Review of: "Increasing Renewables and Building Retrofit in a Coal-Based Cogeneration District Heating System"

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This paper provides a comprehensive and insightful overview of district heating systems. Authors skillfully synthesizes research findings, offering a balanced and well-supported perspective on the current state and future potential of district heating.

The paper connects the theoretical frameworks of district heating with practical applications, showing various research studies that analyze the impact of district heating on energy systems. The inclusion of case studies, such as the one in Prishtina, Kosovo, adds a valuable real-world dimension to the discussion. By illustrating the transition of a coal-dependent district heating system towards the fourth generation, the text provides a tangible example of how these theoretical concepts can be applied in practice. This case study approach enhances the applicability of the research and makes it more relatable for readers.

The paper's structure is well-organized, with clear delineations of sections, from methodology to case studies, results, and conclusions. This structure aids in a seamless flow of information, allowing readers to navigate through the text with ease.

This text presents a highly commendable exploration into the role of large-scale heat pumps in district heating, using the EnergyPLAN model as a robust analytical tool. The development of the model for the reference year 2018 reflects a commitment to accuracy and relevance, providing a solid foundation for assessing the potential impact of integrating renewable energy sources in a coal-based district heating system.

In summary, the text is a commendable contribution to the field of district heating research. It successfully bridges the gap between theoretical frameworks and practical applications, providing a well-rounded exploration of the subject. The inclusion of diverse research studies, case studies, and the use of modeling tools enhances the depth and breadth of the discussion, making it a valuable resource for researchers, policymakers, and anyone interested in the future of sustainable energy systems.