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Report on the EU's Progress Towards Carbon Neutrality: Current Achievements and Challenges

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Abstract

European countries that industrialized earlier had about 60 years to complete the transition from carbon peak to carbon neutrality, and had accumulated much experience in the field of carbon emission management. As the vanguard of carbon emission reduction in the world, EU have many good strategies to learn from in low-carbon development and transformation. Through the analysis of the EU low-carbon transformation, it is found that the important measures are to increase the proportion of renewable energy in the power system, accelerate the low-carbon development of the transport sector, accelerate the improvement of energy efficiency in the building sector, and accelerate the green upgrading of the industrial sector. The current energy crisis in the EU has hindered the progress of carbon neutrality. The unitary energy types and aggressive carbon market policies have failed to regulate energy prices. By the energy crisis triggered by the economic crisis will force the EU forgo short-term to achieve the target of SDGs requirements, but the global response to climate change and to speed up the transformation of energy is the irreversible trend.

Keywords: carbon neutrality; achievements; challenges.

1. Introduction

As a global leader in tackling climate change, the EU has long been the pioneer of the carbon neutral goal. The different carbon neutrality targets set by the EU countries are inseparable from their energy resource endowments and economic development levels. But more attention should be paid to the sustainability ambitions conveyed by these advanced economies. By 2022, 126 countries had committed to achieving carbon neutrality by the middle of the 21st century through policy declarations, legal provisions or submission to the United Nations. These include The Long-term low greenhouse gas emission development strategies and The United Nations Framework Convention on Climate Change submitted by 12 countries to Secretariat set out a carbon neutral goal. Eighteen economies, including Germany, Sweden, the European Union, Japan and France, have enshrined carbon neutral targets in law.

2. Europe: the green transition is accelerating

The EU's green and low-carbon development is closely related to the flourishing of green political parties. European Green political parties are the products of the pursuit of sustainable economic and social development in the process of European integration. It emerged in the post-industrial period of Western Europe, and its influence on the EU and its member states has risen rapidly in recent years. In the European Parliament elections on 23 May 2019, the European Green political parties won a total of 55 MEPs, an increase of about 50% compared to 2014 and reaching its own all-time high. Meanwhile, green parties are moving to the political center in a succession of EU member states. In Finland, for example, The Green League became a coalition party in the new government in 2019. France's Europe Ecologie les Verts emerged as the biggest winner in the French municipal elections on June 28, 2020. The greening of Europe's political ecology has laid a solid political foundation for the EU's green and low-carbon development.

The EU and its member states are actively drawing up a carbon neutral development blueprint. In November 2018, the European Commission first put forward the vision of achieving carbon neutrality by 2050. The draft—— European Climate Law, will be submitted to the European Parliament in March 2020, aiming to ensure that EU institutions and member states achieve climate neutrality through secondary legislation. In October 2020, the European Parliament voted to reduce greenhouse gas emissions by 60 percent from 1990 levels by 2030. In addition, different EU member states have developed different carbon neutral plans. For example, Norway, Finland and Iceland have set 2030, 2035 and 2040 as the target years for achieving carbon neutrality respectively. Sweden, Denmark, Germany, France, Spain and Hungary have all passed legislation to set carbon-neutral development goals by 2050. Slovakia and Portugal, in their LST (Long-term Low Emission Strategy) documents submitted to the UNFCCC secretariat, set a carbon neutrality target time before 2060.

In order to achieve sustainable development, with green development and carbon neutrality as the core, the European Commission launched European Green New Deal on December 11, 2019, as a key guidance document to guide the future social development of the EU. It proposed to realize green transformation from seven aspects and supplement it with financial support plans. The following four points are directly related to carbon emission control.

2.1. Provide clean, affordable and secure energy

The transformation of the energy system is the most important step towards achieving the EU's 2030 and 2050 climate goals. Among them, improving energy efficiency is particularly critical, and the electric power sector, as an important energy conversion and utilization sector, proposes to quickly eliminate the use of coal. Mainly rely on renewable energy, and decarbonize the use of natural gas. Germany, for example, has accelerated the process of phasing out coal power capacity in order to promote low-carbon development. The first "decommissioning bid" was launched on September 1, 2020, offering subsidies over the next 10 years to coal-fired power plants that were commissioned before 1990 and were willing to retire early. In 2020, about 52.5 percent of Germany's electricity generation will be generated from renewable sources, and it is expected to reach 65 percent by 2030.

