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MANAGEMENT OF XINJIANG'S OIL ENERGY AND NUCLEAR ENERGY SOURCES IN THE PEOPLE'S REPUBLIC OF CHINA (PRC) IN POST-COLD WAR: OBSERVING THE SUPPORTING AND INHIBITING FACTORS AND THEIR RELEVANCE WITH ENVIRONMENTAL ISSUES

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ABSTRACT

China's dependence on energy so far has been on coal. However, like other non-renewable fossil energy, the supply of coal itself is getting depleted. In addition, the PRC's dependence on coal so far has brought losses to the PRC itself, namely the high levels of carbon dioxide emissions contained in the PRC's air. This situation makes the PRC government feel the need to develop other energy sources. Considering the PRC is a country that is blessed with various energy reserves which are quite abundant, it is not too difficult for the PRC government to explore and develop these energy reserves. However, it turns out that it is not so easy to raise this issue because in some ways this energy issue has touched other sensitive aspects. For this reason, the PRC government implements an energy policy consisting of a short-term plan, a medium-term plan, and a long-term plan. The agency responsible for this is the State Planning Commission (SPC). Bringing together the supporting factors and inhibiting factors, the visible trend is that the PRC government will continue to strive to maintain its energy policy, but by making improvements that are felt to be very necessary in order to be effective. This is inseparable from the existence of the PRC's economy as well as its environment which means the existence of the country itself in the future.

Keywords: Oil Energy Management, Nuclear Energy Sources, Energy Policy, Environmental Issues

1. BACKGROUND

Demographically and geographically, China is a large country. The country that was founded in 1949 is the most populous country in the world, with around 1.04 billion people—representing about one-fifth of the world's population. China is also the largest country in Asia, reaching approximately 5,500 km from north to south and 5000 km from east to west.

Not only that. Since the last three decades, China has also become a big country when viewed from an economic point of view. This is none other than the result of the implementation of the open door policy which was officially started in 1978, which was intended to improve relations with other countries in the world to develop their foreign trade and to obtain foreign capital in the form of loans, foreign direct investment, and economic aid. According to May (1998), the progress of the PRC's economy can be seen from its GDP factor, which is even predicted to increase in 2050 to US$ 15,000 from the 1995 GDP which was only US$ 560.

One important thing that arises in connection with the two facts above is that in the future the PRC will be faced with the problem of finding and fulfilling a large energy need which must always be sought for its availability to be able to suffice and maintain its existence so far. Its large population—both in cities and villages—really needs this energy not only for daily household electricity consumption, but also for education, transportation, offices, and so on. The industry, which has been supporting its technological progress, also requires the availability of large amounts of energy. In a shorter sentence, the PRC's future energy needs are generally energy used for the electricity sector and energy used for industry and transportation.

China is one of the countries that is blessed with abundant energy sources. It has sources of coal, oil, gas, biomass, and so on. However, so far the PRC is very dependent on the presence of coal. This is understandable because this country, based on 1986 data, has the third largest coal reserves after the United States and the disintegrating Soviet Union. For example, in Shanxi province there are coal reserves of 201 billion tons. However, as with other fossil energy sources, these reserves are increasingly depleting, while the demand for energy continues to increase. In 1994, transportation represented 7 percent of total energy consumption. Industry, particularly heavy industry (chemicals, iron, steel) consumes 75 percent of the electricity and 51 percent of the oil produced in the PRC as a whole. Of course, currently consumption shows an upward graph. For this reason, the PRC feels it is time to explore other energy sources in order to meet the ever-increasing demand for energy. In this case, the discussion will focus on two energy sources that are owned by the PRC. The first is the management of petroleum and natural gas in Xinjiang to represent industrial demand, and nuclear energy to represent China's future electricity needs.

