

go green
with
Aarhus

CITY OF AARHUS



Towards a sustainable and green city

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Aarhus in short

- 2nd largest city in Denmark - 340,000 inhabitants
- 1.2 million in the catchment area
- Fastest growing city in Denmark (~ 5000 new inhabitants/ year)
- A young city (15% of the population are students)
- More than half of the Danish export of energy technology comes from our region
- 30.000 public employees in the municipality





A city in transformation

Vision 2008: CO₂-neutral by 2030

We have no planet **B!**



Getting over 2°C temperature increase will challenge life on earth dramatically!

IPCC says:

Even 2°C will have serious consequences and might start non-reversible negative feedback mechanisms where we lose control and end with 5-6°C . We need to go for 1.5°C .

We have 50/50 chance of 1.5°C if we globally:

1. Cut use of oil, gas and coal in half by 2030
2. Stop use of oil, gas and coal by 2050
3. Capture carbon in large scale

Big Cities Matter!

In 2050 70% of all people in the world are estimated to live in big cities.



The reason why we are gathered today 😊

AARHUS:

City halves emissions and forges ahead to fossil fuel-freedom and carbon neutrality

→ Aarhus is well on its way to reaching its goal of **becoming a carbon-neutral city by 2030**. Already, the city has slashed its emissions by 50% in the last 10 years.

Aarhus' Climate Action Plan and Strategic Energy Planning programme set out the next steps until 2020 towards carbon neutrality and a **future run on 100% renewable energy in all sectors**, supported via partnerships between the municipality and local stakeholders. The collaborative development process for the plan is based on full-scale city modelling and involved more than 250 stakeholders.



What has the city achieved?

Aarhus has undergone an energy transformation from being fossil fuel-based to cutting emissions by 50% by phasing out coal, installing heat pumps and electric boilers, and switching the majority of district heating and electricity to biomass. Now, the city has set its sights on 100% renewable energy, which Aarhus plans to achieve in part by increasing solar and wind power, boosting efficiency in buildings and industry, as well as decarbonising transportation.

Aarhus is increasing its energy efficiency, and the city has already renovated 121,000 m² of residential and commercial space, with the rest of the city's buildings planned to follow suit. It's already paying off, as Aarhus estimates up to \$19 million in energy savings for municipal buildings.

In addition, the city is scaling up its initiatives around circular economy in construction and climate-friendly procurement.

Moving towards 2030, Aarhus has identified the transport sector, and cars in particular, as the greatest source of emissions. Aarhus plans to tackle this challenge by increasing urban density, improving and electrifying public transport, and supporting bikes as a primary means of transportation. Already, since 2009 there has been a 20% increase in the use of bikes in the city.

Aarhus 

AARHUS

↓ 50%

REDUCTION OF CO₂ EMISSIONS has already been achieved in Aarhus in the last 10 years, with the ambition of becoming carbon neutral by 2030

What can other cities learn?

Local partnerships are key to success

From the beginning, Aarhus involved as many relevant parties as possible in creating the plan, including NGOs and via public-private partnerships. The city established a network for NGOs in Aarhus to create a space where they can work together towards solutions that support the city's sustainable transition. In addition, to create the Strategic Energy Plan, the city worked with the local district heating company. Under this partnership, unique approaches have been developed, including smart meters that collect data to optimise district heating and provide early leak detection.

Citizens give cities a hand in reaching beyond the low-hanging fruit:

Aarhus' Climate Plan recognises that they need broad social involvement to get further gains, since most emissions are beyond the reach of the city council's direct influence – for example, within citizens' homes and businesses. Aarhus has taken on the task of building awareness, ownership, and an opportunity mindset in regards to the city's sustainable transformation. One engagement strategy is the REUSE project, a recycling station that collects second-hand products while creating community culture around recycling and upcycling. The city also seeks to support community leaders who are already contributing to the sustainable transition.

What are the co-benefits?

Social:

Aarhus has actively engaged citizens in campaigns and education programmes about climate change and the Sustainable Development Goals, thereby working to create social change. One example is the UNLEASH programme, which gathered young people to collaborate on solutions that address the global goals.

Health:

Aarhus' Climate Action Plan seeks to create a city where bicycles are a main form of transportation. Keeping cars off the roads improves local air quality, while increased cycling supports more active lifestyles and better health.

