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E-Mineral Rights Market in China: Some Recommendations

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Abstract: This study investigates the E-mineral rights trade market in China. This market could improve information disclosure, transparency and efficiency of mineral rights. In China, all mineral resources belong to the country, so this Electronic trade market is both E-business and E-government. Their subjects include departments of land and resources administration, government departments, State-owned geological prospecting units, commercial geological prospecting units, social investors, and financial institutions and intermediaries. This paper introduces the mineral rights market and e-mineral rights market. Then, this paper turns to the approach used by the E-mineral rights trade market, which includes formation of the information network, construction of the database, application of the information system, and choice of key technologies. Finally, this paper recommends promoting the healthy development of the E-mineral rights trade market in China, including non-information source of information, transaction rules, transaction system, and process monitoring.

Keywords: E-mineral rights market, E-mineral rights market in China, mineral rights market in China, E-government, E-commerce.

1. INTRODUCTION

In China, all mineral resources belong to the country [1]. According to Article 2 of Rules For Implementation of the Mineral Resources Law of China[2]: The mineral resources refer to the natural resources formed through geologic function, which are of value for utilization, and existing under solid, liquid or gaseous states. This paper places the focus on non-energy mineral resources. In 2010, the mineral resource industry, together with the material goods production and construction industry yielded about 30% of China's GDP. Mineral resources mark the beginning of a value chain in industrialized economies in China. The statistical data from Ministry of Land and Resources P.R.C. (MLR) shows a total of 112,500 mines and 4,684 large-scale mines (MLR, 2004) [3], with more than 100 million tons of production. From 2005 to 2010, China's GDP increased 2.16 trillion Yuan and the primary energy sources increased a billion tons of standard coal. According to the China Land and Resources Statistical Yearbook (2009), gross industrial output value experienced rapid growth from 2003 to 2009 (See Figure 1) [4]. At the same time, the production of crude steel increased 277 million tons and the production of primary non-ferrous metal increased 15.0233 million tons production.

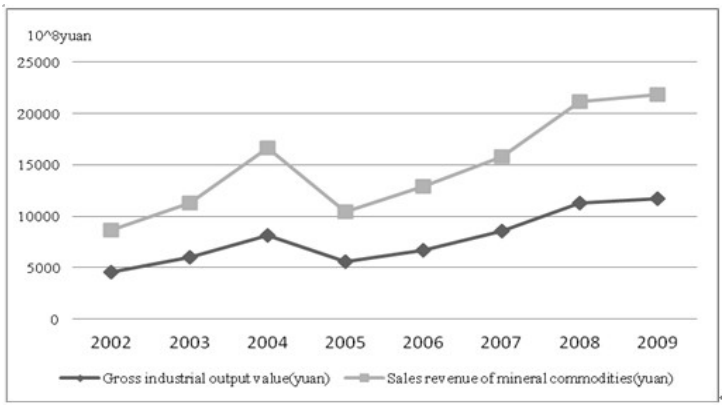

Figure 1. The development of China's mineral resources market (2002-2009)

Companies and individuals in countries where ownership is vested in the government cannot legally extract and sell any mineral commodity without first obtaining an authorization from the government [5], like in China. In my opinion, mineral rights in China are as follows:

The ownership of mineral rights is not only for exploration and mining rights, but also includes the rights for results of mineral reconnaissance (geological data) and the income from extraction (disposition, use and trade). In China, the policy theory system does not admit the latter two rights, but in practice they do exist and run.

The paper's structure is as follows; in the next section, personal opinion for the mineral rights trade market is stated and China's policy from MLR is introduced. Follow by the approach used by E-mineral rights market. In the last section, recommendations for promoting and developing a healthy E-mineral rights trade market in China are displayed.

2. E-MINERAL RIGHTS TRADE MARKET IN CHINA

2.1 Mineral Rights Market in China

The ownerships of mineral rights are obtained from land and resources administrative agencies. According to the MLR, land and resources administrative agencies of the 34 provincial, municipal, and county level should recognize the importance and urgency for establishing and promoting a tangible mining right trade market, pushing forward the market construction of mining rights, and bringing it to the public (MLR, 2010) [6]. China Land And Resources Statistical Yearbook (2009) shows that a total of 18,394 cases of exploration and mining rights being granted or transferred were performed with earning of RMB 108, 275, 980,000Yuan and the number of exploration and mining licenses issued after approval and registration were 148,294 [7] (Figure 2.).

In China, the mineral rights trade market is divided into the primary market and the secondary market. The primary market which has registration and administrative authorities of exploration rights and mining rights manages the ways of granting include examination and approval of bidding, auctioning and listing of mining rights trading, assigning exploration rights and mining rights to the applicant. The secondary market is the ways include selling, investing with evaluated rights value (including cooperation, lease, and contract), transferring exploration rights and mining rights.

