

# SUSTAINABLE INDUSTRIAL DEVELOPMENT IN QUANG NINH PROVINCE: CURRENT SITUATION AND SOLUTIONS

● BUI XUAN NHAN - DANG THANH BINH

## ABSTRACT:

Industry is the largest material production sector of the national economy and it plays an important role in the economic development. However, the industrial development has negatively affected the environment. Therefore, it is necessary to find out solutions for achieving industrial growth while also protecting the environment as well as effectively settling arisen socio-cultural problems. This paper presents the achievements of Quang Ninh Province in developing sustainable industrial growth over the period from 2010 to 2019. The paper also highlights limitations and their causes of Quang Ninh Province in the sustainable industrial development, thereby proposing some solutions for the province's sustainable industrial development to 2030 with vision to 2045.

**Keywords:** sustainable development, industrial development, Quang Ninh Province.

## 1. Overview of the study on the sustainable industrial development

According to Riva Krut, Harris Gleckman (2013), one of the central paradoxes of the current time is the simultaneous increase of knowledge, technology, and the deterioration of the environment, which can be solved by sustainable industrial development. Prof. & Dr. Kenichi Ohno and Prof. & Dr. Nguyen Van Thuong (2005) suggested designing a comprehensive and realistic industrial development strategy in Vietnam; compared Vietnam's industrial development strategy with that of other countries in the region and Japan; addressed the experiences of ASEAN countries in developing the electric and electronic industries, automobile and motorcycle

manufacturing and some supporting industries. On that basis, the authors draw lessons for the Vietnam's industry.

Bui Vinh Kien (2009) in his topic of doctoral thesis: "*Study on applying the local industrial development policy to Bac Ninh Province*" and Nguyen Hai Bac (2011) in his topic of doctoral thesis: "*Research on industrial sustainable development in Thai Nguyen province*" have clearly analyzed some concepts of local industry, factors affecting sustainable industrial development, analyzed and evaluated the current situation of local industrial development in the studied provinces, and proposed a solutions on sustainable industrial development policies of the studied provinces at the same time.

## 2. Research framework on sustainable industrial development of Quang Ninh Province

On the basis of systematizing a number of theoretical foundations on industrial development and basic contents, influencing factors and some criteria for evaluating the local sustainable industrial development at the provincial level, the primary and secondary data collected from the survey results over related subjects, the article focuses on analyzing and evaluating some of their achievements, limitations and causes in order to propose some solutions and ideas for the sustainable industrial development of Quang Ninh Province to 2025 and next years. The research framework is shown in the Figure 1.

Regarding the research methodologies: the authors conducted a survey with the aim of studying the influencing factors and assessing the sustainable industrial development level of Quang Ninh province with 3 selected groups of subjects: (i) Directors, Deputy Directors and Manager of departments in Industrial Enterprises in and beyond the industrial zones (IZs); (ii) Industrial managers at the Department of Industry and Trade and related departments such as the Department of Natural Resources and Environment, the Department of Culture, Sports and Tourism; and (iii) Owners of households surrounding industrial zones.

Choose the survey sample size by using Bollen's calculation (1998) and on basis of the study of Hair, Anderson, Tatham and Black (1998), therefore, the minimum sample size is equal to 5 times of the total number of observation variables; calculation formula is  $n = 5 \times m$ , where  $m$  is the number of factors in the questionnaire. The numbers of factors to be surveyed in the 3 samples are: 27; 17 and 22. Thus, the total required size of sample 1; 2 and 3 in such survey is 135; 85 and 110, respectively. On this basis, the author selected a random study with a total of 660 votes, including 320 votes distributed to the subjects (i); With 90 votes distributed to the subjects (ii) 250 votes distributed to the subjects (iii).

After 3 months, from October to December 2019, 540 votes were collected, of which 501 votes were valid for information processing, including 252 votes from leaders of industrial enterprises; 34

votes of industrial managers in departments and sectors and 215 votes of people living near industrial zones in 7 out of 14 cities and districts in the province. The questionnaire is designed according to the Linkert scale with 5 levels: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; and (5) Strongly agree. Excel statistical software programs were used to generalize information, data and statistics of necessary indicators.

