

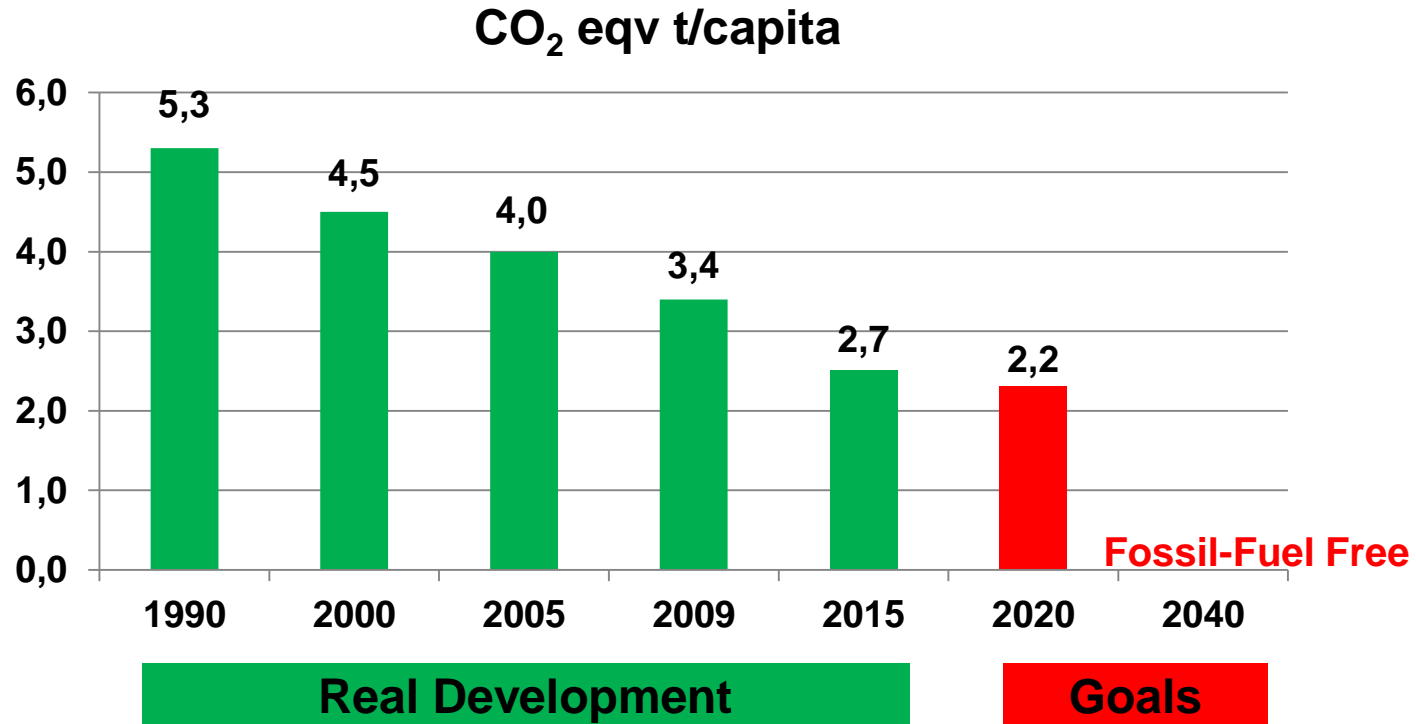


# GROWSMARTER PROJECT 2015-2019

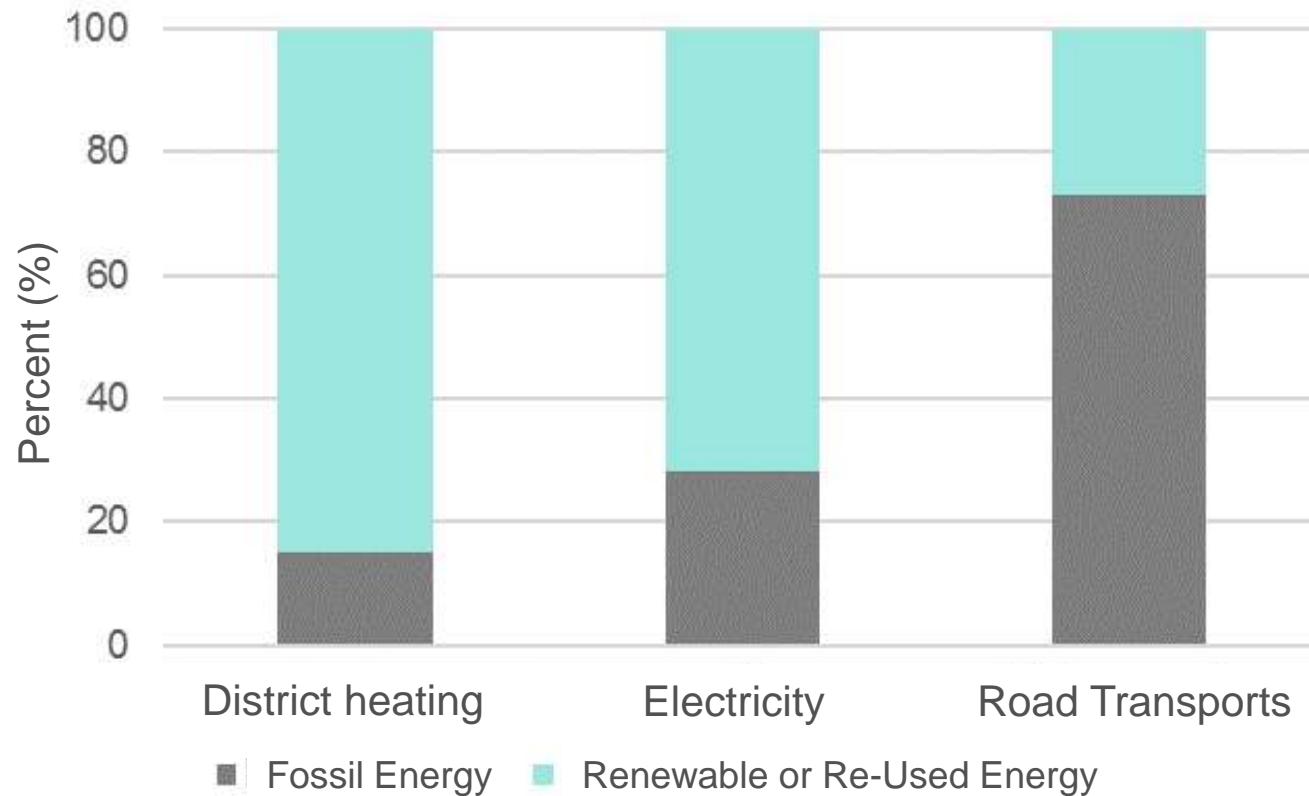
Mika Hakosalo, Site Manager, Site Stockholm



# Stockholm Goals and achievements



## Remaining Fossil Fuels 2017



# HOW TO BECOME FOSSIL FUEL FREE 2040?

Plan for phasing out last coal fired plant.	Fossil fuel free road transports, including prohibition of fossil fuel sales.
Phasing out fossil oils for peakloads.	Fossil fuel free shipping.
Increased use of waste heat.	Fossil fuel free off road vehicles.
Increased renewable power production.	Increased production of biogas
Reduction of fossil plastics in waste incineration.	Carbon sinks, CCS etc.
	Action plan for fossil fuel free city organisation 2030.

# GROWSMARTER PROJECT GOALS



**Improve quality of life for citizens**



**Reduce energy use with 60 %**



**Reduce transport emissions with 60 %**



**Create economical growth and cost effectiveness**

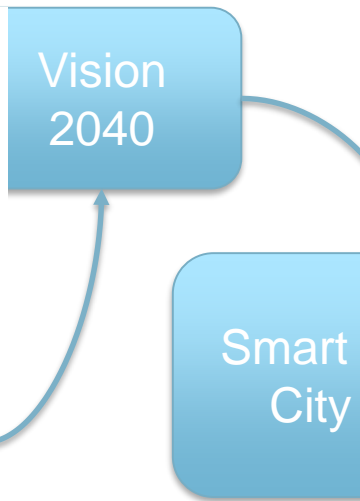
# FROM PROJECT TO SMART CITY VISION AND STRATEGY