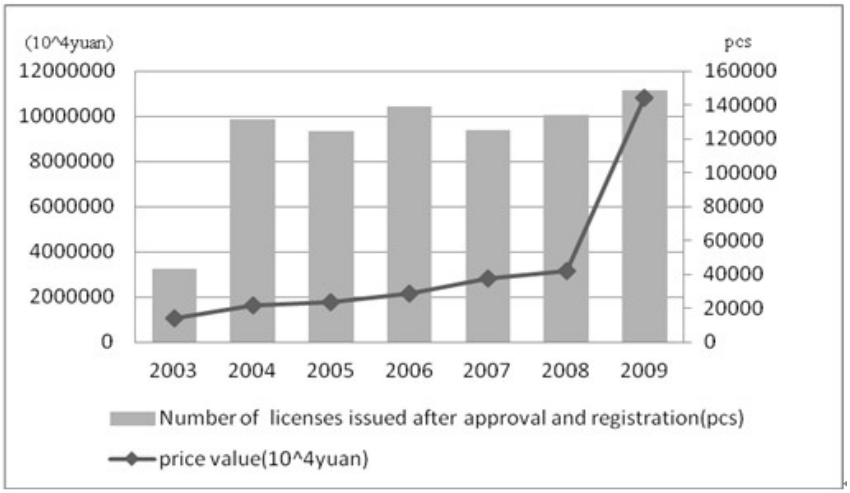

Figure 2. The development of mineral rights trade market (2003-2009)

The mineral rights market in China refers to the aggregate of all economic relationships and behaviors generated and formed from the circulation and transaction of mineral rights, including the object, subject, and media of mineral rights transaction [8]. This includes mining right trade market, the rule and system of mineral

rights issue trade market.

The mineral rights trade market is divided to the primary market, which focuses on the state assignment of its mineral resource ownership, and the secondary market, which focused on "supply and demand relationship" and is guided by the "invisible hand". These two markets have different transaction systems and methods, with the primary and secondary markets adopting mostly the method of assignment and agreement, respectively.

Bidding, auctioning and listing are major forms of mining rights trading. By the end of 2010, in most provinces of China, exploration and mining rights had been traded up to 86% of price value by this way. MLR showed that total amount of selling mineral rights is 493.16 billion RMB by bidding, auctioning, and listing. Contract value of exploration and mining rights granted through bidding, auctioning, and listing increased from 2003-2008 [9] (Figure 3).

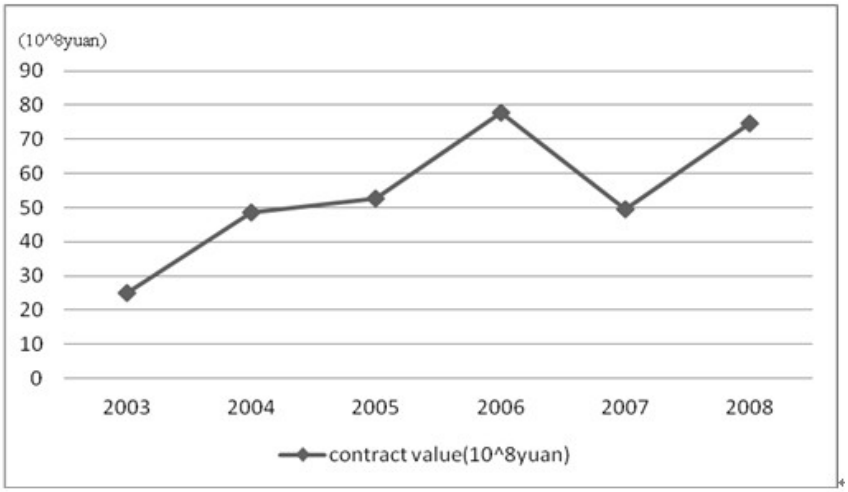

Figure 3. The development of the ways of bidding, auction and listing (2003-2008years)

Major economic relationships in the mineral rights market are reflected by the mutual relationships of "manage and managed, serve and served, and equal transaction." These also include the relationship between owners of mineral rights and mineral resources, administrative authority of land and mineral resources, mine investors, and intermediate organizations and subjects in the mineral rights market (See Figure4).

