NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

Climate City Contract

2030 Climate Neutrality Action Plan

City of Aarhus

CITY OF AARHUS

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Summary

In 2008, the City Council of the City of Aarhus adopted the vision of CO_2 neutrality by 2030 and has since then worked purposefully to realize it. On 29 April 2024, a new political agreement, Climate Neutral Aarhus 2030, was signed by a broad majority in the Aarhus City Council. Central to the agreement was the reaffirmation of the objective that the City of Aarhus must be CO_2 neutral in 2030, and that the City Council must take responsibility for reducing the most significant consumption-based emissions.

This first draft of the CCC 2030 Climate Neutrality Action Plan builds on the *Climate Strategy Agreement: 2025-2030* and the extensive background material on which the agreement is partly based. The Aarhus Climate Action Plan 2025-2030 is expected to be submitted to the City Council at the end of 2024. This time lag between the City Council's endorsement of the final Climate Action Plan and the deadline for the CCC Action Plan has consequences, both for the completeness of the CCC Action Plan (e.g., with regards to the investment plan) and the extent of future iterations, but it also means that parts of the plan must be read with reservations.

It should also be noted that alongside the political negotiations of the climate strategy, negotiations on the Green Mobility Plan have been ongoing. Although the transport and mobility sector accounts for the second highest level of emissions in Aarhus in 2030 and therefore naturally constitutes a significant strategic focus area, it is not included as a strategic focus area in the first edition of the CCC Action Plan due to their separate political and budget negotiation processes. Please note in this connection that actions related to green urban mobility were not a strategic priority in the CCC Mission Expression of Interest. Mobility is included in BAU and the climate accounts, and thus also calculated as part of the reduction path. However, the plan does not unfold specific initiatives and impact pathways for the green mobility plan.

The CCC 2030 Climate Neutrality Action Plan is structured into five parts:

The first part sets the scene of Aarhus and outlines the political and site-specific conditions for realising the 2030 climate neutrality vision. The second part accounts for the current state of climate action in Aarhus. The third part describes pathways towards climate neutrality by 2030, reflections on MEL-processes. The fourth part showcases governance and social innovation interventions enabling the 2030 climate neutrality transition. Finally, the fifth part provides a list of areas for improvements to be included in future iterations.

With the action plan, Aarhus demonstrates a path to achieve its high ambitions and joins a small group of municipalities in the world that aim for CO_2 neutrality in 2030. The preparatory work for the CCC action plan has been made in close collaboration with key stakeholders, including citizens, interest organisations, businesses and industries, knowledge institutions, regional and international partners, other cities and municipalities, all of whom will also play a crucial role in the implementation of the many actions and initiatives outlined in the plan.

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Abbreviations and acronyms

Abbreviations and acronyms	Definition
AARCH	Aarhus School of Architecture
AFOLU	Agricultural Forestry and Land Use
AI	Artificial Intelligence
BAU	Business-As-Usual
CCC	Climate City Contract
CCS	Carbon Capture and Storage
CCSI	Cultural and Creative Sectors and Industries
CCUS	Carbon Capture Use and Storage
CDUE	Central Denmark European Office
CFIA	Centre for Innovation in Aarhus
CHP	Combined Heat and Power
CSRD	Corporate Social Responsibility Directive
C40	A global network of nearly 100 mayors of the world's leading cities that are united in action to confront the climate crisis
DI	Dansk Industri (The Confederation of Danish Industry)
DK	Denmark
DKK	Danish Kroner
DK2020	A partnership between RealDania, Local Government Denmark (KL) and the five Danish regions
ESG	Environment, Social and Governance
EU	European Union
EV	Electric Vehicle
NNF	Nærings- og Nydelsesmiddelarbejdet Forbundet, a trade union that organizes employees within the following industries: Bakers, butchers, dairy, the sugar and chocolate industry and the tobacco industry.
NZC	NetZeroCities
GHG	Greenhouse Gas Emissions
GWP	Global Warming Potential
HVO	Hydrogated Vegetable Oil
JP1	Jet Petrol
KL	Kommunernes Landsforening (Local Government Denmark)
LCA	Life Cycle Assessment
LPG	Liquefied Petroleum Gas
LULUCF	Land Use, Land Use Change, and Forestry
NEKST	(the National Energy Crisis Staff)
NGO	Non-Governmental Organization
NIMBY	Not In My Back Yard
NPISH	Non-Profit Institutions Serving Households
IPPU	Industrial Process and Product Use
PtX	Power to X
PV	Photovoltaic power system
RE	Renewable Energy
SBTI	Science Based Targets Initiative
SDG	Sustainable Development Goals
SME	Small and Medium size Enterprises
UN	United Nations

1 Introduction

On 29 April 2024, a new political agreement Climate Neutral Aarhus 2030 was signed by a broad majority in the Aarhus City Council. Central to the agreement was the reaffirmation of the objective that the city of Aarhus and the surrounding area must be CO_2 neutral in 2030, and that the City Council must take responsibility for reducing the most significant consumption-based emissions. With the CCC 2030 Climate Neutrality Action Plan, the political direction is translated into concrete actions.

With the plan, Aarhus demonstrates a path to achieve its high ambitions based on international standards through concrete action and joins a small group of municipalities in the world that continue to aim for CO_2 neutrality in 2030. The municipality's goal of reaching net zero emissions is, however, dependent on strong and good partnerships with companies, knowledge institutions and citizens.

Together, we have reduced our emissions by 55% over the past 16 years (since 2008). We have achieved several of our climate goals, but there is still a long way to go. In the process, we have learned where the challenges are most significant, and which changes are required. Our society is built around fossil energy sources, and therefore the changes are far-reaching for many of the systems we depend on in everyday life. The climate problem is extensive; so is the solution. This CCC 2030 Climate Neutrality Action Plan shows Aarhus' path to reach the goal of climate neutrality in 2030.

The climate crisis is a global crisis. Around the world we are experiencing massive floods and prolonged droughts, extensive forest fires and wild weather. 100-year events have become the norm, and climate change threatens our living conditions, from food production and water supply to safety and health. Climate change is primarily due to our extensive use of fossil energy sources, but there are also challenges with other greenhouse gases that, among other things, originates from agriculture and waste management.

On the international scene, an important step has been taken with the Paris Agreement from 2015. Here, it was agreed that the global temperature increase must be kept significantly below 2 degrees, and preferably at 1.5 degrees. But the agreement alone is not enough to mitigate the crisis. The latest forecast from 2023 from the UN climate panel, IPCC, predicts that the temperature has already risen by approximately 1.1 degrees and will reach at least 3.2 degrees in the year 2100, in case the countries do nothing to further to slow the development. Further action has been taken by the EU, where a European Green Deal was approved in 2020 with plans to become a climate neutral union by 2050, and it passed the European Climate Law in 2021 with a binding target of reducing greenhouse gas emissions by 55% in 2030.

In Aarhus, climate change is experienced mainly as floods from the sea, lakes, streams, cloudbursts and groundwater rises. Aarhus lies close to the coast on a slightly raised bank and has through its urban development spread down into river valleys and other low-lying areas. Aarhus is therefore particularly vulnerable to weather conditions, which climate change is making increasingly extreme. Particularly threatened are Aarhus' low-lying city centre, areas close to groundwater at risk of flooding and existing buildings along the coast exposed to storm surges.

Like other western countries and cities, Denmark and Aarhus have a large climate burden compared to the size of population, especially due to a high consumption. According to CONCITO's updated assessment of Denmark's global consumption-based emissions, each Dane emits an average of 13 tonnes of CO_2e annually, which is about twice as much as an average world citizen, and it far exceed

the sub-3 tonnes per global citizen required by 2030 to meet the Paris Agreement's ambitious 1.5-degree target. The large climate burden gives a special obligation to make an extra effort to reduce CO_2 emissions as quickly and efficiently as possible.

Aarhus must be a good city for everyone, now and in the future. But the climate crisis challenges us in everything from health and social cohesion to economy and growth. Therefore, Aarhus must also be a green city. In cooperation with the city's citizens, Aarhus City Council has set a common framework for the municipality's development, which secures that Aarhus continues to be a good city for everyone. The framework is referred to as the Aarhus Goals and consist of the following five goals:

Figure 1: The Aarhus Goals as a framework for urban development

The Aarhus Goals also constitute the benchmark for Aarhus' green transition and contribute to ensuring a just transition. One of such trailblazing endeavours where green interventions walk hand in hand with just transition and co-creation with local actors, knowledge institutions, and businesses is seen in the planning of a large energy park in the peri-urban area of Spørring. The City of Aarhus and The Aarhus School of Architecture has developed the project, CO-SHAPE, aiming to test innovative methods of sector coupling and citizen engagement. The project was funded by The Mission and received a 591,803.75€ grant. As part of the project, energy operators and locals will collectively participate in the city's comprehensive planning of the peri-area, its land use, and its energy park with renewable energy sources, in order to ensure that value is properly added back to the community.

Reaching net zero emissions requires a large portion of will and courage. And it requires action and cooperation. Politically, administratively and not least collaboratively between the city's many actors. Aarhus has a strong tradition on jointly developing the city – and on developing a green city. We have proven this with the previous climate action plans, with concrete projects like e.g. CO-SHAPE, and we will continue to do so with the new climate action plan.

Based on the BAU scenario, the *Climate Strategy Agreement: 2025-2030* sets goals and direction for the largest emission domains, listed below (Scope 1 and 2):

- Energy, incl. carbon capture: 405,000 tonnes (scope 1 and 2)
- Transport: 319,000 tonnes (scope 1 and 2)
- AFOLU: 79,000 tonnes (scope 1 and 2)
- Landfill and wastewater: 46,000 tonnes (scope 1 and 2)

With the *Climate Strategy Agreement: 2025-2030*, the coalition parties also decided to set emission reduction targets for the largest emission domains within scope 3:

- Construction and urban development: 40,000 tonnes (scope 3)
- Food: 24,000 tonnes (scope 3)

Finally, Aarhus aims to lead by example when it comes to the green transition. Viewed as its own entity (labelled "climate group") the City of Aarhus emitted 45.091 tonnes of CO_2e in 2023. The *Climate Strategy Agreement* sets the following target:

- Climate Group: 138,000 (scope 3)

Accordingly, a total of **849,000 tonnes of CO_2e in Scope 1 and 2** will thus be saved annually, which will enable Aarhus to achieve climate neutrality in 2030. In addition, a total reduction of **202,500 tonnes of CO_2e in Scope 3** will be achieved with the Climate Action Plan.

The domains and areas listed above are closely linked and influence each other. This means, for example, that the transformation of the energy system is influenced by and intervenes in land use, which in turn has a close link to the food area. It is therefore important to work across sectors with a view to potential synergies and well as their interrelated challenges.

The desire for a green energy transition requires space, and the open spaces in Aarhus are limited. To meet this dilemma, it is therefore necessary to plan based on the idea of multifunctional land use, i.e. use the same area for several purposes. For example, by combining afforestation with the installation of wind turbines.

The city of Aarhus consists of a combination of both rural, urban and peri-urban areas.

1-1.1: Population, area and population density of the city of Aarhus		
	Aarhus city	**Aarhus Municipality**
Population	295.688	367.095
Area	91 sq km	468.10 sq km
Population density	3.249 per sq km	785 per sq km

The combination of urban, peri-urban and rural areas provides Aarhus with a unique space of opportunity. The large land areas, for example, offer opportunities for the establishment of larger renewable energy facilities, biogenic parks, and afforestation.

However, these opportunities also come with a range of challenges and complexities that arise from, for example, decreasing property values because of neighbouring renewable energy (RE) plant, the battle for land, as well as a potentially unequal distribution between neighbourhoods with high emissions and neighbourhoods with space for RE. In addition, the green transition will create a fundamentally different allocation of land areas with less agriculture and livestock in favour of more RE plants, forests and other nature.

This poses special requirements for the green energy transition, with integrated thinking and synergies between domains, internally coordinated collaboration, and the breaking down of organizational barriers, as well as the involvement of and cooperation with stakeholders to ensure democratic participation and a just transition.

Reaching net zero emissions is not something the Municipality can do alone. It requires close cooperation with both commercial, political and civil actors. Therefore, green partnerships and strategic cooperation are a crucial focus area in the upcoming climate work – and a key principle for success.

Based on the above, this plan focuses on the following four strategic focus areas for realizing the neutrality goal:[1]

- Enough green energy for future needs
- Multi-functional land use
- Transversal approach to the green energy transition
- Green Partnerships

Aarhus has a proud tradition of collaboration and community involvement. It is a central part of the Aarhus DNA to include the city's diverse stakeholders in its development to ensure that Aarhus is a good city for everyone. This is also the case when it comes to climate and the green transition. The climate crisis affects all parts of our society. We can only achieve climate neutrality through a joint effort from authorities, businesses, knowledge institutions, citizens, and civil society. Only by joining forces can we create the best conditions for a common direction, development of new technology and green innovation, as well as changed habits and behaviour.

To ensure close local anchoring and ownership, the preparatory work has been made in close collaboration with key stakeholders in line with the NZC Climate Transition Map.

The development of new climate actions in Aarhus builds on the notion that a thorough understanding of the climate challenges from multiple perspectives and learning from past actions has significant potential to accelerate the impact of climate efforts. Accordingly, the CCC 2030 Climate Neutrality Action Plan builds upon many years of experiences. Shared knowledge and learning are therefore a focal point. A clear procedure for how we monitor, evaluate and harvest learning from our climate actions is essential to establish a solid knowledge base for action and thus ensure that we move along the best and most efficient path to climate neutrality.

This document constitutes the first draft of the CCC 2030 Climate Neutrality Action Plan. This first draft builds on the *Climate Strategy Agreement: 2025-2030* and the extensive background material on which the agreement is partly based (including learnings from the Climate Action Plan 2021-2024). The final Climate Action Plan 2025-2030 is expected to be submitted to the City Council at the end of 2024. This time lag between the City Council's endorsement of the final Climate Action Plan and the deadline for

[1] Although the transport and mobility sector accounts for the second highest level of emissions in Aarhus in 2030 and therefore naturally constitutes a significant strategic focus area, it is not included as a strategic focus area in the first edition of the CCC Action Plan due separate political and budget negotiation processes. Please note in this connection, that actions related to green urban mobility was *not* a strategic priority in the CCC Mission Expression of Interest.

the CCC 2030 Climate Neutrality Action Plan has consequences for the completeness of the first edition of the CCC 2030 Climate Neutrality Action Plan (especially concerning the final endorsements of the investment plan, but also in other areas) and thus for future iterations of the CCC Action Plan.

In this CCC 2030 Climate Neutrality Action Plan, ongoing weaknesses and deficiencies have been identified that could strengthen implementation. This is particularly relevant within Monitoring, Evaluation, and Learning. Despite a well-established data analytical and climate-economic procedural approach to climate work in Aarhus, there is a need for further strengthening and prioritization in this area in future iterations.

1-1.2: Climate Neutrality Target by 2030			
Sectors	**Scope 1**	**Scope 2**	**Scope 3**
Stationary energy	Included	Included	For an overview of Climate Neutrality Target by 2030 in scope 3 reduction, please see text below.
Transport	Included	Included	
Waste/wastewater	Included	NA	
IPPU	Included	NA	
AFOLU	Included	NA	
Other			
Geographical boundary	**Same as city administrative boundary**	**Smaller than city administrative boundary**	**Larger than city administrative boundary**
(Tick correct option)	x		
Map			

Figure 2: Map of Aarhus (source: Technical Services and Environment, Aarhus, 2020)

An important principle in the *Climate Strategy Agreement: 2025-2030* concerns taking responsibility for and setting targets for the most significant sources of consumption-based emissions (i.e. related to Food, Construction and Urban Development):

A large proportion of the greenhouse gas emissions in Aarhus are generated by our consumption. The consumption of food and beverages accounts for 26% of emissions from Danish households – second only to transport. The most effective individual factor in relation to reducing CO_2e emissions from our food consumption is a shift from red meat toward a more plant-based diet.

Aarhus must take the lead and, together with business and industry, initiate ambitious projects to reduce emissions from food production in Scope 3. The estimated effect of these initiatives is a 10% increase in the number of Aarhus residents whose diets conform to the official dietary guidelines, corresponding to 24,000 tonnes of $C0_2$ annually in 2030 in Scope 3.

Aarhus also have a special obligation to take the lead and set ambitious targets for municipal construction projects. At the beginning of 2023, the Aarhus City Council pledged that all new construction over 1,000 m2 will comply with the low-emission class standard, which means a threshold value of max. 8 kg CO_2e/m2/pr. year in 2024, falling to 5 kg CO_2e/m2/pr. year in 2030. The City of Aarhus has started working with LCA assessment tools. LCA assessment tools will contribute to making Scope 3 reductions in construction projects possible by enabling calculation of emissions from the building materials used, for example.

Finally, The City of Aarhus must take the lead when it comes to the green transition. The *Climate Strategy Agreement: 2025-2030* sets an ambitious reduction target for the City of Aarhus' consumption-based climate footprint of 50% by the end of 2035. The municipality must lead the way with a major cultural transformation regarding consumption, while at the same time promoting a greener supplier market in Denmark, to the benefit of the City of Aarhus and the country's public and private sectors. The City of Aarhus makes DKK 8 billion in purchases annually, which emits approx. 24,000 tonnes CO_2 in Scopes 1 and 2 in addition to approx. 250,000 tonnes CO_2 in Scope 3 not including the entities.

2 Part A – Current State of Climate Action

2.1 Module A-1 Greenhouse Gas Emissions Baseline Inventory

The most recent GHG inventory is from 2022, and geographically it covers Aarhus Municipality as a whole. The inventory is divided according to standard sectors. The following sectors are included in the inventory: Buildings, Transport, Waste, IPPU and AFOLU.

The inventory is mainly focused on scope 1 and 2 emissions within the municipality. For the scope 1 and 2 emissions, local data is used. No local data for scope 3 emissions exist. An estimation of scope 3 emissions has been computed based on national accounts. The scope 3 emissions are shown in tables A-1.5, A-1.6 and A-1.7.

All the primary greenhouse gases are included in the inventory: CO_2, CH_4, N_2O, SF_6, NF_3 and F-gases.

Since emissions divided in fuel types cannot be divided into sectors without extensive estimation and assumptions, Table A-1.4 shows energy-related emissions divided by fuel type but not by sector. A division by sector can be found in Table A-1.3.

The climate-neutrality target aligns with the scope 1 and 2 inventory.

