

# *Analysis on the Integrated Development of New Energy Industry and Vocational Education*

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**Abstract:** With the continuous growth of global energy demand and the aggravation of environmental pollution, the new energy industry has become one of the important strategic directions for global economic development and environmental protection. Based on renewable energy sources such as solar, wind, hydropower, and geothermal energy, the new energy industry is a complete industrial chain covering multiple links including energy development, production, sales, and services. With the continuous advancement of technology and policy promotion, the new energy industry has rapidly developed globally and has become an important direction for economic transformation and industrial upgrading in various countries. At the same time, the development of the new energy industry also provides new opportunities and challenges for vocational education. Therefore, this article will explore the integration and development of the new energy industry and vocational education from several aspects such as the positioning of the new energy industry, future development trends, and strategic paths of integration, aiming to conduct in-depth research and provide useful reference and inspiration for the development of related fields.

## **1. Introduction**

With the development of the global economy and the increasingly prominent environmental issues, the new energy industry is rapidly emerging as one of the important directions for global economic development. In this process, vocational education, as one of the important ways to cultivate talent in the new energy industry, has become increasingly important [1]. The integration of vocational education and the new energy industry is of great significance under the support of the rapid development of the new energy industry and the national economic development strategy.

At present, the integration of the new energy industry and vocational education is in its early stage in China, lacking effective mechanisms and systems, and the shortage of talents and the insufficient quality of talents have become one of the important factors restricting the development of the new energy industry. Therefore, it is of great significance to study the integration development strategy of the new energy industry and vocational education, explore how to optimize the talent training system in vocational education, improve the quality of talents and industry adaptability.

## 2. Positioning of New Energy Industry

The positioning of the new energy industry refers to the status and role of the new energy industry in the national economy, as well as its role and positioning in the economic and social development. The positioning of the new energy industry is mainly based on several factors:

**Energy transformation:** The new energy industry is one of the core contents of energy transformation. Its positioning is to accelerate the industrialization and marketization process of new energy by replacing traditional energy and achieve the transformation of energy structure [2].

**Strategic emerging industry:** The new energy industry is one of China's strategic emerging industries. Its positioning is to promote economic transformation and upgrading, and promote technological innovation and industrial upgrading.

**Green industry:** The new energy industry is an important part of the green industry. Its positioning is to promote the coordinated development of economic development and environmental protection, and achieve win-win results in economic and environmental benefits [3].

**International cooperation and competition:** The new energy industry is an important area of international competition. Its positioning is to enhance the technological level and industrial competitiveness by integrating with international advanced levels, and promote the Chinese new energy industry to move towards the center of the world stage.

In summary, the positioning of the new energy industry is multidimensional, based on factors such as energy transformation, strategic emerging industry, green industry, and international cooperation and competition. It provides strong support and guarantee for sustainable development and economic transformation.

## 3. Future Development Trend of New Energy Industry

The new energy industry is one of the fastest developing industries globally, and its future development trends mainly include the following aspects:

**Diversification:** The new energy industry will develop in a more diverse direction, which not only includes the development and utilization of renewable energy such as solar energy, wind energy, hydro energy, and geothermal energy but also involves energy storage technology, energy interconnection, and other fields, forming a more diversified industrial pattern [4].

**Innovation:** The development of the new energy industry will increasingly rely on technological innovation and scientific progress, including technology research and development, product innovation, and service innovation. The new energy industry needs to continuously promote technological innovation, improve technology levels, and meet market demand and industry development requirements.

**Networking:** The new energy industry will develop towards networking, including energy interconnection, smart grids, and smart cities. The new energy industry achieves efficient energy utilization, optimized allocation, and intelligent control through digitization, intelligentization, and informationization.

**Internationalization:** The new energy industry will gradually move towards internationalization, strengthening international cooperation and exchanges.

Globally, the new energy industry has become one of the important strategic directions for economic development in various countries. Countries will strengthen cooperation and competition in the new energy industry and promote it to the broader international market.

**Greenization:** The new energy industry will increasingly focus on environmental protection and sustainable development, realizing green production and consumption. The new energy industry will achieve coordinated development of economic development and environmental protection through means such as improving energy efficiency, reducing pollutant emissions, and promoting

green production methods.

