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Research Article

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Research of status of the construction of coal-free zone in Shijingshan district

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ABSTRACT

The features and existing problems in clean energy supply in Shijingshan District have been further studied, then the typical pattern of refined coal can be summarized to promote the upgrading and sustainable development of industry. Under the background of development a green economy, it is necessary to study the Planning of no coal zoon active construction in Shijingshan District. The situation has been analyzed from aspects of Northwest Thermal Power Center Project, general overview of boilers coal-fired, civil loose coal usage and adjusting polluting enterprises. Then four problems have been summarized in aspects of the means to replace coal, reconstruction funds, pipeline construction, reward and punishment intensity and regional planning during the construction of coal-free zone of Shijingshan District in order to provide a solid foundation for achieving "green Shijingshan" goals. Finally, the corresponding policy recommendations have been put forward.

Key words: Shijingshan District; no coal zone construction; policy recommendations

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INTRODUCTION

During "Eleventh Five-Year" period, in order to actively respond to global resources, environmental issues and challenges, Shijingshan District focus on the construction of "Green Beijing", "world city" and a strategic task of creating Beijing CRD, firmly grasp the main tone of "big adjustment, large construction big development ". Air pollution controlling has been seen as the key to continuous improvement of environmental quality. Therefore, actively promote the relocation of Shougang, energy conservation, and the development of light industry have been done in order to providing green Shijingshan a good foundation. It is inevitably for Shijingshan District to face with the problem of reducing the coal to achieve this goal of "green Shijingshan". So, it is necessary to In-depth study of the status of Shijingshan District and put forward the corresponding policy support.

THE NECESSITY OF THE CONSTRUCTION OF NO COAL AREA IN SHIJINGSHAN DISTRICT

Environmental issue is related to human health and survival. It has been a hot topic of people care and scientific research. Beijing haze weather has become an important issue for all people in the capital, including even the world, particularly those involving the formation of haze has caused more and more people's attention. Pollution in Beijing is mainly divided into four categories, the first is vehicle emissions, this proportion exceeds 50%; second is fired, "contribution" of fossil fuel combustion of the residents is close to 30%. From a single source of pollution, coal-fired power plants are the largest source of emissions in Beijing. Installed capacity of coal-fired power plants in Beijing four up 3696 MW, among which the installed capacity of Jingnneng Power Plant in Shijingshan District is

1180 MW, and it annually burns 10 million tons of coal accounting for half of the total coal of Beijing. It can be seen that reducing the coal of Shijingshan District is important for Beijing.

Therefore, It is meaningful for Shijingshan District to further study of characteristics and problems of clean energy supply in and summarize and refine typical pattern of coal reduction work, and promote the upgrading and sustainable development of the industry in the context of pioneering the development of a green economy The achievements of such studies will play a positive role for the development direction of the long-term phase of construction in Beijing.

STATUS ANALYSIS OF THE CONSTRUCTION OF COAL—FIRED DISTRICT IN SHIJINGSHAN

Total coal usage of Shijingshan District 5,375,960 tons in 2012, among them, power plants, industrial boilers and other civilian bulk coal respectively accounted for 99.15%, 0.15% and 0.7%, respectively.

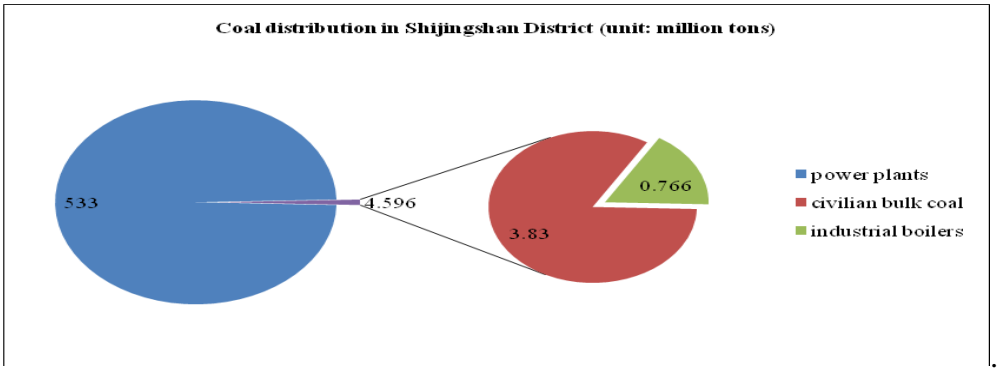

Figure 1 Coal distribution in Shijingshan District (unit: million tons)

As the main areas for winter heating in Beijing, coal-fired boilers for heating has became a major focus of the problem of Shijingshan District in building no coal-free zone. A large amount of coal consumed annually energy. Thus, coal-fired boiler renovation project is the focus of construction of clean energy in Shijingshan District.