China's dependence on energy so far has been on coal. However, like other non-renewable fossil energy, the supply of coal itself is getting depleted. In addition, according to Carbon Dioxide Information Analysis Center (CDIAC), Oak Ridge, Tennessee (1995), the PRC's dependence on coal so far has brought losses to the PRC itself, namely the high levels of carbon dioxide emissions contained in the PRC's air (see table I). In fact, it is projected that in decade the emission levels will double – second only to the US – if the situation is not immediately corrected. (Teble 1)

This situation makes the PRC government feel the need to develop other energy sources. Considering the PRC is a country that is blessed with various energy reserves which are quite abundant, it is not too difficult

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for the PRC government to explore and develop these energy reserves. However, it turns out that it is not so easy to raise this issue because in some ways this energy issue has touched other sensitive aspects.

Table 1. 5 Countries With the Largest Industrial Carbon Dioxide Emissions 1992

COUNTRY	TOTAL OF EMISI CARBON DIOXIDE (in million metric ton)
1. USA	4.881.349
2. PRC	2.667.982
3. RUSSIA	2.103.132
4. JAPAN	1.093.470
5. GERMANY	878.136

Technically, what is meant by energy is the amount of heat that must be transferred, replaced, or used to produce a process or in order to transfer an item to an important point in the economic system. In this paper, the energy that will be elaborated is fossil energy and fissile energy. Fossil energy is all energy that comes from past geological or biological activities. Examples are coal, oil, natural gas, and so on. While fissile energy refers to chemical units containing heavy elements such as uranium and thorium which through the process of release into a smaller mass unit produces a certain amount of energy.

It can be seen that energy is closely related to economic problems. In the context of domestic political economy, what is meant by energy is any form of substance that is needed by every structure of society and infrastructure such as industrial machines that are needed to become the driving force of the life and economy of the country so that politically the country can still exist. In the context of international political economy, energy is closely related to the status of a country in the international sphere. In simple terms, ownership of abundant energy plus effective and efficient management equals ownership of great power, both politically and economically.

Because it is related to the political field, this energy cannot be separated from the formation and implementation of a country's policies. So is the PRC. China's energy policy is characterized by the principle of self-sufficiency and by the simultaneous existence of production and consumption scales, both large and small (Lucas, 1987). The point is that the energy products sought by the PRC industry must be sufficient for consumption, both industrial consumption and public consumption. This means that if the demand for energy increases, efforts to find new energy products must continue.

2. METHOD

The PRC government implements an energy policy consisting of a short-term plan, a medium-term plan, and a long-term plan. The agency responsible for this is the State Planning Commission (SPC). These include the energy and fuel planning bureau and the energy conservation bureau. To facilitate its work, each energy sector has its own ministry, which so far includes the ministries of coal industry, nuclear industry, petroleum industry, water resources, and electric power. In addition, it is also assisted by research institutions, such as the Atomic Energy Research Institute (ministry of nuclear energy), Institute of Nuclear Energy Technology (Qinhua University), Research Institute of Petroleum Exploitation & Development (ministry of petroleum industry), and so on.

In looking at the relationship between sustainable economic growth, peaceful domestic conditions, and energy policy, May (1998) stated it as follows: sustainable economic growth really requires peaceful domestic conditions and rational energy policies. This thought is important in order to see the PRC's domestic conditions in the discussion section later. It should be added that the economic policies that support the PRC's energy policy in this context are as reflected in the following slogan "stabilize the east, develop the west". East here is the eastern region of the PRC, which has indeed been touched by development and is well established, while the West is the western region of the PRC, such as Xinjiang, which is still far behind.

This paper also mentions the existence of a critical movement towards the PRC government's policies, in this case regarding energy. In this regard, Wasserstrom and Perry (1992) stated that in the context of the PRC, to analyze change must be related to the interactive relationship between society, economy, policy, and culture. Because the energy that will be discussed below uses new technology and will change China not only socially but also culturally (with the inclusion of foreign workers and instructors), the critical attitude of the community can be understood through this approach.

