



Development and Transition of the Chinese Petroleum Industry Against International Climate Change Actions: from the Perspective of the Reform and Governance

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Introduction

Introduction

Before liberation, China's annual output of crude oil was only more than 100,000 tons, basically relying on imported "foreign oil" to meet the demand, was recognized as "lean country".

After 70 years of its founding and 41 years of reform and opening-up, China has become an important oil producer and consumer in the world. As the largest developing country in the world, China has become the second largest economy after the United States, and energy security is of vital importance as an important support for China's sustainable economic growth. The safety of oil and gas, which is regarded as the blood of industry, cannot be ignored.



Introduction

By the end of 2017, China's proven oil reserves were 3.5 billion tons, with a reserve/production ratio of 18.3 years and a domestic output of 191.5 million tons. The proven reserves of natural gas are 55 trillion cubic meters, with a storage/production ratio of 36.7 years, and the output is 149.2 billion cubic meters.

By the end of 2018, China's overseas oil and gas production in equity reached 201 million tons of oil equivalent, up 3.7 percent over 2017, including 160 million tons of oil in equity and 50 billion cubic meters of natural gas.



Introduction

According to data released by the general administration of customs on January 21, 2019, China's crude oil imports increased by 10.1% year on year to 462 million tons in 2018, making China the world's largest crude oil importer for the second consecutive year after it surpassed the United States for the first time in 2017, and its oil external dependence rose to 69.8%.

In 2018, natural gas imports increased by 31.9% year-on-year to 90.4 million tons, a record high, and natural gas external dependence increased to 45.3%.



Introduction

No matter from the scale, the system, or the output value of the oil industry, the accomplishments are unprecedented; Whether it is to ensure the sustained and healthy development of the national economy, or encourage enterprises to go out, so as to constantly enhance their competitiveness, among the world's top oil companies, all those things are eye-catching.

All these achievements have been attributed to the country's independence and strength, and the reform and opening-up policy. But the root cause should lie in the whole country's institutional innovation. The most important embodiment of the state's institutional innovation is to open up the path of socialist rule of law with Chinese characteristics.



Introduction

Since 1978 inception, along with the needs of the development of reform and opening up, China has put an end to its history without law. It moves forward the building of the legal system in a planned, focused and step-by-step manner, gradually transforming the condition of "no law being able to follow" to "having the law to follow", from "legal system" to "rule of law", from "rule of law" to "comprehensive rule of law", and from "rule of law" to "rule of law in China". Under the benign interaction mode of "two-wheel drive" and "flying with two wings" in which the reform promoting the rule of law and rule of law guaranteeing the reform and opening up, all walks of life in China are flourishing and the people live and work in peace and contentment, gradually lifting the world's largest developing country out of poverty and making it the second largest economy after the United States. The change of our petroleum industry development and management system is the witness of this process.



Introduction

With the release of greenhouse gases, human industrial activities have threatened the ecological environment of the whole earth. Therefore, countries have to take actions together to deal with climate change. This action is both a great opportunity and a severe challenge for China's oil industry. For this, the whole industry faces a dilemma.

On the one hand, in order to maintain the sustained and efficient development of the national economy and meet the people's constant demand for a better life, it is necessary to continuously increase the oil and gas supply capacity from the supply side and enhance the emergency reserve capacity to ensure national energy security.



Introduction

On the other , it is necessary to actively implement new development concepts in accordance with the changing domestic and world economic situation, and China's commitment to carbon dioxide emission reduction in the climate change agreement.

This requires the efficient use of oil on the demand side, the early peaking and steady decline of oil consumption, and the early decoupling of economic and social development from oil consumption.



Introduction

In order to fulfill its commitments and realize a clean, low-carbon, safe and efficient modern energy system at an early date, China's oil and gas industry still needs to transform and reform. This requires both conceptual innovation, technological revolution and management reform from within the oil industry itself, such as the diversified development of energy sources and the early deployment of low-carbon even carbon-free energy sources including hydrogen.



Introduction

It also needs to be driven by the institutional innovation at the national level and the linkage mechanism at the international level. The latter is epitomized by domestic reforms, policies and legislation. It is directly reflected by the establishment of a relatively complete legal system of energy including petroleum law , and the end of the history of large countries producing and consuming energy without energy law and petroleum law. It is important to note that many problems in the oil and gas industry require both reform and the rule of law. How to coordinate the relationship between them and realize the benign interaction requires practical wisdom.





