

State Governance of Coal Mining Industry towards Sustainable Development in Vietnam

CHU Thi Khanh Ly¹, PHAM Ngoc Huong Quynh², PHAM Tu Phuong³, NGUYEN Quynh Nga^{1,*}

¹ National Academy of Public Administration, Hanoi, Vietnam

² VNU University of Economics and Business, Vietnam National University, Hanoi, Vietnam

³ Investment Consulting Joint Stock Company, Hanoi, Vietnam

Corresponding author: nganq@napa.vn

Abstract. Coal is one of the most precious mineral resource, mining and mineral processing contributes to the economic development. In Vietnam, coal mining industry is economically profitable. However, this industry shows several disadvantages such as low productivity, wasting resources, negative environmental impact. Therefore, the State of Vietnam need to improve the coal mining governance to raise revenues, avoid wasting resources and meet the requirements of sustainable development. The paper aims to evaluate State governance of coal mining industry in Vietnam, and shows the advantages and disadvantages of this governance. Therefore, this paper proposes the strategies and solutions to improve coal mining governance in Vietnam towards sustainable development. The structure of the paper includes: (i) Literature review of the importance and requirements of state governance of coal mining industry towards sustainable development; (ii) State governance of coal mining industry in Vietnam; (iii) Proposals to improve State governance of coal mining industry towards sustainable development in Vietnam.

Keywords: State governance, Coal mining industry, Sustainable development, Vietnam

1. Introduction

“Sustainable development” was mentioned in the early 80s of the twentieth century in the Strategy of World Conservation proposed by the International Union for Conservation of Nature, the World Wildlife Fund, and the United Nations Environment Program. And then, this concept was officially introduced and worldwide used in 1987 by the World Commission on Environment and Development (WCED) in the Brundtland Report - “Our Common Future”. According to the Brundtland Report, sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” [1]. In other words, the sustainable development must ensure the effectively economic development, social equity, and protected and preserved environment. Therefore, all socio-economic sectors, state authorities, social organizations in the economy together take a responsibility to make and implement development policies to reach socio-economic goals as well as environmental protection.

The WCED’s definition of sustainable development mainly emphasizes the effective using of natural resources and ensuring the work place and living environment in the socio-economic development process. The sustainable development is also the transformational model that optimizes the economic and social benefits in the present while potential benefits in the future could not be damaged (Goodian and Heedue, 1988, Prof. Grima Lino) [2].

The nature of the sustainable development concept was reaffirmed in the Summit Conference on Environment and Development in Rio de Janeiro (Brazil) in 1992 and was supplemented and completed in the World Summit Conference on Sustainable Development in Johannesburg (Republic of South Africa) in 2002. Accordingly, “sustainable development” is a development process that is a combination of three aspects including: economic development (economic growth), social development (social progress and justice, poverty alleviation and hunger elimination, and job creation), and environmental protection (reducing environmental pollution, restoring and improving environmental quality; preventing wildfires; reducing and preventing deforestation; rationally exploiting and effectively using natural resources) [2].

There are more than seventy different definitions of “sustainable development”. Depending on different approaches, different research purposes and contents, authors can define the concept of “sustainable development”. However, the sustainable development seeks to attain a balance between economic development, environmental protection, community benefits. The sustainable development is the requirement of country’s development that is a combination of economic development, social development, natural resources and environment protection, national defense and social safety [3].

Figure 1 below illustrates the content of sustainable development that balances economic development, social benefits, and environmental protection.

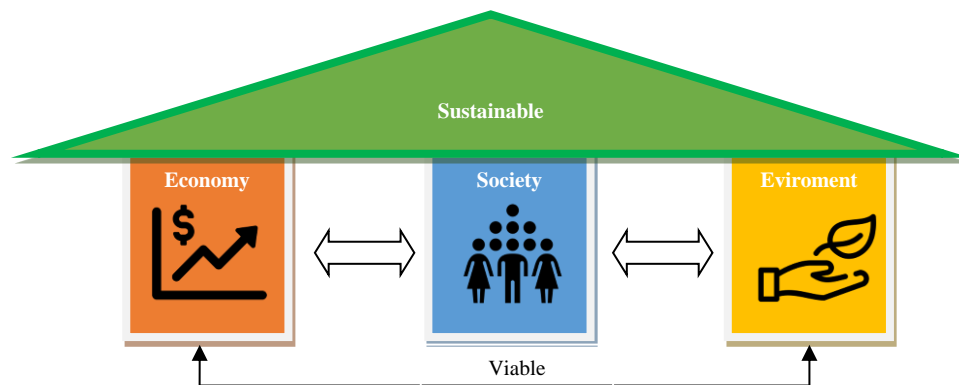


Fig. 1. Sustainable development.

