



CASE
STUDY

Case Study



Clean Energy

Stockholm, Sweden - Energy Concept of Stockholm

The city of Stockholm is a leader in design and implementation of a comprehensive energy concept including all sectors including transport. The coordination of long term vision, long term strategy and shorter term targets and implementation are good practice examples (International Energy Agency (IEA). 2012). Stockholm counts a population of 0.85 million in the municipality (2010) and 1.37 million in the urban area (2010). Stockholm is a coastal city and has relatively mild weather compared to other locations at similar latitude (59°20'N). Its climate could be classified as cold marine with significant continental influence. Heating degree days (18/15) are on average at approximately 4100 with short days in winter, but many sunshine hours in summer.

“Stockholm is taking decisive action against climate change. We aim to reduce greenhouse gas emissions to no more than 2.3 tCO₂ equivalent per citizen by 2020, and to become an entirely fossil free-city by 2040. Stockholm will not be able to meet these objectives on our own – and collaboration is at the center of our climate change strategy. The city’s own operations contribute just 10% of Stockholm’s overall emissions. Our climate strategy depends on us finding ways to work with the majority privately owned local energy supplier, and with our partners in regional government, with whom we share responsibility for public transport in the city and beyond. And our strategy depends upon us finding ways to work with hundreds of businesses across the city, helping them to reduce their own climate impacts, and to find opportunities for new low carbon products and services.” (Carbon Disclosure Project (CDP). 2016.)

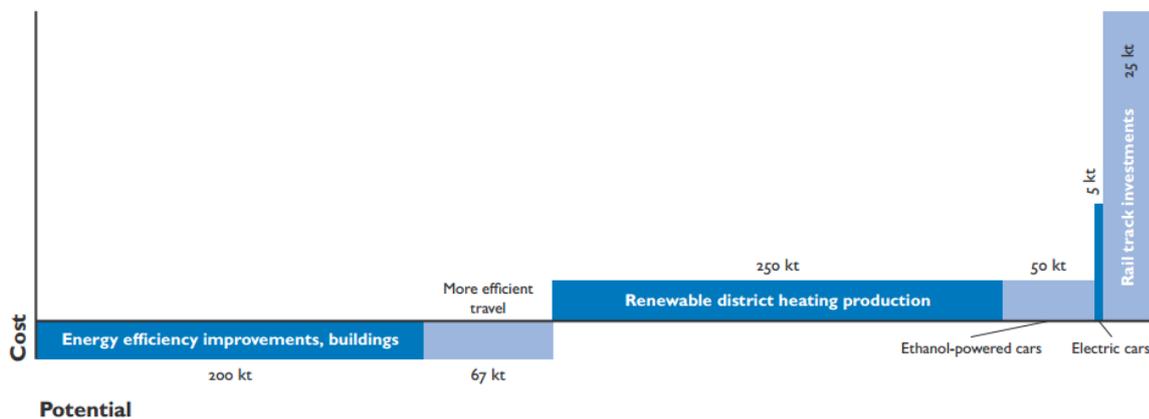
The energy and climate related long-term vision is to achieve a fossil free Stockholm area based on energy saving and renewable energy in year 2050. District heating plays an important role to reach this goal. However, in order to make the region fossil free, transport is the biggest issue. The overall vision for 2050 is to be the “most attractive Metropolitan Region of Europe” and indicates the direction for the total planning and development work for the next 40 years in the region. Back-

casting is used for planning milestones at two intermediate times: 2020 and 2030. The city has set an intermediate goal of maximum 3.0 t CO₂e GHG emissions per inhabitant by the end of 2015, down from 5.4 tCO₂e in 1990. The specifications are made in the Environment Programme 2012–2015 (Stockholm City. 2012.) Stockholm is using the principle of conceivable measures for selecting programs.