3. RESULTS AND DISCUSSION PETROLEUM MANAGEMENT IN XINJIANG SUPPORTING FACTORS

The PRC government's choice in this regard is at least driven by four important things. First, the level of PRC's domestic energy demand, especially for the industrial sector, is increasing, which cannot be met by coal alone. This needs serious attention because of the sustainability of the industry.

highly dependent on the availability of energy that supports it. Many PRC energy experts, and some foreign experts, believe that the PRC has a serious energy constraint in recent times. On the other hand, the PRC government has also stated that energy and transportation constraints are major obstacles to economic development. In other words, the following equation: the economy works if industry works, and industry works if energy is available, puts energy as a very important factor. Therefore, the PRC feels the need to immediately explore and develop petroleum energy sources as the main energy source now and in the future.

The second is the fact that oil reserves in this area can be said to be quite abundant. It has been believed since

the 1980s that this region—an autonomous province of China with a majority Muslim population—has a large oil content. Ongoing exploration bore fruit with the discovery of an oil well in early 1991. Official government research, predicts that the region's oil reserves are at 140 billion barrels (Dorian, 1987).

The third is the existence of cooperation with neighboring countries in order to meet the supply of oil and facilitate oil trade. One of the existing collaborations is with Kazakhstan to build a 3000 km oil pipeline. The agreement signed in September 1997 is worth US$ 4 billion. The line will connect the western oil region of Kazakhstan (Caspian region) to Xinjiang, North China. This is in line with the principle of the PRC's open-door policy which is that cooperation with foreign countries will be used to introduce and acquire advanced technology and management from outside. The government has developed and implemented policies that will further encourage the initiatives of domestic companies and workers.

Last but not least is the fact that quite a large amount of foreign investment has been invested in this area. Since the 1980s, after it was believed that the Xinjiang region held large oil reserves, many foreign oil companies came to cooperate and invest. At the end of 1986, no less than 43 oil companies from 12 countries cooperated with the PRC government in offshore oil projects. The investment value recorded during the period 1981-1985 amounted to US$ 2.1 billion (Lucas, 1987).

Inhibiting factors

There are at least two crucial problems involved in this. First is the lack of infrastructure in this area. Since the end of 1995, the infrastructure that is felt to be lacking is the problem of transportation, both land and air. This is clearly very influential on the performance of the project. It was noted that there was a minus margin of around 10 percent of the total production just because of transportation problems. In addition, there is a lack of internal oil pipelines for the transfer of crude oil from one production site to another. Things like that in turn had created doubts among investors.

The second is that which needs very serious attention, namely the issue of autonomous governance and ethnicity and religion in this region. This issue is very sensitive because it touches on aspects of history and self-esteem. The inhabitants of this area are ethnically different from the majority population of China—the Han ethnicity. Most of them are from the Uyghurs (about seven million people), Kazakhs (about one million people), Kyrgyz (about 140 thousand people), Tajiks (about 34 thousand people), and a number of other small tribes that are part of the about 17 million residents of Xinjiang. The Han ethnic group alone numbered about six million, a sizeable number, but understandable if you look at the policy of assimilation by sending Han people to Xinjiang over a period of time. It is understandable, therefore, that the vast majority of the population of Xinjiang feel culturally and linguistically closer to their neighboring countries than to the Han ethnic people whom they consider to be migrants to their region, not a part of them. Furthermore, they felt the need to distinguish their territory from the territory of the PRC in general by declaring its territory as the territory of the Republic of East Turkistan, which in 1990 caused a tragedy with bloody clashes between the PRC police and the Uyghurs majority. One of the policies that was then taken to ease tensions was to make a compromise to keep Xinjiang as part of the PRC but with an autonomous status (Dorian, 1997).

With the discovery of this source of oil energy, which makes the government more aggressive in placing its bureaucrats—who are actually from the Han ethnic group—in this region, it is certain that the above conflict will escalate again. Especially if there is an impression of exploiting the area for the benefit of the center.