## 3. The sustainable industrial development situation of Quang Ninh Province in the period of 2010 - 2019

### 3.1. Some achievements of sustainable industrial development in Quang Ninh Province

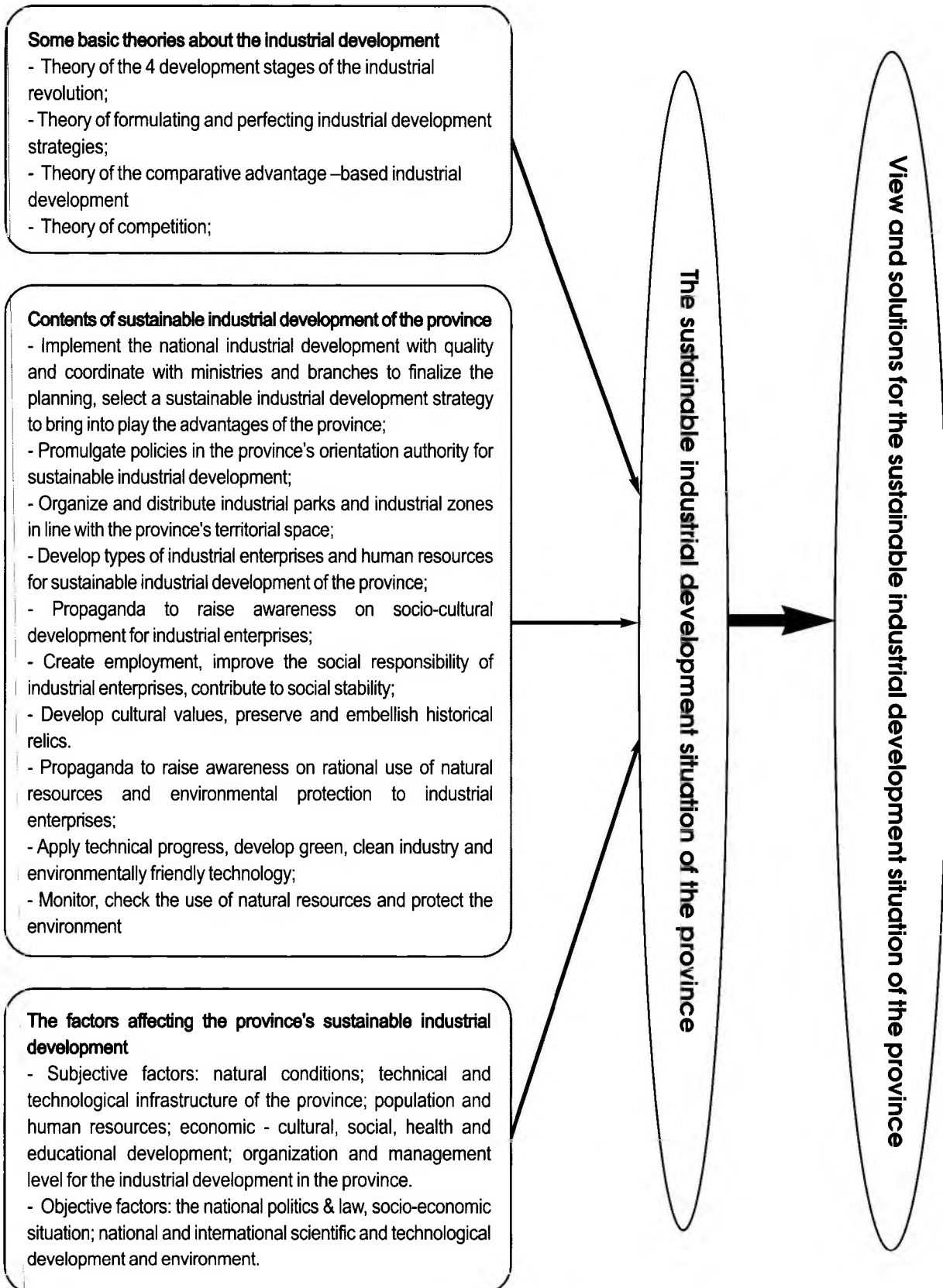
*Firstly*, thanks to the diverse nature of natural mineral resources, Quang Ninh Province's industry has developed in varied fields, always accounting for a large proportion of the province's economic structure and growing steadily. The value of gross industrial product in 2019 increased by 3.38 times compared to that in 2010, contributing to creating a reasonable economic structure in the area. Contributed to the transformation of the province's economic structure, the province's economic structure in 2019 was: agriculture, industry & construction, services and product tax accounted for 6.1%; 49%; 31.8%, and 13.1%, respectively. This is a distinctive feature of Quang Ninh Province compared with the structure of other northern provinces and enables it become one of the provinces with the highest proportion of industry in the country. (Table 1)

