Sustainable Area Development: Open Energy Grid Zaanstad

(region of Amsterdam)

Partners in the Zaanstad project

- The Municipality of Zaanstad
- ZMC medical center
- Rochdale Housing Foundation
- Parteon Housing Foundation
- Zaandams Volkshuisvesting Housing Foundation
- Evean elderly care
- Alliander Network company
- Dalkia B.V.
- HVC N.V.
- Cofely West Nederland B.V.
- Bio Forte B.V.
- Province of Noord-Holland
- Royal Verkade N.V.
- Goglio North Europe B.V.
- Water board Hollands Noorderkwartier
- Tate & Lyle Netherlands B.V.
- AEB Amsterdam Incineration plant
- Westpoort Heat B.V.

Photo: Dick Riesmeijer (gemeente Zaanstad)

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The municipality of Zaanstad wants to achieve its climate goals through reforming their current energy system into a local, sustainable and affordable system. To realize this ambitious goal they are supported by Alliander. For instance by visualizing the heat demands and- supplies within the area in a serious game. This innovative open energy grid is developed by a consortium in the Zaanstad region, which is formed by the municipality of Zaanstad, the Province of North-Holland, Alliander, ZMC medical centre and others (see the list at the rear).

How does it work?

The new heat grid is designed in an interactive multi-stake-holder process and will provide sufficient capacity for local industries to distribute residual heat from their facilities to potential consumers. The thermal energy will be used to heat, or cool, buildings in the area. Furthermore, the open heat grid will be connected to the electricity grid, i.e. by the use of heat pumps. Future surpluses in sustainable electricity from solar and wind power will be used to effectively balance supply and demand of heat (dispatch). Participants in this grid will be able to adjust their consumption and decide based on variations in price, production, and use of electricity. The more actively the grid will be used, the more CO_2 will be reduced. A special and innovative feature – compared to mainstream infrastructure – is the open network structure of this energy grid, this enables all heat producing companies, suppliers, and customers to play by - and benefit from the same rules.
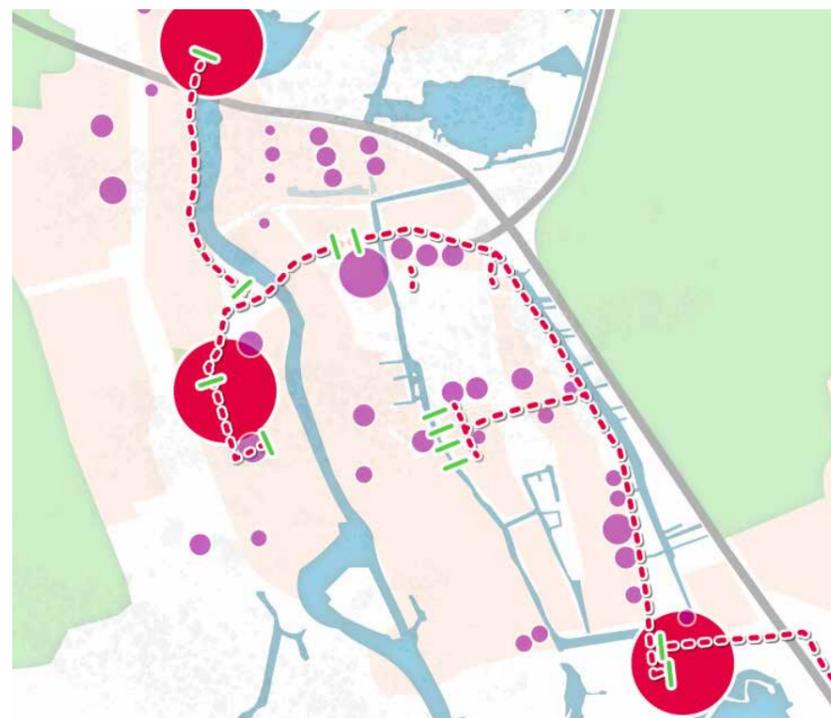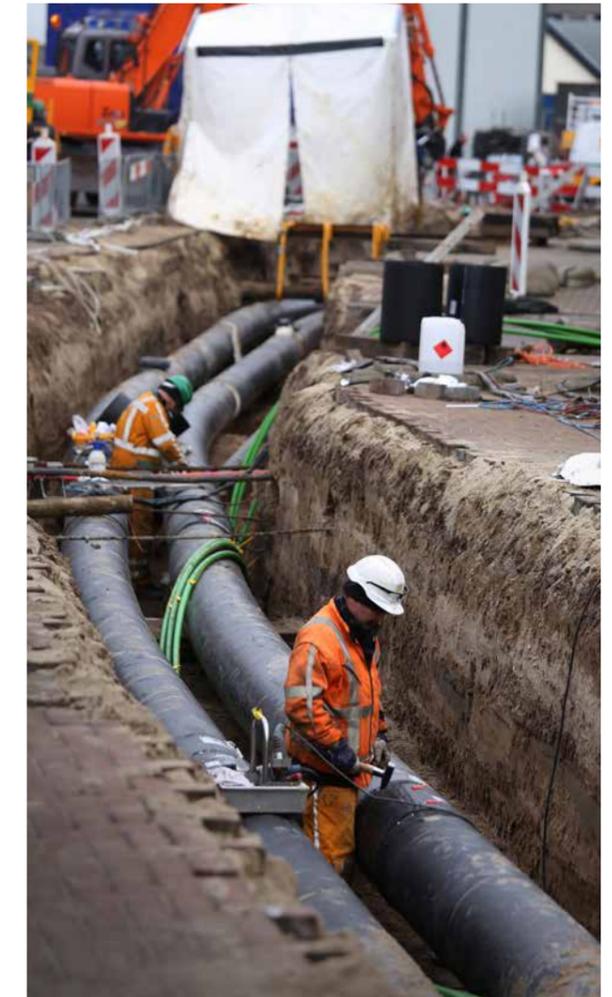
First draft of the network that connects suppliers and customers of thermal energy.

The core of sustainable area development is to create new links and connections. In Zaanstad, residual heat and electricity will be combined in a new open grid system which connects multiple suppliers and consumers. Combining thermal and electrical energy in one system will enhance the overall business case and therefore speed up sustainable development in the region. The method applied in the Zaanstad project is special because many different stakeholders cooperate interactively and work on common climate goals. Different stakeholders are working together to achieve maximal advantage for all. This approach to multi-stakeholder sustainable area development is relatively new in the Netherlands, but has proven to be successful in Denmark and Germany.

Why does Alliander participate?

Our current energy system is not ready for the transition towards a sustainable energy supply system based on renewable energy sources. For energy grid companies, this means great challenges – and opportunities – reach us in the near future. We believe in local and regional energy-solutions. Smart, and open energy grids will provide capacity for temporary shortages and surpluses in sustainable energy. The availability and use of energy storage will also change our services. For our activities, this means we will have to develop new grids and market models, i.e. for heat, steam, biogas, and CO_2, next to our 'standard' electricity and gas infrastructures. Our position as a network company offers us connections with local stakeholders. We feel responsible to support the sustainable ambitions of local customers. In cooperation with these local partners we will design new open grids, which we will also execute, exploit and maintain for the years to come.