A-1.1: Sources and sectors of GHG emissions			
	Scope 1	Scope 2	Scope 3
Buildings	Included	Included	NA
Transport	Included	Included*	See note**
Waste	Included	NA	No emissions***
IPPU	Included	NA	NA
AFOLU	Included	NA	NA

* Electricity used to charge electric vehicles is included under Buildings, since it is not possible to divide the electricity use in the municipality between buildings and transport.
** Scope 3 emissions from transport are not explicitly included in the inventory, but it is part of the estimated scope 3 emissions in tables A-1.5, A-1.6 and A-1.7.
*** All waste in Aarhus Municipality is managed within the city boundary.

Table A-1.2 shows which GWP factors, Aarhus has applied in calculating the GHG inventory.

A-1.2: GWP factors applied					
The GWP factors from the IPCC's sixth assessment report have been applied in the inventory.					
Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_2O)	F-gases (hydrofluorocarbons and perfluorocarbons)	Sulphur hexafluoride (SF_6)	Nitrogen trifluoride (NF_3)
1 t. CO_2e	27 t. CO_2e	273 t. CO_2e	14.800 t. CO_2e	*	*

* SF_6 and NF_3 are also included in the inventory. There is no specific GWP for these gases as they are included in a combination of F-gases. Following the national accounting a sum-calculation of all F-gases is computed. Included in this computation are also HFC and PFC gases.

Table A-1.3 below gives an overview of GHG emissions from different source sectors.

A-1.3: GHG emissions by source sectors				
Base year		2022		
Unit		t. CO_2e		
		Scope 1	Scope 2	Total
Buildings*		81.465	512.703	594.167
Transport*		680.386	-	680.386
Waste**		71.996	-	71.996
Industrial Process and Product Use (IPPU)		28.892	-	28.892
Agricultural, Forestry and Land Use (AFOLU)	Sources (positive emissions)	105.094	-	105.094
	Sinks (negative emissions)	-25.057	-	-25.057
Total		**942.776**	**512.703**	**1.455.478**

* Buildings include all emissions from stationary energy and grid-supplied energy.
** In Aarhus a large share of waste is burned in a central heating system. Emissions from burned fuel is a part of the scope 2 emission from buildings, since it is a part of the heating system.

An estimate of consumer-based emissions can be found in tables A1.5-A1.7 further below.

Table A-1.4 gives an overview of energy usage and emissions related to energy usage. The energy-related emissions are divided by fuel type. The GHG inventory for the energy sector in Aarhus is based on the production of energy and not the consumption of energy. This implies, that a division between buildings and transportation is not possible, when dividing the inventory by fuel type.

A-1.4: Energy-related emissions			
Base year	2022		
	Energy use [TJ]	Emission factor [t. CO_2e/TJ]	Emissions [1.000 t. CO_2e]
Fossil based			
LPG & petroleum	219	65	14
Coal	2.518	94	237
Fuel oil	837	79	66
Gasoil	279	74	21
Diesel	4.612	74	342
Petrol	1.977	73	144
JP1	2.660	72	192
Non-biodegradable waste	1.169	94	110
Electricity import (fossil based)*	646	44	148
Total**			**1.247**

RES			
Wind	69	-	-
Solar	130	-	-
Biodegradable waste & biogas	10.335	-	-
Electricity import (RES)	2.736	-	-

* The energy use from electricity import is divided into fossil based and RES import. The emissions factor is calculated for the combined import, which implies that energy use multiplied with the emission factor is not equal to the emissions for electricity import (fossil based).
** The total equals the emissions from the sectors Buildings and Transport in Table A-1.3.

Figure A-1.1 shows a visual representation of the development in GHG emissions.

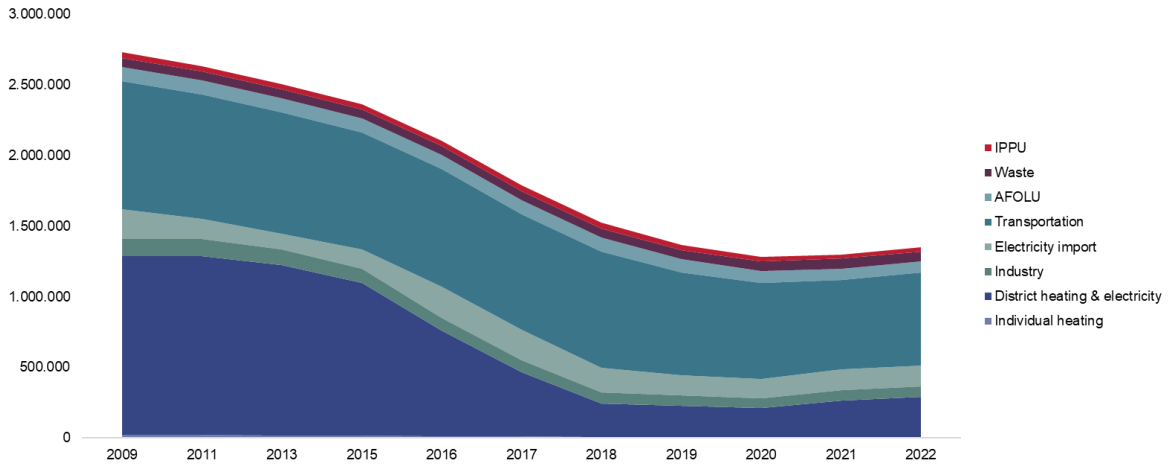


Figure A-1.1: GHG emissions, three-year avg. (t. CO2e)

Note: GHG-emissions are calculated as three-year averages following recommendations from the Climate Council in Denmark.

Figure A-1.2: shows a visual representation of the 2022-inventory with more detailed sub-sectors.

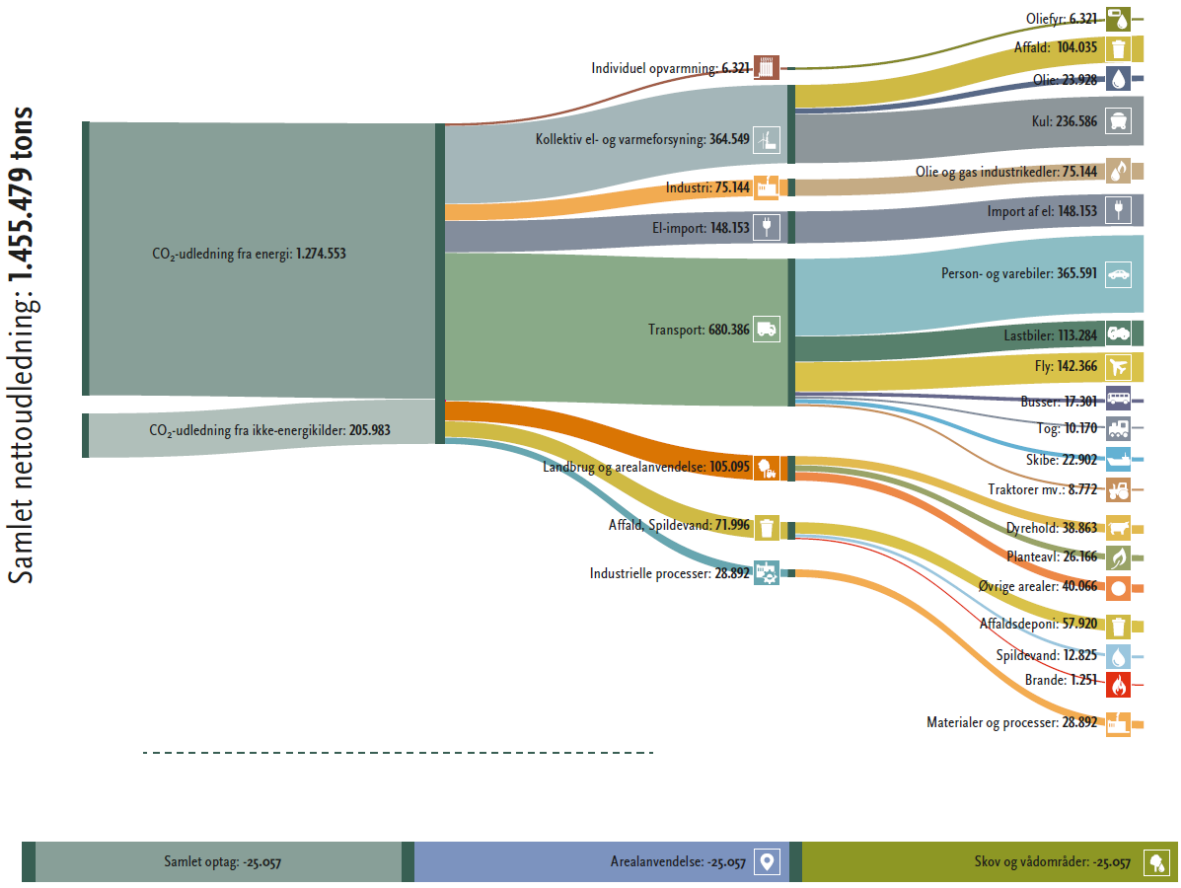


Figure A-1.2: GHG inventory 2022

Note: The visualisation of the detailed 2022-inventory only exists in a Danish version.

Based on the inventory, Aarhus Municipality has prepared a BAU scenario up to 2030. The BAU scenario is a frozen policy forecast, which considers national forecasts of energy usage, emissions factors etc.

The impact pathways are designed based on the inventory and BAU scenario prepared before the methodical changes. It is expected that the calculation related to the impact pathways are also updated during the fall of 2024.

Existing policies, plans etc. in the municipality have not been considered in the BAU scenario. After the preparation of the BAU scenario, there were some methodical changes to the calculation of the inventory. The BAU scenario has not been updated after these changes, which implies that the BAU scenario is not completely aligned with the inventory. It is expected, that the BAU scenario will be updated during the fall of 2024.

The BAU scenario is based on the Energy and Transportation sectors. For the sectors Waste, IPPU and AFOLU, it is assumed that emissions will be at 2022-level up to 2030.

The calculations are based on the following assumptions:

- Higher electricity usage
- Lower emission factor in the electricity grid, i.e. more RES.
- Phasing out all coal from the district heating and electricity system
- Installation of a large bio boiler at a large factory in Aarhus
- Replacement of individual oil boilers with heat pumps
- Introduction of geothermal heating in the district heating system
- An increase in km driven by cars
- Transition to EV's
- A normalisation of flights to pre-Covid levels
- Electrifying city busses
- Electrifying the train network

The specific projects outlined above, e.g. electrifying city busses, has already been settled and are to be phased in over the coming years.

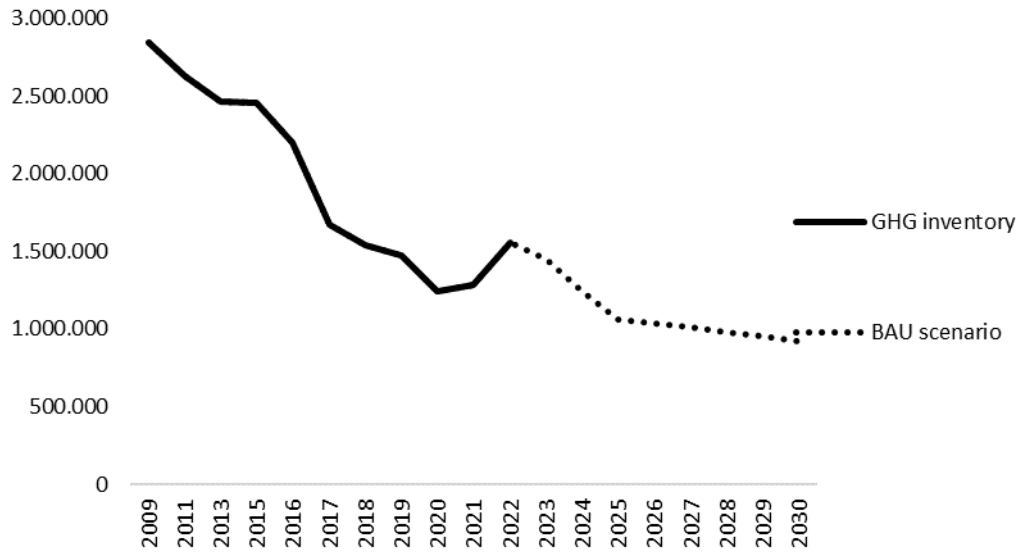


Figure A-1.3: BAU scenario

The jump in emissions around 2021-2023 is due to a fire at a power plant in Aarhus, which meant that the plant had to use a large amount of coal instead of biomaterials in the district heating system.

Scope 3 emissions

Due to lack of data collection in Denmark (and other countries) it is impossible to make precise calculations of scope 3 emissions at a municipal level. Aarhus Municipality has estimated the consumer-based emissions based on national accounts.

In a geographic municipal GHG inventory, scope 3 emissions are all emissions that are emitted outside the municipality due to activities inside the municipality. Consumer-based emissions are a broader definition, that covers all emissions that are a result of activities within a municipality. This implies, that consumer-based emissions can cover scope 1, 2 and 3 emissions.

The Danish Energy Agency has calculated the consumer-based emissions for Denmark, which includes both scope 1, 2 and 3 emissions. The emissions are divided into Danish emissions and foreign emissions, where the latter gives an indication of scope 3 emissions.

In the tables below, these consumer-based emission estimates are divided into emissions from households, public consumption and investments. For each of the three categories, there are a number of specific consumer and investment categories.

A-1.5: Consumer-based GHG emissions from households by consumer category

	Danish emissions	Foreign emissions
	mio. t. CO_2e	
Food and beverages	0,24	0,39
Transportation	0,38	0,24
Energy and supply	0,32	0,11
Services	0,08	0,11
Other products	0,04	0,11
Housing and clothing	0,02	0,12
Culture and spare time	0,03	0,05
Electronics	0,01	0,06
NPISH	0,01	0,01
Total	**1,13**	**1,21**

With the Climate Strategy Agreement, Aarhus Municipality has decided to set emission reduction targets for some of the largest emission domains within scope 3. Aarhus Municipality has set a reduction target for food-related scope 3 emissions at 24.000 tonnes CO_2e. As calculated from the table above, the estimated emissions from food and beverages are 63.000 tonnes CO_2e. However, as described in the Climate Strategy Agreement, Aarhus aims to lead the way in reducing food-related emissions, and the target is a conservative target for the effect of taking on this role.

A-1.6: Consumer-based GHG emissions from public consumption by consumer category

	Danish emissions	Foreign emissions
	mio. t. CO_2e	
Hospitals, etc.	0,03	0,07
Nursing homes, day care centres, etc.	0,02	0,03

Education	0,02	0,02
Economic conditions	0,02	0,02
Daycare centres for children	0,02	0,02
Defence	0,02	0,02
General public services	0,01	0,02
Public order and security	0,01	0,01
Medicines, vitamins, etc.	0,00	0,02
Doctor, dentist, etc.	0,01	0,01
Other	0,02	0,03
Total	**0,18**	**0,27**

A-1.7: Consumer-based GHG emissions from investment by investment category		
	Danish emissions	Foreign emissions
	mio. t. CO_2e	
Investment in housing	0,05	0,06
Investment in machinery	0,01	0,08
Investment in facilities	0,03	0,06
Investment in other buildings	0,03	0,03
Research and development	0,03	0,08
Investment in computer software	0,03	0,04
Investment in means of transportation	0,00	0,07
Other	0,12	0,16
Total	**0,30**	**0,58**

Climate group

The City of Aarhus must take the lead when it comes to the green transition. Therefore, Aarhus Municipality closely monitors emissions related to the climate group (the city including its entities).

For the climate group there is no delay in the data collection, which implies that the inventory for 2023 has already been made. All figures in this section are for 2023.

The climate group emitted 45.000 tonnes of CO_2e in 2023. The figure below illustrates which categories and sectors are causing these emissions as well as the historical development in emissions for the climate group.

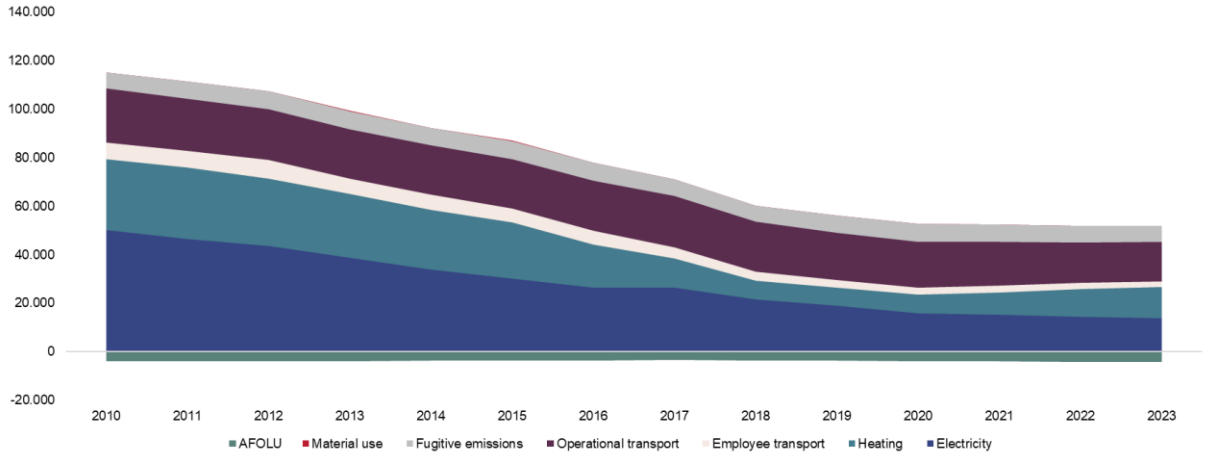


Figure A-1.4: Climate group – historical emissions (three-year averages)

As for the inventory above, Aarhus Municipality has prepared a BAU scenario up to 2030 for the climate group emissions. The BAU scenario is a frozen policy forecast, which considers national forecasts of energy usage, emissions factors etc.