*Secondly*, in the structure of industries in Quang Ninh Province, the mining industry, the electricity and gas production industry has developed rapidly thanks to the industrial development orientation with taking advantage of the strength of mineral resources; The industrial sector has exerted a leverage effect on the agriculture, forestry and fishery industries and promoted the growth of the province's services. (Figure 2).

*Thirdly*, the economic zones (EZs) and industrial zones (IZs) in geographical areas have been outlined towards the synchronous and harmonious development of economic zones in the province.

Currently, Quang Ninh Province has 11

**Figure 1: Research framework of the study**



**Table 1. Total industrial product of Quang Ninh Province in the period of 2010 -2019**

Year	Total products of the province (VND billion)	Total industrial product (VND billion)	Percent (%)
2010	50,097	24,017	47.9
2011	64,564	31,284	48.5
2012	71,310	33,864	47.5
2013	79,004	36,546	46.3
2014	90,725	41,702	45.9
2015	113,908	50,855	44.6
2016	127,229	56,264	44.2
2017	143,068	61,186	42.8
2018	166,271	71,223	42.8
2019	189,773	82,152	43.3

Source: The Department of Statistics of Quang Ninh Province; Quang Ninh Province Statistical Yearbook 2019.

industrial zones approved by the Prime Minister in the planning development of Vietnam's industrial zones to 2015 and orientation to 2020.

Fourthly, the number of industrial enterprises increased steadily with proper investment in production and business capital, and appropriate procurement of equipment, contributing to the

rapid increase in production capacity and competitiveness of the enterprises. (Table 2)

According to assessment of the industrial management agency, the policy of developing traders, developing enterprises and preferential and supporting policies to create a favorable business environment for industrial enterprises of the province are evaluated to be better than implementing policies to attract foreign investment and mechanisms and policies to improve the competitiveness of industrial enterprises.

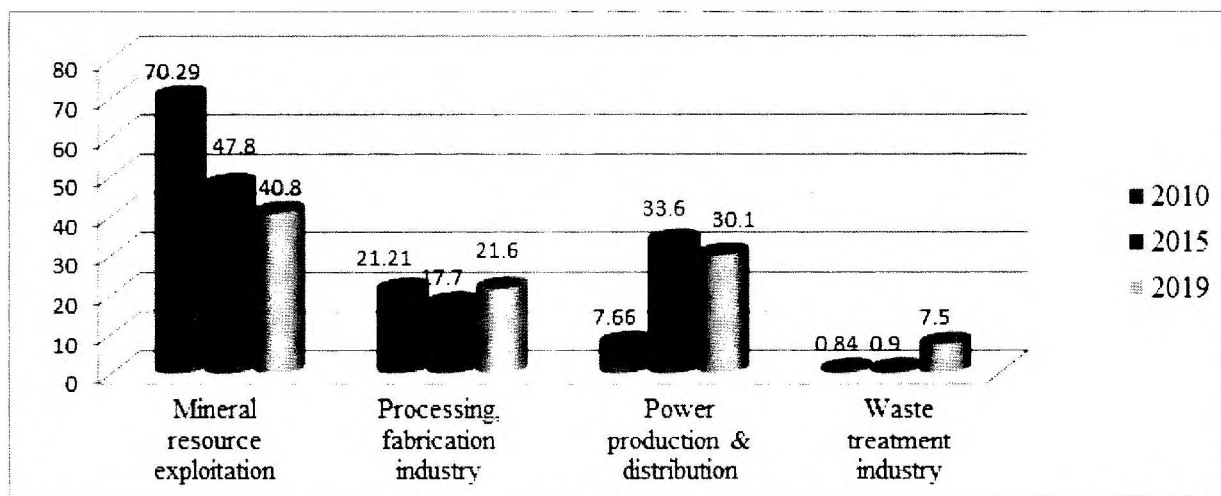
Fifthly, the province has developed and implemented planning and policies for both economic development and social stability, while limiting environmental pollution, and not hindering and facilitating the development of marine tourism, ecotourism, sport tourism, cultural and spiritual tourism of the province. (Table 3)

Sixthly, leaders of management agencies and businesses have realized and initially moved towards using natural resources subject to their ability, scientific, technical and technological level, especially non-renewable natural resources.