1. The development of petroleum industry

The development of petroleum industry

1.1 Discovery of Petroleum and the beginning of modern oil industry

1.1.1 Discovery and Application of Petroleum

China is one of the earliest countries in the world to discover and use oil. more than 3,000 years ago, A Book named Yijing (means change), has records of "fire in Ze" and "fire under Ze". The Geographic Records of the Han Book clearly states that "Gao Nu (now Yanchang County, Shaanxi Province) has water (a tributary of Yanhe River) flammable." People "access it". The utilization of oil and natural gas in ancient China has been widely used since the Western Han Dynasty. It can be used as a torch used in rain night, or as fuel to boil out well salt, or as a lighting candle, or to extract lamp oil from it, or to defend, retreat from the enemy, or to be used as a drug, or to make ink, or to be quenched, or to be used as axle lubricant (Shi Baoheng, compilation of Oil History Research, Geological Publishing House, 2003, p. 91.).



The development of petroleum industry

1.1 Discovery of Petroleum and the beginning of modern oil industry

1.1.2 The beginning of modern oil industry

Even though Chinese found and used oil and natural gas several thousand years ago, but China's modern oil industry began in the second half of the 19th century. Its landmark event was that China drilled China's first oil well, the first oil well in the mainland and the first oil well in Xinjiang Uighur autonomous region with modern drilling machines in 1878, 1907 and 1909 in Miaoli of Taiwan, Yanchang of Shaanxi and Dushanzi of Karamay city of Xinjiang Uighur autonomous region respectively, But after many years of hard work, until the eve of the founding of new China, the foundation of the oil industry is still very weak.



The development of petroleum industry

1.2 The development in the first 30 years since the founding of new China

1.2.1 Restoration and development period (1949-1960)

After the founding of new China, taking the Yumen oil mine as the base, the vast number of oil industry workers carried out exploration operations in Karamay, Kinghai, Sichuan and other places in Xinjiang, making great contributions to the development of the oil industry.



The development of petroleum industry

1.2.2 Historic transition period (1960-1978)

In the era of government-led planned economy, in order to realize industrialization and establish an independent industrial system at an early date, a special movement “oil battle” began to be implemented in the oil industry. In March 1960, the battle of Daqing oil took place. In 1963, China produced 6.48 million tons of crude oil and was basically self-sufficient in oil. After this, successively discovered the Shenli oil field, the Dagang oil field, the Liaohe oil field. In 1976, the annual output of Daqing oilfield exceeded 50 million tons. Crude oil exports to Japan and other countries began in 1973. The annual output of crude oil exceeded 100 million tons in 1978.



The development of petroleum industry

1.3 The development track since reform and opening up

1.3.1 Stable development period (1978-1986)

In 1978, the third plenary session of the eleventh Central Committee of the Communist Party of China (CCPC) put forward the strategic decision of shifting the focus of work from "class struggle as the program" to the socialist modernization drive as the center, decided to implement reform and opening up, and determined the basic policy of developing socialist democracy and improving the socialist legal system.



The development of petroleum industry

During in this period, the reform and opening up has promoted the relevant legislation. Our country basically ended the stage that cannot depend on law, begin to enter legal institution period. In 1982 and 1983, the state council enacted and promulgated the regulations on the exploitation of offshore oil resources in cooperation with foreign countries and the regulations on the administration of environmental protection for offshore oil exploration and development. The oil industry is in its first spring. Subsequently, the state promulgated the mineral resources law (1986), the air pollution prevention and control law (1987), and the environmental protection law (1989).



The development of petroleum industry

1.3 The development track since reform and opening up

1.3.2 Accelerating development in economic transformation (1987-1997)

The decision of the central committee of CPC on economic restructuring adopted at the third plenary session of the 12th central committee of CPC in 1984, which put forward that the socialist economy is a planned commodity economy on the basis of public ownership, and the reform should be carried out in accordance with the principle of separating government administration from enterprise management, streamlining administration and delegating power.

From the mid-1980s to 1997, the management system of the petroleum industry was characterized by separation of government and enterprise, and specialized division of labor. Although the petroleum and petrochemical companies after their establishment still assume most of the government management functions, the petroleum industry in general begins to move towards the mode of enterprise management.



The development of petroleum industry

1.3.3 Leapfrog development in restructuring (1998-2013)

In 1998, the central government decided to carry out the strategic reorganization of petroleum and petrochemical industry. Through the transfer and exchange of administrative assets, the parent company of petroleum and natural gas and the petrochemical corporation of China were reorganized into two major petroleum and petrochemical groups, realizing the integrated operation of upstream and downstream enterprises, production, supply and marketing, domestic and foreign trade.



The development of petroleum industry

In 1999, in accordance with the principle of "separation of main and subsidiary industries, good assets from bad assets, and enterprise functions from social functions", CNPC, Sinopec and Cnooc carried out internal reorganization, established their own joint-stock companies and went public successively. Because China's economic system at this stage is still in the transition period, the relevant energy legislation results have a heavy brand of planned economy. The striking features of this period are reform goes hand in hand with legislation.