The calculations are based on the following assumptions:

- Lower emission factor in the electricity grid, i.e. more RES.
- Phasing out all coal from the district heating and electricity system
- Electrifying the remaining fossil driven city buses
- More employees are driving EV's instead of fossil driven cars

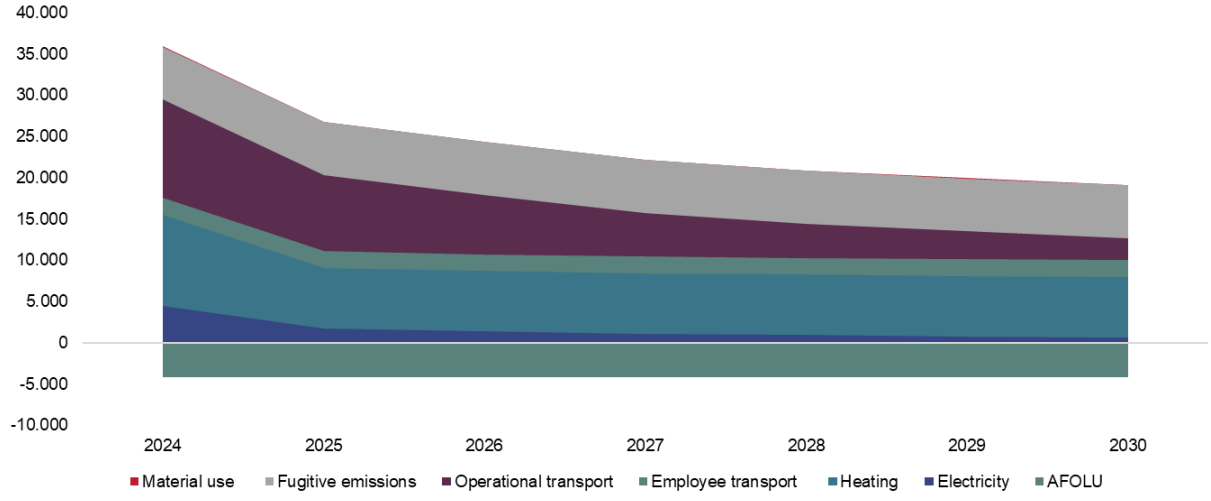


Figure A-1.5: Climate group – BAU scenario

2.2 Module A-2 Current Policies and Strategies Assessment

The development of local climate actions takes place in interaction with the region and the state, as well as with the EU and international network and experts. Aarhus' CO2 targets and climate actions

are developed with a close eye to the framework conditions set by national, regional, and European legislations, regulations, and directives.

EU and state level

With *the Paris Agreement* and *the UN Sustainable Development Goals* (SDGs) from 2015, member states have reached a global consensus on the need for a change of course to avoid a major rise in global temperatures. With the *Danish Climate Act* (June 2020) an ambitious course is charted for Denmark's climate actions:

"1. The purpose of this Act is for Denmark to reduce greenhouse gas emissions in 2030 by 70% compared to the level of emissions in 1990, and for Denmark to achieve a climate-neutral society by 2050 at the latest, taking into account the Paris Agreement target of limiting the global temperature rise to 1.5 degrees Celsius". (Climate Act No 968 of 26 June 2020).

As part of the Climate Act, The Minister for Climate, Energy and Utilities commits to annually prepare a climate status and projection (including historic greenhouse gas emissions, overall and by sector, projections of greenhouse gas emissions, overall and by sector, and global report on the international effects of the Danish climate effort) to provide the necessary data to monitor and document its implementation.

The Danish Climate Act has subsequently been supplemented by additional agreements with foci on energy, transport, waste, CO_2 capture and storage, as well as PtX fuels. The current government has agreed to bring forward the goal of climate neutrality to 2045 and to reduce greenhouse gas emissions by 110% in 2050 compared to 1990.

Since 2020, a number of political agreements have been made to ensure a market-based roll-out of CCS, including the overall CCS strategy. As a result of these political agreements, approximately DKK 38 billion has been allocated to CCS, which is estimated to lead to reductions totalling 3.2 million tonnes of CO_2 by 2030. In addition, the Danish Parliament has passed several bills that create a legal basis for the market development.

The Planning Act in Denmark and *The Building Regulations* constitute the overall framework for an appropriate development of the whole country, for creating and conserving of valuable buildings, settlements, urban environments and landscape, for maintaining the status of the open coasts, for preventing of pollution of air, water and soil and noise nuisance as well as for involving the public in the planning process as much as possible. The purpose states that the Planning Act "shall ensure that the overall planning synthesizes the interests of society with respect to land use and contributes to protecting the country's nature and environment, so that sustainable development of society with respect for people's living conditions and for the conservation of wildlife and vegetation is secured". (The Planning Act: Consolidated Act No 813 of 21 June 2007).

Current legislation prevents the possibility of using areas multifunctionally. *The Green Tripartite*, which consists of the Government, Agriculture & Food, the Food Federation NNF, Danish Metal, Danish Industry and the National Association of Municipalities is, however, set to reach an agreement on

principles for recommendations and solutions on how to create areas in the future where agriculture, nature, renewable energy and recreational areas can coexist. In August 2024, the Government presented a new Ministry for Green Tripartite, which will, among other things, be responsible for climate analysis in the agricultural area, development of green technologies and bioeconomy, and it must ensure progress and implementation of the agreed initiatives in the green tripartite. There is, thus, a great deal of political attention to ensure the right political leeway for the municipalities' green transition, including the opportunities associated with multifunctional land use.

State policy frameworks directly affecting CO_2 emissions

There are several changed national framework conditions that the frozen policy forecast (BAU scenario) does not account for, but which are expected to have a reducing effect on CO_2e emissions in Aarhus by 2030.

At present, two new legislations have been identified that are not included in the forecast but are expected to have a CO_2e-reducing effect. These are the Green Tax Reform 1 and the Mileage-based Road Tax for trucks, both of which were adopted in 2022.

Also, Green Tax Reform 2 is included here despite not having been adopted yet. It is, however expected to be approved during 2024, as it is proposed by the government of Denmark who currently has an absolute majority in the parliament.

Overall, these three reforms are expected to result in a reduction of 154,000 tonnes of CO_2e emissions in Aarhus by 2030:

Green Tax Reform 1:

In 2022, the Danish Parliament agreed on the first part of a green tax reform. In this initial agreement, it was decided to introduce a tax of DKK 750 per ton of emitted CO_2e in 2030 for companies outside the EU's emissions trading system and DKK 375 per ton for companies outside the quota system. Additionally, mineralogical processes, etc., will be subject to a tax of DKK 125 per ton of emitted CO_2e.

The tax system targets energy supply, industry, and non-road transport. The expert group behind the reform estimates that the tax system will reduce national emissions by 3.5 million tonnes of CO_2e, equivalent to 38% of emissions within the respective areas.

In Aarhus, this corresponds to a reduction of 26,000 tonnes from energy, 70,000 tonnes from transport, and 11,000 tonnes from industrial processes.

Green Tax Reform 2:

In February 2024, the expert group behind the Green Tax Reform presented three models for a CO_2e tax on non-energy-related emissions from agriculture (methane, nitrous oxide, etc.). These three models combine a tax on emissions ranging from DKK 250 to DKK 750 per ton, along with deductions and subsidies. The models are expected to reduce emissions by between 2.4 and 3.2 million tonnes of CO_2e by 2030.

The estimated impact of Green Tax Reform 2 in an Aarhus context is based on the expert group's Model 3a, as it is considered the most likely to be adopted. In Model 3a, the expert group expects emissions to be reduced by 2.6 million tonnes of CO_2e, equivalent to 21% of agricultural emissions.

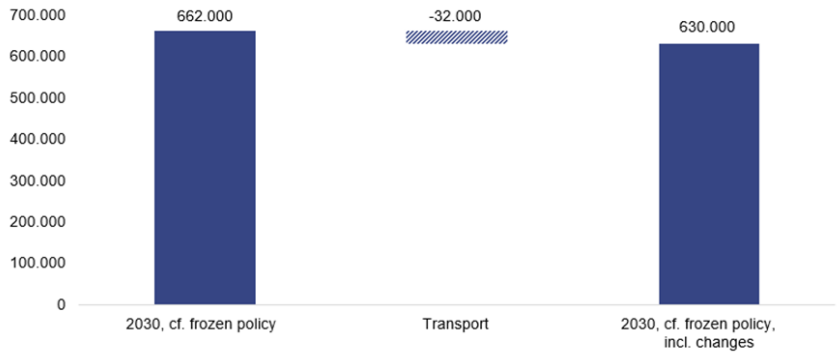
In Aarhus, this corresponds to a reduction of 15,000 tonnes of CO_2e. If Model 1, the most ambitious model, is adopted, the reduction from agriculture in Aarhus is expected to be 18,000 tonnes of CO_2e.

Mileage-Based Road Tax for Trucks:

In 2022, the Danish Parliament decided to introduce road taxes for trucks starting in 2025. The taxes are based on a kilometre-based system, where the amount depends on how much CO_2e each individual truck emits. Green trucks will pay the least in taxes. The average tax rate will be approximately DKK 1.20 per kilometre in 2030.

It is expected that this agreement will lead to a reduction of 0.4 million tonnes of CO_2e emissions in 2030. This corresponds to 24% of emissions from trucks.

In Aarhus, this translates to a reduction of 32,000 tonnes of CO_2e emissions.



Partial implementation of 'the green fund':

According to the latest national agreement on the partial implementation of the 'green fund' concluded on 15 April 2024, DKK 625 million have been allocated to reforestation in the period 2024-2027. Whether the municipalities will receive any of this funding is not yet known, as the agreement states that the allocation of the funding will be decided based on a proposal from the government and must be viewed in connection with the coming forest plan. However, if the municipalities receive any of this funding, the City of Aarhus, based on the usual allocation key, can expect to receive approx. 6.1%, corresponding to approx. DKK 40 million.

Under the agreement, it has been decided to increase the diesel tax by 50 øre per liter from 2025. The agreement is expected to reduce emissions by 16,000 tonnes CO_2e in the City of Aarhus, which has been included in the baseline in the section on transport. In addition, the agreement allocates funds for the green transition of agriculture (funds for methane-reducing feed, etc.), which, it must be assumed, will be granted to the industry and not to municipalities, as well as plant-based foods, in regard to which there is an obvious link to Scope 3, but in regard to which the funds will go to the plant-based food fund, which finances innovation projects in the food sector.

Regional level

Denmark consists of five regions, which are divided into 98 municipalities. Aarhus Municipality is part of the Central Denmark Region, which comprises a total of 19 municipalities. The region covers an area of 13.008 sq km with a population of 1.365.688. Aarhus is actively involved in the regional and national collaboration among the regions and municipalities in the development and implementation of climate plans under the auspices of *DK2020* and *the regional partnership Climate Alliance*.

The purpose of DK2020 and the Climate Alliance is to assist all Danish municipalities in developing a local climate action plan and support concrete climate action that meets the objectives of the Paris

Agreement and contributes to the government's 70% target. The association RealDania, together with the international city network C40, is behind DK2020. A partnership agreement between RealDania, Local Government Denmark (KL), and the five regions gives all Danish municipalities the opportunity to become part of DK2020.

All 98 municipalities have chosen to actively participate in the DK2020 work, which was initiated in 2019. The DK2020 collaboration aims to accelerate the implementation of the Paris Agreement's goals in Denmark, so that the municipalities become both climate-neutral and climate-resilient by 2050. Along the way, municipalities in the project receive sparring and advice from professional staff from Local Government Denmark, the region, and relevant local operators, so that the plans live up to international best practices in climate planning. CONCITO – Denmark's Green Think Tank is the overall project manager and, together with the international city network C40, is a knowledge partner. DK2020 also facilitates contact between the municipalities for knowledge sharing and mutual inspiration.

Local Level

Previous and current climate strategy and action plans

Since 2008, Aarhus has committed to the goal of $C0_2$ neutrality by 2030 and thus has many years of experience with strategic climate actions. The development of the European Climate City Contract builds on and add to the previous climate strategy and action plans (i.e. *Climate Strategy 2021-2030*, *Climate Action Plan 2018-2020*, *Climate Action Plan 2021-2024*).

The city council follows the development and progression of the climate efforts in Aarhus through an annual report, which includes the status, climate accounting, frozen policy, a qualitative evaluation of what has succeeded and what is challenging, as well as recommendations for the future. To ensure a smooth transition from the climate plan 2021-2024 to the climate plan 2025-2030, a transversal screening of the efforts has also been carried out with a particular focus on the internal challenges.

Learnings and experiences from the previous plan are integrated into the political climate strategy agreement and the development of the upcoming Aarhus Climate Action Plan 2025-2030. The Aarhus Climate Action Plan 2025-2030, which must ensure the realization of the 2030 target and the implementation of the agreement, is still being prepared and will be presented to the city council at the end of 2024.

Climate Strategy Agreement 2025-2030

On April 29, a majority of the Aarhus City Council settled on a broad political agreement on Climate Strategy, entitled *Climate Neutral Aarhus 2030*. The agreement on climate strategy for 2025-2030 provides the framework conditions for reaching the goal of CO_2 neutrality. The agreement sets CO_2 goals and directions for the largest emission domains within both scope 1, 2 and 3 and marks a political decision on a high level of ambition and provides a political mandate to prioritize concrete implementation.

A decisive event that paved the way for the climate strategy was the adoption of a climate-economic approach by a majority in the City Council in the budget settlement for 2024. This is in line with the key principle of the State Climate Act, which sets forth the necessity of a cost-effective realization of the climate targets. A climate-economic approach involves prioritizing the initiatives that generate the greatest possible CO_2 reduction for the money. This will provide the best prospects of reaching the 2030 target and making a genuine difference for the climate.

In addition, civic and stakeholder engagement is a central pillar of a new climate strategy. The coalition parties agree that targeted civic involvement initiatives must be closely connected to the emission domains to ensure that dialogue take point of departure in the issues that affect citizens, businesses, and organizations.

Local governance and value frameworks

Aarhus has a strong tradition of cooperation and community. It is a central part of our DNA to include the city's actors in the city's development to ensure that Aarhus is a good city for everyone. It is therefore natural to also invite the city's stakeholders when it comes to climate and the green transition. Several governance value frameworks emphasize this approach:

The Aarhus Compass. Less System. More Citizen sets the direction for new ways to learn, listen, and lead, driven by the idea of *less system, more citizen.* The framework provides fundamental principles for how to ensure citizen empowerment and self-direction.

The Collaboration Compass outlines seven principles for better citizens collaboration and constitutes a collective set of value for engaging in citizen collaboration. The framework provides fundamental principles for engaging citizens in the green transition.

A new Aarhus model for collaboration provides a methodological framework for stakeholder engagement to ensure safe space for collaboration and dialogue and a sustainable and just urban development process. The framework provides fundamental principles for ensuring a just transition.

The political mandate for wicked problems identifies seven wicked problems which Aarhus must address, including climate. Specifically for tackling climate as a wicked problem, the mandate suggests three key principles: We must be brave and set a common direction for the major emission domains; We must take responsibility for our consumption; and We must create a shared understanding of the problem to make a difference. The agreement on climate strategy for 2025-2030 builds on these principles. In addition, the political mandate for wicked problems emphasizes the importance of collaboration, co-creation and creative thinking as important methodologies when designing and implementing climate efforts.

Upcoming Green Mobility Plan

The political negotiations concerning the prioritization of technologies and distribution of CO_2 reductions within the transport sector, and which will set the direction for the development of a *Green Mobility Plan* is currently in process. At present time, the coalition parties participating in the

agreement on climate strategy for 2025-2030 agree that the point of departure for the green mobility plan is an annual reduction of road transport of 270,000 tonnes CO_2 towards 2030. This means that the target for the transport sector account for a total maximum of $C0_2$ emissions of 230,000 tonnes annually in 2030, considering improvement achieved via the national framework conditions. In addition, there will be a reduction of 44,000 tonnes from aviation and shipping as well as 5,000 tonnes from sustainable soil handling.

CO_2 reductions related to aviation and shipping as well as sustainable soil handling is included in the CCC Action Plan, while the remaining CO_2 reductions will be accounted for in the green mobility plan, which is expected to land in 2025. The Green Mobility Plan is financed via separate fundings.

Additional local plans and frameworks

The city council's adopted objectives and designations in *Municipal Plan 2025* include visions for, among other things:

- 12,000 ha of forest and nature and better nature quality
- 7,000 ha of groundwater protection, i.a. in blue-green parks
- Climate adaptation. Water and nutrient retention
- New recreational experiences
- Public health

Aarhus Municipality's *climate adaptation strategy* was adopted by Aarhus City Council in September 2020, and it determines the direction of how we in Aarhus will delay the water and make room for the increased water volumes. The climate adaptation strategy builds on the notion that climate adaptation is a shared societal task. For this reason, the strategy is a common framework for the various players who can create good solutions together: utility company, citizens, businesses, urban development players and the municipality.

The waste plan 2021-2026 'Towards a circular Aarhus' provides a significant contribution to achieving this overall goal as well as other EU and national objectives for reuse, recycling, CO_2 savings and circular material flows. 'Towards a circular Aarhus' is the first waste plan that Aarhus Municipality and Kredsløb has developed together. A circular Aarhus is driven by the vision of shared responsibility and collaboration with the citizens and businesses in Aarhus.

The *Wastewater Plan 2021-2026* is developed in collaboration with Aarhus Vand and designates a number of concrete strategies and action areas for handling wastewater and rainwater. The wastewater plan describes the existing wastewater conditions and contains a comprehensive overview of the planned activities, investments and strategies in the wastewater area. It is a goal that water management must be done sustainably while at the same time increasingly use resources and produce energy. We create good urban spaces with blue and green recreational qualities at the same time as we adapt to the climate and create time and space for the water. The new plan also establishes the framework for how citizens, companies and developers must handle rainwater and wastewater on

their own land, just as it describes minimum requirements for cleaning domestic wastewater in areas outside the sewered area, called the open country.

As a framework for the municipality's continued work with nature and greenery, Technology Services and Environment has prepared "A greener Aarhus – Aarhus Municipality's *policy for nature and greenery*". The framework replaces a number of previously more specific policies and plans for nature and greenery. The goal has been to create an overarching and clear political framework and direction and thus also a better basis for synergies and priorities. "A greener Aarhus" interacts with a number of other policies and strategies on how the good life can unfold in attractive and sustainable settings. The policy has therefore been consulted in selected forums and in the magistrates' departments and has been adjusted on the basis of the consultation. "A greener Aarhus" must also be seen in the context of the municipal plan, which translates the policy's ambitions and goals into concrete guidelines and frameworks for the use of land.

With the *Plastic Strategy*, Aarhus Municipality will minimize unnecessary use of plastic and ensure better recycling. This is done via efforts involving volunteers, companies, educational institutions, interest organisations, knowledge institutions and the municipality itself.

Part of the solution is *the shared narrative about Aarhus Municipality's work with climate, biodiversity and afforestation*. The story that we can all help make a difference and that we are all part of the solution.

The *Children and Young People's Climate Plan* sets the direction for and presents climate effort related to the daily operations and in the educational task. The crossbar for the Children and Young People's Climate Plan is the climate goals for Aarhus Municipality. Thus, both Aarhus Municipality's Climate Action Plan 2021-24, relevant cross-cutting strategies and Budget Settlement 2024 are important for the selection and prioritization of the action areas. When relevant, children and children’s learning must be actively included in future efforts under the climate plan's action areas and tracks. In practice, this means, for example, that solar cells on the roofs or waste sorting are followed up with children's involvement and with practical and project-oriented teaching and learning courses as part of the subject's goals, compulsory subjects etc.