Finally, provincial leaders have realized and promoted administrative reform, created a favorable business environment, facilitated sustainable industrial development, combined with creating employment, increasing incomes to workers, keeping maintain security and social order.

**Figure 2: Structure of industries of Quang Ninh Province in the period of 2010 - 2019**

Unit: %



Source: The Department of Statistics of Quang Ninh Province and the authors' calculations

**Table 2. Evaluation of policies on enterprise development and business environment facilitation**

Unit: %

Evaluation criteria	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<b>Evaluation of the Management Authority</b>					
- Policies on business and trader development	0	0	44.12	55.88	0
- Policies on supporting, creating the business environment	0	0	41.18	58.82	0
- Foreign investment attraction?	0	0	64.71	35.29	0
- Policies on enhancing the enterprise competitiveness	0	0	64.71	35.29	0
<b>Evaluation of the industrial enterprises</b>					
- Policies on business and trader development	0.50	2.40	48.10	41.70	7.30
- Policies on supporting, creating the business environment	0	4.40	34.00	55.80	5.80
- Foreign investment attraction?	1.00	3.90	56.30	35.40	3.40
- Policies on enhancing the enterprise competitiveness	1.50	7.30	54.90	33.00	3.40

**Table 3. Evaluation of policies to improve social responsibility impacting the social stability**

Unit: %

Evaluation criteria	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<b>Evaluation of the Management Authority</b>					
- How reasonable is the province's policy on land recovery and compensation?	0	5.88	70.59	20.59	2.94
- Policies to improve enterprises' social responsibility	0	0	23.53	70.59	5.88
- Implement the policies to improve enterprises' social responsibility	0	2.94	64.71	29.41	2.94
- What level is the policy of sustainable industrial development affecting the social stability of the province assessed?	0	2.94	29.41	67.65	0
<b>Evaluation of the industrial enterprises</b>					
- How reasonable is the province's policy on land recovery and compensation?	0	11.20	61.70	22.30	4.90
- Policies to improve enterprises' social responsibility	1.00	3.90	29.10	60.20	5.80
- Implement the policies to improve enterprises' social responsibility	1.50	10.70	52.90	31.10	3.90
- What level is the policy of sustainable industrial development affecting the social stability of the province assessed?	0	5.80	21.80	66.50	5.80

**3.2. Some limitations and causes in industrial development in Quang Ninh Province**

**3.2.1. Limitations**

Firstly, economic restructuring and industrial development "from brown to green" have been implemented slowly, dissatisfying the requirements of the new situation with the fourth industrial revolution and the rapid development of information technology.

Secondly, the structure of industries has not changed appropriately, the key industries and spearhead industries are unclear; industries that cause environmental pollution but account for a large proportion of GDP are significant, supporting industries for industry in the province have not developed strongly.

Thirdly, the distribution and planning of industrial zones and industrial clusters have not taken the full strengths of each region. The planning feasibility of industrial zones and industrial zones is not high, some industrial parks' licenses are revoked. The positive effects of regional industry on industries are not strong and unclear, especially manufacturing and processing industries to increase the value of goods for local products.

Fourthly, the remediation of environmental pollution of factories and industrial facilities was slow in the past. In many places, it caused the surrounding residents frustrated and unqualified preservation of water, air and maritime environment to meet requirements.

Fifthly, there are still problem regarding the clearance and compensation of land acquired for industrial zones, the attraction of labor for the local people whose land has been recovered and vocational training to the population, the employment and income of the industrial workforce is not high. The transportation of coal in and out of the mines, on the roads to the factories, and the operation of thermal power plants causes air pollution, negatively affecting the travel, education of children, and the lives of the local people when 15.35% of the surveyed subjects said to disagree and 7.44 evaluated to strongly disagree. (Table 4)

Finally, the training and enhancing skills, training high-quality and skilled human resources have not yet met the requirements of the fourth industrial revolution and sustainable industrial development.