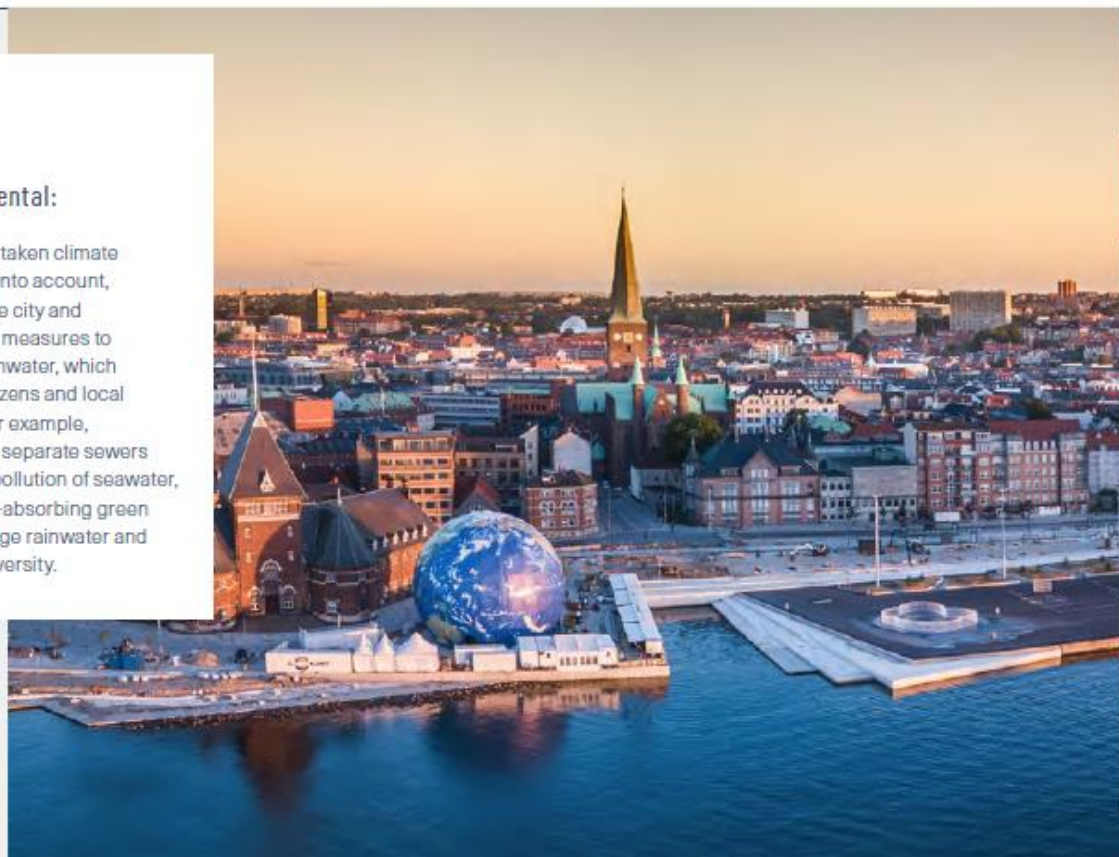
Economic:

Denmark has forecasted the cleantech export sector to be valued at \$7.5 million per year, and Aarhus is taking advantage of the opportunity to build its economy while fighting climate change. The city is setting itself up to lead in the green technology sector by developing cleantech solutions and building an international network.

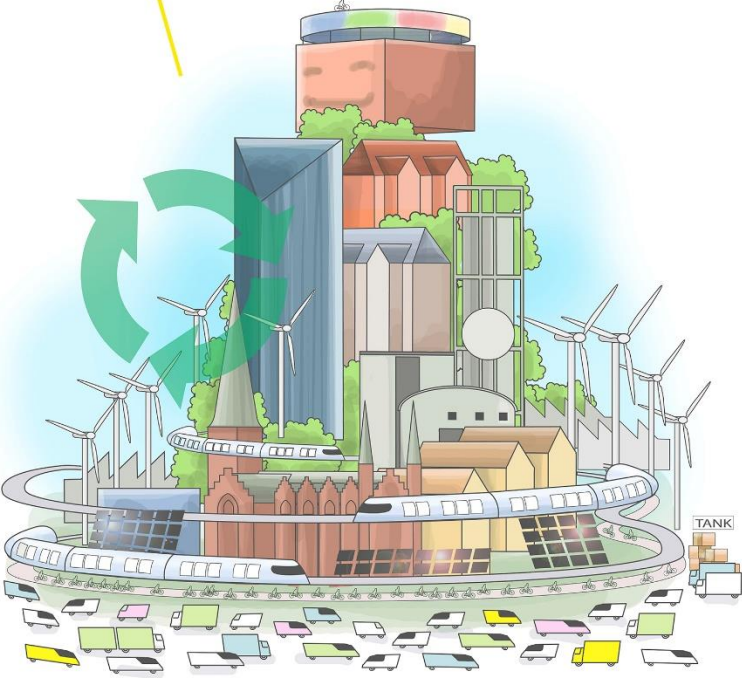
Environmental:

Aarhus has taken climate adaptation into account, greening the city and introducing measures to manage rainwater, which benefits citizens and local ecology. For example, introducing separate sewers avoids the pollution of seawater, while water-absorbing green areas manage rainwater and boost biodiversity.