Identified Strengths and Challenges

On a more general level, the list of relevant policies, strategies and frameworks point towards the following strengths and challenges, respectively:

Identified strengths

The climate is a high priority in Denmark, and Aarhus plays a significant role in achieving the national policy goals. The broad political majority behind the recently adopted *Climate Strategy Agreement: 2025-2030* shows that the climate also has a high local priority. It shows that the climate work has a strong political mandate.

Since 2008, Aarhus has committed to the goal of $C0_2$ neutrality by 2030. Therefore, Aarhus is already well underway with the green transition, and has many years of experiences and learnings to build upon, organizationally, technologically and collaboratively.

Aarhus has a strong history of collaboration and citizen involvement – beyond the conventional public hearings. Cooperation and dialogue are not just something we talk about, but has a strong political priority, is systemically embedded in practice and organizationally anchored, for example, in the organizational unit, *Citizenship*, which is a department under the Technical Services and Environment, which operates out in the field among citizens, collaborates widely throughout the organization and constantly scales new approaches and methods for citizen involvement and empowerment (see also section 4 for examples of other Governance Innovation Interventions).

Identified challenges

In the above review of existing frameworks and policies, it shows that Aarhus has many different plans and strategies which indirectly play a role in climate work (Food strategy, plastic strategy, local plans, mobility plans etc.) and where climate considerations must be integrated to become the new normal. It is therefore crucial to establish an organizational set up that is geared to handle cross-departmental coordination and collaborations. Aarhus Municipality is politically, managerially and administratively organized in magistrates.

The organization of Aarhus Municipality into magistrates means that:

Politically, it allows for a division of power, with the mayor and councillors leading different departments, fostering specialized focus and accountability.

Managerially, it streamlines decision-making, as each magistrate department is responsible for executing the city council's decisions within their domain.

Administratively, it ensures that the municipality's operations are managed by dedicated teams, improving service delivery and responsiveness to citizens' needs.

However, the work with climate (and other wicked problems that require transversal, interdisciplinary and multistakeholder collaboration) challenges the magistrates-model and therefore requires special attention.

A-2.1: Emissions Reduction Target 2030 and Residual Emissions

		(1) Baseline emissions	(2) Emissions Reduction Target 2030		(3) Emission reduction through other Action Plans		(4) Emissions Gap		(5) Emissions reduction through the CCC Action Plan to address the Gap		(6) Residual emissions	
		Baseline emissions (ideally not older than 2018) - referring to the inventory used for target setting	The emissions reduction target for 2030 ideally achieves a minimum 80% reduction from the baseline, as reported in Section 2 of the Commitments document of the CCC. The overall target should be absolute or net-zero (i.e. including the compensation of any residual emissions).		These are the emissions reductions that would be achieved through existing policies, and plans, outlined in Section A-2.1. Those actions are by definition not part of the action portfolio in section B. If they are fully or partially incorporated in module B-2, their associated reduction potential should be referenced in column (5) and not be included here. WARNING if the baseline is a BAU scenario: If the BAU modelling includes any of these existing measures, please also do not include the associated emissions reduction in this column as otherwise it would be double counted.		(4) = (2) – (3)		This column is used to present the already quantified emission reduction associated with the action portfolios outlined in module B-2. Ideally, this equals the gap. If the there is a difference between the reduction potential of the actions specified in module B-2 (for instance because their reduction potential has not been fully estimated or because additional measures will be identified in future iterations), the CCC AP should be explicit about this difference and explain how the difference will be closed. In principle, as long as the difference has not been addressed, it would be considered as part of the residual emissions.		(6) = (1) – (2)	
	1990 (absolute) (t. CO_2e)	Frozen policy 2030 (absolute) (t. CO_2e)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)

Buildings	2.102.000	172.000	2.026.000	96%	26.000	1%	146.000	7%	70.000	3%	76.000	4%
Transport	530.000	667.000	300.000	57%	118.000	22%	549.000	104 %	319.000	60%	230.000	43%
Waste	106.000	77.000	69.000	65%	0	0%	77.000	73%	40.000	38%	37.000	35%
Industrial Process and Product Use (IPPU)	51.000	30.000	38.000	75%	11.000	22%	19.000	37%	6.000	12%	13.000	25%
Agricultural, Forestry and Land Use (AFOLU)	60.000	70.000	84.000	140 %	15.000	25%	55.000	92%	79.000	132 %	-24.000	-40%
Total	**2.849.000**	**1.016.000**	**2.517.000**	**88%**	**170.000**	**6%**	**846.000**	**30%**	**514.000**	**18%**	**332.000**	**12%**
Comments		The percentage in each column is calculated in relation to the 1990 emissions. The large emission reduction through other Action Plans in relation to Transport is due to changed national legislation, e.g. an increased tax on CO_2e emissions. The remaining 12% is expected to be offset by the construction of a CCS plant. See more in Table B-2.3. This table only includes scope 1 and 2 emissions, because the city's climate neutrality target is within these scopes.										

2.3 Module A-3 Systemic Barriers and Opportunities to 2030 Climate Neutrality

The development of new climate efforts in Aarhus builds on the notion that a thorough understanding of the climate challenges from multiple perspectives and learning from past actions has significant potential to accelerate the impact of climate efforts. Accordingly, and in line with the NZC Climate Transition Map, the preparatory work has been made in close collaboration with key stakeholders.

Based on the BAU scenario, the political *Climate Strategy Agreement: 2025-2030* sets goals and direction for the largest emission domains, listed below (Scope 1 and 2):

- Energy, incl. carbon capture: 405,000 tonnes (scope 1 and 2)
- Transport: 319,000 tonnes (scope 1 and 2)
- AFOLU: 79,000 tonnes (scope 1 and 2)
- Landfill and wastewater: 46,000 tonnes (scope 1 and 2)

With the Climate Strategy Agreement, The City of Aarhus has decided to set emission reduction targets for some of the largest emission domains within scope 3:

- Construction and urban development: 40,000 tonnes (scope 3)
- Food: 24,000 tonnes (scope 3)

Finally, the City of Aarhus has decided to lead by example when it comes to the green transition. Viewed as its own entity (labelled “climate group”) the City of Aarhus emitted 45.091 tonnes of CO_2e in 2023. The Climate Strategy Agreement sets the following target:

- Climate Group: 138,000 (scope 3)

Accordingly, a total of **849,000 tonnes of CO_2e in Scope 1 and 2** will be saved annually, which will enable Aarhus to achieve climate neutrality in 2030. In addition, a total reduction of **202,500 tonnes of CO_2e in Scope 3** will be achieved with the Climate Action Plan.

The domains and areas listed above are closely linked and influence each other. This means, for example, that the transformation of the energy system is influenced by and intervenes in land use, which in turn has a close link to the food area. It is therefore crucial to consider the cross-cutting synergies and challenges when designing the action portfolio.

Today, 82% of the supply in Aarhus comes from renewable energy sources, including biomass, which covers 63% of the need for energy. 17% of the energy is still covered by fossil energy, which is the source of emissions of 466,000 t/CO_2 distributed between electricity imports, as well as the burning of coal, oil and waste.

In the 2030 projection, the energy area makes up 1/3 of the total emissions in Aarhus, if no efforts are initiated in this area. It is therefore crucial to take ambitious steps to ensure that the energy sector becomes CO_2-neutral by 2030.

The climate plan must contribute to a real energy transformation in Aarhus away from both fossil energy sources and biomass. All over the world, large amounts of renewable energy are installed, but typically in addition to existing or growing amounts of fossil energy sources. Aarhus wants to become one of the rare examples of a real energy transformation, which phases out one type in favour of another.

But the green energy transition requires space, and the open spaces in Aarhus are limited. To meet this dilemma, it is therefore necessary to plan based on the idea of multifunctional land use, i.e. use the same area for several purposes. For example, by combining afforestation with the installation of wind turbines.[2]

The city of Aarhus consists of a combination of both rural and urban areas. This combination provides Aarhus with a unique space of opportunity. The large land areas, for example, offer opportunities for the establishment of larger renewable energy facilities, biogenic parks, and afforestation.

However, these opportunities also come with a range of challenges and complexities that arise from, for example, decreasing property values, new dynamics between the centre and periphery, densification of cities, and a potentially unequal distribution between neighbourhoods with high emissions and neighbourhoods with space for renewable energy (RE). In addition, the battle for the areas will create a fundamentally different allocation of land areas with less agriculture and livestock in favour of more renewable energy plants, forests and other nature.

This poses very special requirements for the green energy transition, with integrated thinking and synergies between domains, internally coordinated collaboration, and the breaking down of organizational barriers, as well as the involvement and cooperation with stakeholders to ensure democratic participation and a just transition.

The green transition is therefore not something we as a municipality can do alone. It requires close cooperation with both commercial, political and civil actors. Therefore, green partnerships and strategic cooperation are a crucial focus area in the upcoming climate work.

Based on the above, this plan focuses on the following four strategic focus areas for realizing the neutrality goal:[3]

- Enough green energy for future needs
- Multi-functional land use

[2] Please see previews review of current policies, particularly the potentials associated with the The Green Tripartite.
[3] Please notice that The Green Mobility Plan was negotiated separately and with its own budget in August 2024. The Climate Strategy Agreement sets the overall CO_2 target for the Green Mobility Plan but does not specify it's content. Although the transport and mobility domain accounts for the second highest level of emissions in Aarhus in 2030 and therefore naturally constitutes a significant strategic focus area, it is not included as a strategic focus area in this current first edition of the CCC Action Plan and consequently only peripherally included in the subsequent sections.

- Transversal approach to the green energy transition
- Green Partnerships

The four strategic focus areas thus form a causal chain: Because we aim to establish enough green energy for future needs, this requires multifunctional land use. And because we operate with multifunctional land-use, it is crucial to think of the entire energy sector and all domains as interconnected and integrated, and this requires that we work cross-organisationally, cross-disciplinary and across private and public institutions and across stakeholder groupings and industries. In other words, it requires strategic collaborations and green partnerships.

The identification and analysis of the four focus areas has contributed with useful knowledge to the planning and design of the climate action portfolio. The four focus areas constitute the areas to which challenges are particularly associated and where the action plan can and should concentrate its climate actions for achieving the goal of climate neutrality. The analysis of the focus areas has contributed with insights to 1) identify and understand transversal synergies between the domains, 2) identify and unfold relevant areas within scope 3, 3) identify and organize transversal measures and methodologies for handling the climate transition, 4) identify and qualify field of actions and their impact pathways. They have thus functioned as a strategic link between the formulated CO_2 targets for the domains and the formulation of field of actions and their impact pathways.

The tables A-3.1-A3.3 summarizes barriers and opportunities associated with each focus area.

Below barriers and challenges as well as opportunities and key stakeholders associated with each area are outlined.

Enough green energy for future needs

In 2022, the energy sector in Aarhus emitted 698,000 tonnes CO_2e. Today, about 70% of Aarhus' energy needs are met by sustainable energy sources, including biomass, which covers 69% of the municipality's energy needs. Aarhus is committed to taking the next steps toward an even greener energy supply system, and with 'the green district heating of the future', we can phase out fossil fuels and get down to 15% biomass in 2030.

To achieve climate neutrality in 2030, the coalition parties have agreed that the energy sector must contribute negative emissions of approx. -259,000 tonnes CO_2e. This corresponds to a reduction of approximately 405,000 tonnes of CO_2e incl. CO_2 capture and storage. At the same time, power consumption will increase significantly in future. It is thus crucial that we expand renewable energy capacity to meet the demand for power in Aarhus and ensure security of supply. Aarhus must increase the amount of power generated within the municipality to secure supply and meet future needs.

To ensure enough green energy for future needs, it is important to view the entire energy sector as a cohesive and interrelated, interacting system. This involves securing a sustainable energy mix, expansion of renewable energy facilities, carbon capture and storage, and energy efficiency improvements. Below, the barriers and opportunities associated with ensuring enough green energy for future needs are reviewed.

A-3.1: Enough green energy for future needs: barriers and opportunities	
Barriers	**Category**
Innovation and installation of new technology depends on very large capital expenditures (e.g. electric boiler and CCS facility)	Financial
Minor risk that new large-scale facilities will not work entirely as assumed, or as quickly as initially thought	Infrastructural/Technological
A lack of technological maturity in large-scale facilities, and minor uncertainties regarding transport and storage.	Infrastructural/Technological
The climate effect from the green heating system of the future is highly dependent on the emission factor for electricity falling as assumed	Infrastructural/Technological
The areas are scarce in relation to the realization of many other objectives such as groundwater protection, water retention, establishment of forests, nature, etc.	Infrastructural/Technological
It takes a long time to process and realize the projects, partly because of how applications are processed both administratively and politically.	Institutional/Regulatory, Organisational
Support from citizens and civil society is crucial for the establishment of solar parks and wind turbines. Local resistance has proven to be relatively high.	Behavioural and Social
The energy saved in one place may potentially to a corresponding increase in consumption elsewhere (a phenomenon known as Jevons Paradox).	Behavioural and Social
Opportunities	**Category**
Commitment through co-ownership of local production of renewable energy can strengthen support for the green transition in general, but also contribute to further acceptance of the transition processes, construction work, and other activities	Behavioural and Social
Attracting investments to Aarhus, increased employment, uplifting the local community, among other things, by having the developer give something back to the local community.	Financial
More wind turbines in Aarhus will, like the setup of more renewable energy in general, contribute to a more decentralized energy supply, and thus less dependence on external actors.	Energy security
CCS will provide increased employment and increased opportunities for support industries. It also allows Aarhus (and Denmark) to become a green frontrunner in CCS, with the opportunities this may have for the export of solutions, also regarding the storage of CO_2.	Financial
Facilitate support knowledge exchange, collaboration between stakeholders, and partnerships to initiate pilot projects, develop and test best practice solutions.	Behavioural and Social
Foster behavioural change by mobilizing and engaging citizens through access to data and information, giving them insight and ownership of their energy consumption and incentives to lower or optimize energy consumption.	Behavioural and Social
There is a large potential economic gain from energy efficiency improvements. The Confederation of Danish Industry (DI) estimates that a 15% energy saving will have a socio-economic gain of 12 billion DKK in Denmark as a whole.	Financial

Key stakeholders include e.g.: Kredsløb, citizens and local communities, private companies, investors, Ørsted, public institutions, builders and contractors, Energispring, local co-generation plants.

Multi-functional land use

Worldwide, food production – including land use – emits approx. 24% of total anthropogenic emissions (source: IPPC). Therefore, the food production and land use sector are important elements in reducing global emissions.

According to the Danish Energy Agency, Denmark accounts for a similar picture as emissions from agriculture and land use make up to 30% of total emissions (due to emissions from methane and nitrous oxide). A large part of the national effort towards a climate-neutral society should therefore focus on agricultural production, food production and consumption, as well as land use.

To fulfil the political objectives of a comprehensive green transition as well as the City Council's other objectives for the open country, we are looking into a comprehensive transformation of land use with requirements for multifunctional land use. Such a transformation is both time- and resource-consuming and difficult. It therefore places extra high demands on new forms of cooperation and collaborations.

A-3.2: Multi-functional land use: barriers and opportunities	
Barriers	**Category**
There are costs associated with the loss of farmland as well as the loss of opportunities for other uses that could increase the price per hectare.	Financial
Potential barriers may include landowners' willingness to sell or convert to forest and nature, as a much higher land price can be achieved if the land can be sold for urban development or solar panel installations.	Financial
There may be barriers concerning landowners' willingness to participate in projects or a lack of economic incentive to participate in the projects, as compensation rates in the state-financed lowland projects are often too low compared to landowners' expectations/land prices in Aarhus Municipality	Financial
Dependent on very large private investments, for example, in relation to the expansion of the biogas plant as well as the establishment of pyrolysis plants and grass protein plants	Financial
The municipality is only the authority on the facilities (stables, manure storage, etc.) and not the agricultural land. The municipality also cannot deviate from the general legislation in the area, so any initiative will be based on voluntariness, which underlines the importance of maintaining good cooperation between the municipality and the industry	Infrastructural/Technological
Barriers may be that pyrolysis requires significant amounts of electricity and the degree of sustainability therefore depends on there being enough green electricity in the grid. As well as the full effect is only achieved if the uptake of excess heat is ensured.	Infrastructural/Technological
Climate-optimized food production is a complex process with many different interests, and it is necessary to establish strong climate partnerships between local municipalities and stakeholders within	Behavioural and Social

agriculture and land use to coordinate efforts and optimize the food system as a whole.	
Dependent on support from the citizens and a change in citizens' food intake towards a more plant-rich diet.	Behavioural and Social
Opportunities	**Category**
Great potential in new business opportunities and food innovation.	Financial
There is an export opportunity to other municipalities – thus the possibility to be a frontrunner.	Financial
The upcoming climate tax on agriculture is expected to put the industry's competitiveness under great pressure but will simultaneously benefit the environment and public health. Close cooperation with the industry through supervision, development of action plans, and the establishment of partnerships can be crucial in supporting agriculture to adapt to these changes.	Behavioural and Social
Establishing forests and nature are a very cost-effective way to protect groundwater and can prevent flooding of urban areas, nutrient pollution, and deliver more biodiversity and recreational experiences.	Co-benefits
Added values include climate adaptation, environmental objectives in watercourses, biodiversity, nutrient reduction, and recreational values. If synergies are included, the effort is considered to have significant socio-economic benefits in terms of climate adaptation, recreational and health values, and improved nature and biodiversity.	Co-benefits
The extraction of peat soils has the potential to work with synergies and multifunctional floodplains.	Co-benefits
The projects may have synergy with climate adaptation in the form of the restoration of naturally wet floodplains (the sponge effect of the valleys) and, in some places, water parking.	Co-benefits
The projects will also have a significant effect in relation to efforts concerning nutrient reduction, environmental objectives in watercourses, marine environment, new nature, blue-green parks for groundwater protection, and biodiversity.	Co-benefits

Key stakeholders include e.g.: Seges, Velas and other interest organizations that operate in the open country, stakeholders within agriculture and land use, as well as within the food system, citizens and local communities, private companies, investors, research institutions, landowners.

Transversal approach to green energy transition

CO_2e emissions from the energy domain rank among the primary concerns for Aarhus, closely paralleled by emissions from transportation, which are intrinsically intertwined with the energy dynamics. Agriculture, Forestry, and Other Land Use (AFOLU) follow as the third-largest contributor, even though agriculture plays a relatively small role in Aarhus compared to more rural municipalities. Nevertheless, local farmers in Aarhus have livestock of more than 5,500 cows and 600,000 pigs, and agricultural byproducts (slurry, manure, residues) from these farms provide feedstock for the generation of local biogas in villages like Spørring. This can play a role in diminishing emissions associated with the city's energy production and consumption.

A fragmented approach to energy and land use planning has historically led to failed investments, incomplete projects, and suboptimal solutions.