Basing on the sustainable development definition, the paper illustrates the concept “the mineral resources sustainable development”. “Sustainable development of mineral resources is the level of use that does not exceed the capacity to discover new minerals, acceptable alternative materials and the ability to recycle to use wastes. And also, it is always necessary to apply processing technology to prolong the life of the exploited resource to the most extent” [4].

Inevitably, the mineral activities cause significant impacts on the surrounding environment such as destroying natural landscapes, contaminating surface water and groundwater, affecting air quality in the project area and local area. This leads to contaminate and erode arable land, and disturb wildlife, crops and livestock. Therefore, the state should address the ability to prevent environmental impacts in the beginning of project implementation to develop coal mining industry while protecting ecological environment and gaining economically viable.

This paper analyses the state governance of coal mining toward sustainable development in Vietnam. This includes different management functions and solutions that are promulgated and implemented by the State to ensure transparency and fairness in the coal mining industry to exploit economic value while ensuring the sustainable regeneration of coal mineral resources and environmental protection.

2. State governance of coal mining industry in Vietnam

2.1 Policy promulgation

Currently, the competent authorities have issued many legal regulations that is considered as management instrument of the State of Vietnam. Accordingly, the licensing of mineral mining activities has been adjusted more and more closely. Some documents are Directive No. 02/CT-TTg of the Prime Minister dated January 9, 2012 on strengthening the State management of mineral exploration, mining, processing, use and export; Directive No. 02/CT-TTg of the Prime Minister dated September 29, 2020 on strengthening the State management of exploration, mining, processing, use and export of minerals; Decree No. 40/2019/ND-CP dated May 13, 2019 of the Government amending and supplementing the decrees detailing and guiding the implementation of the Environmental Protection Law [5]; Decree No. 91/2019/ND-CP dated November 19, 2019 of the Government on sanction in land; Decree No. 96/2019/ND-CP dated December 19, 2019 of the Government on the Land Price Framework; Decree No. 06/2020/ND-CP dated January 3, 2020 of the Government amending and supplementing Article 17 of Decree No. 47/2014/ND-CP dated May 15, 2014 of the Government on compensation, support and resettlement when the State recovers land; Decree No. 67/2019/ND-CP dated July 31, 2019 of the Government on the method of calculating and collecting fees for granting mineral mining rights; Decree No. 03/2019/ND-CP dated January 4, 2019 of the Government on remote sensing activities; Decree No. 27/2019/ND-CP dated March 13, 2019 of the Government detailing a number of articles of the Surveying and Mapping Law; Decision No. 1746/QĐ-TTg dated December 4, 2019 of the Prime Minister promulgating the national action plan on ocean plastic waste management by 2030; Decision No. 417/QĐ-TTg dated April 13, 2019 of the Prime Minister promulgating the Master Action Program to carry out Resolution No. 120/NQ-CP and Directive No. 23/CT-TTg dated September 5 /2019 of the Prime Minister on accelerating the implementation of Resolution No. 120/NQ-CP, and many relevant documents.

Besides, the State has also issued a lot of regulations that are consulted by different stakeholder before and after promulgating the natural resources and environment policies and laws. Several documents are the draft on Environmental Protection Law; Decree replacing Decree No. 22/2012/ND-CP dated March 26, 2012 of the Government regulating the auction of mining rights; National action plan on ocean plastic waste management by 2030; The Government's master plan, 5-year plan for implementation of Resolution No. 36/NQ-TW dated October 22, 2018 of the Central Committee on sustainable development of Vietnam's marine economy by 2030, towards 2045 [4]; Decision of the Prime Minister promulgating the National Action Plan to respond to climate change from 2021-2030; Strategy for environmental protection from 2021-2030, towards 2040; Strategy for development of three surveying industries in Vietnam and national spatial infrastructure by 2030, toward 2040; Strategy for environmental protection from 2021-2030, toward 2040; National environmental protection planning from 2021-2030 toward 2050; National marine spatial planning from 2021-2030, toward 2050; National master planing on water resources from 2021-2030, toward 2050; National action plan to respond to climate change from 2021-2030, and many relevant documents [6].