## Strategy for a smart and connected city

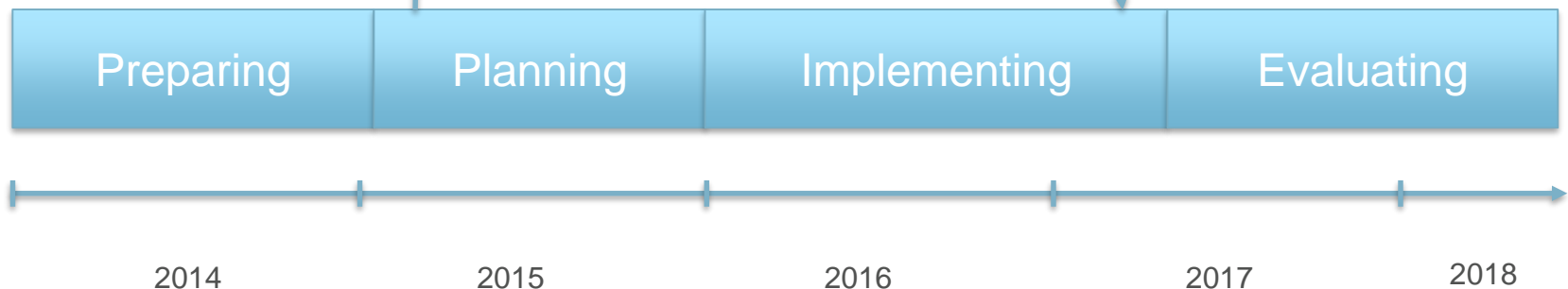
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### Så ska Stockholm bli världens smartaste stad till år 2040

Stockholm ska bli världens smartaste stad till år 2040. 100 miljoner kronor satsas på att möjliggöra utveckling av nya appar och andra digitala tjänster för att underlätta livet för stadens medborgare. Men hur vet vi vad medborgarna vill ha och vilka hinder finns för den digitala transformationen?



On April 3, 2017 the City Council adopted a strategy to further develop the smart city through coordination of the City's work on digitalization. The strategy has been developed together with the Stockholmers.



# Site Stockholm

## Slakthus area

- Energy efficient refurbishment
- Energysaving tenants
- Renewable local energy
- City wifi with Internet of Everything
- Big data platform
- Construction logistic center

## Valla Torg

- Energy efficient refurbishment
- Energysaving tenants
- Renewable local energy
- Smart lighting
- Smart wastehandling
- Sustainable delivery
- Smart mobility solutions

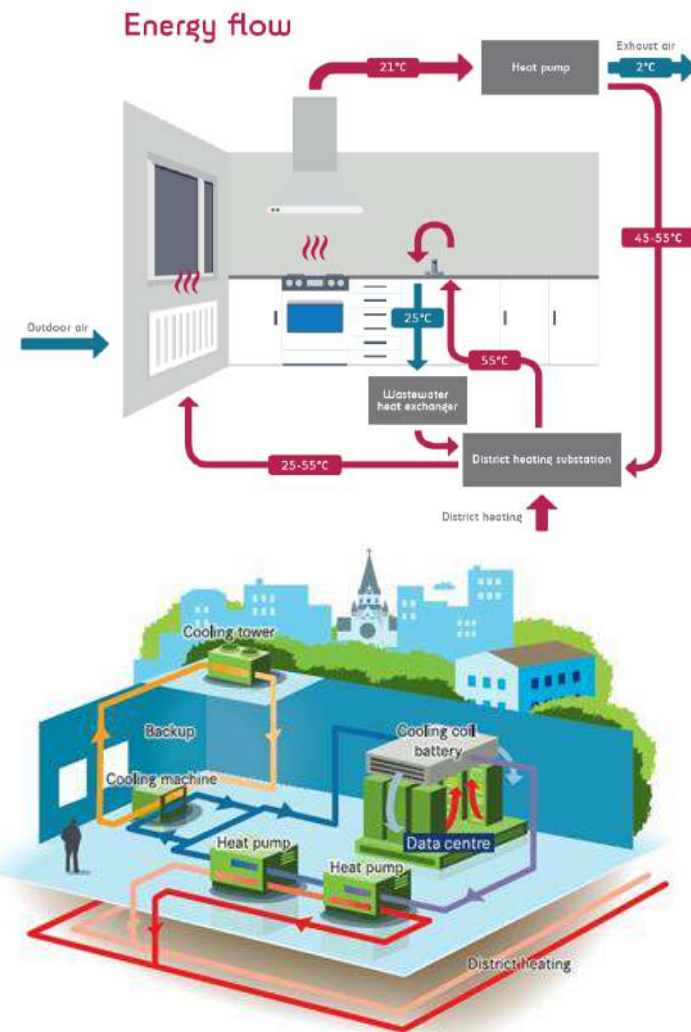
## Västberga

- Open District Heating
- Smart traffic management
- Alternatively fueldriven vehicles