3.2.2. The above limitations are caused by the following reasons:

Objective reasons

The management mechanism and the autonomy of localities in industrial development, the system of legal documents such as the Law on Industrial Parks, the Law on Land, the Law on Planning, the Law on Inspection, etc., have still caused so many obstacles to the locality.

In the drafting of strategic plans, the plans of the ministries and branches at the central level are not really linked with the actual situation of localities

**Table 4. The local people's assessment of the impact of industry on their lives**

Unit: %

Evaluation criteria	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
- How much noise pollution from machinery and equipment affects their family?	0.47	6.05	49.30	34.42	9.76
- How much smoke and dust affect their family's life?	0.93	12.09	44.65	31.63	10.70
- How does the industrial park's waste water and waste affect their family?	0.93	7.91	46.51	33.02	11.63
- How do the activities of industrial enterprises affect the local people's lives?	7.44	15.35	37.67	37.67	1.87
- How do the activities of industrial enterprises affect their children's travel and study?	0.47	12.56	41.86	40.40	3.71

such as the coal mining, energy and construction sectors, which still overlap and use resources ineffectively.

The management mechanism and local autonomy have had a significant impact in the past: coal mining, thermal power development and construction material industry in the province depend a lot on development planning and organization of ministries and branches at the central level.

Subjective reasons

*Firstly*, the province's selected industrial development strategy is not suitable with the socio-economic situation of the country and international fluctuations, so it has not taken the full strengths of the locality.

*Secondly*, slow industrial transformation of the province's development strategy "from brown to green" for various reasons.

*Thirdly*, the competitiveness of industrial enterprises is not high because the level of technology, equipment, machinery and human resources of enterprises in the province is still limited.

*Fourthly*, the distribution of industrial facilities and the combination of socio-economic development and environmental protection are still not linked and sometimes projects to develop industrial zones and industrial zones have not fully taken the negative impacts on the people's lives and preservation of the ecological natural environment into account

*Fifthly*, industrial development associated with the promotion and preservation of cultural values in the area around areas has not been regularly appreciated, affecting daily life and tourism & economy growth of the province.

*Sixthly*, supporting industry and logistics industry have not become a driving force, a favorable condition for the development of industries in the province

*Seventhly*, attracting foreign investors to invest in heavy industries, basic industries, and long payback period is also one of the reasons for limiting the province's sustainable industrial development.

*Finally*, high-quality human resources is a prerequisite for implementing industrial

development to keep up with the requirements of the fourth industrial revolution, which is necessary to be overcome in the coming time.

#### **4. Solutions for sustainable industrial development in Quang Ninh Province**

Sustainable industrial development is both an immediate and long-term urgent issue of localities, so it is necessary to have a holistic, long-term and comprehensive perspective on all aspects: from the province's economic development strategy towards sustainability; harmoniously combine industrial development goals with environmental protection in each specific period; it should be carried out by various appropriate measures and tools, taking the main motto of prevention, and definitive treatment of environmental pollution;

Determine the strategic vision of socio-economic development, sustainable industrial development in accordance with the specific time and conditions of the province. The immediate objective of industrial development is to reduce local pollution, considering it as the main goal in environmental protection.

Promulgate policies according to its authority to orient and shift the industrial development from "brown" to "green" growth. Develop clean industries, supporting industries, processing industries, and high-tech industries that are friendly to the environment.

Adjust the distribution of industries and industrial establishments in the province in order to use full advantages of regions and in accordance with the requirements of sustainable development. Developing industrial enterprises and improving their competitiveness in the market.

Management and protection of the environment is a process of long-term continuous efforts, synchronous, in the direction of: taking prevention as the main direction - strict control - proactively overcoming pollution.

Prioritize prevention by measures: overall assessment of environmental impacts of investment projects; select advanced technologies when approving projects, comply with the steps and standards issued for new projects, do not lower environmental barriers to attract investment by any way. Complete and supplement criteria to serve as a basis for approving investment projects in order to

avoid the risk of environmental pollution. Develop and issue a set of local environmental standards to implement the roadmap for applying environmental standards of advanced countries after 2020.