Furthermore, while implementing the 2010 Mineral Law, the State of Vietnam issued many relevant legal documents to clarify mineral management institution and improve mineral resource governance, such as, Decree No. 33/2017/ND-CP of the Government on sanctioning of administrative violations in water resources and minerals. This document stipulates different types of fines for negatives in mineral mining. Accordingly, if an individual does not build the mine map during mining, he will be fined 200 million VND. Similarly, this fine for an organization will be 400 million VND [3]. There are many other relevant documents including Decision No. 89/2008/QD-TTg dated July 7, 2008 of the Prime Minister approving the development strategy of Vietnam's coal industry by 2015, toward 2025; The coal mining industry development plan to 2020, toward 2030, approved by the Prime Minister under Decisions No. 60/QD-TTg dated January 9, 2012, Decision No. 403-TTg dated 14/3/2016 and No. 1265/QD-TTg dated 24/8/2017 [5].

In general, the current legal documents can create a foundation to manage and ease the operation of enterprises in coal and mineral mining industry.

2.2 Policy implementation

The Vietnam National Coal and Mineral Industries Holding Corporation Limited - Vinacomin and the Ministry of Natural Resources and Environment (MONRE) take the main responsibility to implement the coal mining industry policy and strategy. Many other ministries and state agencies also contribute to State's coal mining industry policy and strategy implementation.

Coal mining license

The MONRE has granted the permits for coal mining activities in accordance with the Mineral Law. Accordingly, there are 128 licenses issued, including 27 exploration licenses and 101 coal mining licenses until 2020 [7].

From 2014 to June 30, 2019, the MONRE and local governments approved 582 mining auction projects. There were 304 successfully auctioned plans (including 13 types of minerals) accounted 52.23 % of the total projects. The auctions that are completed mineral exploration were 56 (accounting for 18.4 % of the total projects), gaining 272,516 billion VND revenue. While the data of auctions that are uncompleted mineral exploration were 248 (accounting for 81.6 % the total projects), gaining 768,306 billion VND revenue. The total revenue from 304 auction plans was at 1,040,823 billion VND, and more 466.210 billion VND than the total starting price auction (576,504 billion VND). Therefore, state budget revenue increased by 466,210 billion VND through mining auction [8].

Besides, the MONRE approved 94 projects of mineral investigation and exploration, earning 866.6 billion VND, while the local government licensed 152 mineral mining projects (accounting for 50 % of the total projects) and earned 354,358 billion VND to state budget [8].

Coal mining processing

According to the MONRE's reports, there are currently 3,000 organizations and individual be conducting mineral exploration and mining. Until 2020, there are 55 projects of mining investment and expansion, including 38 coal mining projects. Accordingly, there are 46 progressing projects, 35 completed projects, and 9 not started yet projects [7].