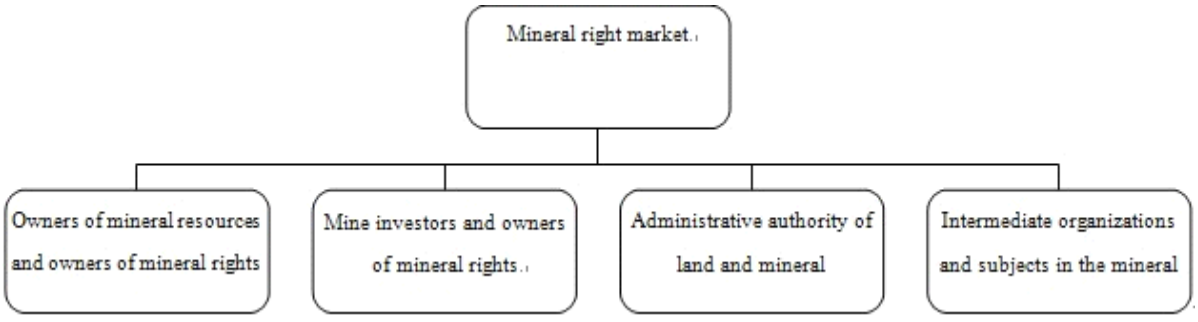

Figure 4. Major economic relationships in the mineral rights market in China

2.2 E-mineral rights Market in China

According to a report published by the MLR, 22 provinces (regions and cities) in China have built provincial-level transaction markets of mineral rights in 2011[10]. Among them, Hunan, Ningxia, Liaoning, and other provinces (regions) plan to facilitate online transaction. Some provinces (regions) have greatly promoted

the market-oriented configuration of mineral rights, while Shanxi, Inner Mongolia, and Yunnan are building the prefecture-level transaction organizations of mineral rights based on either existing prefecture and city land transaction centers or independent mineral right transaction centers. Basic prefecture-level transaction markets of mineral rights have also been built and are currently in operation. In December of 2011, the MLR published pilot provinces of the trade rule assembling file of mineral rights granting an online trading platform, which included Hunan and Ningxia. Hunan activated the web to receive bidding application, confirm bidding qualification, organize bidder's bidding exploration and mining rights on the internet [11].

This paper argues that the E-mineral rights market refers to the mining industry's economic activities, such as promotion, purchase, and settlement, are based in electronic communication. According to the classification of mineral rights market, the primary mineral rights market in China belongs to the E-government and assignment market, which adopts mainly the government to business mode; the secondary market belongs to the E-commerce and transfer market, which adopts mainly the business to business, business to customer, and customer to customer modes. This paper organizes E-mineral rights market including E-government and E-commerce; included in these are the departments of land and resources administration (D.L.R.A), government departments (G.D), state-owned geological prospecting units (S.G.P.U), commercial geological prospecting Units (C.G.P.U), social investors (S.I), financial institutions (F.I), and intermediaries (See Figure 5).

