively participate in regional energy cooperation, to actively participate in environmental protection, to promote employment, public welfare and other activities, and to create a responsible image of China's energy enterprises.

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