THE COALMINES IN MY HOMETOWN

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ABSTRACT

My hometown is a place of coal origin. The type of mining is underground mining and the work is really hard. Because of the coal-dominated energy resources, China needs coalmines for economic development and coalmines will exist within a relatively long period in the future. Coal burning holds a high efficiency for power generation, and also brings harmful emissions. In this report, I just want to discuss something about what coalmines bring us in the view of a person living next to coalmines.

INTRODUCTION

My hometown is located in the junction of Jiangsu and Shandong provinces in China, in the west side of Weishan Lake, mining a total area of 245 square kilometers. It's not a large city but a large corporation. The corporation's name is Datun Coal and Electricity (Group) Co., Ltd., which is a subsidiary of the China National Coal Group Co., Ltd.

It has been constructed and developed by Shanghai in 1970. And after nearly 40 years of development and construction, it has formed an industrial chain of coal, electricity, aluminum, rail transport, and an integrated comprehensive management, with four pairs of coalmines, four coal preparation plant, a power plant, an aluminum plant, an aluminum processing plant, and 179.3 kilometers of rail lines, also has a mechanical system repairs, construction and installation, car transportation and logistics services, and other units. And before 1970, it seemed to be a wilderness.

UNDERGROUND MINING

The type of my hometown's mining is underground mining. The big machines can't enter the underground because there is no enough space. Many people go to the underground for working every day. It is really a very hard work. Despite a series of measures to protect their safety, accidents still happen occasionally in the time unexpected.

The coal mining maintained everyday includes Saturday and Sunday. It doesn't mean that there are no holidays for workers, but means that the production of coal cannot be stopped, because the beginning of the whole production chain is coal. The mining is only closed around the Spring Festival. In those days, the aluminum plant and the aluminum processing

plant can be also closed, but the power plant can't.

Many technologies are applied underground such as drift mining, slope mining, shaft mining, and shrinkage stope mining and so on.

The choice must be based on geological conditions of coal mining technology and economic conditions. Choose a good and reasonable mining method to maximize safety at work and to meet the large output, high efficiency, high quality, low cost and high rate of coal mining requirements.

POWER GENERATION BY COAL BURNING

A simple understanding of power generation by coal burning power is that plants burn coal to make steam and the steam turns turbines that generate electricity.

Coal burning holds a high efficiency for power generation, because it is relatively cheap. For my hometown, coal is just under the ground and our task is to take it to the surface. It is relatively easy to transport because it is a solid.

Recently, the International Energy Agency (IEA) released its annual flagship report "World Energy Outlook 2009."

> *"The main driver of demand for coal and gas is the inexorable growth in energy needs for power generation…Coal remains the backbone fuel of the power sector, its share of the global generation mix rising by three percentage points to 44% in 2030. Nuclear power output grows in all major regions bar Europe, but its share in total generation falls."* [1]

PEOPLE'S LIVING COST

Cost of electricity is very low in my hometown. The electricity is 0.25 Chinese Yuan per KWh, which equal to 3.282 Japanese Yen or 0.036 American Dollars. I even cannot find such a low cost in China. And it seems impossible in Japan. Now I must pay 2000-3000 yen for the electricity per months, which means about 16 Japanese Yen per KWh!

I never worried about power outages. The power plant works in 24 hours. Even if an accident occurs, there is a plan to deal with it. My hometown has experienced a disastrous tornado last year. Some houses' roofs were blown away but others' electricity is never stopped.

Because of advanced mining technology and constructions underground, groundwater can be taken easily. The water is cheap relatively. And of course the coal gas is cheap, too. In winter, every person has heating in his own house instead of an air-conditioner, which makes the room warmer so slow that one can only feel a little warm air with high cost of power.

EMISSIONS OF COAL BURNING

The combustion of coal produces several types of emissions that adversely affect the environment. The five principal emissions associated with coal consumption in the energy sector are:

- Sulfur dioxide (SO_2), which has been linked to acid rain and increased incidence of respiratory illnesses
- Nitrogen oxides (NO_x), which have been linked to the formation of acid rain and photochemical smog and to depletion of the Earth's ozone layer
- Particulates, which have been linked to the formation of acid rain and increased incidence of respiratory illnesses
- Carbon dioxide (CO_2), which is the primary greenhouse gas emission from energy use.
- Mercury (Hg), which has been linked with both neurological and developmental damage in humans and other animals. Mercury concentrations in the air usually are low and of little direct concern. However, when mercury enters water — either directly or through deposition from the air — biological processes transform it into methylmercury, a highly toxic chemical that accumulates in fish and the animals (including humans) that eat fish.