## **4. Current Situation and Development Direction of Vocational Education**

### **4.1. The Characteristics of Vocational Education**

Vocational education is established to cultivate talents with specific vocational skills and qualities. Compared with traditional education, vocational education has some significant features. Firstly, the goal of vocational education is very clear, which is to cultivate professional talents that meet the actual needs of the workplace [5]. Therefore, the training objectives of vocational education are very specific and clear, which can help students to have a clearer career development direction. Secondly, vocational education pays attention to the cultivation of practical operational skills combined with theoretical knowledge, so that students can better adapt to various challenges in practical work. Therefore, the practicality of vocational education is very strong, and students need to acquire skills and knowledge through practical operations and actual projects. In addition, the teaching content and teaching methods of vocational education are very flexible and can be adjusted according to the needs of different professions and industries, ensuring that the teaching content is in line with actual work needs. Finally, vocational education pays attention to the cultivation of students' vocational qualities and professional ethics, so that they can better play their roles in the workplace.

### **4.2. The Situation of Vocational Education**

Currently, vocational education in China is increasingly valued for its status and role, and the government and society have increased investment and support in vocational education. However, compared with developed countries, there is still a lot of room for improvement in the overall level of vocational education in China [6].

Firstly, the curriculum and faculty of vocational education need to be improved urgently. The teaching content and curriculum of vocational education in China are not flexible enough and lack updates and reforms that keep pace with the times, resulting in the knowledge and skills learned by students being inconsistent with actual work requirements. In addition, the faculty of vocational education also needs to be strengthened, and the teaching level and professional quality of teachers need to be improved in order to provide students with high-quality teaching services.

Secondly, the employment and internship aspects of vocational education need to be strengthened. The ultimate goal of vocational education is to provide students with opportunities for employment and career development, but in reality, many vocational education students find it difficult to find suitable jobs after graduation, or their employment is not closely related to their major, which hinders their career development [7]. Therefore, vocational education needs to pay more attention to arranging internships and providing employment guidance, in order to help students better adapt to workplace demands and improve their employability.

Finally, the internationalization level of vocational education still needs to be improved. In the context of globalization, vocational education also needs to adapt to the trend of internationalization. Currently, there is still a lot of room for improvement in international cooperation and communication in China's vocational education [8]. More exchanges and cooperation with international educational institutions and enterprises are needed to introduce international advanced educational concepts and technologies into China's vocational education, and to improve the level and quality of vocational education in China.

### 4.3. Vocational Education Development Direction

The development direction of future vocational education should focus on innovating the talent cultivation system, building a high-quality teaching faculty, and innovating teaching content and methods to meet the development needs of the economy and society, and promote vocational education towards a high-quality and high-level direction [9].

Firstly, innovation of the talent cultivation system is one of the important directions for the development of vocational education. With the continuous development and changes in the economy and society, the talent cultivation system of vocational education needs to be adapted accordingly, with more emphasis on practical ability and simulated training in actual work scenarios [10]. In addition, with the rapid development of new industries such as new energy, the talent cultivation of vocational education also needs to keep up with the trend of industrial development, constantly innovate teaching methods and content, and improve the quality and effectiveness of talent cultivation.

Secondly, building a high-quality teaching faculty is another key direction for the development of vocational education. An excellent teaching faculty is the key to ensuring the quality of vocational education and is crucial for the development of vocational education. In the future, we need to continuously improve the overall quality and educational and teaching abilities of the teaching faculty, introduce more excellent teachers and professional talents, while strengthening teacher training and continuing education to improve their professional level and teaching abilities.

Thirdly, innovation of teaching content and methods is also a key direction for the development of vocational education. In the future, vocational education needs to place more emphasis on practical ability cultivation and simulated training in actual work scenarios. Teaching content needs to be adapted to market demand and industry development, emphasizing the integration of knowledge and skills, and strengthening interdisciplinary and cross-industry teaching. At the same time, teaching methods also need to be more diverse and flexible, using new teaching technologies and methods, such as virtual simulation technology and online learning, to improve teaching effectiveness and quality.