Nuclear Energy Development

Supporting factors

There are at least three important things that can encourage the PRC government to see this potential (May, 1998). First, there is an urgent demand for energy availability for present and future PRC domestic electricity needs. For this reason, various preparations need to be made as early as possible. The PRC's nuclear industry can be said to be still in its infancy, but a complete industrial system covering uranium exploitation, reactor construction, training of human resources for permanent operations, and infrastructure development is being developed and continues to be developed. The PRC has set its goal to have around 20,000 MWe units by 2050. If this is realized, then nuclear energy, which currently accounts for only about one percent of the total electrical energy in China, will increase to about 15 percent, which means reducing the burden of electrical energy run by coal. Although it is not expected that coal will replace coal in a short period of time, research on the use of nuclear energy as home heating, as heating in industrial processes, and for the production of liquid fuels continues to be carried out.

Second, there is the fact that China has large uranium reserves. It is estimated that China's crude uranium reserves are approximately 100,000 tons, which is capable of supplying 15,000 MWe of a pressurized water reactor—which is considered a relatively safe and appropriate reactor type—for 30 years.

Third, there is foreign interest to cooperate and invest in this field. In this case, the country that has actually entered into a cooperation agreement with the PRC is France worth US$ 2.83 billion. This value is greater than the total exports of France to China in 1994. In this cooperation, France will supply two nuclear reactors for the Daya Bay expansion project, which in its implementation will be coordinated by Framatom, a representative company of France. Each reactor has a capacity of 900

Mwe (mega watt electricity) units. The contract includes $1.13 billion for nuclear core equipment, $567 million for conventional spare parts and $189 million for equipment connecting the two. In addition to this, eight new projects with a total capacity of 6,600 MWe are currently in talks and under construction. Six of these new projects, two each in collaboration with France, Russia and Canada. In addition to this collaboration, the PRC has operated one of its own domestically made reactors with a capacity of 300 MWe units in Qinshan. Two of the new projects above are also domestic projects.

Inhibiting factors

There are at least three things that can hinder the realization of this project (May, 1998). First, there is a bad precedent regarding the management of nuclear rectors in the world which causes environmental and radiation damage. At least two of these great tragedies: the accidents at Three Mile Island in 1979 and at Chernobyl, Russia in 1986 are enough to represent how mismanaged this nuclear energy project can have fatal consequences. In addition, the final product waste treatment process, protection from radioactive threats is also not something that can be done simply. This emphasizes the need for a truly sophisticated but safe supporting technology factor if this project is to continue.

Second, the negative world view of the PRC regarding the use of nuclear power. It is well known that the PRC has previously owned and developed technology to develop nuclear weapons, such as missiles and the like. In fact, on various occasions, the PRC's military leaders have always linked their advanced technological warfare systems with missile weapons systems which are now more complete in types, both at short, medium, far, and even intercontinental ranges. Furthermore, the PRC also has a bad record in terms of nuclear weapons for purely economic purposes without looking at the world's security side. When Iraq and Iran went to war, the PRC supplied about 57% of the weapons. From Iraq, China received US$ 4.2 billion, while from Iran US$ 3.3 billion. The party that feels most responsible for controlling the PRC's attitude is none other than the United States. Various efforts were made—such as involving the PRC in the framework of the NPT (non-proliferation nuclear treaty) or the MTCR (missile technology control regime)—which in essence made the PRC easier to control. In this regard, the main line of US policy is to monitor the availability of nuclear material and technology that can be used for the purpose of making nuclear weapons.

Such conditions clearly create an unpleasant situation in the context of international relations. There is a kind of feeling of insecurity, not only for the countries around the PRC, but for the world as a whole. This in turn raises the attitude of distrust of most countries in the world regarding the PRC's activities in this nuclear energy project.