Aarhus' Climate Action Plan fostered the creation of The Climate Planet, a globe-shaped film theatre, which shared the story of climate change with more than 40,000 citizens from Aarhus. The Climate Planet then went on tour to Copenhagen, Bonn, and beyond, spreading the word about climate change and how citizens can take action.



A city in transformation



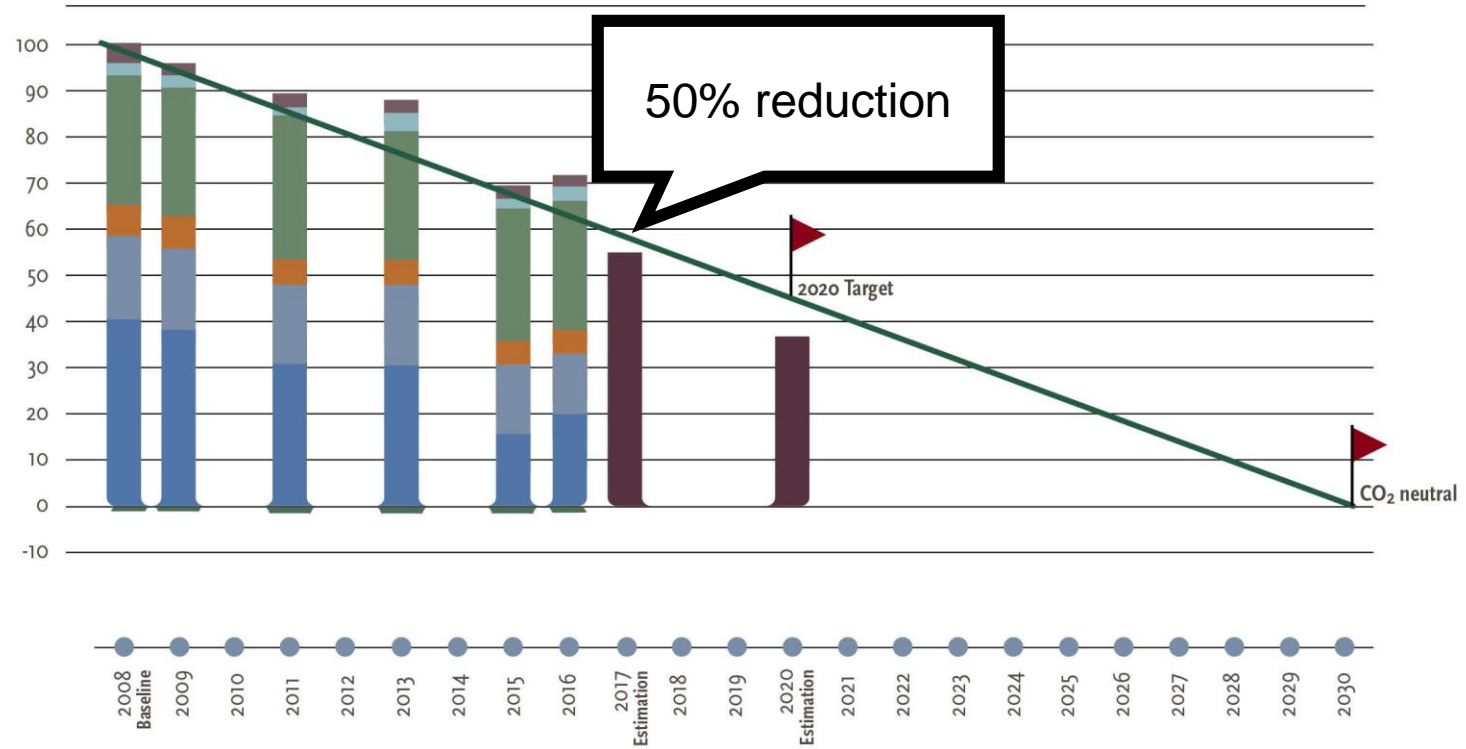
Sustainable



Liveable

CO₂ Index

CO₂/year



Electricity



Heating



Industry



Transportation



Agriculture



Waste, waste water etc..



