

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.

The paper addresses an important topic: the conversion of old-generation DHGs to 4th GDH. Initiating studies is crucial, and the authors' development serves as a foundation for further in-depth research. For instance, it is essential to begin conducting evaluations on the temperatures of the heat transfer fluid.

The historical evolution of district heating networks (DHNs) is marked by a transition from high-temperature carriers to lower temperatures (hot water with $T < 100$ °C for 3rd and 4th generation DHNs). Numerous scientific works have emphasized the presence of various barriers, many stemming from an initial design emphasis on high-temperature heat carriers.

The paper doesn't fully address this issue. However, it could be tackled through a detailed analysis of integrating high-temperature fluids from coal-based cogeneration systems with medium-temperature ones from heat pumps. This integration might require a targeted engineering approach to optimize the overall system efficiency.

Certainly, this paper is a preliminary study, and this should be emphasized in the introductory section.