

Study on the Development of the Industrial Recycling Economy in Wuhan of China

Li Zhihong, Liang Dong

Business School, Jiangnan University, Wuhan, P.R.China, 430056

(E-mail: linanwudingbang@163.com, sxylid@163.com)

Abstract Industry has been playing an important role in Wuhan economy. With the wide concerns to the environment, the industrial recycling economy is becoming obligatory in Wuhan. The paper adopts a case research method, makes a deep analysis of the actual situation of the industrial recycling economy in Wuhan and raises some key problems that interfere with developing the recycling economy in Wuhan and thinks that it is obliged to find out some approaches to solve these problems. This paper has set up systematic countermeasure structure to construct Wuhan industrial recycling economy and draws conclusion that the implementation of the countermeasures depends on generalization of clean production ideas, establishment of relative standards and norms, technique reforms and investment to the enterprise, governmental policies and service, etc.

Key words Countermeasures; Recycling economy; Industry; Wuhan

1 Introduction

From 2003 to 2008, the environmental protection has achieved much progress in Wuhan. The industrial output value has been increased steadily year by year, but the increase rate has fluctuated much from 2003 to 2008 (see Figure 1). As the environmental protection attracts more and more attention, the industry is also focused on in Wuhan. Especially, the construction of the “Two-Oriented Society” aims at a fast and better development of the social economy, which has brought Wuhan historical new opportunities in its progress. The “Two-Oriented Society”, namely, resource conserving and environmental friendly one, requires that a new-typed industrialized path with high technology content, better economic benefits, low resource consumption, little environmental pollution and a full play of the human resource advantages should be opened up on the basis of obeying the ecological laws and of centering on raising the utilized efficiency by recycling.

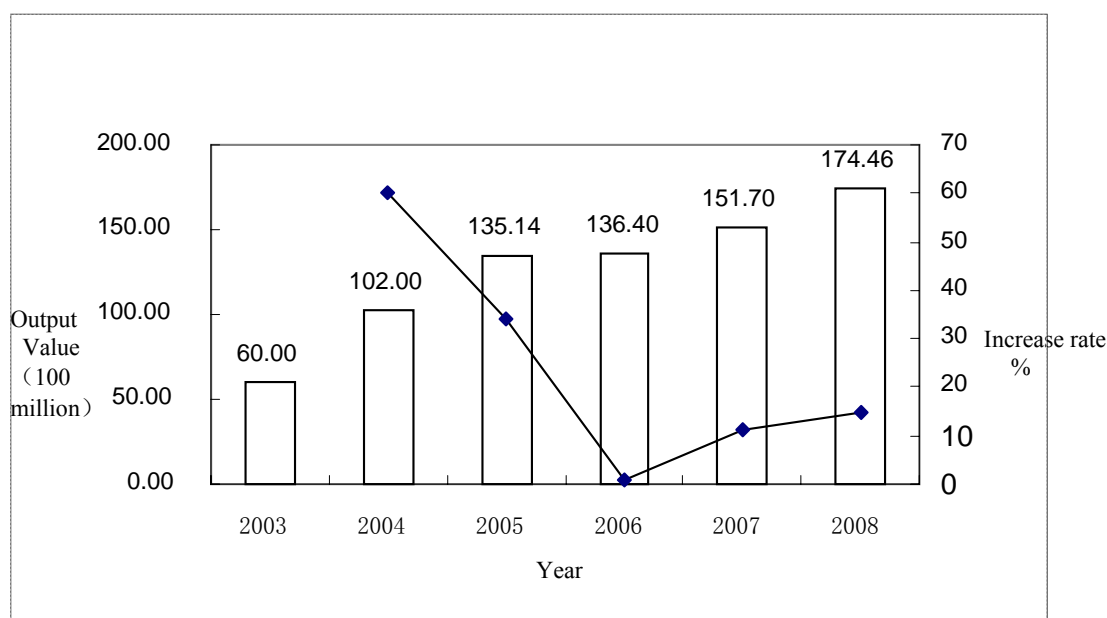


Figure 1 Output Value and Increase Rate of the Environmental Protection Industry in Wuhan from 2003 to 2008

2 Actual Situation of the Industrial Recycling Economy in Wuhan

Since 2005, such enterprises as Wuhan Steel Group, Wuhan Chemical Group, and Dongfeng Citroen Peugeot Automotive Co.ltd, etc have been chosen as first pilots in clean production, on which Wuhan Clean Production Center is being built. Now, the districts like Dongxi Lake and Qingshan have been determined to be pilot industrial parks as national recycling economy. An initial success has been achieved in constructing the industrial recycling economy.

2.1 Patterns of the industrial park in recycling economy have preliminarily formed

In Dongxi Lake Park, the recycling economic circle centered on Shiyuan Electricity Generating Station has been established. An industrial ecological chain such as electricity, heat, steam, used water recycling, fly ash, and fertilizer has been set up. In Qingshan recycling economic Pilot Park, four ecological industrial chains in recycling waste iron and steel, magnetic materials, fly ash, and granulating slag have been formed. All these chains have produced good economic and social efficiency.

2.2 Typical enterprises are being born

Some enterprises have been well experienced in developing the recycling economy. Wuhan Steel Group has realized energy saving steelmaking by adopting new technologies of energy conserving and consumption reduction as TRT, flue gas waste heat recovery, and soft water seal circulation cooling and so on. Also, it is engaged in comprehensively reuse the resources and fully recycles the metallurgical residue, steel scrap, waste water and gas, etc so as to minimize their damage. Wuhan Huarun Snowflake Beer Co.ltd attaches much attention to recycling the resources in its whole production process. On the one hand, the by-products in the processing as distillers' grains, coal cinder, and waste trademark, etc are being recycled to reduce waste emission as much as possible, which produces an economic benefits of five million yuan for the enterprise every year; on the other hand, the enterprise increases the investment to the production techniques and relevant recycling equipment reform and maximizes the reuse. For example, the updating and transformation of CO₂ recycling equipments raises the recycling rate by 100%. Besides, the enterprise strives to conserve energies and reduce ejection and raise the energy efficiency. The reform of dynamic low pressure technique is made by F line sugar boilers, which can save 1400 ton coal or so every year and cut down the ejection by 2 tons of sulfur dioxide and by 2.7 tons of smoke dust.