## 5. Strategic Path of Integrated Development of New Energy Industry and Vocational Education

### 5.1. Concept and Connotation

The integration of the new energy industry and vocational education refers to the close combination of the new energy industry and vocational education to achieve resource sharing, complementary advantages, promote the development of the new energy industry, and meet the needs of vocational education. This integration includes vocational education providing high-quality talents for the new energy industry, as well as the new energy industry providing practical bases and opportunities for industry-academia-research cooperation for vocational education. The connotation of the integration of the new energy industry and vocational education includes: first, the integration between industry demand and vocational education, that is, vocational education should set courses and cultivate talents based on the needs of the new energy industry; second, the integration of teaching content and methods, that is, incorporating new energy industry-related technologies and knowledge into vocational education teaching, adopting various teaching methods and means; third, the integration of practical teaching and industrial cooperation, that is, vocational education should cooperate with new energy industry enterprises to cultivate students into talents who can meet the actual work needs of the new energy industry.

## 5.2. Path and the Integration of Production and Education Strategy is Implemented

The integration of new energy industry and vocational education refers to the close combination of the two, achieving resource sharing and complementary advantages, promoting the development of the new energy industry, and meeting the needs of vocational education. This integration includes not only vocational education providing high-quality talents for the new energy industry, but also the new energy industry providing practical bases and opportunities for industry-academia-research cooperation for vocational education. The connotation of the integration of the new energy industry and vocational education includes: firstly, the integration of industry demand and vocational education, that is, vocational education should set up courses and cultivate talents based on the needs of the new energy industry; secondly, the integration of teaching content and methods, that is, integrating relevant technology and knowledge of the new energy industry into vocational education teaching, and adopting various teaching methods and means; thirdly, the integration of practical teaching and industry cooperation, that is, vocational education should cooperate with new energy industry enterprises to train students to become talents that meet the actual working requirements of the new energy industry.

Industry-education integration is an important means and approach to achieve the integration of the new energy industry and vocational education, and its strategic paths and implementation methods mainly include the following aspects:

Firstly, industry-academia-research cooperation is one of the important ways to achieve industry-education integration. By cooperating with new energy-related enterprises and research institutions, vocational education can understand the latest development trends of the industry, open relevant courses in combination with enterprise needs, and provide technical services and talent support to enterprises, promoting the technological innovation and development of the new energy industry.

Secondly, innovation of talent cultivation mode is also the key to achieve industry-education integration. Vocational education should innovate the talent cultivation mode according to the development needs of the new energy industry, adopt diversified teaching methods and means, encourage students to participate in enterprise practical activities, improve their practical ability and professional quality, and cultivate talents that meet the needs of the development of the new energy industry.

Thirdly, sharing educational resources is also an effective way to achieve industry-education integration. Vocational education can share its educational resources with new energy industry enterprises, establish industry-academia-research cooperation platforms, and carry out cooperation in scientific and technological innovation, talent cultivation, and other aspects to achieve resource sharing and complementary advantages.

Finally, industry-education integration also requires policy support and social participation. The government should introduce relevant policies to encourage and support the integration and development of the new energy industry and vocational education. At the same time, all sectors of society should actively participate and promote the development of industry-education integration, and promote the benign interaction between the new energy industry and vocational education.

## 6. Conclusion and Prospect

This article draws the following conclusions through research on the integration of the new energy industry and vocational education. Firstly, the new energy industry is a strategic pillar industry for China's economic development, with vast development prospects. At the same time, vocational education is also an important way to cultivate high-quality skilled talents, which is of great strategic significance for the development of the new energy industry. Secondly, there are

many problems and challenges in the current integration of the new energy industry and vocational education. For example, there is a gap between the teaching content of vocational education and the actual needs of the industry, the level of the teaching staff is uneven, and industry standards and norms are not perfect. These problems need to be addressed through the integration of production and education. Finally, the future development trends of the new energy industry include industrial upgrading, technological innovation, and international development. For vocational education, it is necessary to pay more attention to the innovation of the talent training system, improve the level of teaching staff, promote the innovation of teaching content and methods to meet the development needs of the new energy industry.

Looking ahead, the integration of the new energy industry and vocational education will become one of the important ways to promote China's economic development and talent cultivation. It is necessary to increase support in policies, talent training, and teacher training, and strengthen the practice of production and education integration to promote the benign interaction and common development of the new energy industry and vocational education.

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