

Climate smart Hyllie - green district project

Malmö, Sweden 



Climate smart Hyllie - testing the solutions of tomorrow

Hyllie is the largest development area in Malmö, and is planned to become the most climate smart district of the entire Öresund region, including 9,000 homes when completed. In this district, solutions will be tested that can act as role models and good examples for the rest of Malmö and for other cities. The energy supply will be 100% renewable or reused (energy from waste or waste water) by 2020, and the district is a major transportation hub with a train station and a “park and ride” garage for bikers. Other features include mandatory sorting of food waste, smart grids for energy consumption, urban gardening and environmentally certified buildings. The district shall help to achieve the energy strategy for Malmö, and be a dense, mixed and green showcase of sustainable city development [1] [5].

Country/ City Profile

		Country		City (Malmö)	
		Population (2014)	9 .747 million [2]	Population (2013)	313,000 (metropolitan) [2]
Land & water area (km ²)	528,447 [2]	Land + water area (km ²)	157 + 177 (metropolitan) [2]		
GDP per capita (2014, US\$, at purchasing power parity)	45,143 [8]	GDP per capita (2014, US\$, at purchasing power parity)	45,000 [9]		
Region	Northern Europe/Scandinavia	Region	Coastal (Skåne)		
City's physical geography	Location	<ul style="list-style-type: none"> ✓ Located on the southwest coast of Sweden ✓ Low altitude 			
	Climate	<ul style="list-style-type: none"> ✓ Tempered climate (average temperature: -1 to -6C° in winter and 11 to 13 C° in summer) [7] ✓ Around 670 mm/year annual rainfall (Swedish average) [2] 			

Initiating context

The district is being developed on municipal land that has been sold to a number of private developers [5]. In 2011, the City of Malmö signed a climate contract with the municipal waste treatment company VA-SYD and the energy company E.ON to make Hyllie a global benchmark in sustainable city development [1]. The close cooperation between public and private partners is a success concept previously tried in other development areas of Malmö, such as Västra hamnen. In Hyllie, these solutions can be further developed and optimised.

District description

Hyllie is located in the southern part of the city of Malmö, close to major roads like E20 and by the railway line to Copenhagen (see picture below). It is the largest development site in Malmö and home to a shopping mall, a train station and a large sports and culture arena: Malmö arena. The train station was opened in 2010, the shopping mall in 2012 and the sports arena in 2015. The first homes were ready in 2013. When fully built, Hyllie is planned to have 9,000 homes and almost as many work places. The sustainable development of Hyllie has many different focus areas, including waste management, smart and renewable energy, a water management park, sustainable transportation and urban gardening. The aim is to support and inspire citizens to lead a sustainable and resource efficient life by providing solutions on many levels [1] [5].

Energy solutions

The energy system in Hyllie shall be based on local production to a large extent, mainly covered by wind and solar energy. In 2020 at the latest, all energy shall be renewable or reused (generated from waste and waste water) [3]. An integrated infrastructure for electricity, heat, gas and cooling is developed to enable an optimised use of energy resources, balancing production and consumption of energy. Hyllie serves as a demonstration case in the EU-project “Future Internet Smart Utility Services”, developing smart energy applications. Within this project, a number of buildings are connected to an energy management system to try to balance supply and demand in real time [4]. Citizens of Hyllie will have screens in their apartments enabling them to monitor and control their use of energy; for example by decreasing the temperature when leaving home or running appliances during the night when energy is cheaper. The buildings themselves are smart; they can optimise the total energy flows in terms of price and production capacity. Many buildings also have local energy production, such as solar collectors. There are also plans to run applications such as dishwashers, washing machines and dryers on hot water rather than on electricity [1].

Sustainable transport

Hyllie will be a major hub in the Malmö region transport system. From the train station, you reach Malmö city in 6 minutes and Copenhagen in 30 minutes. There is a large “park and ride” garage, where travellers can shift between different modes of transportation. It provides protected bike parking, bike renovation services, showers and changing areas and a car park, all located just by the train station [5]. There are also a number of car pools available, with cars that can run on biofuels or electricity [1].

Waste and water management

The general idea of waste management in Hyllie is that it should be easy for the citizens to do the right thing. Waste sorting solutions are integrated in the homes, and sorting of food waste is mandatory. The food waste is used to produce biogas for transportation [1]. The waste management company VASYD has built an educational water park in connection to the local water tower, where children can experience the different roles and uses for water in society [6].

Urban gardening and green roofs

There is space set aside for individual urban gardening parcels in many areas of the Hyllie district [1]. On top of the shopping mall, there is also a large green roof park, with excellent view over the entire district [5].

Lessons learnt - from an energy perspective [11]

- The cooperation between partners early in the process is critical for implementation and success.
- Incentives and regulation for different stakeholders are not synchronised.
- Development of sustainable solutions requires a broader perspective on climate, energy efficiency, resource efficiency and renewable energy.
- New technical solutions have limited benefits if they are not combined with new business- and market models.
- Sustainable transport solutions are more challenging to realise than sustainable energy solutions



Source [10]

References

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- [9] Standard & Poor´s rating direct: <http://malmo.se/download/18.31ab534713cd4aa9213badc/>
- [10] Pictures taken during a POCACITO project meeting held in Malmö
- [11] "Hyllie - erfarenheter från pågående utveckling av en hållbar stadsdel". Presentation by Mattias Örtenvik, Head of Sustainable city, E.ON Sverige, June 9th 2014

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