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

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Potential competing interests: No potential competing interests to declare.

1. The manuscript provides a comprehensive analysis of the role of large-scale heat pumps in district heating to increase the share of variable renewable energy and decrease CO2 emissions from coal-based district heating systems. The use of the EnergyPLAN model for assessing the impact of increasing the district heating share and building retrofitting on the overall performance of the energy system is commendable. However, it would be beneficial to provide more details on the specific parameters and assumptions used in the EnergyPLAN model to enhance the transparency and reproducibility of the study.

2. The incorporation of different local building energy efficiency retrofitting norms and their impact on the overall performance of the energy system is a valuable contribution to the field. However, it would be beneficial to discuss the potential challenges and limitations associated with the implementation of these retrofitting norms, particularly in the context of the existing building stock and urban infrastructure.

Overall, the manuscript presents a valuable contribution to the field of sustainable energy systems and district heating. With some additional details and considerations, the study has the potential to make a significant impact on the understanding and implementation of large-scale heat pumps in district heating systems