Complete planning of industrial zones and industrial zones to classify the environment according to the level of each type of region. Use the achievements of science and technology, with priority to high technology, advanced environmental protection models of developed countries. Research, application and transfer of clean, environmentally friendly technologies, cleaner production models in the field of mining and mineral processing; develop technologies for treatment and recycling and reuse of waste. Invest in the construction of environmental technical infrastructure works in industrial zones and clusters.

Propagandize the role of cultural development and social stability to to the industrial enterprise community. Promulgate mechanisms and policies for industrial development in the direction of sustainable development, taking people as the center and driving force for industrial development. Enhance enterprises' social responsibility; Implement sustainable development in culture and society

For production and business entities in the province

Enterprises should gradually apply advanced technology in production to both save resources and contribute to environmental protection.

Mineral production and mining units, especially coal products, should comply with and implement on schedule production and environmental improvement projects due to mining, processing, transportation, and coal consumption. Enterprises should actively expand production capacity by using more modern and advanced technology, diversifying products with higher value, better waste management to enhance competitiveness in the market. Actively participate in preserving and developing cultural values.

#### **5. Some recommendations to relevant agencies**

The National Assembly should soon promulgate the Law on Industrial Zones, Economic Zones, and

Border Gate Economic Zones, creating the highest legal corridor in line with the roles and development trends of these industrial establishments in order to improve the efficiency of the management method for industrial zones and economic zones. Amending a series of Laws on Investment and Environmental Protection, Law on Land, Law on Planning, Law on Inspection for enterprises in industrial zones; Law on Special Administrative - Economic Units, in the direction of actively empowering for the synchronous development of industrial zones and economic zones.

The Government should shorten the process of developing, reviewing, appraising and approving investment projects: industrial zones, economic zones, border gate economic zones. Amend regulations related to the order, procedures and documents for land allocation to the Industrial Zones Management Unit to redistribute or lease land in accordance the Law on Land. Finalize the regulations on the implementation of projects using land and water surface; Issue the regulations on support when the State recovers garden and pond land in the same plot of land with houses. Issue the regulations on environmental protection planning and environmental protection plans.

Coal mining and energy sectors actively coordinate with the province to proactively implement plans to move production facilities out of residential areas, overcome consequences of air, water and soil pollution; ensure a healthy life on the environment. Ministries and sectors should soon guide the authorization for implementation of a number of tasks under the authority of the Industrial Zones Management Unit to ensure the implementation of the "one-door" mechanism in administrative procedures, creating favorable conditions for enterprises in industrial zones and economic zones in the area.

Strengthening education and dissemination of laws on environmental protection and biodiversity in association with communication work to raise awareness and responsibility of people, organizations and businesses. Promote the community's role of supervision and strongly condemn violations of the law on environmental protection ■



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## PHÁT TRIỂN CÔNG NGHIỆP BỀN VỮNG TẠI TỈNH QUẢNG NINH: THỰC TRẠNG VÀ GIẢI PHÁP

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### TÓM TẮT:

Công nghiệp là ngành sản xuất vật chất lớn nhất của nền kinh tế quốc dân và có vai trò quan trọng trong sự phát triển kinh tế. Tuy nhiên, sự phát triển công nghiệp đã ảnh hưởng tiêu cực đến môi trường. Vì vậy, cần phải tìm ra các giải pháp để đảm bảo tăng trưởng công nghiệp, những vấn đề bảo vệ môi trường, cũng như giải quyết hiệu quả các vấn đề văn hóa - xã hội nảy sinh. Bài báo này trình bày những kết quả đạt được của tỉnh Quảng Ninh về phát triển công nghiệp bền vững trong giai đoạn từ năm 2010 đến năm 2019. Bài báo cũng nêu rõ những hạn chế và nguyên nhân của tỉnh Quảng Ninh trong quá trình phát triển công nghiệp bền vững, từ đó đề xuất một số giải pháp hỗ trợ tỉnh Quảng Ninh phát triển công nghiệp bền vững từ nay đến năm 2030 và tầm nhìn đến năm 2045.

**Từ khóa:** phát triển bền vững, phát triển công nghiệp, tỉnh Quảng Ninh.