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INTEGRATING LOW TEMPERATURE WASTE HEAT IN DISTRICT HEATING SYSTEMS. LEGAL FRAMEWORK AND PRICING

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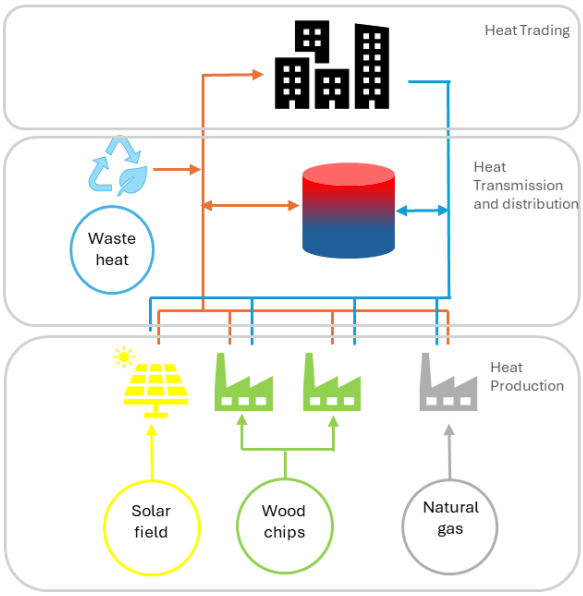
Abstract – Decarbonisation of the heating sector is a key challenge for the European Union to achieve its ambitious goals of becoming the first climate-neutral continent in 2050. Decarbonising the heating sector is about reducing fossil fuel consumption and finding new scenarios based on renewables and restructuring the operation of district heating system. Recovering and integration waste heat into the district heating system has an enormous potential to meet the heating needs of households through non-combustion technologies while reducing carbon emissions. The heat from urban sources of waste heat is advantageous because the heat sources are close to district heating networks and close to areas with high heat demand. However, there is still no legal or regulatory framework for the use of waste heat and no incentives for its use in district heating in the Member States of EU. This paper has two main objectives: firstly, to consider different pricing and cost determination scenarios when the waste heat is integrated into the district heating system. The heat tariff calculation model is based on the approved Latvian heat tariff calculation methodology. Secondly – to consider a mathematical model for the pricing of waste heat. The waste heat integration strategies are tested on the case study of district heating system in Salaspils, Latvia. Simplified model of a waste heat recovery system that recovers heat energy from a wastewater treatment plant through heat pump integration is developed.

Keywords – District heating; heat tariff; low temperature waste heat; modelling; waste heat



Heat Tariff Pricing model.