



STOCKHOLM ON ENERGY PERFORMANCE OF BUILDINGS



960,031
INHABITANTS

To support its goal of being fossil free by 2040, Stockholm aims to reduce GHG emissions from energy for heating/cooling buildings, electricity and gas use and transport to 2.2 tonnes CO₂e per capita by 2020. The city is currently developing an emission goal for 2023, a climate budget for 2040 and its sixth climate action plan.

CARBON
NEUTRALITY BY

2040

GHG REDUCTION
TARGET OF

2.2

TONNES CO₂E PER
CAPITA BY 2020

65%

REDUCTION IN CO₂E
EMISSIONS FROM
BUILDINGS SINCE 1990

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OPTIMISING THE ENERGY PERFORMANCE OF NEW AND OLD BUILDINGS

Stockholm has reduced annual emissions from the building sector by almost 1.3 million tonnes CO₂e since 1990 by switching from fossil to renewable fuels for district heating/cooling systems, improving energy efficiency in existing buildings and setting higher energy standards for new buildings built on city-owned land.

The city's last fossil fuelled district heating plant will shut down in 2022, after which plastics in the waste incineration plant will be the last remaining fossil fuel in the system. The low-climate impact of the city's main heating systems - district heating and electrical ground source heat pumps - will continue to decrease. With system progress made, the city prioritised energy efficiency.

The city provides an energy advice service for private property owners on-site to help them optimise their building's energy performance. For municipal building stock, energy efficiency goals have been set in the city's environmental programme — which are monitored annually — and funds for renovation are reserved in the annual city budget.

The city also initiates and coordinates research and development projects concerned with energy efficiency. Additionally, it has mandated that new buildings on city-owned land must be built to passive house standard - achieving energy use of 55 kWh/m² rather than the national standard 80 kWh/m².



ADAPTATION

- **Climate adaptation** is an integrated part of Stockholm's Environment Programme and the Stockholm City Plan, which sets out guidelines for the use of the city's land and water areas, as well as the development and protection of the built environment.
- **To be prepared** for the changing climate the city has carried out an Urban Flood Risk Analysis identifying areas where actions need to be taken. Using ecosystem services such as biochar in tree beds to retain larger amounts of water, the city is taking action to prevent future floodings while enriching the biodiversity of the city.
- **One of the city's biggest** urban construction projects – the Slussen project – is designed to adapt the city to increased amounts of rain and rising water levels. While creating a more people-friendly and livable space in the heart of Stockholm, the investment will secure future access to potable water for the entire region around Lake Mälaren.

CHALLENGES

- **Enabling** city-owned housing companies to achieve the same return on investment as the private sector while also fulfilling political goals for energy efficiency
- **Educating** tenant-led building management boards about energy management
- **Ensuring** that construction companies can comply with high energy standards for new builds

LESSONS LEARNT

- *Goals and action plans must be defined and agreed by politicians*
- *Regular evaluation of the effect of actions and progress towards goals is vital*
- *Lessons learnt can provide useful information when setting new targets*
- *Implementation should use existing city processes such as budgeting and reporting*
- *Costs for actions need to be budgeted for*



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