Forestation

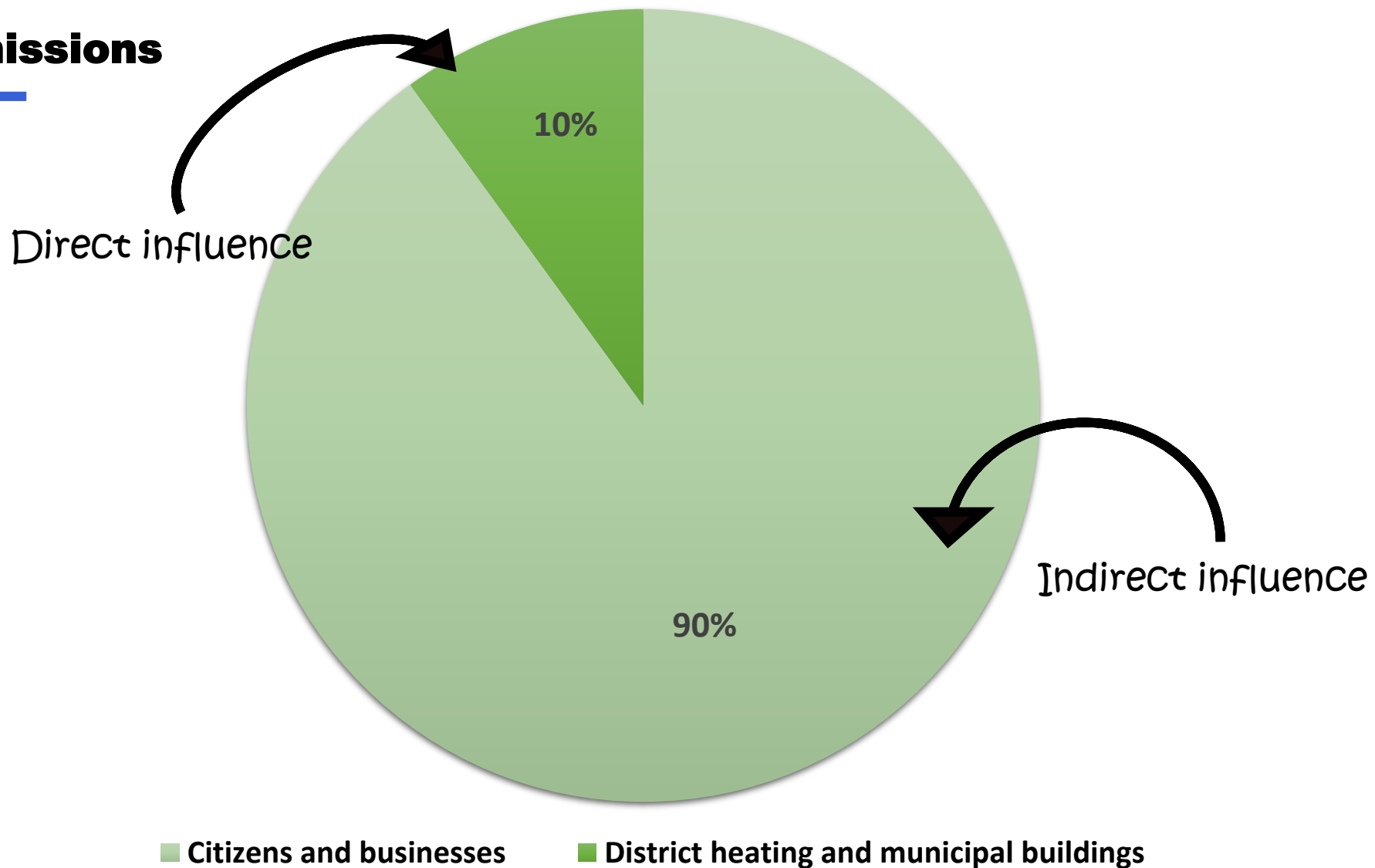


Projection in total



Target

CO₂ emissions



Motivation for choosing the greener road

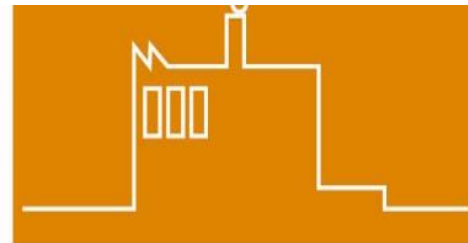


Climate strategy



Climate action plan 2016-2020

- 250 stakeholders involved



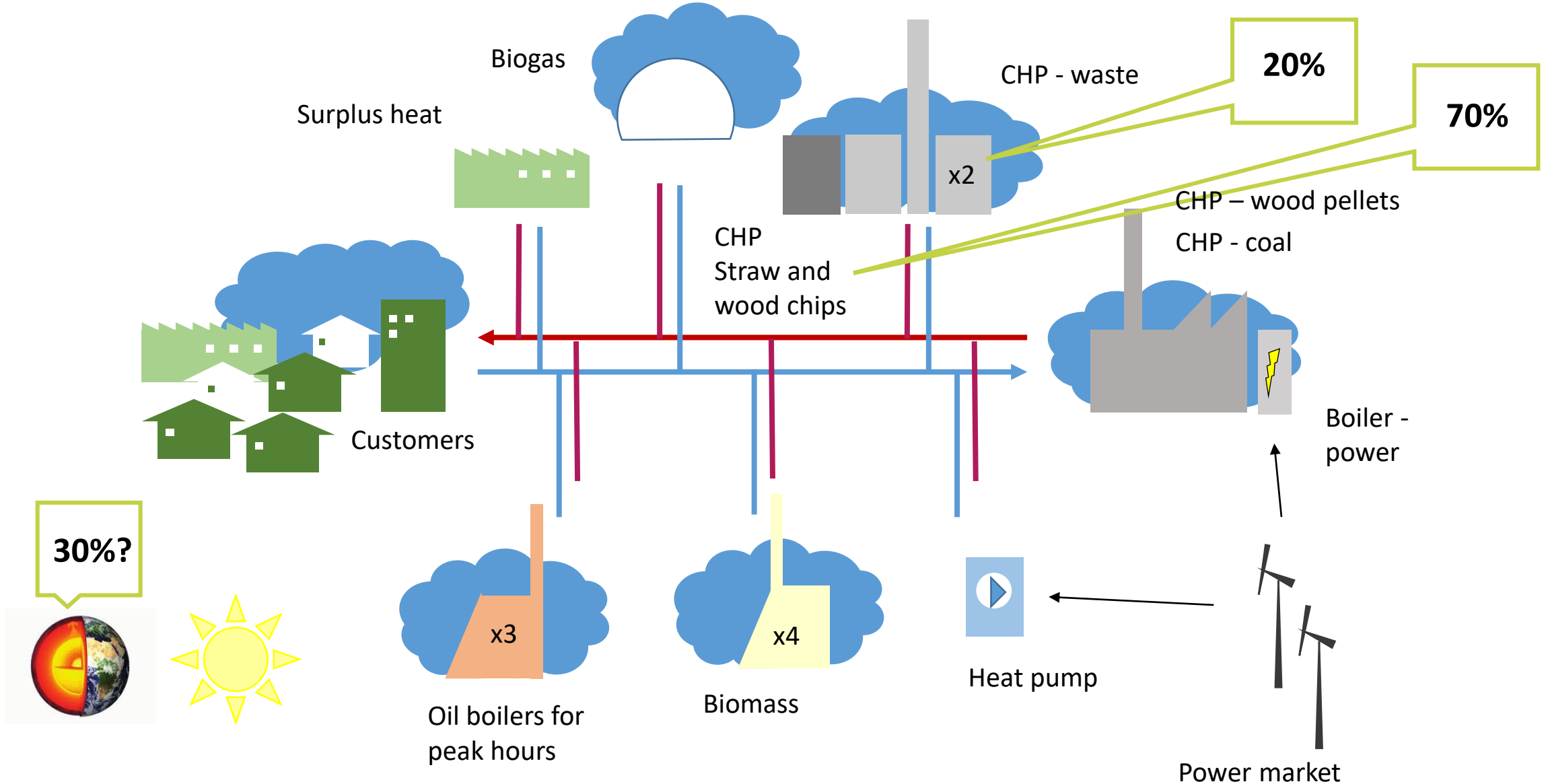
6
focus areas

50
initiatives

Energy

- **Green district heating**
- **Energy supply of the future**
- **Waste as a resource**

