

Critical Path of Power Grid Enterprises Serving Rural Revitalization Strategy

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ABSTRACT. The 19th CPC National Congress put forward the strategy of Rural Revitalization for the first time, and list it as a major national strategy. In 2022, the Central Document No. 1 put forward a comprehensive promotion of rural revitalization, calling for a solid and orderly implementation of the key work of rural development, rural construction and rural governance, which defined the direction and priorities of the rural revitalization work. Power grid plays an extremely important supporting and guarantee role in rural revitalization, due to its important infrastructure for economic and social development. In recent years, even though power grid enterprises have actively implemented various objectives and tasks of the Rural Revitalization Strategy and achieved remarkable results, there is still a certain gap with the high-quality Rural Revitalization Strategy. It is urgent to strengthen the strategic planning and promotion of serving rural revitalization, systematically design the implementation framework and key measures of power grid enterprises serving rural revitalization, contribute power grid strength to serving Rural Revitalization Strategy, and promote new progress in Rural Revitalization. New steps have been taken in agricultural and rural modernization.

Keywords: Rural Revitalization, Power Grid Enterprises, Critical Path

1 Introduction

The implementation of the Rural Revitalization Strategy is a major historical task of building a well-off society in an all-round way and building a modern country with the main body of society in an all-round way. It is the general starting point for the implementation of rural work in the new era. Since the 19th CPC National Congress, the government has issued a number of

policy documents, which put forward requirements and pointed out the direction for the development of power grid in rural revitalization. First, we should strengthen rural power grid construction and consolidate power grid infrastructure. We will improve the layout of rural power grids, accelerate a new round of rural power grid transformation and upgrading and the construction of medium voltage distribution network backbone, comprehensively consolidate and improve the level of rural power security, and meet the production and living needs of farmers. Second, we should improve rural power supply service capacity and ensure safe and reliable power supply. Strengthen the training and construction of township power supply stations and rural power supply teams, promote the integration of urban and rural services, make up for the short-comings of rural power supply services, realize the transformation from using electricity to use using electricity better, and gradually change from power suppliers to comprehensive energy service providers. Last, we should accelerate the promotion of clean energy use in rural areas and support the reform of rural energy supply side. Carry out comprehensive energy services, promote rural clean and low-carbon energy consumption, actively build rural distributed clean energy network, promote comprehensive smart energy services, improve the clean level of rural production and domestic energy consumption, and help the development of new energy in rural areas.

At present, power grid enterprises give full play to their power advantages, take the new development concept as the guide, take a strong smart grid and high-quality services as the guarantee. We always adhere to starting from the reality of rural production and life, strengthen the infrastructure construction of rural power grid, promote the improvement of rural electrification, optimize rural power supply services, actively carry out rural assistance actions, and make every effort to serve the revitalization and development of rural areas, in terms of rural power grid guarantee capacity, electrification consumption level, rural power supply services. Remarkable achievements have been made in the task of poverty alleviation. However, compared with the requirements of high-quality service for rural revitalization, there are still many areas need to be further strengthened, such as the transformation and upgrading of rural power grid, the level of rural electrification, helping the photovoltaic development of the whole county, power data mining and the improvement of power supply service quality.

This paper takes the current situation and key problems of power grid enterprises serving rural revitalization as the starting point, studies the construction of a strategic system of serving rural revitalization with the characteristics of power grid enterprises, puts forward the framework structure of the overall thinking, development goals and Implementation Paths, defines the key projects, key measures and safeguard measures of serving rural revitalization, and accelerates the implementation of the Rural Revitalization Strategy.

2 Thoughts and Implementation Framework

Under the new development situation, power grid enterprises need to take the “integration and unification of comprehensive service for Rural Revitalization and corporate business value” as the construction goal, focus on the general requirements of “industrial prosperity, ecological livability, rural civilization, effective governance and affluent life”, adhere to the “four development principles” of low-carbon electrification, high-end intelligence, pluralistic equalization and new modernization, new type of modernization, and focus on the improvement

direction of “five services”, Follow the improvement path of the “five projects”, implement the improvement measures of the “15 actions”, comprehensively serve the Rural Revitalization Strategy, and promote high-quality and efficient agriculture, rural livability and industry, and farmers’ prosperity, see Figure 1 for details.