2.2. Promote industrial transformation into a clean and circular economy

Industry will remain an important part of the EU's long-term economic development. The EU stressed that energy-intensive industries such as steel, chemicals and cement, as important raw material suppliers, are indispensable to economic development, and explicitly stated that it will strengthen the development of low-carbon technologies on the premise of ensuring industrial security. Climate neutrality and digitalization of the industrial sector were highlighted in the EU Industrial Strategy published in March 2020. However, no specific route has been given for the transformation of these energy-intensive industries. As is known to all, Germany is an important exporter of chemical products in the world. It has gradually realized the green and low-carbon transformation of the chemical industry by persisting in the research and development of energy-efficient technologies for the chemical industry, reducing the cost of raw materials, implementing green marketing strategies and using government incentive policies and other measures.

2.3. Building energy-saving upgrading and renovation

Building energy consumption accounts for about 40 percent of the terminal energy consumption in the EU.

Reducing building energy consumption and improving the energy consumption structure of buildings will be the two main directions to achieve low-carbon transformation. Belgium and Germany are in a leading position in ultra-low energy green buildings. Ultra-low energy buildings and near-zero energy buildings represented by "passive houses" have become a common trend, and the application scope has expanded from the initial small projects in the middle and low floors to large public building cases. At the same time, existing buildings such as old urban areas and industrial parks have also been included in the transformation schedule.

2.4. Speed up to the wisdom of sustainable transportation

Transport contributes about a quarter of the EU's greenhouse gas emissions, and the EU has focused on expanding rail and river capacity to speed up low-carbon road transport. At the same time, it is committed to increasing the proportion of renewable transportation fuels. The French government issued the LOM (La loi d'orientation desmobilités) on December 24, 2019, which stipulates that the total carbon dioxide emissions in the transportation sector will be reduced by 37.5 percent by 2030. And stop selling vehicles-using fossil fuels ,such as petrol, diesel and natural gas, by 2040 to ensure the transport sector achieves carbon neutrality by 2050. To promote public transport, cycling and other green mobility, the Future-oriented Transport Act also provides 13.7 billion euros by 2023 to transform transport infrastructure, increase the number of charging points for electric vehicles by five times by 2022, and increase the number of charging points for electric vehicles by five times by 2022. They set up 3 500 million euro fund to manage travel of bicycles, electric scooters.

2. Europe: doubts and challenges

As autumn and winter approaches, how Europe will survive the winter in the face of soaring energy prices and widening supply gaps is under scrutiny. European imports nearly half of natural gas from Russia, sales to Europe accounted for one-third of the Russian gas exports of natural gas. Germany gets 55 percent of its gas imports, 50 percent of its hard coal and 30 percent of its oil from Russia, and Astora, a subsidiary of Russian energy giant Gazprom, owns more than a third of Germany's gas storage facilities. The uncertainty in energy suppliers has led to panic buying in European gas and electricity markets, with sharp price swings in the eurozone electricity market. The economic strain of the energy crisis is spreading across Europe. Facing the pressure of insufficient energy supply, Germany, Austria, the Netherlands, France and other European countries have announced in recent months to restart coal-fired power generation or delay the process of retiring coal. The Netherlands, for example, said at the end of June that it planned to lift its cap on coal-fired energy production and allow coal-fired power plants to operate at full capacity until 2024. Germany in early July abandoned its goal of "close to 100% renewable energy" in its grid by 2035 and said its carbon-neutral energy target for the energy sector would be reached after coal-fired power was phased out. The side effect of energy policy adjustment in many European countries is also obvious, and doubts about the carbon neutrality target are gradually growing.

The Russia-Ukraine conflict has exposed the weakness of EU countries' dependence on Russian energy, reflecting that under the circumstances of profound changes in the international situation and intensified regional conflicts, the unity of national energy supply will inevitably lead to the harm of their own energy security and economic security. Europe while trying to increase the energy supply diversification, energy investment and energy-saving measures to reduce dependence on Russian energy, speed up the green energy transformation, but this doesn't happen overnight, Europe's dependence on fossil fuels is not variable. The pursuit of green energy in European countries is too aggressive. When the demand changes little, the policy reduction of energy supply pushes up the price of energy and raw materials, while the increase in the price of carbon credits also pushes up the price of energy which increases the financial burden on people's lives.

3. Conclusion

In order to get rid of dependence on Russian energy, EU countries have to restart coal power, which is not conducive to the global energy transition and carbon neutrality process but a helpless choice. However, judging from the general trend, the global response to climate change and accelerated energy transition are irreversible trends, and EU will not change its positive position on curbing global warming. It is regrettable to see little progress on Global GHG emissions relative to Paris targets in the SDGs, but EU's past contribution should not be overlooked.

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