3 Main Existing Problems

3.1 Lack of enough cognition to the recycling economy

Some departments still regard GDP as hard tasks. As a result, partial enterprises lean to production and operation and neglect the energy conserving and ejection reduction. Therefore, clean, intensive, conserve, recycle and ecological development has not been paid much attention to.

3.2 Insufficiency of the guarantee mechanism to develop recycling economy

The price mechanism for the resource-typed products can't reflect the scarcity of the resources, the cost damaging the environment and the relationship between demand and supply. The laws and rules recycling the resources are still to be improved.

3.3 Recycling economic industrial parks are to be expanded

Although Dongxi Lake Park and Qingshan Park have been started, the industrial parks in the other municipalities and the recycling economy in the province-level development districts have not been begun, yet. So, the industrial systems in the park such as sharing resources and exchanging by-products haven't been set up.

3.4 Constraints in funds and technologies

Enterprises want the inner and outer motivation to increase fund inputs and the stable input mechanism to support recycling economy by the governments in various levels. And R&D in the resource conserving and environment protection is so weak that the key technology in upgrading the efficiency reusing and recycling resources is in urgent needs.

4 Countermeasures

4.1 Establishment of norms and conceptions

The industrial standards and norms of the recycling economy should be formulated and the ideas of the clean production and resource conserving technologies generalized. The enterprises should be guided to learn from the pilot ones and lay down the measures to implement the recycling economy. Concretely, 65 important enterprises will be supported to carry out the projects pushing the recycling

economy and clean production, 20 recycling economic ones are to be started and 40 example clean production ones to be opened.

4.2 Technological reform in energy conserving and ejection reduction to be sped up

70 reform projects in the energy conserving technique and 30 ones in the polluted water treatment, sulfur dioxide and industrial dust treatment will be launched. In the 8 technique fields of the energy conserving and ejection reduction, 50 projects in the technique development and outcome transformation are to be focused on.

4.3 Relocation and reform of the enterprises to be accelerated

The industrial enterprises located in the central city are planned to move towards the planned industrial parks and development districts. Also, their technique reform is to be implemented and the production techniques are to be raised.

4.4 Backward production capacity, techniques and equipments will be eliminated

For example, in 2008, 2 generator sets with 24 thousand kilowatt were shut down in Qingshan Nanmu Power Plant and in 2010, 3 with 300 thousand kilowatt will be closed in Qingshan Sujiawan Power Plant.

4.5 Investment to be increased

The financial funds ought to be increased and encouragement mechanisms in energy conserving and ejection reduction to be set up. The special funds for energy conserving of over 10 million yuan are provided every year.

4.6 Policies in electricity demand management and its discriminatory pricing to be issued

On the occasion of “Two-Typed Society” construction, the discriminatory pricing can be adopted more extensively and the electricity used price for the high energy-conserving and high pollution products will be raised. The income obtained by discriminatory is specially used to support the industrial structure adjustment and energy conserving and ejection reduction in Wuhan.

4.7 Tax policy to promote the energy conserving and ejection reduction of the firm to be made

The projects in conserving energies and the investment to the equipments specially used in the environmental protection are free from enterprise income tax. In the experimental region realizing the recycling economy, the preferential value-added tax concerns such products as comprehensive resource use and energy joint development among enterprises, etc.

4.8 Establish the institutions of objective management

The main energy-consumed enterprises ought to be set energy-conserving and ejection-reduction objectives and assessed per year and moreover the results should be published to the society. The relative encouragement or punishment will be given to the correspondent enterprises.

4.9 Governmental services

The service systems mainly aimed at the important energy-conserving and ejection-reduction enterprises are to be improved. The systems include the financial supports to the technique reform in recycling economy, environmental protection and energy conserving and ejection reduction, the contract energy management to the main energy-consumed enterprises, and the energy balance test made guiding the enterprise.

5 Conclusion

The recycling economy is a systematic complicated engineering and involves the people's cognition, technology, funds, environments, enterprises, governments and so on. So its successful realization needs conjoint efforts of individuals, enterprises and governments.

Acknowledgement: This paper is supported by Key Research Institute of Strategies and Development in Manufacturing Industry in Wuhan.

References

- [1] Wuhan Economy Council, Wuhan Statistic Bureau. A Statistic Manual of Wuhan Industry Economy 2007[M]. 2008: 6 (In Chinese)
- [2] Yu Xinguo. A Research Report on Industrial Chain and Clusters in Wuhan 2007[M]. Wuhan: Wuhan Publishing House, 2008: 448 (In Chinese)
- [3] Liang Dong, Tang Chao, Li Zhihong, Wang Wenqing. A Research Report on the Industry in Wuhan 2009 [M]. Wuhan: Hubei Science and Technology Press, 2009: 56-60 (In Chinese)

- [4] Chinese Enterprise Evaluation Association, De Wuhua Economy Information Institute Co.Ltd. Big-Sized Chinese Enterprise Development Report (2004-2005)[M]. Shanghai: Shanghai Finance University Press, 2005: 197-210 (In Chinese)
- [5] Zhang Yanning, Sun Shuyi. A Report on the Development of Chinese Enterprises 2005[M]. Beijing Enterprise Management Publishing House, 2005: 194-213 (In Chinese)