Tenrony Transformers: Strengthening the Foundation of Urban and Rural Energy, Solving the Challenges of Power Development

In the current era of accelerated urbanization and the in-depth advancement of the rural revitalization strategy, energy, as the core driving force for social operation, has become increasingly crucial in terms of supply stability and efficiency. In urban centers, with their dense populations and industrial clusters, energy demand is snowballing; meanwhile, vast rural communities are eager to achieve economic takeoff and improve living standards through electrification. Connecting urban and rural areas and ensuring smooth energy flow cannot do without a powerful and reliable power grid infrastructure. Transformers and substations, as the "heart" of the power grid, are of paramount importance. Tenrony, deeply rooted in the power industry, relies on comprehensive transformer and substation solutions to precisely meet the energy development needs of both urban and rural areas. It has achieved remarkable results in efficient energy distribution, reducing power outages, and promoting the modernization of the power grid.

Addressing the pain points of energy in urban and rural areas and analyzing the key challenges.

The disparity in urban and rural development has led to distinct and personalized challenges for power grids. In cities, the primary issue is the ever-growing demand for electricity. With the rapid rise of skyscrapers, the widespread application of various smart devices, and the increasing popularity of new energy vehicles, cities are consuming more and more electricity, overwhelming traditional power grids. Additionally, urban land is extremely valuable, and space constraints have become a

bottleneck for substation construction. How to achieve efficient power supply within limited space is a test for every provider of power solutions. Moreover, the urban power grid is highly interconnected, and its stability directly affects industrial production, commercial operations, and residents' lives. Even minor fluctuations can cause significant losses. More importantly, with the advancement of smart city construction, the integration of smart grids has become an inevitable requirement, which traditional equipment cannot meet.

In rural areas, the situation is quite different. The first challenge is to expand the coverage of the power grid. Many remote areas have complex terrain and inconvenient transportation, making it extremely difficult to set up power grids, resulting in long-term insufficient power supply in some rural areas. Secondly, due to the long transmission lines in rural power grids, transmission losses are prominent, causing a significant waste of energy. Furthermore, the natural environment in rural areas is relatively harsh, and power grid equipment needs to adapt to remote conditions and withstand high temperatures, cold, wind, and rain. Finally, ensuring the reliability of rural power grids is of vital importance. A stable power supply is the foundation for rural agricultural production and improving living conditions.

Customized solutions, empowering urban and rural development

In response to the differentiated challenges faced by urban and rural power grids, Tenrony has launched a series of customized solutions to provide a strong guarantee for energy supply in both urban and rural areas.

In the urban sector, Tenrony's solutions are characterized by high efficiency, compactness, and intelligence. Compact substations, as a key measure to address space constraints, feature small footprints and strong power supply capabilities, and can be flexibly deployed in commercial and residential areas in urban core regions, effectively enhancing space utilization efficiency and reducing the pressure on urban land

resources. Low-noise transformers fully consider the special requirements of the urban environment, with significantly reduced noise levels during operation, effectively avoiding interference with the lives of surrounding residents and achieving coordinated development with the urban environment.

To adapt to the development of smart grids, Tenrony provides equipment that supports smart grids. These devices are equipped with advanced communication and control functions, enabling real-time monitoring, precise regulation, and intelligent operation and maintenance of the power grid, thereby enhancing the intelligence level of the power grid. At the same time, advanced monitoring solutions can conduct all-round and all-weather monitoring of urban power grids, promptly detect and warn of potential faults, minimize the risk of power outages, and ensure the stable operation of urban power grids.

In rural areas, Tenrony's solutions focus more on adaptability, energy efficiency, and reliability. Mobile substations provide great convenience for power supply in remote areas. They can be flexibly moved to where they are needed and quickly set up temporary power supply systems, solving the problems of high difficulty and long construction periods in grid construction in remote areas. Pole-mounted transformers are easy to install and suitable for the scattered residential characteristics of rural areas, effectively expanding the coverage of the power grid and enabling more rural households to have stable electricity. The application of energy-saving designs significantly reduces transmission losses in rural power grids and improves energy utilization efficiency, saving precious energy resources for rural areas. In addition, a powerful protection system acts as a "protective suit" for rural power grid equipment, capable of withstanding various adverse environmental influences and ensuring the long-term stable operation of equipment in remote areas, guaranteeing the reliability of rural power supply.

Examples prove strength, and cases demonstrate value.

Tenrony's solutions are not just theoretical; numerous successful cases have demonstrated its strength and value in urban and rural power grid construction. In a bustling southern city, as the city expanded rapidly, the existing substations could no longer meet the growing power demands and occupied large areas, which were incompatible with the development of the surrounding commercial districts. Tenrony tailored an upgrade plan for the city, introducing several compact substations and low-noise transformers. These compact substations were ingeniously integrated into the urban architecture, occupying only one-third of the area of traditional substations while increasing power supply capacity by 50%, effectively easing the power supply pressure in the area. The application of low-noise transformers kept the noise level around the substations below 40 decibels, making them almost imperceptible to residents and completely solving the problem of noise disturbance caused by substations in the past. Meanwhile, the accompanying intelligent monitoring system enabled power grid operation and maintenance personnel to monitor the equipment's operational status in real time. The power outage time in this area was reduced by 80% compared to before, significantly enhancing the stability of the power grid and providing a solid power guarantee for the city's commercial prosperity and residents' lives.

In a remote rural area in the west, due to its mountainous terrain, power grid coverage had always been a challenge, and villagers often faced unstable power supply and insufficient voltage. After conducting on-site investigations, Tenrony equipped the area with multiple pole-mounted transformers and a mobile substation. The pole-mounted transformers were installed in every corner of the village, precisely covering every household, allowing villagers to bid farewell to the era of candles and kerosene lamps. The mobile substation played a crucial role during the busy farming season, providing stable power support for irrigation equipment, threshers, and other agricultural machinery, greatly improving agricultural production efficiency. Moreover, the application of energy-saving designs reduced power transmission losses in the area by more than 30%, saving a significant amount of electricity annually. The robust protection system ensured the stable operation of the transformers in the face of the mountainous area's variable weather, increasing the reliability of power supply in the area by 90% compared to before. The quality of life for villagers improved significantly, and it also injected strong impetus into the development of local specialty agricultural product processing and rural tourism industries.

From bustling cities to remote villages, Tenrony has always been dedicated to solving energy problems in urban and rural areas with innovative transformer and substation solutions, continuously injecting new impetus into urban and rural construction. In the future, Tenrony will continue to focus on the power industry, constantly upgrading technology and services, and contribute more to building a more efficient, stable, and intelligent urban and rural power grid.

Author: Luna.li from Tenrony