A-3.3: A transversal approach to the green transition: barriers and opportunities	
Barriers	**Category**
The Aarhus administration does not have the planning tools to intervene in peri-urban areas. Comprehensive planning procedures are only used in the urban centre, while in rural and peri-urban areas there are usually two options in the Danish Planning Act: local plans and municipal plans. In essence, a local plan is lawfully required before building energy facilities, but this level is not agile enough to plan large cross-sectoral projects. The municipal planning procedure is simply a strategic spatial designation of what is desired where but offers no way of achieving the desired designation. In addition, the municipal planning process lasts years, which makes it unsuited for immediate climate action. Furthermore, previous attempts from Aarhus to plan largescale and cross-sectoral energy have failed, because existing governance structures fail to see the potential of energy synergies and instead plan separately yielding fragmented energy facilities without taking advantage of positive spill-over effects and symbiosis potentials	Institutional/Regulatory
Citizen opposition towards large-scale energy projects (also known as NIMBY, Not In My Back Yard). Local opposition often stand in the way of RES in terms of electricity generation and fossil-free gas (upgraded biogas to biomethane). Large-scale energy plants induce significant impacts on the local community and its inhabitants visually, in terms of industrial odour, traffic, culturally, and emotionally – resulting in negative attitudes towards its realization	Behavioural and Social
Lack of internal capacity building among public officers in the Aarhus Administration. There is currently a lack of critical intersections between existing practices and the necessary climate initiatives among public officers. Thus, it is difficult to integrate climate considerations into the core tasks of local planning, environmental assessments, and citizen engagement, as the current processes and methods are not necessarily in line with climate targets. Specifically, the employees lack experiences when it comes to technical sector-coupling in the domains of Energy and Land use but also in terms of co-creation with citizens and external stakeholders.	Organisational
Opportunities	**Category**
A fundamental need for rethinking how energy projects more rapidly and innovatively are rolled out across the municipality. To overcome this systemically, there is a need for a reflexive model for governance that involves stakeholders and citizens in an iterative process throughout its activities.	Institutional/Regulatory + Behavioural and Social

To overcome the barrier concerning local opposition (NIMBY) against industrial energy facilities, a comprehensive co-creation effort is required, which includes adding value to the community to compensate the local community e.g. with better infrastructure, green recreative areas, sports facilities, etc.	Behavioural and Social
Internal capacity building within the city administration is necessary to overcome the barrier of lacking interdisciplinarity. Currently, a lack of understanding of how different emission domains and sectors interact prevails, which is a technical, institutional, and cultural systemic barrier in Aarhus. This also entails sector coupling as technical competence is lacking among employees across all departments. This competence is vital for enabling future energy parks. Cross-sector collaboration is also hampered by cultural barriers in Aarhus, where different departments tend to have a narrow focus on their own agendas, and sometimes this even cultivates unproductive competitiveness between departments e.g. when it comes to delivering successful climate results. A transversal approach to a green energy transition must strengthen sector coupling competencies and encourage a culture of interdisciplinarity across departments.	Organisational

Key stakeholders include e.g., Citizens, Private developers (including Nature Energy, Better Energy, BioRefine A/S and Stiesdal SkyClean), Energinet, Landowners, Aarhus School of Architecture (AARCH), as well as internal organisational departments.

Green partnerships and strategic collaborations as a key principle

The barrier and opportunities analysis above shows that there are many different types of barriers associated with the green transition of Aarhus. The barriers are particularly concentrated around issues of technological development (e.g. CCS) and the construction of new facilities, to which is linked the need for large investments (see also the CCC Investment Plan). Also, organizational practices (including the magistrate model itself) are challenged by the climate agenda's embedded cross-cutting focus. It also shows the need for a focus on mobilizing public support, not least when it comes to the initiatives that affect the everyday life of the individual citizen and communities the most.

At the same time, one of the areas that has the highst potential to break down the barriers is related to the behavioural and social category and is fundamentally about collaboration: Collaboration across the organization and the domains, collaboration with citizens and local communities and not least partnerships with companies etc.

Below, the strategic opportunities associated with entering and facilitating new green partnerships and strategic multi-stakeholder relationships are listed and exemplified with current practice. The list is structured according to how different stakeholders can support different systemic levers.

Systemic levers are the structural means of actions that preconditions the realization of direct CO_2-reductions and fall first and foremost within the categories of 1) Governance & Policy, 2) Technology

& Infrastructure, 3) Finance & Business Models, 4) Democracy, Social Innovation & Change, and 5) Learning & Capabilities:

1) *Governance & Policy, e.g.:*
   - Businesses: understand the specific challenges and opportunities that the green transition brings with it in relation to various industries
   - NGOs and interest organisations: secure that the interests of various actors are accommodated in the political and organisational processes
   - Internal stakeholders: ensure the best possible framework for cross-functional cooperation and managerial prioritization and political support for the green agenda.

An example of how the systemic lever *Governance & Policy* is supported by collaboration with various stakeholders to push forth policy making, is the Climate Alliance Aarhus. Based on dialogues between the partnership's members, the Climate Alliance Aarhus handed over recommendations to the city council on how the municipality can push forth and accelerate the green transition for heavy transport. More specifically, the Climate Alliance Aarhus suggested a payment ring around the inner city on heavy transport.

2) *Technology & Infrastructure, e.g.:*
   - Businesses and industries and knowledge institutions: develop and test new innovations

An example of how the systemic lever *Technology* is supported by multistakeholder collaborations to ensure applied research, is the current partnership agreement between The City of Aarhus and Aarhus University at the faculties of Natural Sciences and Technical Sciences about a demonstration plant with a focus on research into the capture and use of CO_2.

3) *Finance & Business Models, e.g.:*
   - Private and public investors: fund larger projects
   - Knowledge institutions: research new models for financing
   - Local communities and investors: implementation of new models for financing for local projects, for instance with local co-ownership

An example of how the systemic *Finance and Business Models* gains from collaboration can be found within the food sector. The transformation of the food system requires the development of new sustainable business models and models for product and market innovation.

4) *Democracy, Social Innovation & Change, e.g.:*
   - NGO and interest organisations: ensure that minorities and the particularly vulnerable also get a voice in the transition
   - Citizens and local communities: engage and mobilise the public, not only inviting citizens to join the classic political consultation process or informing them about the climate work, but to active involve them

An example of how the systemic lever *Democracy, Social Innovation and Change* is driven by citizen and stakeholder involvement in the climate work is Climate Living Labs, which is open-source approach to innovation. Climate Living Labs is a Public-Private-People Participation model with a people-oriented approach where all stakeholders including government, cultural institutions, knowledge institutions private sector and civil society work together on a particular problem, issue or challenge relevant for a geographically defined area.

5) *Learning & Capabilities, e.g.:*

- Knowledge institutions: research in new management models for handling and facilitating green transition processes and development of educational programs and further educations with inclusion of sustainability related issues, competence development/further training
- Businesses and industries: understand current practices and key challenges concerning capacity and capabilities to ensure relevant and applied research projects and teaching programs.

Examples of how the systemic lever Learning & Capabilities gains from collaborations, include the partnership Energispring Aarhus, where building owners, together with Kredsløb, focus on energy savings through knowledge sharing and close collaboration. The partnership also includes Aarhus University; Another example is the partnership between the municipality and VIA university collage on the Green Academy. The Green Academy offers highly educated unemployed people in Aarhus a further training in sustainability, the green transition and related issues with a combination of theory and practice. The course participants act as green agents who can make a difference in the companies and organizations where they are employed. The partnership also includes internship agreements with companies.

In Aarhus, we are already well underway. We are engaged in a range of collaborations and corporations, and we have formalized strong partnerships as part of the Aarhus Climate Plan 2021-2024. With the CCC 2030 Climate Neutrality Action Plan, we will continue to strengthen and expand partnerships and collaborations with business and industries, knowledge institutions, cultural institutions, civil society and citizens.

3 Part B – Pathways towards Climate Neutrality by 2030

The development of the CCC Action Plan builds on the notion that a thorough understanding of the climate challenges from multiple perspectives and learning from past actions have significant potentials to accelerate the impact of climate efforts. To ensure close collaboration, local anchoring and ownership, the preparatory work has been made in close collaboration with key stakeholders in line with the NZC Climate Transition Map. The figure below illustrates the process of stakeholder consulting and co-creation for building a strong mandate:

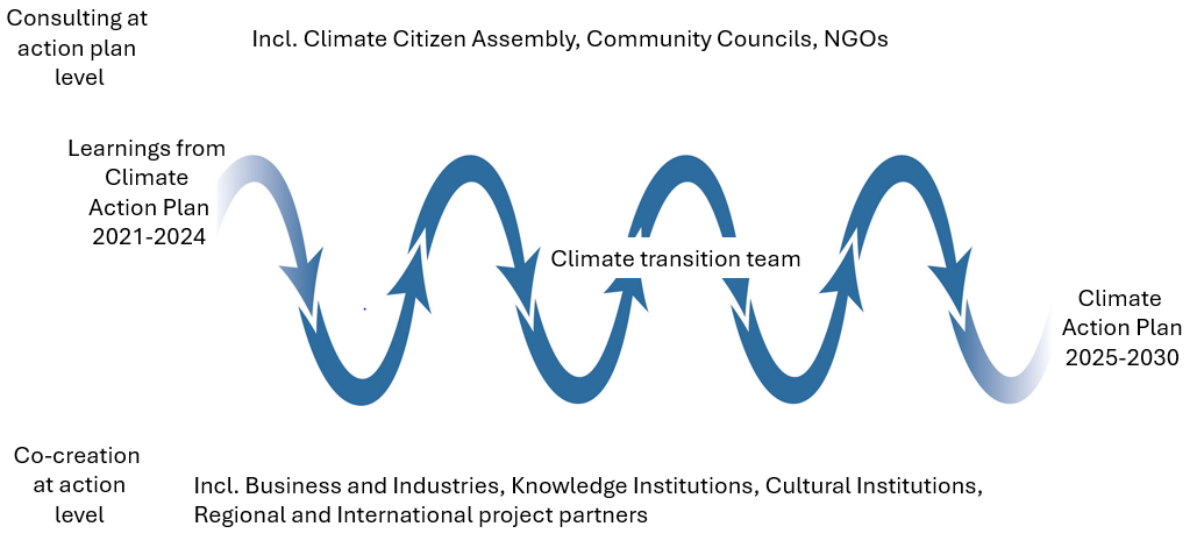


Figure B-2.1: Building a strong mandate through stakeholder consulting and co-creation processes

The figure shows how the preparation and development of the Climate Action Plan are built around the experiences and learnings gained from the previous plan, and that the preparatory work in conjunction includes both stakeholder consultation at the action plan level and stakeholder co-creation at the action level.

Consultation at the action plan level includes – in addition to the mandatory public hearing process, where all citizens are invited to comment on the content of the climate plan to ensure that any undiscovered challenges or economic, social, or cultural biases of the climate plan are identified, and that input and comments of a more general nature are heard – more dialogue-based consultation processes. Examples include workshops with relevant NGOs, grassroots movements, and advocacy groups, workshops with Community Councils, and recommendations from the Climate Citizen Assembly.

With regards to consulting more specific groupings, three target groups were identified prior to the upcoming work on the new climate plan. These were assessed as particularly relevant to involve through separate measure, as there were found difficult to reach by means of the established consultation activities. The three target groups are 1) Aarhus' green associations and communities, 2)

Families with children and 3) Children (10-12 years). Through various involvement activities and workshops, a number of recommendations for Aarhus' climate work have been collected and reported (see links in additional sources of information list).

Target group: Aarhus' green associations and communities

The purpose of involving Aarhus green associations and communities was:

- To give the associations information about the climate plan process, about how their input will be used in the process and how they will be involved in the process going forward
- To gather information about which initiatives the associations believe are most important in Aarhus Municipality's climate plan 2025-2030, how they want to cooperate with the municipality in the coming climate plan period, and which activities they themselves focus on
- To create an opportunity for dialogue between the various associations and between associations and the municipality, with a focus on what is important in future cooperation and in the associations' proposed climate efforts

After a mapping of associations and communities in Aarhus, which focus on (aspects of) climate and green transition, the associations were invited to participate in a two-step process: 1) A questionnaire. 2) A network meeting and workshop. The associations were actively involved in a collection of inputs from the questionnaire and had the opportunity to deepen and reflect on the themes.

31 associations were invited to participate. 20 of the invited associations sent answers to the questionnaire. 30 participants from a total of 18 associations took part in the workshop.

Target group: Families with children

The purpose of involving the children's families was:

- To give families with children information about the climate plan process and how their input is used.
- To gather knowledge about motivations and barriers for more climate-smart habits, and what role communities in local areas can play for climate action, as well as what Aarhus Municipality can do in the climate plan 2025-2030 to support climate-smart habits.
- To create opportunities for dialogue between families with children in selected local areas and between the families with children and the municipality, with a focus on green measures in communities in local areas.

The activities targeted at families with children were organized to make it easy and attractive for busy families with children to participate. A focal point was to reach families with children who were averagely or lower interested in climate issues, as well as families of non-Danish ethnicity, as these groups are often difficult to reach in municipal involvement processes. Therefore, the events for families with children were held at local libraries, which are easily accessible and naturally form part

of the families' everyday life. Two out of three local libraries were in areas with many families of non-Danish ethnicity. Three 'carve, talk and soup' (in Danish: "snit, snak og suppe") events were held at three local libraries: Beder library, Hasle library and Gellerup library. Residents of the respective local areas were invited to a free event, where they had the opportunity to carve Halloween pumpkin, eat pumpkin soup and talk about climate and eat cake – while the children were offered to play with Lego. The framework of the local libraries helped to create an informal atmosphere and dialogue, while climate conversation menus with introductory climate questions as well as questions within Transport, Food and Consumption gave direction to the conversations.

Approx 38 adults and 47 children participated in total (approx. 6 children/young people participated without a parent). Almost half of the participants had an ethnicity other than Danish.

Target group Children (10-12 years)

The purpose of the involvement of children (10-12 years) was:

- To obtain knowledge about which climate actions occupy children and which green solutions they dream of
- To create opportunities for dialogue between the children and between the children and the municipality

On 3 October 2023, approx. 700 children at the Green Festival at Dokk1 (the cultural center which, among other things, contains Aarhus Main Library, Aarhus City Archives, and Citizens Services and other cultural workplaces). The 'Network for sustainability at children's level' across 9 schools in Aarhus had taken the initiative for the festival with the support of Aarhus Municipality's Climate Fund in 2022 and 2023. Children from the schools created most of the festival's inspiring activities, while Children and Young People together with Aarhus Libraries and Aarhus Omstiller created the framework.

Aarhus Omstiller organized an activity for the festival where the children were invited to build green ideas in LEGO. The 'Build the Change' concept, on which the Aarhus Libraries collaborates with LEGO, was used. The children had to choose between a mission within Food, Transport or Clothes.

At the Green Festival, the Aarhus Libraries also held a children's election, where the children voted on particular scenarios, e.g. whether the school canteens should serve vegetarian food.

Approx. 110 children aged 10 to 12 build their climate ideas in LEGO, while approx. 260 children voted in the children's election.

Co-creation at the action level involves closer collaborations with those actors who have direct or indirect influence on the effect of the action. This includes formal events and workshops, but also ongoing dialogue and sparring, for example with relevant organisations, privately and publicly-owned companies, cultural institutions, and – at a more practice level – professional staff in the municipality's institutions (e.g., home economics teachers). Finally, it includes stakeholder engagement efforts where stakeholders actively and directly contribute to climate solutions. Examples of the latter includes *The Climate Alliance Aarhus* (a business partnership aiming to jointly achieve Aarhus' goal of CO2

neutrality) and *The Green Academy* (an educational partnership aimed at further educating unemployed academics to becoming "Green Change Agents" who helps local companies in their green transformation). Aarhus Municipality also has a strong portfolio of ongoing green projects which builds on co-creation processes with key stakeholders (including citizens), e.g. the CO-SHAPE project which aims to create shared value for all parties when planning for renewable energy plants in peri-urban areas.

Please consult table C.2.1. for an elaboration of the examples.

The climate challenge is a wicked problem that affects virtually all aspects of our lives. The transition is not a task that Aarhus Municipality can handle alone. On the contrary, the many CO2-reducing efforts require local anchoring and support. Dialogue, co-creation, and partnerships are crucial to achieving the green transition. This is important both in terms of minimizing resistance and ensuring local support, co-creating new visions for local climate solutions, developing new technologies and green innovation, and not least, ensuring that the green transition rests on democratic principles. This is particularly emphasized by the UN's Sustainable Development Goals, which define partnerships, dialogue, and cooperation as prerequisites for a sustainable future. Accordingly, citizen involvement and dialogue with civil society are tools for risk management and for creating the necessary conditions for the green transition, as well to develop, support, or accelerate structural and systemic changes. Co-creation processes contribute to strengthening and supporting democratic conversations and active citizenship. Therefore, close collaboration and citizen engagement is a high priority in Aarhus Municipality when planning and acting for a green future. However, there is a need for new approaches to involving and engaging citizens and civil society.

In this connection, Climate Living Lab is an important tool. *The Climate Strategy Agreement 2025-2030* emphasizes the necessity as well as the value of actively involving citizens and other stakeholders in the development and implementation of green climate solutions in Climate Living Labs. Living lab is a recognized innovation and design method, based on the idea of open innovation and user-centered design close to the lives of citizens and businesses. Experiences show that there are many and great benefits to be gained the earlier and more actively citizens and other actors are involved in the development of green climate solutions. The specific Climate Living Labs will be designed, implemented and "lived out" in close collaboration with important local actors (e.g. local community councils, citizens, business and research institutions) to ensure that everyone who can and will be affected by the green solutions is given an active voice. The specific Climate Living Labs will be developed with the implementation of the climate plan 2025-2030, and it is therefore not possible at this time to account for the details. However, future iterations will outline their specific actions and experiences related hereto as they are lived out.

Involving local citizens is also an important principle from an economic perspective. For example, the so-called Oplandspulje is based on the principles of participatory budgets, which is a method for allocating municipal funds. The Oplandspulje aims to develop the local areas outside the Ring Road and in the urban and peri-urban areas of Aarhus, focusing on increased citizenship, participation, engagement, and urban development. Here, it is the citizens of a local area who propose how an earmarked budget should be used for a specific, defined area within a predetermined theme. The citizens of the local area then vote on the submitted proposals, and based on the voting, the solution(s) that can be realized within the allocated budget are selected. The proposals include projects that support the green transition, e.g. initiatives that aims at improving biodiversity.