Unit: Billion VND

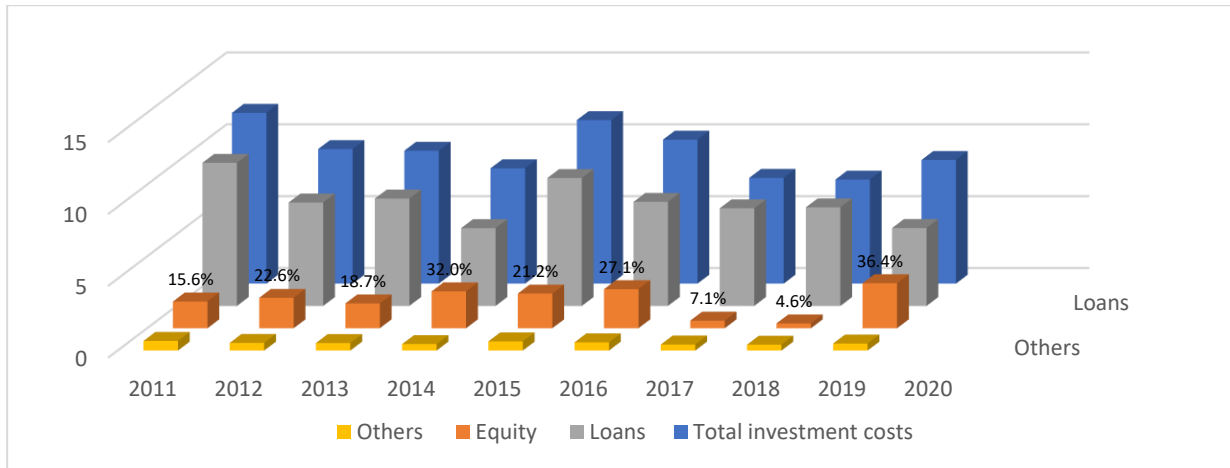


Fig. 2. Coal and mineral industry's investment from 2011-2020.

The coal and mineral mining investment is continuously fluctuated from 2011 to 2020. Figure 2 illustrates that the total investment cost for coal and mineral mining increases from 7.24 billions VND to 11.887 billions VND from 2011 to 2020. The figures in 2011, 2016 and 2020 are highest (11.887 billions VND, 11.381 billions, and 11.23 billions VND, respectively). Besides, majority of coal and mineral mining investment comes from the bank loans. The Chart 2.1 also shows that the capital from private equity is accounted for 4.6 % to 38.5 % of total investment cost [9].

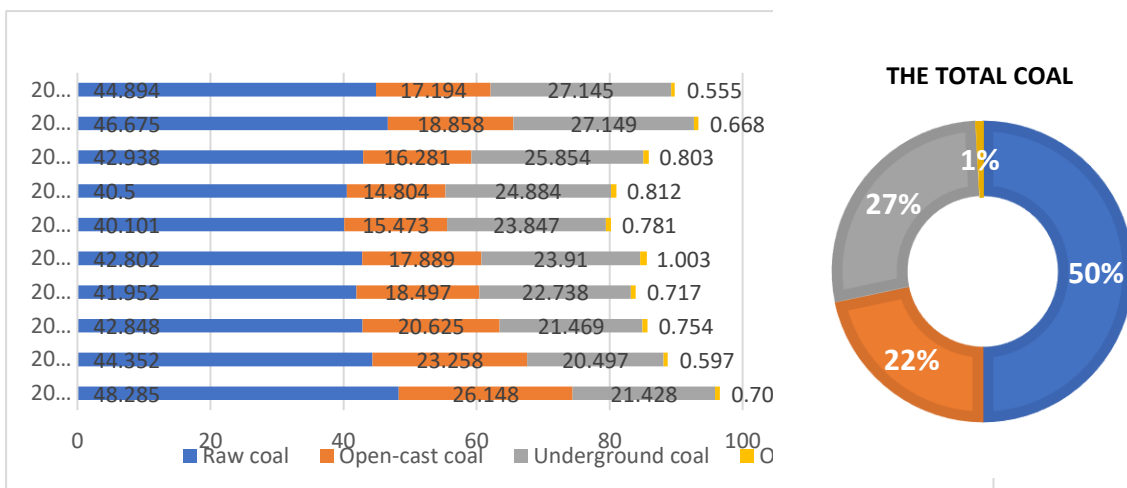


Fig. 3. Coal production from 2011 – 2020 (Unit: Thousand tons).

Figure 3 illustrates the coal production is fluctuated from 2011 to 2020. the data that the coal output is 48.285 tons in 2011, but from 2012 to 2018, this figure decreases from 44.325 tons to 40.5 tons. This is because of the decrease of mining investment; the decrease of households' consumption demand; the tightened State's management on mineral resources protection to protect ecological environment. From 2018 - 2020, the rate of coal mining increases from 42.938 to 26.676 tons [9]. This is due to the increase investment cost and the improvement of electronic government with online services and electronic one-stop model.

Accordingly, raw coal accounts for 50 % of total coal production, while the proportion of open-cast coal and underground coal is 22 % and 27 %, respectively. Because open-cast coal resources have become to be exhausted, many enterprises have switched to underground mining. This shift is inevitable, leading to use resources more effectively and to ensure sustainable ecological environment.