# HOW DID WE SUCCEED REGARDING THE DISTRICT HEATING?

- The city's own calculations indicate that a reduction of 30% in existing buildings would be enough to reach the fossil-free goal of 2040:
  - The GrowSmarter project showed that it is possible to reduce min 30% in different type of buildings, but even 50-60% is economically feasible
  - More waste heat should be recovered into the district heating system to replace the coal:
- The GrowSmarter project showed that it is economically feasible to recover waste heat from datacenters and that it has a high scalability and replicability





# HOW DID WE SUCCEED REGARDING ELECTRICITY?

- The city is rapidly electrifying and therefore it is important to reduce electricity use in existing buildings and infrastructures.
- The GrowSmarter project showed that it is possible to reduce electricity use between 20-30% in different type of buildings/infrastructures, but the economic feasibility is in some cases low



## More solar power should be introduced in Stockholm:

- In GrowSmarter the combination of PV:s, battery storage and energy hub improved the output from the photovoltaics

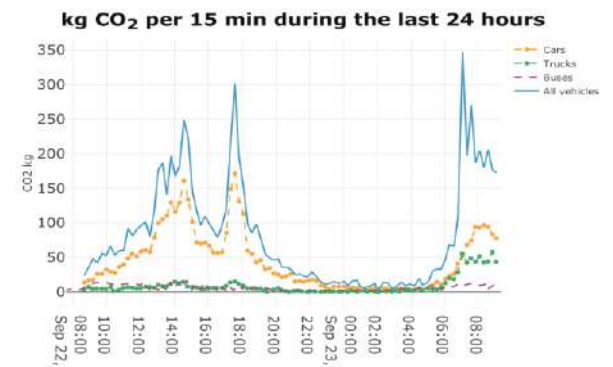


# HOW DID WE SUCCEED REGARDING ROAD TRANSPORTS?

- The city needs to reduce road transports to reach the fossil-free goal:
- The GrowSmarter project showed that with a combination of many different measures it is possible to reduce road transports



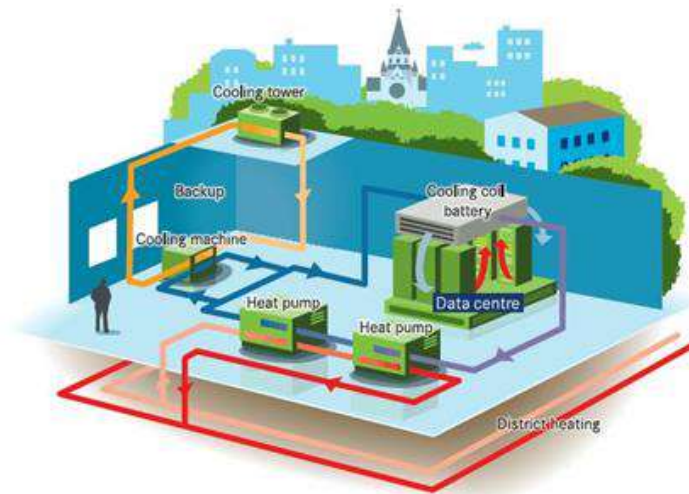
- A larger part of road transport should use biofuels and electricity:
  - The GrowSmarter project showed that with many different measures it is possible to get more vehicles in city running with biofuels and electricity
  - The city needs real time information of the road transport emissions for more accurate planning and decision making
  - The GrowSmarter project showed that with sensors and a data platform real-time planning and decision making is possible



# OUR SUCCESS STORIES

## STOCKHOLM Residential buildings

64% energy savings  
70% CO2 savings  
Reduction of  
8 kg CO2/m2



Read more about the project on internet:

[www.grow-smarter.eu](http://www.grow-smarter.eu) & [www.stockholm.se/grow-smarter](http://www.stockholm.se/grow-smarter) (in Swedish)

Sign up the newsletter (eng) and follow us on Twitter @EUGrowSmarter



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