The model of stakeholder collaboration and co-creation is politically and strategically supported by a range of local governance and value frameworks (c. Module A-2 Current Policies and Strategies Assessment), including:

- *The Aarhus Compass. Less System. More Citizen* which provides fundamental principles for how to ensure citizen empowerment and self-direction.
- *The Collaboration Compass* which provides fundamental principles for engaging citizens in the green transition.
- *A new Aarhus model for collaboration* which provides a methodological framework for stakeholder engagement to ensure a democratic and just transition.
- *The political mandate for wicked problems* which emphasizes the importance of collaboration, co-creation and creative thinking as important methodologies when designing and implementing climate efforts.

The Climate transition team consists of members from The Climate Secretariat and plays a key role with regards to the overall coordination and project management of the climate action plan as well as to ensuring a close dialogue with key internal and external stakeholders in preparing the climate action plan. Each field of actions have a coordinating partner represented in the Climate Secretariat to ensure continuous dialogue and overall coordination with the professional environments and the employees who work hands-on developing and implementing the climate action plan. The group of coordinating partners constitutes the climate transition team.

Prior to the *Climate Strategy Agreement: 2025-2030*, the city council was presented with comprehensive materials consisting of a climate account, frozen policy, and proposals for overarching fields of action, as well as an overview of possible measures and actions. The latter was the result of insights gained from many years of stakeholder consultations and co-creation processes elaborated above.

The materials formed the basis for a negotiation process with the mayor as the lead negotiator. On 29 April 2024, a majority in the City Council signed the Climate Strategy Agreement: 2025-2030, which is now being translated into the Climate Plan 2025-2030 in collaboration with the professional environments.

Climate neutrality scenarios and impact pathways are based on the *Climate Strategy Agreement: 2025-2030* and the background materials developed prior to the agreement.

3.1 Module B-1 Climate Neutrality Scenarios and Impact Pathways

As an integrated part of working with the EU Mission for 100 Climate-neutral & Smart Cities and the CCC action plan – and not least as a natural extension of the previous years' climate actions in Aarhus – Aarhus is increasing its attention towards co-benefits of the climate transition. The more difficult and comprehensive actions towards CO_2e reductions become, the more important it is to focus on the co-benefits that the green transition brings with it and thus formulate a value-based vision beyond CO_2

reductions. The green transition of Aarhus should not only contribute to realizing the national and international CO_2 goals. It must also pave the way for creating value for citizens, businesses and communities, thus, act as a lever for the Aarhus goals (cf. 1: Introduction). In other words: How can the Aarhus Goals be translated into the climate agenda and how can the climate transition contribute with value to Aarhus being a good city for everyone.

The table below outlines the Aarhus Goals and suggests how they can be translated into the climate agenda. The third column refers to their alignment with the NZC co-benefit domain framework.

B-1.1: How can the climate transition act as a lever the Aarhus goals?		**Alignment to the NZC co-benefit domain framework**
1: A city with a place for everyone	e.g. by creating a city with space to learn and develop. A city where all citizens have the best opportunities, conditions and prerequisites to join the green transition. A city that invites all stakeholders to engage in dialogue about the climate - even when it's difficult. Or as exemplified in the EU CO-SHAPE-project, funded as part of Aarhus' participation in the Mission, where citizens, architects, local farmers, civil servants, and the agricultural collaborate.	Social Inclusion, Innovation, Democracy and Cultural Impact Co-Benefits
2: A city of community and fellowship	e.g. by creating a city where green development is something we co-create and co-shape, and where new ideas are cultivated and tried out in non-traditional ways of working. A city where fellowship is a key path to rethinking the possibilities for living in and developing our city together. Or as exemplified in CO-SHAPE, by co-creating a comprehensive plan for peri-urban area with locals a diverse group of stakeholders.	Social Inclusion, Innovation, Democracy and Cultural Impact Co-Benefits
3: A city where everyone is healthy, and everyone thrives	e.g. by creating a city where green lifestyles promote health, well-being and security. A city that offers the best conditions for sustainable living. Or as exemplified in CO-SHAPE, where plans are made with the agricultural sector to ensure practices that are beneficial for groundwater protection, such as the planting of grass protein.	Public Health & Environment
4: A growing city with a strong private sector	e.g. by creating a city with sustainable growth, green partnerships and innovations driven by new sustainable business models and green workplaces.	Economy

	Or as exemplified in CO-SHAPE, where extensive sector coupling is facilitated and avenues for new technologies regarding PtX and pyrolysis are explored.	
5: A sustainable city with good urban and local environment	e.g. by creating a city with thriving local areas in both urban, peri-urban and rural areas, where biodiversity and recreational areas are in focus. A city with good conditions for both people, animals, nature and water Or as exemplified in CO-SHAPE, where comprehensive planning ensures that the transformation of Spørring adds value back to the locals by e.g. increasing liveability and developing green areas.	Resource Efficiency + Biodiversity

The Aarhus goals have been developed in collaboration with the citizens and serve as the benchmark for the City Council's decisions, for the strategic directions and tactical plans that are developed by the city administration, for the everyday work of the municipal employees, and not least as a value framework for practicing Aarhus citizenship. With a direct link between the Aarhus goals and the CCC Action Plan, we can ensure a continued strong focus on Aarhus as a good city for everyone. And we can ensure that everyone works in the same direction.

The tables below list impact pathways for scope 1+2 and 3 respectively.

The numbers (1-5) following each identified co-benefit in the table refer to the numbers associated with the five Aarhus Goals, cf. B-1.1).

Please note that the impact pathways have not been politically endorsed and should therefore be viewed with reservation!

B-1.1a: Impact Pathways (scope 1+2)

Fields of action	Systemic levers	Changes and outcomes (Process deliveries)	Direct impacts (CO_2-reductions	Indirect impacts (co-benefits)
Energy systems	Governance & policy **Strategic Energy Plan Aarhus**	Manage the Energy Plan 2025-2045 platform Lead the work package on energy in the EU project LIFE Act (Energy) Facilitate networks and forums between central (local) players in the energy field	0	Improved energy planning processes and outcomes
	Technology/infrastructure + finance/funding + Governance & policy **Carbon Capture and Storage**	Kredsløb must submit a recommendation for an overall CO_2 capture project to Aarhus Municipality, after which Aarhus City Council, as the owner, can choose to approve the installation of the facility. The city council's proceedings will include the position on the municipal guarantee and framework for the responsible sale of CO_2 credits, which	335.000 tonnes CO_2e	Large public investment creating jobs in the municipality (4)

		ensures the necessary financing of the CO_2 capture project Aarhus Municipality, as an authority, will have to process the associated local plan and environmental assessment of the project Aarhus Municipality, as the owner of Kredsløb, must also approve the CO_2 capture project at a general meeting before the project can be started The project is expected to be processed before November 2025, when there is a deadline for applying for support in the state-funded CCS pool.		
	Technology/infrastructure **Phasing out oil from the district heating system**	Prepare material regarding adoption of the Green Heating System of the Future. Prepare Energy Plan 2025-2045 regarding adoption by Aarhus City Council after public consultation. Authority processing and implementation of the many elements in the Green Heating System of the Future (heat pumps, geothermal, etc.)	28.000 tonnes CO_2e	Improved air quality (5 + 3) Increased energy security
	Democracy/participation + Governance & policy **Installing wind & solar**	Identify improvement opportunities and success criteria for RE case processing in collaboration with developers, citizens and landowners. Prepare an addendum to Municipal Plan 2025, where the planning supports the expansion of 1,600 hectares of solar cells and eight wind turbines to an even greater extent, i.a. in the form of clarifying guidelines for prioritizing area considerations when expanding renewable energy. Develop and implement a new planning model for RE by the end of 2026 at the latest. Support political processing of local planning cases corresponding to 1,600 hectares of solar and eight wind turbines.	12.000 tonnes CO_2e	Installing wind & solar in Aarhus is done with close involvement of local communities, which improves citizen & communities' participation (2 + 5)
	Technology/infrastructure + democracy/participation **Biogen Energy Park***	Is described as part of the Green infra-structure & nature-based solutions field of action	14.000 tonnes CO_2e	Improved land use management practices, where conventional agriculture is being replaced by grass (5 + 3) Improved dialogue and

				relationship building with key stakeholders (2 + 4)
	Democracy/participation **Energy efficiency improvements**	Prepare an analysis that maps energy efficiency potentials and reduction paths in Aarhus Represent Aarhus' interests on the national stage. Scale and intensify the collaboration in Energispring 2.0 Exchange and incorporate experience in relation to the EU project LIFE Act	16.000 tonnes CO_2e	A larger share of public buildings will be equipped with building energy management systems (4) Citizens will be involved in co-creation of climate neutrality actions, as they are to carry out energy efficiency improvements at home (1)
	Governance & policy + democracy/participation **Energy efficient buildings**	Prepare data-based comparison across municipal buildings, etc. to support an overview of water, heat and electricity consumption. Cooperation with the private sector regarding development of new methods for reducing energy consumption. Advocate for support the work on the infrastructure of our power grid	500 tonnes CO_2e	Improved management practice and stakeholder collaboration (2 + 3 + 4)
Mobility & transport	Governance & policy **Sustainable soil management**	Evaluate the implementation of sustainable land management in planning processes in management as well as the need for further measures, Prepare a catalogue of methods to reduce the amount of surplus land in building and construction projects Analyse and describe suitable locations for land tipping in Aarhus Municipality, as well as prepare a business case for two suitable locations	5.000 tonnes CO_2e	Improved road safety and noise pollution (5 + 3) Improved air quality (5 + 3)
	Technology/infrastructure **Sustainable shipping & aviation**	Project-oriented dialogue with shipping and aviation players in and around Aarhus Municipality Map the opportunity space, including decided and potential reduction measures. Prepare decision proposals and possibly mutually binding agreements.	44.000 tonnes CO_2e	Improved air quality (5) Innovative fuels (4)
	Green Mobility Plan	These are described in the green mobility plan and do not appear in the current CCC Action Plan	270.000 tonnes CO_2e	Improved road safety and noise pollution (5 + 3)

				Improved air quality (5 + 3) More green spaces in the city (5 + 3)
	Learning & capabilities + Technology/infrastructure **Municipal emission-free machinery and transportation**	Optimize driving and the size of the fleet Expand and introduce car sharing across magistrates' departments Introduce an emission-free car fleet and work machines Develop emission-free services from Aarhus Municipality's Entrepreneurship Department Introduce requirements for the purchase of emission-free contractor services	3100 tonnes CO_2e	Improved air quality (5 + 3)
Waste & circular economy	Technology/infrastructure **Construction of a new water management plant and installing biocovers at landfills**	TBD	40.000 tonnes CO_2e	Reduced leakage (3)
Materials in the industrial sector	Learning & capabilities + Technology/infrastructure **Reducing material use and using more sustainable materials in the industrial sector**	TBD	6.000 tonnes CO_2e	Improved waste management and efficiency (4) Better deployment of material cycles and circular economy (4)
Green infra-structure & nature-based solutions	Governance & policy + democracy/participation + finance & funding **Afforestation**	Plan and realize 8,000 ha of forest and nature in collaboration with landowners, utility companies, agricultural businesses and investors Prepare a financing model for overall realization and operation, and secure municipal co-financing Establish up to 1,000 ha of municipal forest and nature in the Water and Nature Parks together with companies and the Climate Forest Foundation Work so that, for example, the funds in Denmark's Green Area Fund contribute as much as possible to Aarhus Municipality	30.000 tonnes CO_2e	An increase in urban and near-urban forestry & plantation (5) Closer ecological habitat connection (5) Nature restoration (5) Private-public partnerships (4)

		Cooperation with Agricultural Organizations and SEGES on demonstration projects Search for new opportunities for co-financing municipal and private forests and nature, for example through new business concepts and the development of green business models Test methods for establishing nature and forest that can change objectives and delivery over the coming decades		
	Technology/infrastructure + democracy/participation **Set-aside of peat soils**	Preliminary investigation of 500 ha (expected) more through state-funded low-lying schemes Preliminary study of 300 ha of municipally funded low-lying climate projects Investigation of the possibilities and consequences in relation to the purchase of buildings, stables, etc. Build closer cooperation with the agricultural industry on how we succeed with the common climate agenda through dialogue meetings Take care of interests in relation to the legal framework and government schemes in order to achieve a single-entry point to search for multifunctional projects with added value for climate, biodiversity, etc.	15.000 tonnes CO_2e	Nature restoration (5) Reduction of nitrogen discharged into streams and groundwater (5 + 3) Better sea and water environments (5 + 3) Private-public partnerships (4)
	Learning & capabilities + Governance & policy + democracy/participation **Climate supervisions of farms**	Continue preparation of climate action plans for crop and livestock farming from 2025. Explain the possibilities and incentive structures for changed land use from 2025. Establish partnerships with relevant actors within agriculture and across sectors. Continually guide and be in dialogue with farms about green conversion options and changed land use.	1.000 tonnes CO_2e	Improving ecological awareness (1 + 5) Private-public partnerships (4)
	Technology/infrastructure **Biogen Energy Park***	Prepare planning basis for the location of the technical facilities in the area around Baanlev Biogas, via e.g. involvement of local citizens and landowners as well as operators of the facility Facilitate dialogues and enter into collaborations with relevant stakeholders, including operators who build and operate the technical facilities in the energy park, as well as potential buyers of the end products.	33.000 tonnes CO_2e	Improved land use management practices, where conventional agriculture is being replaced by grass (5 + 3) Improved dialogue and relationship building with key

		Establish collaborations with local farmers and agricultural organizations on especially incentive structures in relation to grass cultivation as well as the supply of livestock manure and crop residues to the biogas plant.		stakeholders (1 + 2)
City, Country and Construction	Governance & policy **Climate strategic planning**	Implement the Climate Agreement in Municipal Plan 2025 Concept development in relation to Climate strategic planning Method development in relation to Climate strategic planning Develop climate strategies through local community planning Implement relevant climate initiatives in Thematic Plans Represent interests in relation to the state framework in planning law, sector legislation and building law	0	TBD
	Governance & policy **Local community planning of the open country**	Implement the Climate Agreement in Municipal Plan 2025 Concept development in relation to climate strategic local community planning Method development in relation to climate strategic local community planning Develop climate strategies through local community planning Implement relevant climate initiatives in Thematic Plans		
	Learning & capabilities + democracy/participation **Partnerships with relevant players in the construction field**	Enter project partnerships around PIER 3 Establish and/or further develop collaborations in already established network constellations within the built environment		

	Learning & capabilities + democracy/participation + Governance & policy **Climate-efficient buildings**	Ensure continuous fulfilment and communication of climate requirements for municipal construction Carrying out pilot projects with a focus on testing materials, methods etc., as well as subsequent evaluation of the pilot projects Develop and use a material catalogue with knowledge of the climate footprint and effect of available materials Develop and prepare CO_2 budgets for municipal construction in Aarhus Municipality in accordance with the Paris Agreement Ensure effective implementation of Aarhus Municipality's climate pool for sustainable construction Concept development on the possibility of a central risk fund for unforeseen expenses in connection with e.g. builder deliveries. Prepares ongoing analyses of municipal administration buildings Maintain Strategic Property Portfolio		
	Learning & capabilities + democracy/participation + Governance & policy **Resource-efficient buildings**	Prepare and actively use material catalogue Carry out relevant pilot projects Prepare statements of a building's positive value for the local environment		
	Learning & capabilities + democracy/participation + Governance & policy **Circular buildings**	Map and assess materials' potential for reuse, recycling, resale or disposal Strengthen the database of resources in existing buildings on the online platform Establish your own resource warehouse with a focus on recycling building materials and furniture and establish a digital material bank Prepare environmental and resource mapping of existing buildings and own projects Develop a resource register in existing buildings Develop a strategy for the selective demolition of Aarhus Municipality's buildings		

		Engage in market dialogue with external partners and in cross-municipal collaborations Increase focus on co-location, dual use and design for separation with continuous evaluation of the development Develop a circular policy for Aarhus Municipality as developer		
Total			**579.000 tonnes CO_2e**	

* Biogen Energy Park is described in the Energy systems as well as in the Green infrastructure & nature-based solutions sectors. The energy park will cause CO_2e reductions in both sectors.

B-1.1b: Impact Pathways (scope 3)				
Fields of action	**Systemic levers**	**Changes and outcomes (Process deliveries)**	**Direct impacts (Emission reductions**	**Indirect impacts (co-benefits)**
Mobility & transport	**Municipal sustainable facilities**	TBD	2.500-3.500 tonnes CO_2e	TBD
Green infra-structure & nature-based solutions	Technology/infrastructure **Biogen Energy Park**	Described in the Green infra-structure & nature-based solutions field of action	6.000 tonnes CO_2e	Improved land use management practices, where conventional agriculture is being replaced by grass (5 + 3) Improved dialogue and relationship building with key stakeholders (1 + 2)

A climate-friendly food system	**Partnership with food actors** **Climate-friendly food and habits** **Transformation of the food production system** **Climate policy food strategy**	Please see elaborated impact pathway etc. for the climate-friendly food system field of action, Table B-2.3	20.000-30.000 tonnes CO_2e	
Waste & circular economy	Technology/infrastructure + social innovation **Circular resources**	TBD	12.000-15.000 tonnes CO_2e	Reducing material use and improving circular economy (1 + 4)
Collaborating Aarhus	Democracy/participation + learning & capabilities **The Climate Alliance Aarhus**	Further develop existing working groups and the strategic level, including developing new "products" such as guides, recommendations, commitment paper, etc., which other companies can join/use. Disseminate Klimaalliance Aarhus' "products" to the wider business community, including the SME segment in relation to make knowledge and resources available. Develop "products" such as guides, recommendations, commitment papers, etc., which contribute to efforts in the other emission domains, including supporting other domain areas through company involvement and collaborations. Spread awareness of the Climate Alliance Aarhus, including strengthening communication efforts.	TBD	Improving conditions for number of skilled green jobs (4) Facilitating improved businesses' behaviour changes towards low carbon practices (4)
	Democracy/participation + learning & capabilities + finance & funding **Green investment fond**	Support relevant projects that contribute to green solutions and CO_2 savings in Aarhus Municipality. Develop an application form that can facilitate the application procedures for both the Municipality and the applicant.	TBD	TBD

		Develop a reporting form that can facilitate reporting procedures for both the Municipality and the applicant. Prepare CO_2 calculations and/or probability of CO_2 reductions in the projects that receive support. Spread awareness of The Green Investment Pool, including strengthening communication efforts.		
	Democracy/participation + learning & capabilities **Improving sustainable thinking in SME's**	Ensure that companies get help to kick-start or work further with their green transition through three annual courses of the Green Academy up to and including 2028. Include knowledge and guidance on climate action in the authority-based dialogue with the Aarhus companies in connection with environmental supervision. Spread knowledge about the green transition among companies through local networks, including making relevant projects visible.	8.500 tonnes CO_2e	Improving conditions for local entrepreneurship & local businesses (4)
	Democracy/participation + learning & capabilities **Climate Living Labs**	Prepare the city council's recommendation on the disbursement of funds between MTM and MKB Develop a cooperation model for how the Climate Secretariat and MKB jointly locate, define and prioritize efforts, target groups and areas Search for relevant domains for the development and implementation of Klima Living Labs, including uncovering geographical areas and actors Develop methods and best practice for involving citizens and civil society Search for fund opportunities	TBD	TBD
	learning & capabilities + finance & funding **International outlook**	Attract funds for and foreign investments in Aarhus climate solutions and transversal projects. Support externally funded projects. Strengthen collaboration with and the benefits of international collaborations (e.g. 100 cities) through visible participation at conferences and events, sparring on best practice and joint applications for unique projects. Strengthen participation in leading international networks and partnerships such as ICLEI, C40 and IPCC.	TBD	Branding of Aarhus as a climate frontrunner (4) Key focus on ensuring a just transition (1 + 2)

		Look after Aarhus' green interests in Europe, e.g. via active use of the regional office CDEU, European partnerships and dialogues with EU authorities and institutions. Ensure the visibility of a green Aarhus in connection with the Danish EU presidency in the second half of 2025. Re-establish and upgrade Aarhus Municipality's delegation service to promote partner visits, raise their quality and improve the benefit from them.		
	Learning & capabilities **Active ownership in relation to green transition in the municipally owned companies**	Work strategically and focused to enable companies owned by Aarhus Municipality to prepare CO_2 accountings that outline the path towards CO_2 neutrality in 2030.	TBD	TBD
Total			**47.000-59.500 tonnes CO_2e**	

3.2 Module B-2 Climate Neutrality Portfolio Design

The descriptions of action portfolios in the table below *build on the specific content and wordings of the Climate Strategy Agreement: 2025-2030* and thus reflects the strong political mandate that the climate work in Aarhus has. With the climate strategy agreement, the participating parties also in principle agree to endorse the final climate action plan, which is expected to be submitted to the City Council at the end of 2024. Link to a full text version of *the Climate Strategy Agreement: 2025-2030* can be found in the Additional sources of information-list).