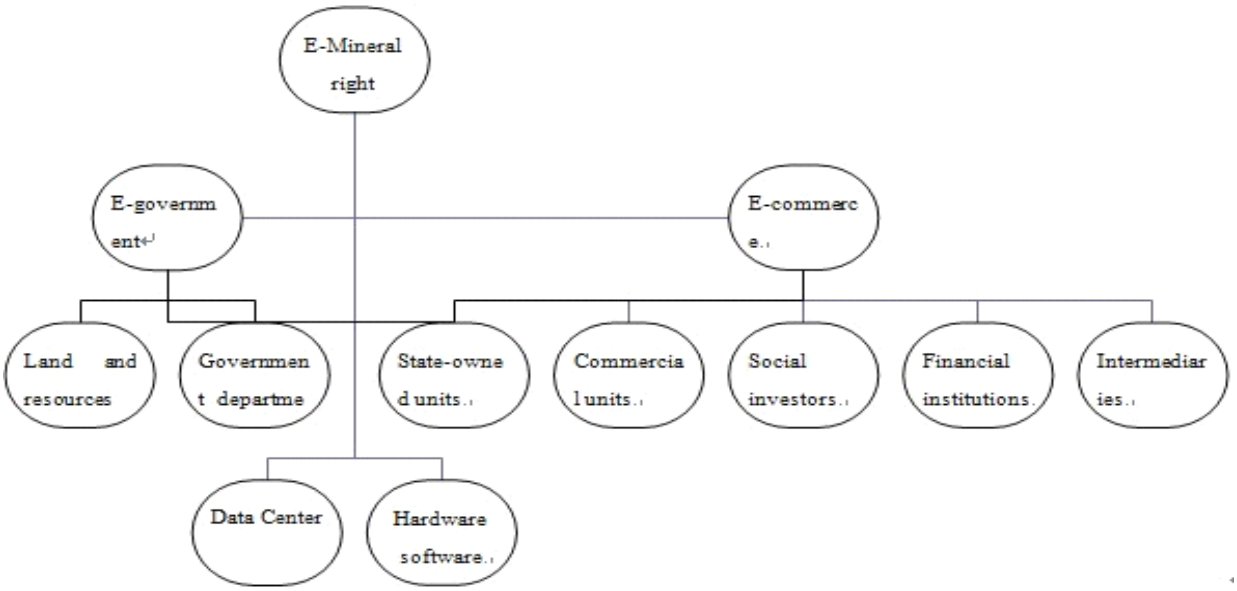

Figure 5.The framework of E-mineral rights market

3. THE APPRPOACH USED BY E-MINERAL RIGHTS MARKET

3.1 Formation of the information network

Information network is the foundation and its final aim is to build a platform of public telecommunication networks consisting of four major telecommunication networks (Post and Telecommunication Network, Cable TV Network, Data Network and Satellite Network), as well as to lay the foundation for the E-mineral rights market.

3.2 Building the database

The network database is quite important. Data is divided to two types: internal data (which provides information for internal management) and external data (which are related to the government's administrative and service functions). The latter provides convenient services for owners of mineral resources, owners of

mineral rights, land and mineral resource organizations, mine investors, and intermediate organizations.

3.3 Application of the information system

The system has extensive applications, including internal management (e.g. the Office Unified Information Transfer System, which integrates e-mail, voice mail and fax, e-personnel management, office automation, etc.), administrative functions (e.g. e-policy and regulations), and public service (e.g. online office, voice mail system, and online information dissemination). These applications provide the public with efficient "diversified services" and 24-hr uninterrupted services every day.

3.4 Choice of key technologies

Technologies decide the efficiency of a system. In view of the special features of the E-mineral rights market, there is a need to exert greater effort in adopting technologies that incorporate geographical information system, remote sensing, global positioning, multi-source data integration and digging, three-dimensional information representation, database, wideband network, meta-data, and other mining-related electronic technologies. For example, geographical information system (GIS) mainly deals with electronically geologic information, including data acquisition, input, editing, storage, output, and spatial analysis and inquiry. Multi-source data integration mainly deals with the characteristics of mineral resource in multi-space and multi-scale, and the diversity of obtaining ways to stimulate mining investment (See Figure 6).

3.5 Improving transaction efficiency

Global mineral resources distribution and economic development of every country and region in the world is not balanced. It is essential to the minerals trade promoting maximization of mineral resources allocation efficiency and matching the supply and demand. Minerals trade transaction cost mainly consist of the information search cost and transaction processing cost [12]. The E-mineral rights market improves the flow of information, electronic trade transmission speed, sharing degree, and accuracy through electronic means. At the same time, it reduces the information search cost and transaction processing cost and improves the effectiveness and efficiency of the trade deal, which reduces total transaction cost. The E-mineral rights market should use IT technology for the whole trading activities, and integrate into the administrative authority of land and resources, state-owned geological prospecting units, commercial geological prospecting units, social investors, intermediaries, and financial institutions. So that it can improve the structure of the industrial chain and expand the scope of trade.

