

Utilization of industrial waste-heat for district heating system in an Eco-Industrial Park (EIP)

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The objective of this study is to develop and evaluate an approach for utilization of waste-heat of a local industrial symbiosis network. An optimization approach is proposed in order to assess the technical and economic feasibility of a waste-heat based district heating system in an eco-industrial park. The approach is applied to a case based on the cooperation between the petro-chemical industry and municipality in Yeosu. Several possibilities for improving energy use by increasing integration were identified. To utilize surplus steam from industrial waste incinerators, a greenhouse heating system including heat exchangers and heat storages is designed. Furthermore, specific design parameters which can lead to significant savings in comparison to traditional fossil fuel are calculated both from the point of view of costs and of environmental impact.

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