District heating: from simple to complex



Strategic Energy Planning



Background:

- Co-operation: municipality ↔ private energy companies to ensure a larger role in urban planning of:
 - Electricity
 - Heating
 - transport sectors
 - Energy planning

Purpose:

- **Planning and organizational framework** to ensure a **cost-effective conversion of a joint energy system** in Aarhus, long term 100% based on renewable energy.

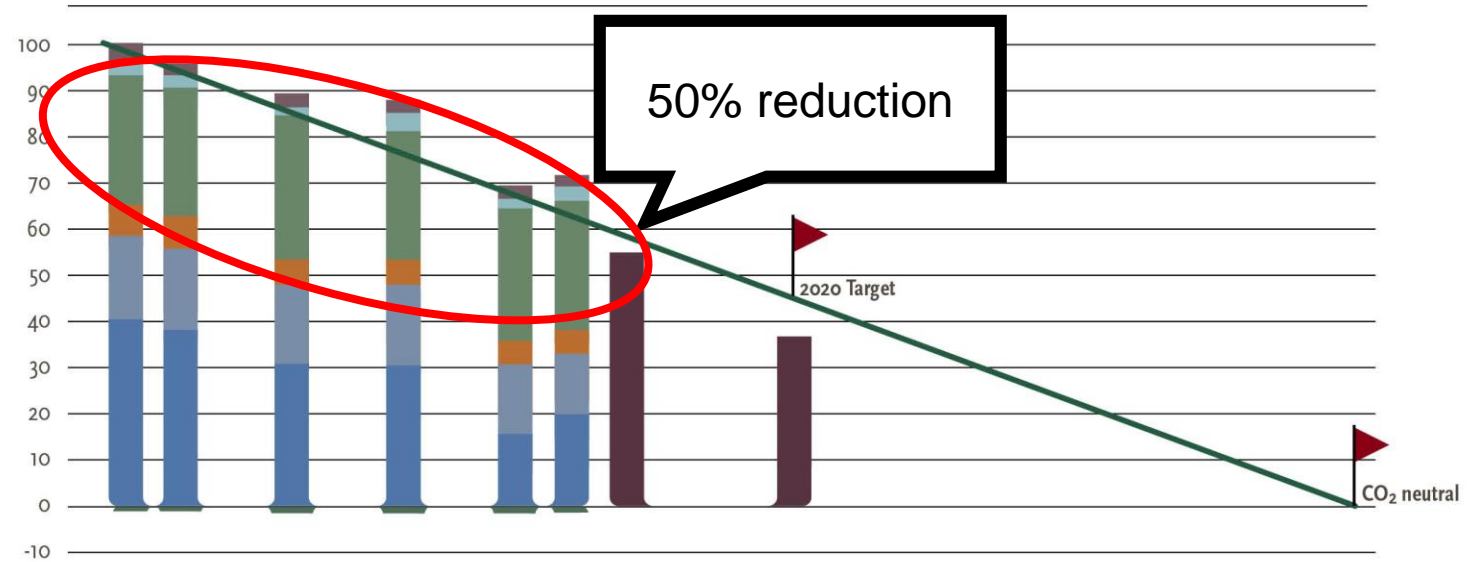
Challenges:

- More residents in Aarhus - and more jobs
- 'Business as usual' leads to increased costs
- Grid challenges

CO₂-emissions from one sector remain high..

CO₂ Index

CO₂/year



2008 Baseline 2009 2010 2011 2012 2013 2014 2015 2016 2017 Estimation 2018 2019 2020 Estimation 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030



Electricity



Heating



Industry



Transportation



Agriculture



Waste, waste water etc..



Forestation



Projection in total



Target



Transport

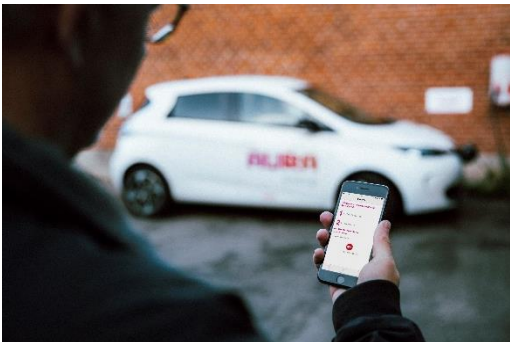
- **Technology change**
- **Shifting the means of transportation**
- **Reduce transport and energy demand**

Transport initiatives



Smart Mobility
"365 days by bike"

**Intelligent Traffic Systemes &
LED street lighting**



Shared electric cars
Climate
Mobility
Sharing economy



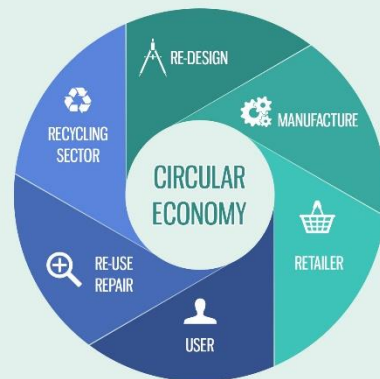


Buildings

- **Renovation and smart energy technology**
- **Green transition in the construction sector**
- **Expand and share knowhow and competences**

Wood conference

Unite competencies for sustainable construction



Circular economy Inspiration catalogue

For building developers, advisors, municipality etc.