“In 2007, we launched the Climate Pact, a collaborative network that offers a forum for networking, development and sharing expertise. It was set up to break down the sense of ‘them and us’ that divided private companies from the city authorities, and to find common cause in reducing carbon emissions. The pact is open to every company – big and small, environmental leaders and those looking to learn. With more than 200 members, it is not restricted to those who are already doing well – only to those who want to do better. It provides a way for companies to share experiences with each other. Unlike other business forums, it is cross-sectoral, allowing construction firms to learn from transport companies, and energy firms to talk to IT companies. It also helps us, within the city, to develop climate policies and programs in dialogue with business. We can talk to each other to bring forward proposals that work, and that have buy-in from those who will have to deliver them. [Stockholm is] now deepening collaboration with those companies who are ready to go further, with the launch of a vanguard group. These companies will serve as an inspiration to their peers and be stretched to be even more ambitious and to report their climate work. The most important lesson from the success of the Climate Pact for other cities around the world is that collaboration can start small, and costs little. Networks can be established at little expense, and can grow and evolve as their worth is proven, and as needs are identified. The first step in addressing the challenge of climate change lies in understanding the nature of the problem, and the challenges faced by all the parties involved. Then, in a spirit of dialogue and collaboration, we move forward to begin to tackle it.” (Carbon Disclosure Project (CDP). 2016.)

Stockholm: Potentials and costs for different blocks of measures prior to 2015

Potentials and costs for different blocks of measures prior to 2015 (thousand tonnes of CO₂e)



Source: http://projects.centralbaltic.eu/images/files/result_pdf/COMBAT_result2_Stockholm.pdf, p. 23

The interim target for 2015 required that:

- Building stock of Stockholm be made 5 per cent more energy efficient by 2015; Stockholm’s city administration aims to reduce the energy use in its own buildings by 50% before 2050;
- Emissions from traffic be reduced by 15 per cent; and
- Emissions from district heating reduced by 50 per cent.

The utility for heat and electricity, co-owned by the city has an extensive program for conversion and extension of the district heating system and electricity production, including new waste-fired

and a large forest biomass CHP unit (Fortum Media 2012). In the long run, a coal fired CHP unit will be closed.

Hammarby Sjöstad. Good practice neighborhood projects in the Stockholm area include the Hammarby Sjöstad project for revitalization, recovery of this contaminated former industrial area (IEA 2012). In total 11,000 apartments will be erected in about 500 buildings. The urban concept is to minimize car use by mixing housing and business, short distances to work, public traffic and car pools instead of privately owned cars. Commercial centres are also within the area. New for Stockholm is the public transport by means of a tramway. The environmental feature is reduced emission from energy and waste. At least half of the energy is directly or indirectly produced on-site (solar energy and biogas from recycled waste). The energy supply is primarily based on cogeneration and district heating.

Järva. Through the city-owned real estate company Svenska Bostäder, Stockholm is also renovating Järva. The "Sustainable Järva" project (EU Sustainable Energy Week 2015) aims to reduce energy use by 50% in the suburb, with 10,000 square meters of rooftop solar panels being installed. Sustainable Järva also serves as a demonstration project to the many suburbs in the rest of Europe, where suburbs are demanding in terms of energy consumption and are also in urgent need of renovation.

References

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See Fortum media room 12/20/2012 <http://www.fortum.com/en/mediaroom/pages/fortum-to-invest-in-a-new-biofuelled-combined-heat-and-power-plant-in-stockholm-sweden.aspx>

International Energy Agency Energy Conservation in Buildings and Community Systems Program Annex 51: Energy Efficient Communities Case Studies and Strategic Guidance for Urban Decision Makers;

http://www.annex51.org/media/content/files/casestudies/subtaskA/SubA_report_120405.pdf

IEA Subtask A

EU Sustainable Energy Week 2015; Retrofitting 1960s homes in Sweden for an eco-efficient future <http://www.eusew.eu/awards-competition-2/about-awards-competition/25-awards-nominees-2014/managenergy-local-energy-action-award/138-sustainable-jaerva-re-building-the-suburbs>

Credentials

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