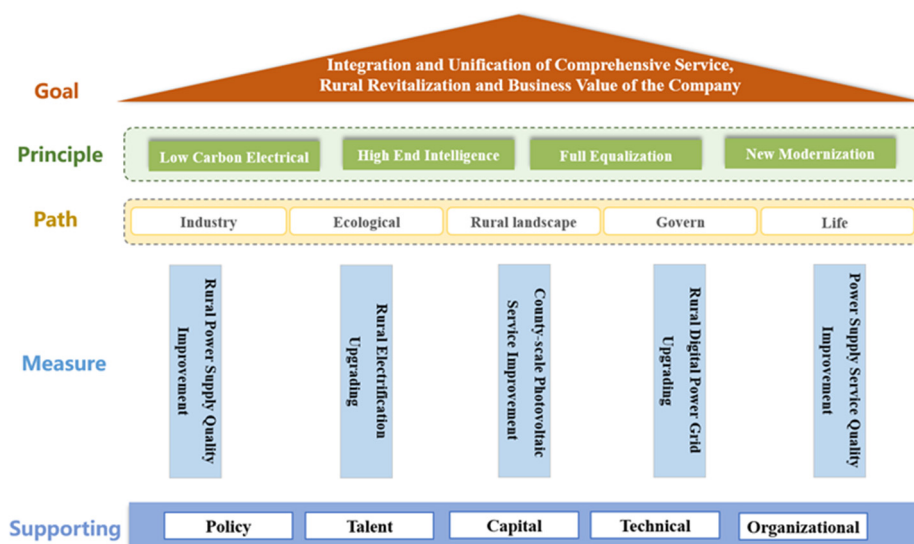


Figure 1 Implementation framework for grid enterprises to serve rural revitalization

2.1 Basic Principle

(1) Adhere to low-carbon electrification. Focus on the “double carbon” goal, new power system, clean and low-carbon development and other requirements, and realize the development of agricultural production, rural industry, rural life and other fields towards a more low-carbon electrification direction.

(2) Adhere to high-end intelligence. Focusing on the construction of intelligent distribution network and rural energy Internet, combined with the relevant requirements of high-quality development, carry out the intelligent upgrading of rural power grid equipment, operation and maintenance, and strive to develop in a more intelligent direction.

(3) Adhere to pluralistic equalization and new modernization. We will promote more diversified equalization of urban and rural services and comprehensively improve the service level and capacity of rural power supply in terms of power supply quality, equipment operation and maintenance, emergency repair services, business expansion, newspaper installation, meter reading and charging.

(4) Adhere to the new type of modernization. Focusing on the synchronous development of industrialization, informatization, urbanization and rural modernization, we will accelerate the

formation of a new type of agricultural and rural modernization featuring mutual promotion of industry and agriculture, complementarity between urban and rural areas, comprehensive integration and common prosperity.

2.2 Development Goals

First of all, strive to realize the integration and unity of serving rural revitalization and power grid business value, and a new rural power grid suitable for modern agriculture, beautiful and livable villages and rural industrial integration will be built in an all-round way. Further optimize our grid structure, improve the reliability of power supply, we will provide sufficient, reliable and high-quality power and energy guarantee for the comprehensive revitalization of rural areas. And then, the level of electrification and intelligence in various fields of agriculture and rural areas will be greatly improved. Significant changes will take place in the mode of rural energy production and consumption, the proportion of electric energy in terminal energy consumption in rural areas will continue to increase, and the entire county's large-scale photovoltaic grid connection service mode will continue to be optimized, laying a solid foundation for rural green development. Finally, the equalization mechanism of urban and rural power supply services will be basically established, the power supply service level will continue to improve, and the value of power data will be fully displayed. We will help modernize the urban and rural governance system and governance capacity, drive social enterprises, the government and the public to participate in rural revitalization, help achieve the integration and unity of serving rural revitalization and business value, and provide strong support for building a well-off society at a high level in an all-round way.

3 Key Initiatives

3.1 Rural Power Supply Quality Improvement Project

(1) Scientific planning of rural power grid. In the next step, we should scientifically plan and build the rural power grid, closely connect the planning and implementation plans at all levels, actively connect with governments at all levels, comprehensively consider the connection between the work of serving the high-quality development of agriculture and rural construction actions and the rural power grid planning, and promote the effective connection between the rural power grid planning and the rural revitalization planning.

(2) Rural power grid transformation and upgrading. Focus on the power demand of agricultural and rural modernization, continuously enhance the structure of rural power grid, optimize the distribution of power supply and distribution transformer, accelerate the distribution of substation in load concentration areas, improve the power supply quality in rural areas and the intelligent level of rural energy allocation, so as to meet the needs of rapid increase of rural load.

(3) Differentiated construction of rural power grid. Carry out differentiated power grid construction in accordance with the principle of priority, solve the problems of unbalanced regional development and unbalanced development of urban and rural power grids, and meet regional differentiated power demand.

3.2 Rural Electrification Upgrading Project

(1) Promote electrification of agricultural production. Master the power demand and load characteristics of electrified agricultural planting, livestock breeding and aquaculture, reasonably plan the layout of power infrastructure in advance, promote the construction of supporting power facilities for agricultural production, and meet the reliability and power supply quality requirements of agricultural production electrification.

(2) Promote electrification of rural industrial. Fully tap the demand for electrification in Rural Revitalization and industrial development. Expand the demand of electrification facilities in the storage and processing of grain and agricultural products, and serve the energy demand of agricultural processing such as family farms, large grain growers and professional cooperatives, and promote the optimization and strengthening of agricultural product processing industry and the electrification of rural leisure tourism agriculture.

(3) Promote electrification of rural life. Organize rural green travel and promote rural household electrification. We will continue to carry out new energy vehicles to the countryside, gradually improve the utilization level of electric energy in all areas of rural life, improve the quality of rural life and serve the construction of beautiful villages.