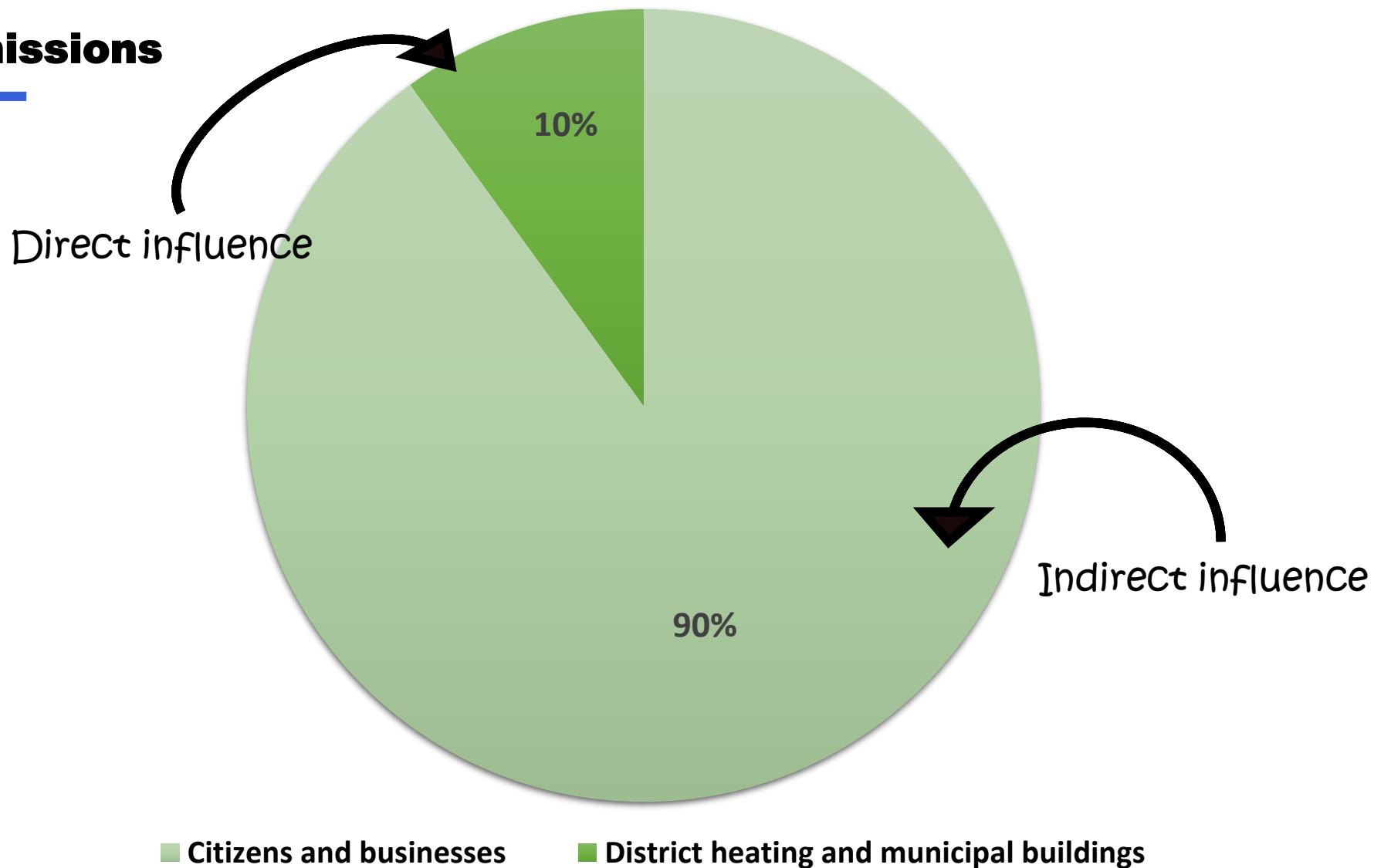
Industry

- **Efficient and fossil free industry processes**
- **Benefit from excess heat production**
- **Circular economy projects and business models**

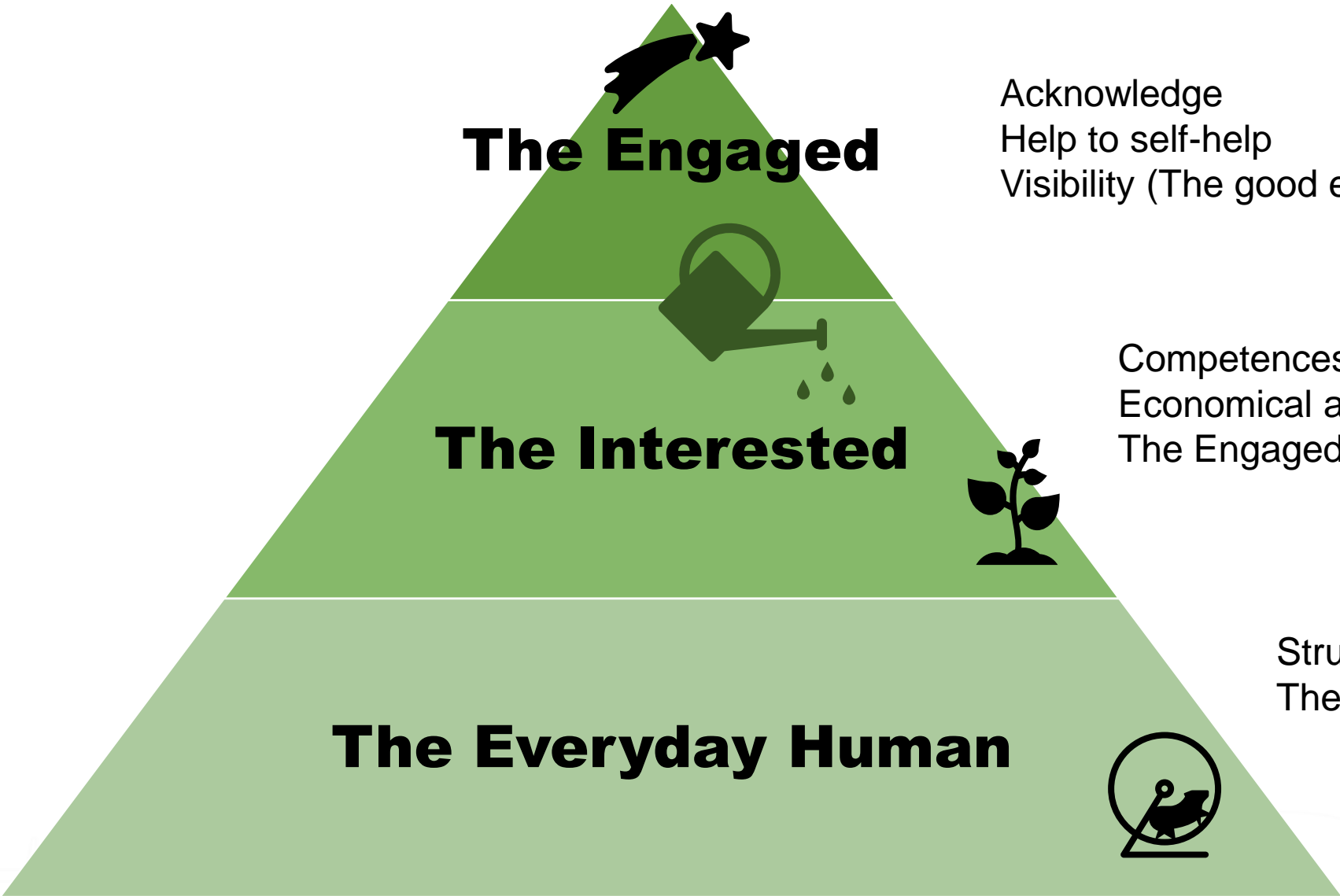
**Business
Enhancing
Environmental
Inspection**



