

Impact and Countermeasures of the Increase in Electricity Prices on Industrial Power Conservation for the Year 2022-2023

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In the past two years, the increase in fuel prices has created significant operational pressure for Taiwan Power Company (Taipower). In order to timely reflect reasonable costs and ensure stable power supply, the Ministry of Economic Affairs adjusted electricity prices for industrial users with high voltage and extra-high voltage in July 2022 and April 2023, with increases of 15% and 17%, respectively. These adjustments were higher than the average electricity price adjustment (8.4% and 11%). Despite these adjustments, Taipower still faces substantial losses, and there is an expectation of possible future electricity price increases.

Therefore, this study utilizes a questionnaire survey to investigate the actual electricity costs and operational cost impacts for industrial users in the face of the past two years and future electricity price adjustment policies. It also explores the implementation of relevant energy-saving measures, coping strategies, and expectations or suggestions for government assistance in policy. The analysis aims to understand the impact of electricity price increases on promoting energy conservation and improving energy efficiency, as well as how to assist industries in conserving energy and enhancing energy use efficiency amid rising price pressures.

According to the survey results presented in this article, nearly 40% of the large industrial energy users in our country have electricity costs accounting for over 10% of their operating costs, with 7% of businesses having electricity costs exceeding 40%. Faced with the recent two-year increase in electricity prices, which has raised operational costs, 6% of businesses indicate that a 1-5%

increase in operating costs could potentially lead to company closures or relocations. It is suggested that the government should pay closer attention to this issue and provide relevant guidance programs.

The impact of the two electricity price adjustments in 2022-2023 reveals that, under the pressure of energy cost, the number of businesses taking no measures has decreased. Users are adapting by extending beyond the initial strategy of replacing old equipment, incorporating more energy-saving measures. These measures include reducing equipment operating hours, shifting electricity usage from peak to off-peak hours, adjusting electricity contract capacities, upgrading energy management systems, and outsourcing some production processes. These adaptations aim to mitigate the impact of energy cost on the operational efficiency of enterprises.

To mitigate the impact of rising electricity prices and encourage industrial transformation, this article also conducted a survey on businesses to identify their expectations for future government assistance. The findings indicate that businesses are most hopeful for government support in the form of financial subsidies, energy-saving tax incentives, and information or professional consultation, planning, and diagnostic services related to energy efficiency and carbon reduction. However, in practice, the majority of businesses have not applied for any subsidy measures, suggesting potential issues such as information asymmetry or difficulty in applying for subsidies that could be improved upon.

Furthermore, amidst the pressure of rising electricity prices, it is essential for the government to assist industries in energy conservation and improving energy efficiency. This can be achieved by leveraging fiscal tools or the power of the financial market to support low-carbon transformation. The government can provide low-carbon investment incentives through tax benefits or incentive subsidies for investments in energy-saving equipment. In addition, the government should enhance the provision of relevant energy-saving and carbon reduction technology guidance and consulting services, as well as facilitate activities for the exchange of industrial energy efficiency improvement technologies and information sharing. This approach can help reduce information asymmetry and transaction costs, encouraging more businesses to engage in the transition.

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