B-2.1: Description of action portfolios		
Fields of action	**Portfolio description**	
	List of actions	Descriptions
Energy system	The Green District Heating of the future	The Green District Heating of the Future project is a prerequisite for reducing the use of biomass for heating in 2030 and represents a significant contribution to phasing out coal. In particular, the Green District Heating of the Future will contribute to phasing out wood pellets as fuel, which currently account for 1.5 million tonnes of CO_2. The coalition parties agree that Kredsløb, the municipal utility, should pursue technologies that enable the greatest possible reduction in biomass fuels. Geothermic district heating will make it possible to exploit heat from subterranean water as a sustainable source of energy that is available every day, all year round. Kredsløb and Innargi have drilled two test wells, one on the Port of Aarhus and one in Skejby. Results from both test wells have been positive, and the project will continue. The

		objective is to begin supplying geothermal heat to residents of Aarhus in the fall of 2025. In the long-term, the objective is a heating system in Aarhus that does not use any biomass that is not captured using CCS, except for necessary waste incineration. The coalition parties recognize that hay biomass in Lisbjerg will continue to be a component of the district heating system for some years. The Green District Heating of the Future project will lead to a 28,000 tonnes reduction of $C0_2$ in 2030.
	Accelerated deployment of sustainable energy (Solar and wind)*	Nationally, the target is to quadruple onshore sustainable energy production by 2030. The coalition parties agree that the City of Aarhus must contribute to reaching this target. The City Council has already earmarked 1,200 ha for the establishment of renewable energy facilities (RE) in the form of solar energy. The earmarked locations are to be fully exploited, corresponding to installation of solar panels with the target of producing 1,000 GWh annually in total. The coalition parties agree that it is necessary to find many locations as possible for solar energy, and that installing solar panels in areas with vulnerable groundwater reserves would be advantageous, as this will achieve synergy effects. The coalition parties agree that the solar panels must be installed so as to prevent seepage of substances harmful to groundwater. The coalition parties agree that the ambition is to earmark an additional 400 ha for solar cells, and that possible locations will be explored in connection with the drafting of the 2025 municipal plan. In connection with the drafting of the municipal plan, new and more flexible tools must be explored in connection with the selection of locations. A number of the 20 wind turbines that currently provide Aarhus with green power are inadequate or obsolete. The coalition parties agree to replace the existing wind turbines in the municipality with new turbines on the same sites, and in this connection to promote dialogue with the owners of the turbines and work to promote better framework conditions that provide incentives for owners to invest in new, modern wind turbines. Replacing five existing wind turbines and installing two new 150-meter wind turbines on existing sites would generate enough power for an additional 2,500 households (10 MW). The coalition parties also agree that in connection with the drafting of the 2025 municipal plan, sites for wind turbines will be proposed with a view to installing an additional eight new wind turbines in the City of Aarhus that would be able to generate power for an additional 16,000 households (40 MW) in Aarhus. Sites in Vosnæs and Kasted have already been earmarked with capacity for a total of five wind turbines. The Danish Liberal Party has previous expressed opposition to the installation of wind turbines in Vosnæs and Kasted but accepts that the majority agrees to continue work towards installing wind turbines in these locations. Site identification for and installation of three additional wind turbines remains to be carried out. The coalition parties agree that installing wind turbines on the harbour is not a precondition for the agreement. In addition, the Liberal Party's agreement is conditional on the new three wind turbines being installed as replacements for existing wind turbines. Installing new wind turbines may involve purchase or expropriation of homes in the countryside in a radius of 600 m to the wind turbine area (for wind turbines with a total height of 150 m), in addition to deprioritizing buffer zones around larger towns. The coalition parties request that Technical Services and Environment explores the possibilities for and consequences of a new model for RE planning that can deliver greater speed in land-use planning, clear prioritization of different land-use considerations and to a higher degree accommodate citizen-driven energy communities. Designation of sites for solar cells, for example, would take place in dialogue with

		private actors and relevant stakeholders, including the agricultural sector. It is estimated that the combination of 1,600 hectares of solar energy and 10 new wind turbines combined would lead to a reduction in CO_2 emissions of 12,000 tonnes in 2030 and generate approx. 1,450 GWh annually, which corresponds to about 50% of Aarhus' projected electricity consumption in 2030. The coalition parties aim for Aarhus to generate more of its own electricity in future and have therefore agreed to set a minimum target of 1,750 GWh. As Aarhus Municipality's electricity consumption increases, efforts must be to establish additional renewable energy, with the goal of reaching 65% self-sufficiency. The coalition parties agree that this presupposes that Kredsløb can deploy RE throughout Denmark. For this reason, the coalition parties request that Technical Services and Environment and Kredsløb present a plan for deploying renewable energy in the form of solar and wind energy outside the municipal boundaries to achieve the target. Any CO_2 reduction that would be possible to include in the municipality's greenhouse gas emissions report will be included in the CO_2 buffer. The coalition parties note that Technical Services and Environment has already received a considerable number of applications for the installation of solar cells. In 2022, the City Council allocated DKK 7 million annually for RE case processing in the period 2023-2027. The coalition parties agree to extend the RE case- processing effort, and the coalition parties request that Technical Services and Environment speed up regulatory processing and increase simultaneous citizen involvement. The coalition parties note that the national energy crisis staff (NEKST) intends to reduce barriers to faster deployment of RE. The coalition parties also agree that green funding pools should benefit local communities and neighbours of RE installations to an even greater extent, including with a focus on biodiversity, and that steps should be taken towards increasing the available forms of neighbour compensation, for example through sale of electricity from RE installations to their neighbours.
	Carbon Capture and Storage*	A CO_2 capture facility at the Lisbjerg Plant is projected to be able to capture approx. 335,000 CO_2e annually. CCS is thus a decisive factor in our efforts to achieve climate neutrality in 2030 and contribute to negative emissions from the energy sector. The coalition parties agree that Kredsløb must apply to establish a CCS facility, including that the City of Aarhus may provide a municipal guarantee in connection with the construction project. The coalition parties emphasize the importance of collaboration with external partners in this connection, as well as the expectation that operations achieve financial equilibrium, government funding is considered. Because the by-laws for Kredsløb stipulate that owner approval is necessary for investments over DKK 500 million, the City Council will have to make a final decision on the approval of the Circuit's CCS facility. If needed, a municipal guarantee will be considered at the same time. A prerequisite for the introduction of CSS is that Kredsløb must be able to sell CO_2 credits to ensure the financial viability of the project. Of the 335,000 tonnes of CO_2e captured, approx. 25% will come from fossil sources and 75% from biogenic sources. The coalition parties support allowing Kredsløb to sell CO_2 credits from biogenic sources to help finance the project. The coalition parties agree that the market for CO_2 credits is immature, that principles for CO_2 credits must be developed, and that the City Council will be responsible for setting the framework for the responsible sale of credits that will continue to ensure the necessary financing. The coalition parties also support

		Kredsløb applying for funding from the government operating grant pool to help fund the startup of CSS. The coalition parties also acknowledge that the effectiveness of CCS facilities has not yet been demonstrated on a large scale, and that there is a risk regarding technology, transport and storage. The adoption of CCS technology is thus associated with significant uncertainty. For this reason, the coalition parties request that Kredsløb, Technical Services and Environment and the Mayor's Department provide regular status reports to the City Council on the progress of the project, including if it is considered necessary to discuss risks with the coalition parties. The coalition parties will also explore the possibilities for additional CCS projects elsewhere in the municipality than at the Lisbjerg Plant. Additional CSS facilities could potentially reduce the municipality's total C02 emissions. The coalition parties agree that additional CSS facilities must not impose restrictions on the phasing out of biomass in connection with the Green District Heating of the Future. For this reason, the coalition parties request that Technical Services and Environment and the Mayor's Department explore potential synergies between the Lisbjerg Plant and potential additional CSS facilities elsewhere in the municipality, including but not limited to in connection with the biogenic energy park or in connection with private point sources. CO_2 reduction from additional CCS facilities will be included in the CO_2 buffer. A status report must be submitted to the coalition parties in the third quarter of 2024.
	Energy efficiency improvements	Through the Aa+ project, the City of Aarhus has implemented ambitious energy-efficiency retrofits. With the formation of Aarhus Ejendomme, it is now possible to carry out additional energy-efficiency retrofits on an even larger scale and contribute to the implementation of the EU's energy efficiency directive, which sets a target of overall energy savings from all buildings of 11.7% for the period 2024- 2030. This goal applies to society as a whole and includes citizens and businesses in addition to the municipality. To achieve this target, a partnership with business and industry to reduce energy consumption will be established. In addition, the municipality will launch a public information campaign focussing on energy-efficiency retrofits. In total, energy efficiency retrofits will lead to a reduction of 16,000 tonnes of CO_2e annually. The City of Aarhus has taken the lead and has already formed a solar cell entity that will install solar cells on the roofs of all municipal buildings where this is financially feasible. The solar cell entity is expected to install 71,000 m2 solar cells on about double the roof area. Electricity production from 2029 with 71,000 m2 is estimated at 12.8 GWh annually. The projected CO_2e reduction in 2030 is estimated at approx. 100 tonnes. The private sector is taking a proactive approach and is offering installation of solar cells on existing private detached houses. The City of Aarhus will launch a website that can calculate the solar cell potential for all roof surfaces in the municipality, including private homes. The coalition parties are committed to promoting the expansion of solar cells in all new and existing urban and commercial zones, and to this end a partnership will be established between the City of Aarhus and relevant contractors, developers, and advisers. The coalition parties are also committed to providing support for the installation of solar cells on the roofs of housing associations and cooperatives. The coalition parties will also work to ensure that the state provides the necessary national framework for a rapid energy efficiency effort, including solar cells on roofs.
Transport & Mobility	Green Mobility Plan (please consult the Additional sources	The transport sector will account for two-thirds of all CO_2 emissions in the 2030 projections. This means that it will be the largest source of CO_2 emissions in the City of Aarhus. Even though more residents are

	of information-list for link to the Green Mobility Plan Agreement, Dec 2024)	driving EVs, most busses are electric and air transportation has gotten greener, the transport sector emitted 729,000 tonnes of CO_2e in 2022. With changes in the framework conditions for transport, the transport sector will still emit 549,000 tonnes in 2030. To reach the goal of climate neutrality in Aarhus, a transition from fossil transport to greener forms of transport is necessary: collective transport, cycling and walking, along with EVs. Being able to get around easily and quickly is decisive for the quality of everyday life in the City of Aarhus – whether it's the commute to work, the bike ride to school or a walk in the city centre. A reduction of CO_2 from transport must take the mobility perspective into account, to ensure a focus on promoting accessibility and a high-quality urban environment for residents, commuters and visitors. The coalition parties agree that the point of departure for the green mobility plan is an annual reduction of road transport of 270,000 tonnes CO_2 towards 2030. This means that the target for the transport sector as a whole is total maximum annual $C0_2$ emissions of 230,000 metric tonnes in 2030, taking into account improvement achieved via the national framework conditions. There will additionally be a reduction of 44,000 tonnes from aviation and shipping as well as 5,000 tonnes from sustainable soil handling. Aarhus is a good and attractive city to live and work in. The conciliation parties acknowledge that with the growth in the number of inhabitants and jobs, the pressure on the mobility system in Aarhus will increase significantly in the coming years, and that several mobility measures must be initiated in response. The coalition parties thus agree that a green mobility plan must be developed with a focus on active forms of transport such as cycling and walking and a sustainable city with collective transport. The coalition parties also agree that the prerequisite for the green mobility plan is an ongoing assessment of whether new technologies or changed framework conditions can lead to improvements. The coalition parties see the development in the number of EVs as positive, and thus it is assumed that at least 37% of all vehicles in Aarhus in 2030 will be EVs, which will result in an additional reduction in CO_2 emissions of 56,000 tonnes annually. This reduction will be included in the mobility negotiations. If this assumption is not realised, the shortfall will have to be made up within the transport sector. A transition to EVs will not lead to any improvements in mobility. The coalition parties agree that emissions from the transport sector are significant in relation to consumption-based emissions. The coalition parties thus request that Technical Services and Environment and the Mayor's Department draft a recommendation during the first year of the climate action plan that sets out proposal for the development of a data-based baseline for achieving reductions win consumption-based emissions in the transport sector.
	Sustainable soil management	Please note that actions covering this area is not further described in the *Climate Strategy Agreement: 2025-2030.*
	Sustainable aviation and shipping	Emissions from aviation and shipping will, according to projections, account for approx. 30% of the transport sector's emissions in 2030. The coalition parties thus agree to work to promote the electrification of the aviation and shipping to the greatest possible extent, and for the replacement of fossil fuels by more climate-friendly alternatives. The coalition parties agree to reduce emissions by 15-30% annual from 2030 onwards through partnerships with actors in the industry.
Agriculture, Forestry and Land use	Conversion to forest and nature	The conversion of agricultural land into forest and natural habitats can be achieved, among other things, through the establishment of 'blue-green parks'. These parks protect groundwater, reduce nutrient leaching and provide recreational opportunities and water retention capacity. The coalition parties agree to earmark a total of 8,000 ha

		(including existing natural habitats) as blue-green parks in the 2025 municipal plan. The blue-green parks will mean the conversion of 4,000 ha of agricultural land to natural habitats, woodland and other groundwater-protective uses. The coalition parties agree to earmark an additional 4,000 ha, bringing the total ambition for woodland and natural habits in Aarhus to 16,000 ha, which corresponds to one-third of the municipality's area. To achieve this, it will be necessary to think in terms of multi-functional land use, with multiple uses on the same site. The coalition parties acknowledge that a transformation of this scale will take time and will be difficult. These targets will be reached through a collaboration with landowners, agriculture and businesses. The coalition parties request Aarhus Vand to contribute to the realisation of the blue-green parks in the earmarked areas, and that groundwater protection measures are implemented in these areas. In addition, the coalition parties also require Technical Services and Environment to present an ambitious, balanced strategy for groundwater protection within a radius of 300 m from a water bore in connection with the 2025 municipal plan, and that this strategy become the basis for the practice of both Technical Services and Environment and Aarhus Vand with respect to groundwater protection. Reforestation, with diverse species-rich stands of untouched forest, will also contribute to groundwater protection and groundwater formation, biodiversity, water retention, outdoor recreation and public health. At the same time, these types of forest are an efficient, long-term carbon sink. The amount of carbon sequestered depends on the tree species planted and how the resulting wood is used. The greatest CO_2 impact can be achieved in the short term by private operators planting fast-growing commercial forests, which also have the potential to provide valuable material in the furniture, paper and textile industries, and especially in the construction industry, where wood is increasingly in demand as a sustainable building material. The amount of carbon sequestered depends on the tree species planted and how the resulting wood is used. The conciliation parties agree to initiate the establishment of 2,500 ha of untouched forest and 1,500 ha of natural habitats in the blue-green parks. In addition, private commercial forestation projects on 1,200 ha of privately-owned sensitive soils outside the blue-green parks, as well as 300 ha of forest in the 'Green Denmark Map'. In addition, the possibility of establishing an additional 300 ha of commercial forest will be explored. The CO_2 reductions from this will be included in the CO_2 buffer. Commercial forests will be established with a view to partnerships with the private sector to make us of these forests, for example in construction. A priority will be placed on planting untouched forests as close to urban areas as possible, to enable residents to use them for recreational purposes to the greatest extent, while also maintaining a focus on biodiversity. It is estimated that multifunctional forests will sequester 15 tonnes of CO_2e per ha annually, a total of 60,000 tonnes CO_2e annually; the full effect will only be achieved after many years of growth. The carbon sequestration effect in 2030 is estimated at 30,000 tonnes of CO_2 annually, depending on the speed of establishment, the land on which the forest is established and the type of forest. Reforestation has a long-lasting effect and is costly. See the section on the funds for the land fund regarding financing
	Set-aside of lowland soils	When carbon-rich lowland soils are drained for cultivation, they are oxygenated, and emit large amounts of greenhouse gases to the atmosphere. The City of Aarhus has already planned the set-aside of specific areas on 500 ha of lowland soils: the lowland soils will be