Besides, Vietnam has accelerated the construction of new mines as well as maximized the domestic mining capacity, the Vietnamese coal industry has invested in building several vertical well mines due to domestic units that design, construct and supply equipment themselves, have joint ventures or hire the foreign subcontractors. The Figure 4 compares the different output of raw coal and commercial coal from 2011-2020.

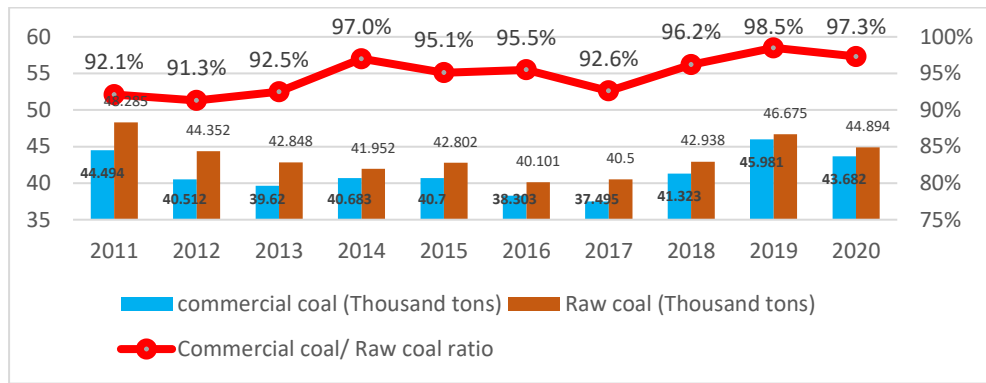


Fig. 4. Mining output of raw coal and commercial coal from 2011-2020.

Furthermore, mining production significantly depends on investment. Figure 5 shows the correlation between investment capital and coal mineral mining products. Accordingly, total investment costs are proportional to mining output from 2011-2020. From 2011 to 2014, the investment costs for production decreased from 11,887 billion VND to 9,251 billion VND, and mining output in this period also tended to decrease accordingly. However, in 2015, the investment costs increased by 11,381 billion VND, but the product did not increase significantly [9]. This is because investment cost has not been used effectively.

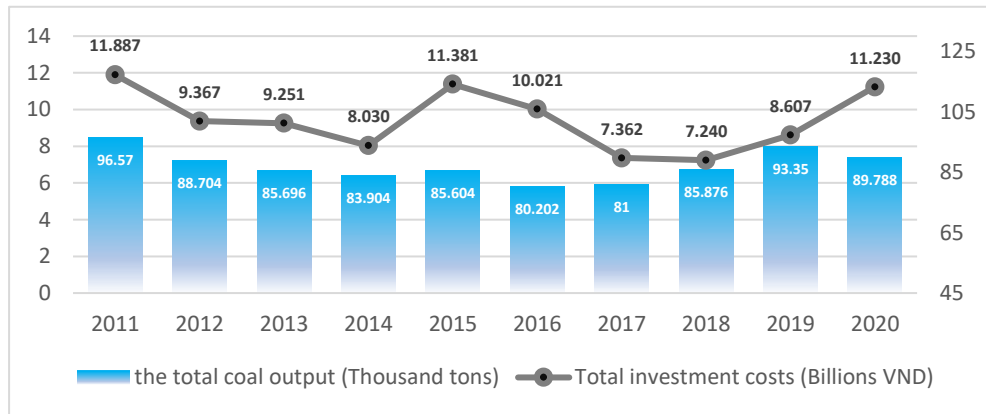


Fig. 5. Mining output of raw coal and commercial coal by 2011-2020.

The mining production also significantly depends on equity investment. The Figure 6 illustrates that from 2011 to 2020, the coal mining efficiency increases from 91.3% to 98.5%. This is because the improvement of equity proportion that grows from 4.6% to 38.6% [9]. Therefore, the exploiting natural resources efficiency strongly depends on the equity. If the equity is low, the mining efficiency decreases and vice versa. This result has shown the limitations in investment policy as well as state management in coal mining.