Table 1 The heating providing capacity and coal usage of each unit of Shijingshan District in 2011

NO	Heating unit name	Area (acres)	Number of units * tons of steam	Heating area (ten thousand square meters)	Reduce the amount of coal (ten thousand ons)
1	Beijing Xing Gimhae real property management center	5.3	3*20	62	1.2
2	Ma Yu Industry and Trade Company	165	19*33	29	0.39
3	Beijing Lugu central heating plant	52.5	4*40, 1*65	210	5.2
4	Beijing Heavy Electric Machinery Works	37.5	3*41	163	4.5
5	Beijing Shougang Machinery Co. Heavy Machinery Branch	15.0	5*20	12	1.0
	Total	275.3	541	447	12.29

Note: By the end of 2011, a total of 447 tons of steam coal-fired boilers exist in Shijingshan District, the annual coal consumption is 122,900 tons.

In early 2012, according to the Beijing Municipal Development and Reform Commission related arrangements, Shijingshan District Development and Reform Commission organized a comprehensive diagnostic statistics of small coal-fired boilers, industrial coal-fired boilers. According diagnostic view, there are nine district offices. Small coal-fired boilers have existed in eight district offices except for Babaoshan Street area. At the end of 2011, there were 12 small coal-fired boilers (business use), the annual amount of coal usage is 27.62 tons coal; 15656 small coal-fired boilers (home use) and use 4,206 tons coal per year. There are total 15,668 small coal-fired boilers in Shijingshan District, the amount of coal usage is 4233 tons.

Table 2 Boiler basic situation of Shijingshan District

Street	Boiler number (corporate use)	Coal-fired capacity (kg)	Stoves number (home use)	Coal-fired capacity (kg)
Jindingjie Street			1842	3684000
Lugu street			3338	13565000
Bajiao Street			949	1138800
Wulishe Street			1846	2215200
Gucheng Street			3959	6415000
Laoshan Street	2	16200		
Guangniing Street	10	260000	3370	15000000
Babaoshan Street				
Pingguoyuan Street			352	44892.5
Total	12	276200	15656	42062892.5

At June of 2013, a total of 21,007 households coal exist in Shijingshan district, the coal usage was about 36,500 tons, the specific circumstances is in the following table.

Table 3 Shijingshan District cottage areas Overview of coal

Belongs streets	Community Name	Coal units (household)	Cooking coal (tons)	Total coal (tons)
Pingguoyuan Street	Bianfu community	1290	967	1663
	Langshan community	685	514	880
	Xihuancun community	4200	2555	4823
	Xijing community	700	525	903
	Xishanfenglin first community	459	344	590
	Xishanfenglin second community	150	112	193
Total		7484	5017	9052
Babaoshan street	Qingnianlou community	26	0	38.6
Total		26	0	38.6
Lanshan street	The eleventh yard	3	12	16.38
	Hejiafen	2437	0	1219
Total		2440	12	1235
Jindingjie street	Zuzao community	94	25	334
	Xifu community	71	18	291
	Moshilou community	377	153	2946
Total		542	106	3571
Gujie street	The north community	3	20	25
	Huantie	18	18	36
	Xilubei	4	0	4
	Tianxiang	30	5	1
	Dajie	820	70	1995
	Tiexin	623	0	1869
	Nanbeishashe	1000	500	6500
	Shuinnichang	2	1	2
	Baimiao	435	35	235
	Pangcun	8	10	20
Total		2943	659	10687
Bajiao street	Jingyang east street	757	30	503
	Jiangangnanli	138	95	265
	Guchengnanli	11	0	37
	Guchengnanlu	14	0	6.7
	Gongyuanbei	3	0	3.6

	Yangzhuangbeiqu	10	0	12
	Yangzhuangzhongqu	8	1.3	2.3
	Bajiaolu	6	0	4.7
	Bajiaobeilu	10	0	6
	Bajiaonanli	8	1	5.64
	Bajiaobeili	1	0	1
Total		966	127.3	847
	Dongshan community	5	0	13.5
	Gaojing community	26	0	93.5
Guangning street	Xinlijie community	14	0	29.5
	Mabei community	290	0	1045
	Manan community	721	0	1374
Total		1056	0	2556
	Yadong	1213	200	2166
Lugu community	Yaxi	1834	370	2118
	Yanan	1430	170	2010
Total		4477	740	6294
	Longensi community	336	0	1007
Wulishe Sreet	Gaojing Community	614	0	926.5
	Heishitou community	123	0	344.4
Total		1073	0	2278

THE MAIN PROBLEM OF CONSTRUCTION OF COAL—FREE ZONE IN SHIJINGSHAN

Through the investigation to construction of no coal-fired in Shijingshan District, district, northwest heating located in Shijingshan District will reduce the total amount of about 6.4 million tons of coal-fired power plants, but the total area in coal usage amount is still about 20 million tons, northwest electric Center only solve about a quarter of coal consumption, coal usage is still a huge amount in Shijingshan. The main reasons for this situation are the following aspects of the problem in the transformation process.

