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# THE IMPLEMENTATION OF THE DISTRICT HEATING ENERGY SECURITY INDEX THROUGH A LEGISLATION FRAMEWORK

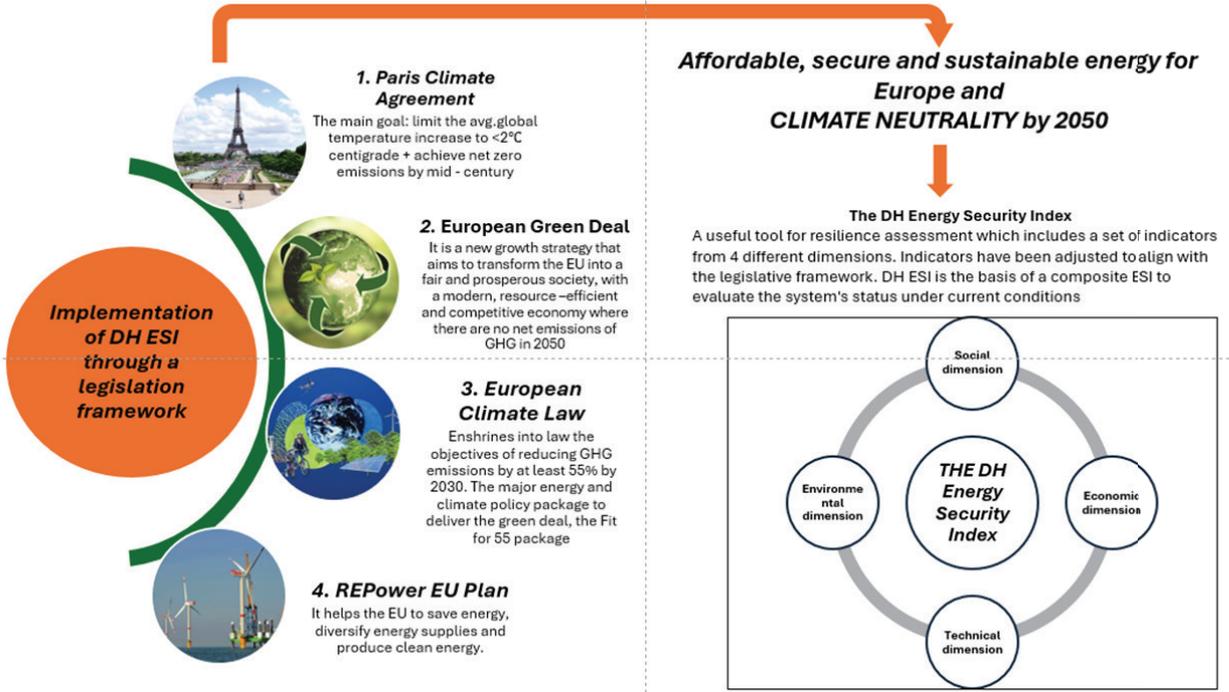
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**Abstract** – The resilience of district heating (DH) is a relevant research topic, as energy systems are frequently affected by natural and human-induced disruptions, such as floods and supply chain issues. A valuable tool for resilience assessment is the Energy Security Index (ESI). In the existing literature, it is mostly used for the evaluation of a country, but not as much for certain energy systems. In this study, a municipal DH system is studied through the lens of energy security. An ESI is used to better evaluate the state of the DH system during unplanned interruptions. It includes a set of indicators – social, economic, environmental, and technical – that form the basis of a composite ESI to evaluate the system’s status under current conditions. In this study, the previously developed methodology is applied to a case study from Latvia. Adjustments to the indicators are made, and three main risks – dependency on energy imports, affordability of DH, and diversity of heat sources – are identified to facilitate a more thorough analysis of the specific system. The results have been adjusted to align with the legislative framework in Latvia and the European Union concerning DH development. This adjustment aims to propose realistic scenarios for system improvement, considering its specific characteristics. These results can be used for decision-making at the municipal level, and the developed methodology can be applied to other cases.

**Keywords** – *Composite index; district heating; energy security index; resilience assessment*



DH ESI through a legislation framework

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