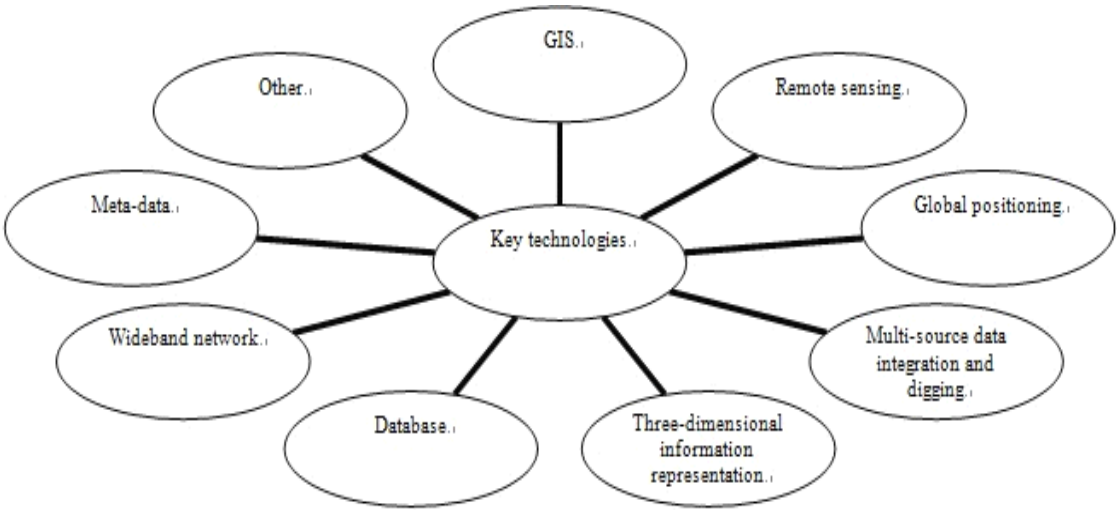

Figure 6. Key technologies of E-mineral right market

4. RECOMMENDATIONS FOR PROMOTING THE HEALTHY DEVELOPMENT OF THE E-MINERAL RIGHTS TRADE MARKET

4.1 Uniform source of information

The MLR shall strengthen the management of information collection, sorting, dissemination, and transmission in the E-mineral rights Market of China. The ministry should also build the information network by focusing on the functions of the administrative departments of land and resources at different levels, establish an online database, and collect various information orderly, efficiently, and scientifically in order to strengthen the authoritativeness, timeliness, and consistency of information in the E-mineral rights market in China. The ministry shall build a wideband multimedia integrated information network based on the latest network technologies that cover a wide area, that is, a platform of public telecommunication network that integrates four major telecommunication networks (i.e. post and telecommunication network, cable TV network, data network, and satellite network), as well as lay the foundation for a stronger E-mineral rights market. The E-commerce management system of the mineral rights transaction is an important part of the Land and Resource E-government System. It achieves computerization of application, registration and processing of reconnaissance and extraction rights of mineral resources (including annual inspection of mineral rights, regular inspection, fee management, statistics inquiry, comprehensive management and configuration), and unification of information sources to facilitate better transactions within the E-mineral rights market.

4.2 Uniform transaction rules

As mentioned previously, mineral rights refers to the transformation of resources into capital and technical achievements into commodities to form the property right with new values; it does so by taking the mineral resource as foundation and the market as guidance based on applicable market rules. Transactions of mineral rights are market activities that need strict rules. Major economic relationships in the mineral rights market are represented by the mutual relationships of “manage and managed, service and serviced, and equal transaction.” A national set of mineral rights transaction rules under consistent standards shall be formed in accordance with legal and regulatory requirements in “Mineral Resource Reconnaissance Block Registration Management Method” and “Mineral Resource Extraction Registration Management Method,” especially rules of E-mineral rights transaction. Along with the development of computer hardware and software, and in view of the rapid growth of state land and resource data, the application system developed by the MLR finds it difficult to consider the actual situation of all areas, resulting in a system that cannot adapt to current working needs. Existing problems such as functions that are unable to meet the demand, backward database software, difficulty in data sharing, inability to use large-scale drawings and data, and constraints on software updating and upgrading must be resolved as soon as possible.

4.3 Uniform transaction system

China shall build and execute the provincial-level transaction organizations of mineral rights, improve hardware facilities and software application for public notification of assignment and transfer of mineral rights, as well as promote greatly the market-oriented configuration of mineral rights. A uniform transaction procedure is needed for the transaction of mineral rights, domestic and international mergers, investment and financing of geological reconnaissance, as well as the acquisition and reserve of mineral rights. A uniform transaction standard is needed for the transaction of mineral rights, including the formal review of documents for partial or complete transfer of shares of mine operators, information dissemination, application of inward and outward transfer, choice of transaction mode, and transaction settlement. A set of uniform transaction rules is also required for investment and financing services of commercial reconnaissance projects (mineral reconnaissance right), joint-equity and cooperative reconnaissance, option agreement, private equity shares, and so on. Finally, a uniform transaction service system is needed for merger loan services provided to domestic mine operators,

enabling them to merge with or control established enterprises and operate continuously through transfer of existing shares, subscription of additional shares or acquisition of assets, takeover of debts, and so on.

4.4 Uniform process monitoring

The management of the E-mineral rights market should be standardized as much as possible. The market should be monitored by taking the transaction of mineral rights as the core, the information dissemination and service consultancy as the foundation, and the mineral asset as the power. Then, transaction rules and procedures shall be continuously standardized and consummated to achieve three major functions of improving platform, channel, and services. Processes such as the assignment and transfer of project management, proposed assignee management, deal management, deposit management, tax and fee management, membership management, and bill management should also adopt uniform process monitoring. The new "Mineral Resource Law" has been in effect since 1997 and has been instrumental in establishing the system for acquisition of mineral reconnaissance and extraction rights. This law also considers the transfer under the law and the principle of "one level of management, two levels of certificate issuance, and three levels of monitoring" for the extraction of mineral resources, which shall be executed rigorously by mineral resource administrative departments at different levels.

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