



Innovative Exploration and Practice in the Construction of Scientific and Technological Talents in Power Grid Enterprises

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Abstract. With the energy transformation, the development and reform of the power industry, and the deepening reform of the economic system, the traditional talent management and training methods in the power industry need to be changed urgently. By combing and summarizing the practical exploration and typical experience of the State Grid and China Southern Power Grid in the construction of scientific and technological talents, this paper provides support and reference for the talent training of power enterprises and provides strong talent support for the transformation of power enterprises under the demand of "double carbon" strategic objectives.

Keywords: Power grid enterprise, Scientific and technological innovation, Talent team construction.

1 Introduction

Electric power industry is the basic industry of national development, which is related to national production and economic development. With the passage of time, the market environment of power industry has changed greatly. Under the new macro background, talent development has become an important part of the development strategy of power enterprises. Facing the complicated and changeable market demand and policy situation, in order to achieve transformation and upgrading and high-quality development, electric power enterprises must strengthen team building, enhance their competitiveness with the help of talent, and attach importance to talent training and management innovation^[1]. Talent is a strategic resource to realize national rejuvenation and win the initiative of international competition. China has entered a new stage of development, and the CPC Central Committee has made important arrangements such as "peak carbon dioxide emissions, carbon neutrality", deepening the reform of power system and building a new power system with new energy as the main body. With the transformation and upgrading of electric power development, it has a far-reaching impact on the development goals and direction of electric power enterprises. In addition, the market competition is becoming increasingly fierce, and electric power enterprises are fac-

ing many challenges. It is necessary to speed up the innovative transformation of electric power enterprises and change the existing talent management concept. A group of talents with high political quality, sufficient achievement momentum, strong innovation ability and comprehensive literacy are needed to support the development of enterprises [2].

2 China Electric Power Research Institute Co., Ltd.: Leading the Development of Scientific and Technological Innovation with the Priority Development of Talent Team

China Electric Power Research Institute Co., Ltd. (China Electric Power Research Institute for short) was established in 1951, which is a scientific research unit directly under State Grid Corporation and a multidisciplinary and comprehensive scientific research institution in China electric power industry. Mainly engaged in power system analysis and protection control technology, high voltage and power transmission and transformation technology, automation and information communication technology, distribution and measurement technology, new energy, energy storage and new electrical technology, etc., covering all aspects of power science and related fields.

China Electric Power Research Institute insists on giving priority to the development of talent team to lead scientific and technological innovation, forming a "talent echelon" led by three academicians of the two academies and two academicians of China Electric Power Research Institute, led by 39 national-level talents, supported by 177 chief experts of the company, provincial and ministerial experts and experts of China Electric Power Research Institute at all levels, with young talents at the bottom. The team of high-quality talents continues to grow and the kinetic energy of scientific and technological innovation continues to increase.

2.1 Mindful of "the Top Priorities of the Country", to Achieve a Higher Position in Talent Work

Keep in mind the "three functions" of state-owned central enterprises, focus on the needs of the country and the expectations of the company, and regard the construction of talent team as the breakthrough point and key point of scientific and technological innovation. Always adhere to the party's management of talents. To implement the Party's overall leadership over talent work, in 2023, the Party Committee of the Academy made overall arrangements for 18 reform measures to "stimulate innovation vitality and build a highland for talents", highlighted political guidance, and built a roadmap for talent development that conforms to the development law of scientific and technological talents and is conducive to the growth of talents at all levels. Always insist on serving the overall situation. Guided by the national strategy, we will train talents in major national projects and tasks such as research and development projects and future industries, and help high-level science and technology to stand on their own feet and develop

new quality productivity. Always insist on taking responsibility. Facing the construction of new power system, cultivate core technical and scientific talents, build a strong technical service talent team around the company's key tasks, and support the company to be a good technology source and industrial chain.

2.2 Focusing on the "First Resource" to Achieve a Stronger Talent Building System

Adhere to the practical standards, reform the talent system and mechanism, and build a high-quality talent training system. Strengthen the system to cultivate talents. We will implement a series of talent projects such as "strategic scientists" and "future scientists" and focus on cultivating "masters" and "everyone". Establish a "four channels and six sequences" development system, support the construction of the State Grid Institute of Excellence Engineers, and carry out joint training of engineering masters and doctors. Implement a number of youth talent training plans, build a platform for youth talent training in conjunction with provincial companies, and establish a diversified talent growth path of step-by-step training and mutual promotion. Excellent mechanism to use talents. Establish a "stuck neck" talent allocation mechanism, and play a leading role in scientific research. The Youth Innovation and Creative Competition and Youth Science and Technology Forum were held to give young talents a heavy burden, and the proportion of young leaders in scientific research projects such as long-term research, basic research and applied research was greatly increased, which greatly stimulated the vitality of innovation and creation. Re-oriented to stimulate talents. Establish an evaluation system based on innovation ability, achievement quality and performance contribution, implement project dividends based on contribution degree, set up dean award fund, and promote incremental resources to tilt towards teams and individuals who have made outstanding contributions [3].

2.3 Focusing on "Casting Soul By Culture", the Talent Development Environment is Better

Adhere to the talent-oriented principle and effectively transform cultural advantages into talent advantages. Build an excellent ecology and love talents. Smooth career development channels, strengthen scientific research integrity management, enrich cultural and sports activities and welfare protection, and support researchers to concentrate on research. All rivers run into the sea to gather talents. Make good use of the national talent introduction policy, implement the treatment of urgently needed talents, improve the talent information database at home and abroad through multiple channels, strengthen the strategic talent reserve, draw a map of key talents cultivation, and accelerate the construction of innovative talents highland. Spirit leads to mold talents. Cultivate the feelings of home and country, vigorously carry forward the spirit of scientists, create a series of spiritual and cultural business cards for scientists, and stimulate the tenacity and persistence of "grinding a sword in ten years".