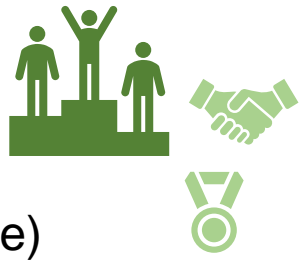
CO₂ emissions



Dealing with humans – social proof



Acknowledge
Help to self-help
Visibility (The good example)



Competences
Economical and practical help
The Engaged as example



Structures pave the way
The Engaged as example





Local commitment and growth

- **Involvement and co-creation**
- **Promotion of trade and green growth**
- **Visible green transition (knowhow & showhow in Aarhus)**

Initiatives in Local commitment and growth

Climate Planet
June - August 2017



**Green citizens
of the future**



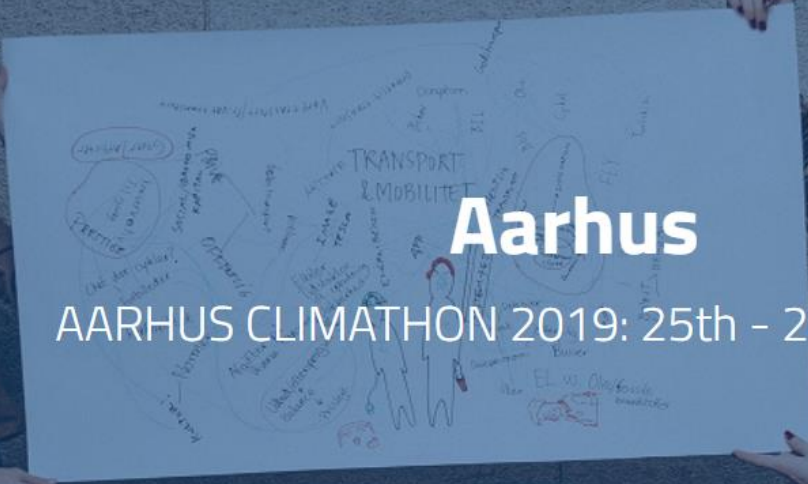
Aarhus Climathon 2019

Climathon



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Aarhus

AARHUS CLIMATHON 2019: 25th - 26th OCTOBER



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Micromobility - a smart and sustainable solution for Aarhus' future transport?

Join the Aarhus Climathon to find local solutions to the climate crisis and help creating the vision for a more sustainable city of the future. Transport is the biggest challenge when it comes to cutting Aarhus' CO2-emissions, which is why our 2019 Climathon will deal with micromobility.

Our organisation

- **Fossil free transport**
- **Increase energy efficiency of our buildings**
- **Requirements: purchase & tenders**
- **Employee involvement**

Initiatives in our organisation

Cross-disciplinary team effort

Green requirements in procurement and tender



Green transport plan

Own, acquired, embedded

Aarhus wants to motivate

➔ Climate strategy



www.gogreenwithaarhus.dk

➔ Climate action plan 2016-2020





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gogreenwithaarhus.dk