A. Pipeline construction defects

Due to ill-defined range of coal-fired boiler pipeline business unit and gas trunk sparse reasons, common problems exist in the branch pipeline construction. Some units need to build a long branch pipeline to introduce natural gas, thermal energy, and the laying of the pipeline extension need high cost which units participating in the reconstruction project cannot afford. In addition, the current branch network needs to be built by units who are along the line to the construction and can benefit from it, while it is difficult to define the pipeline construction responsibilities clearly as both sides or multi-unit, so management apartment not only need to do a lot of coordination, and often make the building works very long time delay, to a certain extent, it affected the transformation enthusiasm of user.

B. Single means for coal

For the central region of Shijingshan District, there are mainly two means to achieve no coal zone, namely natural gas and urban heat, for other forms of clean energy, such as electricity, oil, liquefied petroleum gas, solar energy, etc., which cannot be extensive used because of no reliable market supply and price guarantee. Electric heating has been implemented in dozen rural villages, at the same time use of heat pumps, solar and other clean energy for heating have been promoted, but the scope is narrow, not universal.

C. Insufficient Transformation funds

Without considering relocation fee , only coal-fired boiler room transformation and pipe network investment , average cost is 670,000 yuan on / tons of steam , after taking into account the cost of demolition, renovation costs much higher than this value. 280 million yuan estimated of funds is needed for Shijingshan region to complete transfirmating four coal-fired boiler room. From a fact of Shijingshan District , progress in the transformation of no coal area is not very well, where exist financial pressure. No source of funding is a major problem. General source of funds is include government subsidies , units and other units raised subsidies . But relying on financial allocations administrative institutions, there is no special financial set aside for reconstruction funds , financial subsidies amount

account for only 15 % -35 % of the total investment transformation. So ome operational difficulties businesses can not afford and it is still difficult for some companies that have some benefits bear the huge cost of reconstruction (especially network investment) and operating costs .

D. Inadequate reward and punishment

In the implementation of non-coal-fired boiler area construction and cleaner promotion work, due to inadequate incentives, and no punitive measures, resulting in some coal-fired boiler units still go its own way and not positive improve participation in the transformation of coal-fired facilities or production equipment during the transformation process of the implementation of the project. Many units want to transform the unit also hold a wait and see attitude, delaying the progress of the coal district building, which increased the difficulty of building coal-free zone .

E.Many planning contradiction

Old residential renovation project is one of a priority in the process of no coal zone building of Shijingshan District. Since some narrow roads and high building density of the old city, it is easily entangled with the other lines if gas pipelines are arranged, and the spacing between along buildings is too narrow, the spacing between proposed regulator station and adjacent buildings would be difficult to meet the requirements of the existing fire protection specifications.

In addition, in water source protection areas, the environmental protection department does not allow the construction of underground tanks, while the fire department does not allow the construction of the ground tank. Because of these problems, it is difficult to complete transformation in a short period, which plagued life of old district residents, which is difficult to gain the support of community residents.

SUGGESTIONS

Focusing on above five points, combining with prospects and requirements for China's carbon emissions and energy transformation [1-4], with reference to the construction of clean energy experience abroad [5-9], following five aspects recommendations on the Shijingshan District no coal zones have been put forward.

A.Clear job responsibilities, and enhance scientific and technological support

District and county governments have to implement territorial responsibility, and the construction units, the main responsibility have to implement subject responsibility. They should cooperate to finish coal-fired facility improvement as planned and in accordance with the strict time node. Various functional departments should improve work efficiency, expedite approvals and other related procedures.

B.Develop of policies and increase financial support

Financial support should be increased, and capital investment should be gradually increased. Energy-saving technological transformation, new technologies and products and cleaner production should be promoted, and backward production capacity and environmental protection projects should be eliminated.

C. Strict regulatory and quantitative assessment indicators

The objective assessment should be strictly implemented. Decomposition table should be set up by leading work group of coal reduction. Main co-organizers should be determined in time and the tasks should be assigned to the appropriate departments, industries and enterprises. Internal accountability and reward system and specific measures for implementation of assessment should be established as soon as possible. At the same time environmental upgrading should be accelerated.

D. Strengthen co-scheduling and coordinate organizational leadership

The leading group of Shijingshan District should be responsible to strengthen co-ordination and solve major problems in the work. Further strengthen the comprehensive management of air pollution and thermoelectric Northwest coordination center project. Coordination of linkage among various departments should be strengthened. From all aspects of industrial development, ecological construction, low-carbon energy, environmental protection, recycling, the work of coal-fired reduction should be advanced.

E.Mobilize public participation and promote training

Annual coal reduction work information should be announced by radio, television, newspapers, Internet and other media means timely. Advice hotline should be established for public to collect public consultation and accept social supervision. Green production and green new consumption ideas should be advocated. A good atmosphere "starting with me, everyone involved in" should be created.

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