The development of petroleum industry

1.3.4 The period of institutional reform (2013 --?)

In 2013, with the establishment of the new government and the "new normal" of the economy, the central Committee of the CPC proposed the strategy of comprehensively deepening the reform, thus the reform of state-owned enterprises entered the deep water zone and paid more attention to comprehensively deepening the reform in supervision, property rights, operation and other aspects.



The development of petroleum industry

In November 2013, the third plenary session of the 18th central Committee of the CPC adopted the decision of the CPCC on major issues related to comprehensively deepening reform and decided to launch a series of reform measures. At the meeting, Xi proposed that "all major reforms should be based on legal ground, and those that need to modify the law can alternate the law first, establish the law first, then modify it, and proceed in an orderly manner. Some important reform measures need to be authorized by law and should be carried out in accordance with legal procedures."



The development of petroleum industry

1.3.4 The period of institutional reform (2013 --?)

On May 22, 2017, the central committee of CPC and the state council issued several opinions on deepening the reform of the petroleum and natural gas system, clarifying the guiding ideology, basic principles, overall thinking and main tasks of deepening the reform of the petroleum and natural gas system.





2. Existing problems

Existing problems

After decades of development, China's oil and gas industry has made brilliant achievements, and resource exploration and development has reached a new level. China has become a big country in oil and gas production, consumption and processing, and the 4 major oil companies have ranked among the top 500 companies in the world.

China is an important country in international oil and gas investment. At the same time, countries and enterprises are facing more and more challenges and problems.



Existing problems

The most prominent problem is that with the establishment and improvement of the market economic system, the market gradually plays a fundamental role in the allocation of resources, and competition among market players will be the norm.

However, the market economy is inseparable from the rule of law. With the opening of the reform of oil and gas system, the incomplete legal system of petroleum will definitely restrict the development of the industry.



Existing problems

- 1. The current situation of oil and gas endowment is not optimistic.**
- 2. The pressure to improve domestic oil and gas support capacity is increasing year by year.**
- 3. Upstream development is constrained by oil and gas restrictions. For a long time, the State has treated oil not as a commodity but as a strategic material for special management, and has made legal restrictions on its exploration and development, which has restricted the efficient development of oil and gas and the healthy development of enterprises.**



Existing problems

4. There are many problems in the current oil and gas resources management system, and the reform is imperative.

5. The process of reforming the oil enterprise system is slow, and the benefit of enterprises is declining.





3. Oil and gas industry choices in the context of international climate change action

Oil and gas industry choices in the context of international climate change action

According to the 2016 climate change agreement signed in New York, its main goal is to control the global average temperature increase in this century to within 2 degrees Celsius, and to control the global temperature rise to within 1.5 degrees Celsius above the pre-industrial level.

In this context, China's oil and gas industry faces a dilemma. On the one hand, in order to maintain the sustainable and efficient development of the national economy and meet the people's constant demand for a better life, it is necessary to continuously increase the oil and gas supply capacity and enhance the reserve emergency response capability from the supply side to ensure national energy security.



Oil and gas industry choices in the context of international climate change action

On the other, it is necessary to actively implement new development concepts based on the changing domestic and international economic situation, and continuously reduce carbon dioxide emissions, reduce coal consumption ratio, and vigorously develop clean, low carbon energy according to China's commitment to carbon dioxide emission reduction in climate change agreements.

This requires efficient use of oil from the demand side, as early as possible to achieve peak oil consumption and a steady decline, to achieve economic and social development and oil consumption as early as possible from the associated to the gradual decoupling.



Oil and gas industry choices in the context of international climate change action

In order to realize the clean, low-carbon, safe and efficient modern energy system at an early date, China's oil and gas industry will inevitably need to carry out transformation and reform. That is to say, technological innovation on the one hand. On the other hand, what is more important is institutional innovation. i.e. to acquire protection and support for the development of the oil and gas industry from the institutional level, specifically to provide basis from policies, regulations and systems.





4. Oil and gas legislation needed

Oil and gas legislation needed

4.1 Whether legislation is necessary

4.2 There is much debate about whether legislation or reform should come first in the oil and gas industry.

4.3 How to legislation





5. Conclusion

Conclusion

To review the development of the oil and gas industry in the past 70 years is to condense the successful experience and summarize the past mistakes and lessons. Considering the changing international situation, climate change actions and the current situation and future trend of domestic oil and gas system reform in the coming period, we should prepare for the future and make the oil and gas industry adapt to the historical trend, move with The Times, take advantage of the opportunities and actively innovate.



Conclusion

In order to achieve clean, low carbon, green, safe and sharing system of modern energy. It's imperative to adhere on the rule of law and reform direction, make them work together so as to achieve modernization, ultimately benefit the people in the process of utilizing the reform thinking to promote greater development of industry, using the rule of law thinking and way security reform smoothly, consolidate the reform achievement, and more greatly promote the healthy development of the industry.





Thanks for your attention