3 China Southern Power Grid Research Institute Co., Ltd.: Promoting Innovation and Development by Building Talent Advantage

China Southern Power Grid Research Institute Co., Ltd. (hereinafter referred to as "China Southern Power Grid Research Institute") was established on August 6, 2010 and is a holding subsidiary of China Southern Power Grid Corporation. It is positioned as "Central Research Institute of Southern Power Grid, national strategic scientific and technological strength, electric power scientific and technological innovation platform and innovation achievement transformation platform". Mainly engaged in energy and power technology innovation research, new power system technology research, DC transmission technology research, DC engineering system integration design, power system equipment simulation test, new power equipment research and development, power equipment inspection and testing, digital information network technology research and application and other businesses.

In order to implement the strategy of China Southern Power Grid Corporation to strengthen the enterprise with talents and further promote the reform of the talent system and mechanism, China Southern Power Grid Research Institute took the lead in formulating the "New HVDC Transmission and Advanced Equipment Talent Highland Construction Plan". By promoting the three major construction carriers of "optimizing the professional layout of key areas, creating an open and innovative ecology, and improving the diversified growth platform", it coordinated the construction of five mechanisms of "organizational guarantee, talent development, institutional governance, resource investment and cultural guidance" and coordinated the superior resources of the whole network.

3.1 Explore a New Path of Talent Training, and Introduce Talents with Rigidity and Softness

In order to further improve the efficiency and accuracy of talent introduction, China Southern Power Grid Corporation focused on the technical breakthrough problem of "sticking the neck", drew a "map of talent introduction in key areas" around the needs of major national projects, major projects and key core technologies, and introduced high-level talents in batches, layers and stages through various ways such as talent introduction, intermediary talent hunting and talent recommendation at meetings. At the same time, we will explore the implementation of part-time introduction projects for high-level talents, innovate and build a flexible introduction mechanism for high-level talents with talent training as the core and key technical cooperation as the link, and introduce talents flexibly.

3.2 Give Play to the Role of "Young Outstanding Scientists" and Accurately Match Tasks with Talents

In order to give full play to the role of strategic scientists in basic research and strategic decision-making, China Southern Power Grid Corporation will further implement the precise support of academicians and reserve talents of academicians, and set up an expert studio and a studio fund according to the principle of "one person, one policy" to attract funded scientific research teams to participate in the studio research, and the project will be directly established after approval by the person in charge of the studio. Establish a task library of talent pool in key areas. Take the lead in organizing the formulation of talent pool evaluation standards in this field, comprehensively take stock of talents in planning, science and technology and engineering application in this field, and build a core talent pool in this field. At the same time, organize all units in the system of China Southern Power Grid Corporation to sort out the major project tasks in this field, form a task library around the main research fields in this field, and select high-quality projects to implement "unveiling the list" and "horse racing". By opening up two "libraries", the precise matching between tasks and talents can be achieved.

3.3 Make Good Use of Scientific Research Talents and Break Down Barriers to play a Game of Chess

In order to make good use of active scientific research talents, China Southern Power Grid Corporation will improve the new R&D team PI system, improve the organizational model of "based on authorization and decentralization, with salary value linkage as the core and last adjustment as the constraint", give strategic talents greater power to make decisions on technical routes and control resources, realize value-oriented dynamic allocation of personnel and property, truly "untie" talents, and shift their focus to scientific research and technology incubation applications. Adhere to the "three distinctions", respect the laws of scientific research, establish a white list of talent fault tolerance, refine the fault tolerance situation, identification standards and handling procedures, and separate motivation and goal evaluation, behavior and process evaluation, and result and contribution evaluation^[4].

3.4 Establish a Sharing Mechanism Between Achievements and Evaluation

Take the lead in establishing a linkage mechanism between task evaluation and talent evaluation of major projects, and take the actual contribution of project personnel as a necessary link in project conclusion. Implement project achievement sharing, and share the reward achievement according to the actual contribution of each unit. In terms of expert selection, assessment and employee performance evaluation, we will promote the exchange and mutual recognition of the performance of trainers in various units.

4 Practical Enlightenment

The management of scientific and technological talents can not be generalized, but should be classified by layers and focused. The management of scientific and technological talents in state-owned enterprises is highly complex, which needs to consider the influence of many factors, such as enterprise characteristics, characteristics of scientific and technological innovation activities and differentiated needs of scientific and technological talents. There is no one-size-fits-all method. Based on the talent development echelon, China Electric Power Research Institute conducts differentiated management of different scientific and technological talents. According to the development maturity of different scientific and technological talents, China Southern Power Grid Research Institute has also carried out differentiated system design. Therefore, for the management of scientific and technological talents, we must fully consider the characteristics of different levels and types of scientific and technological talents, and carry out differentiated management on the basis of systematic and complete division of scientific and technological talents, analysis of characteristics and deconstruction of needs.

5 Conclusion

As the driving force of economic development and social progress, scientific and technological talents are the main force of enterprises in market development and the core driving force of technological innovation, so the cultivation of scientific and technological talents is of great significance in enterprise development [5]. Under the background of energy transformation and development, in order to achieve leapfrog development, the power industry must give full play to the advantages of talents, pay attention to the training of scientific and technological talents, and strive to build a large-scale talent team with reasonable structure and excellent quality, so as to vigorously promote the innovative development of electric power.

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