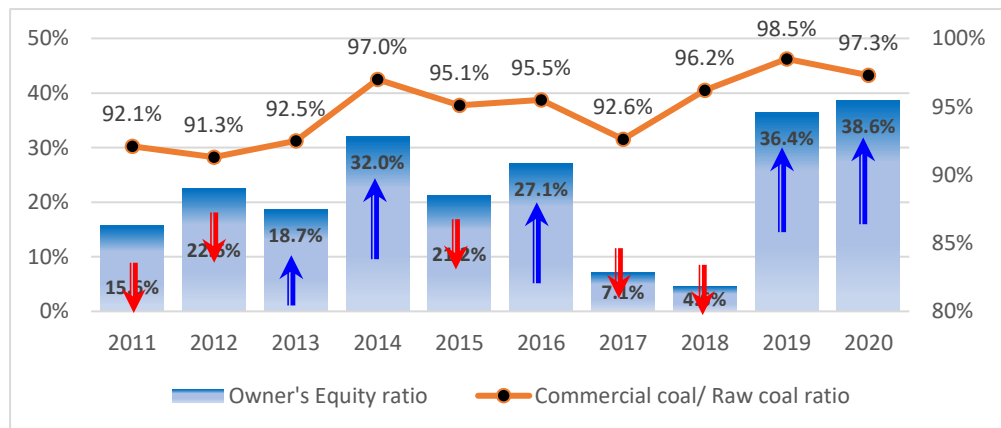


Fig. 6. Correlation between ratio of owner's investment capital and mining output of raw coal and commercial coal by 2011-2020.

2.3 Evaluating State governance of coal mining industry in Vietnam

Advantages

First, mineral exploration and mining are managed and licensed in accordance with the 2010 Mineral Law. The mineral deposit investigation, exploration, and assessment are also seriously managed in accordance with the 2010 Mineral Law. Therefore, mining enterprises can easily invest capital in undertaking, design mining projects, assessing environmental impact, design renovation projects, and deposit the Environmental Restoration Fund to apply for a mining license. Mining enterprises also can promote new mining technology and equipment to increase business efficiency, reduce environmental pollution, and save resources.

Second, due to the inspection of mineral exploration, mining and processing activities have been strengthened. The negatives of coal mining have been handled more effectively than in the earlier period, leading to limit the disadvantages in coal mining and raise the awareness of compliance with the law on minerals of organizations, individuals, people and agencies and organizations. Therefore, illegal coal mining has decreased, the awareness of compliance with the minerals law of organizations and individuals as well as agencies has been enhanced.

Third, due to the proactive implementation of environmental protection solutions according to the approved planning, the impact of coal production on the environment and population has become much minimized, the production environment has strongly changed, the ability to adapt to climate change has been enhanced. This contributes to the improvement of the general landscape and environment and the development of localities.

In general, the mining and mineral resources protection are strictly adhered to the approved planning, achieve positive results, and contribute to socio-economic development, economic structure transformation, and industry proportion.

Disadvantages

There are many challenges posed in coal mining. After the Prime Minister's Directive No. 29/CT-TTg dated December 2, 2019, this is fierce competition between domestically produced coal and imported coal, between coal production and business units in importing coal. While the mines are getting deeper and deeper with increasingly difficult and complex mining conditions (underground mines) and increasing waste supply (open-pit mines). Moreover, many inputs used for production and business activities (most types of machinery and equipment; petrol and oil; raw materials for the production of industrial explosives, etc.) depend on imports. The beneficial effects of weather and climate change will also be challenges for coal enterprises [4].

Accordingly, the coal reserves in favorable mining areas are gradually being exhausted. In the near future, coal mining will be mainly by underground mining method, while the investment rate for underground coal mining is currently very high. The mining area is getting deeper and deeper, the mine pressure is great, the mining conditions are increasingly unfavorable, leading to the increasing costs of exploration, mining, environment, and labor safety. The taxes on natural resources in Vietnam are still high, higher than the common tax rates of other countries in the region, leading to high domestic coal production costs, reduced competitiveness and disadvantages compared to imported coal.

In addition, there is a shortage of high-quality human resources due to the heavy and toxic mining working environment affecting the workers' health, leading to the fact that mining enterprises have to face the labor shortage, especially the direct labor force (underground miners, open-pit mines). Currently, remuneration policies have been improved, but still not satisfactory, even lower than that of some countries in the region, while the developing domestic economy creates conditions for the workers to have many career choices. As a result, labor productivity is low compared to some countries in the region.