Third, students and non-governmental organizations are ready to attack government policies if they make the slightest deviation. So far, the general Chinese public acceptance of this nuclear installation project has not been too critical. This is evidenced by the lack of actions or protests regarding this project. However, that does not mean that there is no activity at all from this group. Their current actions tend to be more directed at controlling the PRC's nuclear policy which is considered dangerous and has a negative effect on the environment, in the sense that it is not for peaceful purposes. Like what a Greenpeace activist, Ann Dingwall, did when the PRC conducted a nuclear test in around August 1985. She said that the test in a remote area of Western Xinjiang was a disaster for international efforts to achieve a complete test ban. For this effort he was deported from the PRC to Hong Kong. In addition to these actions, there were also demonstrations at Tian An Men Square by the Greenpeace group.

CONCLUSION

Bringing together the supporting factors and inhibiting factors from the two cases above, so far the visible trend is that the PRC government will continue to strive to maintain its energy policy, but by making improvements that are felt to be very necessary in order to be effective. This is inseparable from the existence of the PRC's economy as well as its environment which means the existence of the country itself in the future.

In terms of the lack of infrastructure in the Xinjiang region, the PRC government has so far made efforts to build a 219 km paved highway to connect it with other oil fields. Later this road was extended with an additional US$ 300 million to 370 km to deal with increasing oil transportation. In addition, the new Urumqi international Airport, which can handle one million passengers a year, was operational by the end of 1997.

For ethnic issues in Xinjiang, the PRC government politically has so far taken approaches, especially to the leaders of its neighboring Central Asian countries, such as Nur Sultan Nazarbayev and others by holding a meeting in Shanghai, China in April 1996, which ended in assurances that in the case of separatism, the leaders guarantee not to support such actions. Economically, the PRC government began to actively develop this region, starting with the construction of 80 new skyscrapers in Urumqi, the capital of Xinjiang. In addition, the government has invested one billion yuan in the development of the rural areas of Xinjiang. This issue indeed needs special attention because it directly intersects with the position of neighboring countries which are culturally and linguistically close to the people of Xinjiang. Because if not, it is possible that unexpected conflicts will arise.

The PRC's step in preparing for this nuclear project is to choose a pressurized water reactor as the reactor that is considered relatively the most appropriate and safe to avoid things that are not desirable. This is one of the PRC's

ways to reduce the pressure on the NGOs. This step should be followed up with efforts to implement "The Code of Practice for International Transboundary Movement of Radioactive Waste" in order to reduce the detrimental impact of nuclear radioactive waste. As for the attitude of the international community towards its nuclear policy, the PRC faces it based on the basic principle of not wanting to be too pressured on its sovereignty. However, this is offset by his support for international institutions related to this matter such as the NPT, CTBT, MTCR (which in writing has been supported since 1992 even though the PRC is not a member), and so on, although this is done only as a silencer. while the PRC itself does not intend to be actively involved in it. This can be seen from the violations he made, such as the 1995 nuclear test, the sale of nuclear weapons, and so on.

What is stated above is certainly still far from what it should be, if we want to see through the "glasses" of an idealist. There are still many shortcomings that need to be eliminated immediately by the PRC. What has been carried out as described above is the first step which is the motivation for the next steps if the PRC really has a strong desire for its energy policy, especially the management of the two energy sources mentioned above. Do not let it happen that the PRC is only concerned with meeting its energy needs but ignores safety, security and environmental aspects, both domestically and internationally.

Regardless of the efforts made by the PRC in order to fulfill its energy needs, there are two important points that can be taken, namely that from a positive perspective, actually fulfilling this energy need is no longer a mere domestic problem of a country. Energy is a need of the international community to be able to exist. Not only in the form of energy itself, but also in the form of products that are needed by the international community which are impossible to obtain if energy as its constituent factor does not exist. This will then lead to international cooperation.

Seen from the negative side, energy can also cause insecurity if it is not used properly, or for peaceful efforts. This can be seen from nuclear energy which can turn into deadly nuclear weapons or destroy the environment if not managed properly. This can then lead to international conflict.

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