

Track 1 - The bioresource transition in regions

**Title of the proposed paper**

Optimized configuration of a biogas cogeneration and district heating system

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**Text abstract (max. 300 words)**

The energy supply for the new Meppel district Nieuwveense landen is based on biogas cogeneration, district heating and ground source heat pumps. When a sufficient number of houses are build, a CHP converts biogas from the municipal waste water treatment facility into electricity for heat pumps and heat for district heating purposes. Development of the urban district is influenced by the current economic and building decline. For the district heating energy concept, a migration strategy for the required infrastructure is developed with minimum operational costs as objective. The migration spans the district's small scale starting phase involving 20-40 houses up to the scale involving 200-300 houses. District heating demand patterns are investigated and described, from which optimal CHP, boiler and thermal storage sizes are determined and developed into a migration strategy.