Besides, the requirement of environmental protection and sustainable development have been set more rigorously for the mining of mineral resources.

Therefore, improving the state governance in the mining of mineral and coal resources is necessary to ensure the sustainable development of the national mineral resources.

3. The importance of State governance in the coal mining industry towards sustainable development in Vietnam

3.1. Guiding the national coal-mineral resource mining strategy

The coal mining industry is an important sub-sector in the overall energy sector of Vietnam. The development of the coal mining industry is currently being implemented in accordance with the

Development Planning of Vietnam's coal industry by 2020, towards 2030, approved by the Prime Minister in Decision No. 403/QD-TTg dated 14/14/ 3/2016 [4] and adjusted some contents in Decision No. 1265/QD-TTg dated August 24, 2017 [9]. In the past, the planning of sectors was carried out almost independently, but now the energy sectors such as electricity, oil, gas, coal and renewable energies integrated into the “National Energy Master Planning for the period of 2021-2030, toward 2050”.

The strategic orientation of coal mining industry development has been stated in Resolution No. 55-NQ/TW on “*Strategic Orientation for National Energy Development of Vietnam by 2030, toward 2045*” by the Ministry of Political Affairs. The main tasks and solutions are: (i) building a new coal mining industry development strategy associated with the task of effective investment abroad and long-term coal import; (ii) implementing appropriate coal reserves to meet requirements for production activities, especially electricity generation; (iii) expanding search, exploration, improve the quality of assessment of reserves and resources; (iv) stepping up domestic coal mining on the basis of ensuring safety, efficiency and saving resources; urgently research technology to be able to exploit the coal basin of the Red River Delta; improve the clean coal recovery coefficient in underground mining; (v) rapidly deploying the construction of a large-scale coal port, storage and transit system; increasing mechanization and modernization of coal sieving, sorting and mining equipment; (vi) reviewing and assessing the demand, developing plans and optimizing solutions for stable coal supply for power production in line with the market mechanism” [10].

The Master Plan is also a condition for coal mining enterprises to meet the requirements of the 2010 Mineral Law. According to the Article 40 of the 2010 Mineral Law, “organizations and individuals with mineral exploration licenses must have an exploration project in accordance with the planning”. The Article 53 shows that organizations and individuals with mineral mining licenses must have an investment project to exploit the minerals in the area where the reserves have been explored and approved in accordance with the planning” [10].

Currently, the government is restructuring the economy and transforming the growth model, enforcing intellectual property rights, making investment and bidding activities transparent, creating a more open mechanism. This is the driving force for the coal industry to realize strategic goals, improve competitiveness, and improve the quality of goods and services.

3.2. Promoting national socio-economic development strategy

The coal mining industry plays the role of a key economic sector providing operating fuel for most industries, especially electricity, fertilizer, paper, and cement, which use the most coal in production. This shows that the output of the coal industry is very stable. The State pays strongly attention to issue and implement policies and directly invest to coal mining industry, so that the risks of the industry’s operation due to fluctuations in the monetary market are limited. The workers and officers of the coal mining industry is rich in revolutionary tradition, always upholding the spirit of “Discipline and Coordination”, ready to face and overcome all challenges. In addition, Vietnam has changed from an energy exporter to an energy importer, the demand for coal for power generation and other domestic economic sectors has increased, even exceeding the domestic mining capacity, creating great opportunities for the coal industry. While the world coal price is on an upward trend and the domestic coal price in 2021 and the following years is expected increase.

4. Some suggestions

In order to improve the effectiveness of State governance in coal mining industry towards sustainable development in Vietnam, there are some following recommendations.

Firstly, the State should soon complete legal documents on mineral resource mining in general and coal mining in particular. In which, the State should soon issue specific and update regulations to increase the participation of different stakeholders in coal mining investment. Besides, the administrative reform and application of information technology in governance is very important to control and supervise coal mining activities and coal mining capital sources.

Secondly, the State should design and implement specific coal mining policies and measures to ensure the requirements and principles in the exploration and mining of mineral resources to ensure sustainable development. Accordingly, coal and mineral mining activities should comply with the principles of law, the principles of professional expertise leading to gain economic profits, ensure the ecological environment, and respect traditional cultural values.