3.3 County-scale photovoltaic service improvement

(1) Support photovoltaic scale development. Scientifically evaluate rural photovoltaic resources and power grid carrying capacity, support the government to reasonably formulate photovoltaic development plans, strengthen the construction of photovoltaic operation and maintenance guarantee capacity, promote the construction of power station operation and maintenance management mechanism of “local government leading and professional institutions participating”, and improve the overall photovoltaic large-scale development capacity of the County.

(2) Service photovoltaic grid connected consumption action. Enhance the perception and prediction ability of distributed photovoltaic, improve the access process of rural distribution network, improve the flexibility level of rural power grid, effectively ensure the demand for large-scale photovoltaic access, and make every effort to promote the full consumption of clean energy such as photovoltaic.

(3) Optimize photovoltaic grid connection process. Explore and implement “one-stop” services, including business acceptance, onsite investigation, scheme design, contract signing, meter installation and power connection, grid connected operation, daily maintenance and other processes. Formulate differentiated grid connection service processes for different voltage levels to comprehensively improve the efficiency of grid connection services.

3.4 Rural Digital Power Grid Upgrading Project

(1) Rural Revitalization power index. Tap the value of rural energy data and integrate multi-source data such as geography and finance. Evaluate and serve the Rural Revitalization from multiple levels and dimensions, regularly release the Rural Revitalization power index, dynamically monitor the effectiveness of rural revitalization, and support the government in making scientific management decisions.

(2) Intelligent improvement of rural power grid. We will promote the intellectualization of distribution networks, strengthen the construction of rural energy information collection terminals, and establish a rural energy Internet that integrates the production and consumption of various types of energy. Optimize the maintenance plan and arrangement, strengthen intelligent operation and maintenance and fine management, and improve the efficiency of operation and maintenance.

(3) Basic levels digital empowerment. Strengthen digital “two-way empowerment” and improve internal management efficiency and external service capacity. Combined with the actual needs of the grass-roots level, use digital technology and digital concept to optimize business processes, promote the digitization of management operation and business execution, and improve the flexibility and adaptability of grass-roots management.

3.5 Power supply service quality improvement project

(1) Optimizing the rural business environment. Optimize the rural electricity business environment, understand the needs of customers in advance, and meet the personalized needs of various customer groups. We will continue to simplify procedures and vigorously promote the “three zero and three economize” services. Promote the integration of urban and rural services, unify the specific requirements of urban and rural power supply services, and realize the equalization of urban and rural services.

(2) Power supply service personnel training. Clarify the responsibilities of grass-roots power supply stations, increase talent preference, carry out professional training, strengthen the specialization of staff allocation of grass-roots front-line power supply stations, improve the talent cultivation mechanism of different types of power supply stations, expand staff development channels, improve the professional ability of new businesses, and build a backend all-round service team for township and Village revitalization.

(3) Digital power supply station. Relying on the support of “strong frontend” and “big backend”, strengthen the service support capacity of township power supply stations, deepen the construction of all-round township power supply stations, carry out digital module construction led by grass-roots needs, and promote the comprehensive management level of power supply stations to a higher level.

4 Safeguard Measures

In order to ensure the implementation of key measures of power grid enterprises serving rural revitalization, safeguard measures are formulated from various aspects based on the perspective of all factors, including policy guarantee, talent guarantee, capital guarantee, technical guarantee, organizational guarantee, etc.

4.1 Policy

It is necessary to use the method of system theory to make an overall planning for all aspects, levels and elements of power development from the perspective of the overall situation, promote the planning results to be incorporated into the development planning of governments at all levels, and ensure the effective connection with the rural revitalization planning.

4.2 Talent

Strengthen the awareness of paying attention to talents, establish the guidance of attracting talents, carry out talent training and introduction according to the characteristics of energy services at all levels such as villages, towns, cities and counties, enrich the technical force of rural energy services, improve assessment and incentive measures, and stimulate the vitality of talent team.

4.3 Capital

We will continue to increase investment in the construction of rural distribution networks, reasonably arrange capital investment according to the stage of regional economic development and the difference of power grid foundation, and ensure that the transformation and upgrading of rural power grids are carried out in an orderly manner.

4.4 Technical

Strengthen the research and development of Rural Electrification Technology and products, promote technologies related to power substitution, constantly promote the upgrading of power grid technology and equipment, improve the intelligent level of rural power grid, and support the construction of rural energy Internet.

4.5 Organizational

Establish a leading group for Rural Revitalization. Pay attention to horizontal coordination and vertical connection, promote all work as a whole, study and formulate key work plans according to the division of responsibilities, and do a good job in the connection of policies, measures and work to ensure that all work is implemented in place.

5 Conclusion

Systematically combed the Rural Revitalization policies issued by the government and the State Grid Corporation of China. Power grid enterprises need to strengthen the construction of rural power grid infrastructure, improve the level of rural electrification, improve the quality of rural power supply service, promote rural clean energy consumption, and support the implementation of Rural Revitalization Strategy. Focusing on the rural regional characteristics, industrial characteristics, economic foundation and other factors, this paper studies and puts forward the implementation framework of “5515” for rural revitalization, the improvement direction of “five services”, the improvement path of “five projects” and the improvement measures of “15 actions”.

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