Notes from Expert Analysis of Data from MEC Kolobrzeg

The analysis is based on input from the experts

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The system in Kolobrzeg is smaller than the system in Gdynia and it shows a marked increase in the heat deliveries in the morning, due to the activities in the growing number of spa hotels in the city. Apart from this, the system appears as well balanced, showing no unusual signs of heat or energy consumption. Return temperatures seem slightly high and there should be some room for improvements.

The potential for improvement would to a large extent rest with the opportunities that are available to most district heating companies and that can render substantial improvements:

- Reduction of return temperature
- Reduce the forward temperature by improving forecasts in cooperation with spas
- Improvements in substations, for example to reduce the size of valves

A number of opportunities are specific or particularly pronounced for Kolobrzeg, due to the large number of spas that receive heat from MEC Kolobrzeg…:

- … the opportunity to work together with the largest spas in order to plan for the heat deliveries in each day and forecast deliveries during the day to reduce the volume of excess heat that is produced.
- … to store heat in buildings in the mornings ahead of the spa opening hours. This is a technology that has been developed in Sweden, and that is in its early use phases at more than one district heating company.
- … the retrieval of heat by spas in order to reduce use of heat.

It is not only necessary to identify the improvements with the highest savings potential, but also to identify win-win solutions that offer savings to the customers and improved profits for Kolobrzeg. In a market where customers are not very actively trying to save energy there is the possibility that customers or “the market” will not force heat suppliers to help them reduce heat deliveries. In Sweden, where this development has been going on for a number of years, many large customers are actively working with district heating companies in order to reduce heat consumption.

The idea of installing district cooling in Kolobrzeg seems to be an opportunity. The best alternative would be to use free cooling from the Baltic Sea, in a way similar to the way that Jönköpings Energi uses free cooling from the Lake Vättern. With access to the pipe network that is currently unused the investment will be lower than in the case of Jönköping. The absorption technology used to convert heat to cooling leads to large losses of efficiency compared to the free cooling alternative.