Thirdly, the State should encourage enterprises to more invest and apply modern science and technology in coal production. This is a sustainable development strategy to increase productivity, mining output and

especially save mineral resources for the country. Particularly, at underground mines, enterprises should apply mechanization and synchronous automation systems in coal mining to improve working conditions for miners and limit the impact on the environment.

Fourthly, the State should delineate and publicize scattered and small coal areas for local management, and effectively calculate fees for granting coal mining rights, fees for using data and information of coal investigation and exploration.

Finally, the inspection and examination of coal exploration and mining activities should be promoted. Accordingly, the State should conduct statistics on actual coal production, inventory of exploited coal reserves and remaining coal reserves nationwide accurately and efficiently.

5. Conclusions

In general, State governance in the mineral resources mining in general and coal mining in particular in recent years has achieved certain results. The details are as follows:

The State has oriented the development strategy of coal mining by formulating and promulgating legal regulations to ensure the legal implementation. Besides, State's investment capital for coal mining from 2010 to 2020 is relatively large, especially in 2012, 2014, 2020. State policies also have been more open in enhancing the participation of different stakeholders in coal mining investment, leading to more attract capital sources of enterprises and business owners, and bringing a lot of coal mining output and economic value for the State's budget.

However, State governance of coal mining still has certain limitations. Specifically, although the current legal regulations on coal mining have been promulgated by the State, the current regulations still show overlapping and lack of regulatory contents. Currently, there is still a lack of regulations on the participation of stakeholders in capital investment in coal mining activities. Regulations on ensuring sustainable coal mining and the environment are also still lacking. The management of the State's investment capital in coal mining is less effective, so that using State's investment capital in coal mining is less effective than that of business owners.

Therefore, State governance has not focused only on the efficient mining of coal production but also on the sustainability of mineral resources upon coal mining and ensuring the ecological environment. Environmental protection and renewable resources in coal mining should be seriously concerned by the State. The State should issue specific legal documents in coal mining to ensure the sustainability of mineral resources and living environment. The State also should improve the inspection, supervision on environmental assurance in coal mining.

6. Acknowledgements

The paper was presented during the 6th VIET - POL International Conference on Scientific-Research Cooperation between Vietnam and Poland, 10-14.11.2021, HUMG, Hanoi, Vietnam.

7. References

1. World Commission on Environment and Development, 1887.
2. Nguyen Duc Quy, Dang Huy Huynh, Nguyen Thuong Hung, Nguyen An Phong, 2011. On the mining and rational use of some natural resources of Vietnam, Anthology "Environmental Resources" Science and Technology Publishing, Hanoi.
3. Strunk, Jr. W., White, E.B., The Elements of Style, fourth ed., Longman, New York, 2000.
4. Vu Van Hien, 2014. Sustainable Development in Vietnam. Communist Review, 1(4): 67-69.
5. <https://thuvienphapluat.vn/van-ban/Tai-nguyen-Moi-truong/Nghi-quyet-55-NQ-TW-2020-dinh-huong-Chien-luoc-phan-tien-nang-luong-quoc-gia-cua-Viet-Nam-435381.aspx> 15/5/20121.
6. <https://tulieuvankien.dangcongsan.vn/he-thong-van-ban/van-ban-cua-dang/nghi-quyet-so-36-nqtw-ngay-22102018-hoi-nghi-lan-thu-tam-ban-chap-hanh-trung-uong-dang-khoa-xii-ve-chien-luoc-phan-tien-ben-4810>, 15/05/2021.
7. Debra Lam, Vietnam's Sustainable Development Policies: Vision VS Implementation, World Science Book, Hanoi, 2014.
8. <http://baochinhphu.vn/Chinh-sach-moi/De-xuat-quy-dinh-ve-dau-gia-quyen-khai-thac-khoang-san/395960.vgp>, 10/05/2021.
9. Vietnam National Coal and Mineral Industries Group - Vinacomin (TKV) and Dong Bac Corporation.
10. <https://nhandan.com.vn/tin-tuc-xa-hoi/minh-bach-trong-quan-ly-khai-thac-khoang-san-330362,10/5/2021>.