PEOPLE'S LIVING ENVIRONMENT

I feel sorry that my hometown is not a beautiful town. In fact, the environment is dirty.

I don't like the sky of my hometown. The sky always looks gray, especially when I am unhappy. I cannot see any clouds on the sky but black smoke there. When I was young, there were two towers of black smoke emissions in the north of my home. Now I don't know whether they are still there or not since I have moved to another house far away the original one, but I can still see the gray sky.

I also remember that I used to see some coal cinders in the center of the road which the coal trucks always passed by. Although I can't find those coal cinders now, the dirty road is remained in my memory forever.

Certainly the air is not good. My father has got chronic laryngitis and always coughs heavy. This is all attributed to the coal mine.

BY CONTRAST

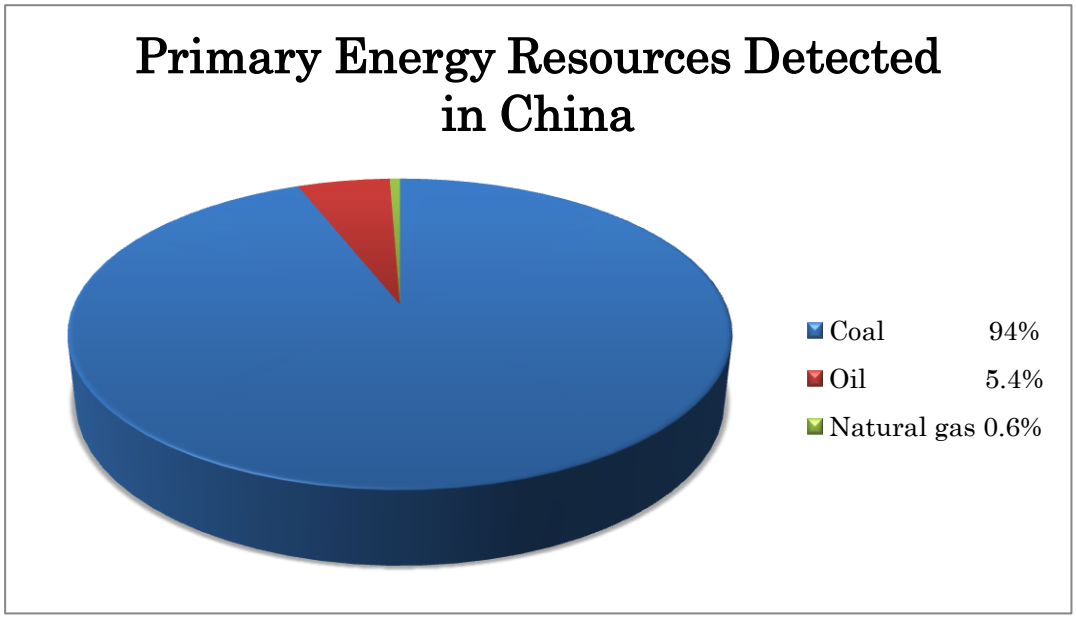
Living next to a coalmine brings both advantages and disadvantages. People have to face a life with low living cost but harmful living environment.

For me, I have no choice. But if I had the opportunity to choose, I would choose to stay away from it. There is a simple reason that life is more important than money.

For a coal miner, he will prefer to live around it. No person will prefer to work far away from

his home and a coalmine can also solve his livelihood problem.

For China, coalmines are needed for the economic development.



Graph 1 Primary Energy Resources Detected in China

In the International Coal Summit 2009 on 26th October, Xianzheng Wang - the president of China Coal Industry Association analyses the current primary energy structure in China, and pointed out that the dominance of coal will continue in the future.

> *Among the primary energy resources detected in China, coal accounted for 94%, oil and natural gas accounted for 5.4% and 0.6%. China's coal-dominated energy resources decision that the coal-dominated energy structure is difficult to change within a relatively long period in the future. [2]*

So coalmines will exist for a relatively long time. There must be a group of people to develop coalmines and live around them. Just as there must be some programmers to write programs, although they all know that the PC's electromagnetic radiation is harmful to their eyes.

In conclusion, some people will work in the coalmines and others won't. This is not determined by their will but their self-development. That's the fact.

REFERENCES

[1]International Energy Agency (IEA), "World Energy Outlook 2009", 10 November, 2009

[2]Xianzheng Wang, the president of China Coal Industry Association, Speech in "International Coal Summit 2009" in Beijing, 26th October, 2009