Cost benefit analysis of water and wastewater solutions in Norra Djurgårdsstaden, Stockholm

Client's objectives

City of Stockholm is known internationally for its waters and commitment to responsibility. As part of their continued efforts to uphold this status, Stockholm wanted to evaluate and understand the socio-economic implications of different water and wastewater systems in Norra Djurgårdsstaden with the goal of increasing their energy and resource use efficiency.

The project

To meet the clients ambitions, Anthesis provided policy support and conducted a cost benefit analysis of two alternative water and wastewater systems. Our work was carried out as part of project MACRO, which aims to stimulate innovation in Sweden by using organic waste from households, food and toilet waste to produce renewable energy and revitalize agricultural land.

The first system explored the benefits of building upon existing infrastructure through measures such as implementing a membrane filter in the city's primary wastewater treatment plant. The second alternative was more ambitious, and involved diverting greywater to a heat recovery plant and food waste to a local biogas facility.

Key project outputs

The results of our work were presented as a 44-page technical report and shared during a conference to mark the end of project MACRO. The report provides an in-depth look at the estimated costs and expected benefits of the two alternative systems.

Project impacts

Based on our findings, the second solution was concluded as the most profitable option and is expected to deliver the following benefits:

- Increased wastewater heat recovery from 34% to 80%, saving 577 kWh per person, per year. This is equivalent to driving an electric car for 2,500 km or powering an LED lightbulb for 500,000 hours.
- A reduction in water use of 14 litres per person, per day.
- Significant reductions in wastewater pollution from nitrogen and phospherous.

For further information

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