		taken out of cultivation and the water table will be raised in these areas in order to reduce CO_2 emissions from agriculture. The coalition parties agree to a more ambitious target for set-aside of lowland soils, from 500 ha to 1,300 ha of lowland soils, in addition to ensuring rapid processing of applications by the City of Aarhus. It is expected that 1,000 ha will be financed by the state and 300 ha financed by the City of Aarhus. The projects are conditional on voluntary agreements being made with the local landowners. The possibilities and consequences in relation to purchasing buildings and stables and the like are also being explored. The initiative will lead to an annual reduction in CO_2e of 15,000 tonnes in 2030. Technical Service and Environment estimates that over a number of years, it will become necessary to add approx. DKK 200 million to the land fund. See the section on funding for the land fund in relation to assigning funding.
	Holistic planning	The green transition of the countryside will require that all initiatives are implemented at once within a very few years before 2030. The coalition parties agree that a tool must be developed to support the creation of a master plan for the countryside that will facilitate the implementation of nature restoration projects, local development plans, development projects and construction projections within geographically defined locations.
	Biogenic Energy Park*	Biogenic energy parks use biological materials as fuel to produce energy, for example manure from livestock, crop residues or other organic waste. A biogenic plant can contribute to strengthening the link between agriculture and the energy sector. The coalition parties agree to work to promote the establishment of a pyrolysis plant that can sequester up to 50% of the biomass carbon in biochar, which means it will not be returned to the atmosphere, in addition to a grass protein plant that produces a sustainable feed for swine. It is estimated that the annual CO_2e effect will be approximately 47,000 tonnes of CO_2e in Scopes 1+2 and 6,000 tonnes in Scope 3. At the same time, the coalition parties will also explore the possibility of implementing CO_2 capture in connection with the establishment of the biogenic energy park. In addition, it must be ensured that any emissions of environmentally harmful substances must remain below threshold values.
	Agricultural climate planning and monitoring	Agriculture in the City of Aarhus emits approx. 61,500 tonnes of CO_2e. Reductions can be achieved by strengthening the dialogue between agriculture and the municipality, including by having climate as a recurring element in monitoring and regulatory approval process. Climate action plans for both livestock and crop-producing farms must also be developed. A partnership with central players in the agricultural sector and across municipalities and industries must be established with a view to promoting climate-optimized food production. The coalition parties agree that Agro Food Park in Skejby has great potential to lead the play towards the food system of the future. The coalition parties are thus prepared to promote a new 'Climate, Health and Food Systems Valley' in Skejby with a view to maintaining the Aarhus region's position as a world leader in this area. A reduction of 1,000 tonnes of CO_2e annually is estimated by 2030.
Waste and Industrial Processes	Biocover, ReWater and industrial processes	It is estimated that on an annual basis, approx. 25,000 tonnes of CO_2e are emitted from landfills, 13,000 tonnes of CO_2e from wastewater, 9,500 tonnes of CO_2e from composting, 23,500 tonnes of CO_2e from leakage and 6,000 tonnes of CO_2e from fires. This amounts to significant emissions. The data necessary for targeted reduction initiatives is not currently available. The coalition partners thus agree that a process must be initiated to generate better local data, and that on the background of

		this new precise data, initiatives must be put in place to help reduce the CO_2e emissions from the specific sources. Old landfills can potentially release large amounts of methane, which is a potent greenhouse gas. As a mitigation technology, a biocover can be put in place: a meter-thick layer of compost is spread over the area, which then breaks the methane down into water and CO_2. The possibility of a partnership with Kredsløb will be investigated, with a view to using biocovers to reduce emissions. The coalition partners agree on the target of an approx. 46,000 metric ton Co_2e reduction annually in 2030. This target assumes that ReWater is realized, and that it is possible to reduce virtually all emissions from landfills by means of biocovers, in addition to the assumption that emissions from this domain will be significantly reduce in the greenhouse gas emissions report when local data becomes available. By working more intensively with the waste hierarchy and waste generation, the City of Aarhus can move towards phasing out waste through a greater focus on recycling and reuse rather than disposal, in addition to behavioural design and new habits. The coalition parties agree that a circularity policy must be developed for the City of Aarhus as a client in connection with construction projects, and that the City of Arhus must support business and industry in developing circular solutions through industrial symbioses. This initiative will result in an annual reduction of approx. 14,000 tonnes CO_2 in scope 3.
A climate-friendly food system	Partnerships with the food industry	Danish agriculture and the food industry have a significant role to play in achieving climate neutrality. In recognition of this, efforts must be made to establish partnerships with the food industry. For example, a partnership with Agro Food Park can attract companies and institutions that create sustainable solutions for the food industry, both in Denmark and abroad. The coalition parties are committed to supporting Agro Food Park in establishing concrete partnerships, for example with regard to land use, drought/water issues, soil health and resilience, biodiversity, regenerative agriculture (conversion of cultivation methods), sustainable building materials based on the products of nature and the automatization and AI-driven digitalization of agriculture, in addition to project development through national and EU partnerships with relevant cluster organisations. The coalition parties agree that Agro Food Park is to be expanded to include companies within health and renewable energy, in addition to food and agriculture. The coalition parties request an investigation into whether Agro Food Park's locations outside the municipal plan development area might be used in future for renewable energy production that can contribute to the City of Aarhus' climate targets and strategy. A working group is to be established comprised of Agro Food Park, the Mayor's Department and Technical Services and Environment, with a view to ensuring alignment between the municipality's climate targets and business policy objectives, the development potential of Agro Food Park and the physical development of the area, including the municipal planning framework.
	Climate-friendly food habits*	Food production is under great pressure today. The municipality must take the lead by promoting climate-friendly dietary habits and skills among children and young people through enhanced education in primary school, in addition to providing support for climate-friendly food communities in the municipality. 'Climate-friendly meals and sustainable food habits' is included in the terms of reference for the committee on climate and sustainability; there is potential for synergy here. The Department of Children and Young People, the Department of Health and Care and the Department of Social Affairs and Employment are all working with climate plans aimed at children, the elderly and marginalized populations, for example, which include climate-friendly diets and foods.

	Transformation of the food system	The City of Aarhus can help support the transformation of agricultural production by contributing to the test and development of new cultivation concepts and business models on agricultural sites within the municipality. In addition, local sustainable food value chains can be supported, with a view to promoting more plant-based production and sale. If more Aarhus residents follow the official dietary guidelines, a significant annual CO_2e reduction in Scope 3 can be achieved.
Construction & Urban development	Climate-strategic municipal and urban planning Partnerships with the building industry	Aarhus is a good and attractive city, and a growing city as well, both in terms of population and jobs. Analyses show that urban growth with new construction can be climate-positive, as long as elements like housing typologies, collective waste and heating systems, collective traffic and ridesharing develop in line with population growth. The coalition parties agree on an ambition to achieve sustainable urban development, but that Aarhus must continue to accommodate social balance with a focus on social cohesion and an inclusive, diverse city with more families with children. The coalition parties will promote the continuation of a sustainable urban development in Aarhus in connection with the 2025 municipal plan. If the City of Aarhus is to succeed in reducing emissions from construction, more tools will be necessary. The national legislative framework, in the form of the planning act and the building regulations, are not ambitious enough. Agreements can be made with private construction project clients and developers, and the coalition parties will engage in targeted political advocacy with a view to securing statutory authority for achieving climate targets. The coalition parties thus agree that the City of Aarhus will accede to the Reduction Roadmap with a view to promoting more climate-friendly building regulations. The coalition parties are committed to supporting new partnerships with the construction industry in Aarhus, as well as consultancy and research, in order to promote sustainable construction projects. The City of Aarhus must take the lead with our own construction projects and develop concrete solutions to serve as inspiration for others.
	Municipal construction	In relation to the municipality's own buildings, the best square meters are the ones we do not build. For this reason, the coalition parties aim for Aarhus Ejendomme to reduce the municipality's administrative square meters by at least 10-15%, and to review the total property portfolio from a climate-conscious perspective in addition to new ways of working, in the form of more remote work. The coalition parties agree to revisit the target for the number of administrative square meters in 2026, once an activity-based layout has been implemented, including a consideration of whether further reductions in administrative square meters are possible. The coalition parties agree that the municipality must build fewer new structures, renovate more structures and increase the geographical consolidation of services across functions. Aarhus Ejendomme must take an ambitious approach to meeting new needs in new ways based on the most climate-friendly model when it comes to the municipality's building needs. The coalition parties thus agree that Aarhus Ejendomme must make targeted use of CO_2 budgets in the City of Aarhus in relation to municipal construction projects. The coalition parties agree that the Mayor's Department and Technical Services and Environment must present a recommendation that sets out a target for municipal construction projects, which includes a focus on requirement and the future frameworks for construction of structures such as schools, nursing homes and sports facilities. The coalition parties agree that the municipality – within the framework of the Reduction Roadmap – has a special obligation to take the lead and set ambitious targets for municipal construction projects. At the beginning of 2023, the Aarhus City Council pledged that all new construction over 1,000 m2 will comply with the low-emission class

		standard, which means a threshold value of max. 8 kg CO_2e/m2/pr. year in 2024, falling to 5 kg CO_2e/m2/pr. year in 2030. The City of Aarhus has started working with LCA assessment tools. LCA assessment tools will contribute to making Scope 3 reductions in construction projects possible by enabling calculation of emissions form the building materials used, for example. The recommendation must also illuminate implications for other political priorities, for example prioritizing sports, health and/or education initiatives, as well as social balance and attracting more families with children to the city, including whether there may be a need to continue to exempt certain construction projects, such as sports club-financed sports facilities from the requirements, based on a climate-economic approach and drawing on the funding pool for climate-friendly construction.
Collaborating Aarhus	The Climate Alliance Aarhus*	The City of Aarhus must provide support for the green transition in business and industry by facilitating partnerships across industries and between businesses of different sizes, herby creating a platform for knowledge, innovation and action. Climate Alliance Aarhus is a business partnership that mobilizes and engages the business community around Aarhus in the green transition. Going forward, it will address topics such as data and digitalization, green procurement, circular economy, ESG reporting/SBTI and green competencies, etc. The City of Aarhus aims to take the lead as a climate-friendly organisation and, through its own ESG reporting, lead the way for small and medium-sized enterprises (SMEs) in the municipality through new concepts.
	Circular resources Green innovation fond SMEs and climate actions	The business community has an important role to play in the development of green solutions that can contribute to reaching our climate targets. We will continue to give companies the opportunity to exploit the innovation power and synergy between companies and the City of Aarhus through the 'green investment pool', thus actively contributing to the development of green solutions as well as testing and proof of concept. SMEs in particular need support, and so the City of Aarhus, through the exercise of its regulatory powers, highlight initiatives that contribute to the provision of the knowledge and resources needed to launch a green transition to SMEs. A focus on circular resources is essential for the green transition in business and industry. Supporting companies in their efforts to minimize, sort, recycle and reuse waste and ensure that regulatory processes support and develop this work has great potential.
	Climate Living Labs	There is a need to break new ground in the dialogue with and involvement of citizens and civil society. With Climate Living Labs, we transform local areas in Aarhus into a 'living laboratory' for the development, implementation and testing of green climate solutions, where the solutions must reside and live in close cooperation with the area's citizens, civil society, business and public actors. Climate solutions and green innovation is thus not just something we talk about or imagine how it will be, but something we develop together, testing in everyday life and continually optimizing and scaling. The initiative is carried out by Technology and Environment in collaboration with Culture and Civic Services, who will jointly submit a recommendation on disbursement of the funds

	International outlook	The climate knows no boundaries. That is why we depend on strong partnerships and international collaborations. Aarhus has come a long way with international cooperation, and Aarhus Municipality wants to strengthen international efforts and work purposefully to mark Aarhus as a green beacon on the world map. The parties to the settlement will continue the work in the EU's 100 city cooperation in order to ensure through this exporting the technologies and approaches we have found locally as well as obtaining the latest knowledge from outside. The settlement parties also want to re-establish the delegation service in order to ensure that visitor cities, interest organisations, etc. get the greatest possible value from a visit to Aarhus.
Climate Group	A target for consumption-based emissions	The City of Aarhus must take the lead when it comes to the green transition. The coalition parties agree to set an ambitious reduction target for the City of Aarhus' consumption-based climate footprint of 50% by the end of 2035. The municipality will achieve this reduction through three reduction tracks: initiatives already launched, reduced and more circular consumption and green strategic partnerships. Taken together, these tracks will achieve a reduction of 100,000 tonnes CO_2 from consumption-based emissions in 2030, increasing to 138,500 tonnes CO_2 in 2035. Specifically, strategies are being worked on that can translate the objectives into initiatives that will be evaluated annually. At the same time, the impact of a climate-economic approach of a forced transition must be assessed, including the importance for the level of services in the areas of social welfare in particular. The municipality must lead the way with a major cultural transformation in regard to consumption, while at the same time promoting a greener supplier market in Denmark, to the benefit of the City of Aarhus and the country's public and private sectors. In addition, the coalition parties will explore the possibilities of achieving Scope 3 reductions in the municipality's entities through owner strategies, and concrete targets will be set for this. The coalition parties agree that these entities must comply with the City of Aarhus' climate objectives. The City of Aarhus makes DKK 8 billion in purchases annually, which emits approx. 24,000 tonnes CO_2 in Scopes 1 and 2 in addition to approx. 250,000 tonnes CO_2 in Scope 3 not including the entities. By mapping the group's total consumption-based emissions, it will be possible to develop recommendations for the optimization of consumption, enabling the municipality to be a frontrunner in the market with regard to green specifications for goods and services as well as circular economy.
	Climate policy food strategy	The City of Aarhus' climate policy food strategy has set a target of a 25% reduction in CO_2e from the food products purchased for municipal food services. A 20% reduction has been achieved since 2019. The coalition parties agree to extend and expand the strategy, with a greater focus on food waste, concrete targets for purchasing specific foods, such as food, legumes, fruit and vegetables, climate taxes and new methods of measurement and procurement agreements. The Climate Council estimates that if everyone follows the official dietary guidelines, emissions from food production and consumption can be significantly reduced. This would lead to a reduction in CO_2e of approx. 5,000 tonnes in 2030 in Scope 3. The coalition parties note that the municipality's consumption of beef has fallen by 33% since the introduction of CO_2 taxes in 2022. The coalition parties agree that work on CO_2 taxes in connection with the procurement portal are to continue, and that in 2025, the Mayor's Department must present a recommendation to the City Council describing how this work can be continued, based on the positive experiences gained up this point, with a focus on food literacy in schools and daycare centres, but that special consideration for the elderly in assistant cares homes may be shown

	Zero-emissions vehicle fleet in the City of Aarhus	The municipality's fleet of passenger cars and small vans must be fossil-free in 2025. These efforts can be strengthened through harmonized rules and behavioural changes, in addition to artificial intelligence. An investigation must also be made of whether ride sharing can contribute to the green transition. Simulations have shown that vehicular transportation needs can be met with up to 15% fewer vehicles than today. The municipality has developed a tool called FleetOptimiser in collaboration with other municipalities, and results have been positive from the last eighteen months of use. The coalition parties agree to extend the project, which is set to expire at the end of 2024. The coalition parties also agree to explore the possibility of using transport allowances to encourage municipal employees to choose green modes of transportation.
	Circular Aarhus and frugal consumption	'A Circular Aarhus' aims to ensure strategic focus and synergy across the municipality's current and future circular economy initiatives. Through the 'frugal consumption' effort, the goal is to create a process of cultural change for both managers and employees, with a focus on changing behaviours and mindsets in relation to consumption and consumption patterns. City of Aarhus employees must therefore rethink their purchasing needs before buying new goods, use the Genbrugsportalen recycling portal, buy more durable quality products and repair and share what they already have, as well as when the City of Aarhus defines specifications in tender documents.
	Zero-emissions machinery and driving	The construction unit uses heavy machinery, including trucks, excavators and sweepers. Charging infrastructure has been installed in the unit, and the process of conversion to electrically powered machines is well underway. The coalition parties agree that the construction unit must, as far as possible, be CO_2-neutral in 2030. However, this requires the generation of solar power for the machines, and the use of HVO fuel for the heaviest machinery. The conversion to CO_2-neutrality in the construction unit must take place on the background of an assessment of the costs of such a transition, in terms of the costs of the new machines relative to the CO_2 savings. In addition, it is necessary to investigate whether a green transition of the machinery used can be carried out more efficiently through cooperation with external partners

Note: the asterisks in the table above mark the actions that are further outlined in the tables B-2.2a - B-2.2e below.

Please also see table B-2.3 for an even further elaboration of the field of action Climate-friendly food system.

B-2.2a: Individual action outlines		
Action outline	Action name	**Carbon Capture and Storage**
	Action description	Aarhus Municipality and the municipal utility company, Kredsløb, plans to install a CCS plant at the CHP plant in Aarhus. This will create an energy system, that will absorb CO_2, because a large share of the CHP plant is based on Biogen fuels.
Reference to impact pathway	Field of action	Buildings and energy system
	Systemic lever	Technology
	Outcome (according to module B-1.1)	Absorption of 335.000 tonnes of CO_2e.
Implementation	Responsible bodies/person for implementation	Kredsløb (municipal utility company)

	Action scale & addressed entities	The district heating system
	Involved stakeholders	Neighbouring municipalities (for storage of the CO_2), citizens, and Government (the project requires some regulation changes)
	Comments on implementation – consider mentioning resources, timelines, milestones	The CCS plant is expected to be finished by 2029. The action is part of a large plan for electrifying the district heating system. This plan is expected to be passed by the City Council late 2024 or early 2025.
Impact & cost	Generated renewable energy (if applicable)	N/A
	Removed/substituted energy, volume, or fuel type	N/A
	GHG emissions reduction estimate (total) per emission source sector	N/A
	GHG emissions compensated (natural or technological sinks)	335.000 tonnes CO_2e (technological sink)
	Total costs and costs by CO_2e unit	Not yet clarified

B-2.2b: Individual action outlines		
Action outline	Action name	**Biogen Energy Park**
	Action description	In the biogen energy park, livestock manure and plant residues are converted to energy in the form of biogas, pyrolysis gas, liquid biofuels, electricity and heat. Besides the biogas facility, the park will include a grass protein plant and a pyrolysis plant. In a Pilot Cities project 'CO-SHAPE', Aarhus tests the application of a co-creation model in the establishment of the energy park.
Reference to impact pathway	Field of action	Green infrastructure & nature-based solutions
	Systemic lever	Technology/infrastructure + democracy/participation
	Outcome (according to module B-1.1)	Reduction of 47.000 tonnes of CO_2e. Storage of CO_2e in the form of biochar.
Implementation	Responsible bodies/person for implementation	The technical department in close collaboration with investors and the local community
	Action scale & addressed entities	
	Involved stakeholders	The local community and farmers
	Comments on implementation – consider mentioning resources, timelines, milestones	The business case for the project looks very promising and it is highly expected that the energy park is constructed within 4-5 years.
Impact & cost	Generated renewable energy (if applicable)	Yes

	Removed/substituted energy, volume, or fuel type	Yes. Natural gas is substituted with biogas.
	GHG emissions reduction estimate (total) per emission source sector	47.000 tonnes of CO_2e
	GHG emissions compensated (natural or technological sinks)	A significant share of the reduction is due to natural sinks (biochar)
	Total costs and costs by CO_2e unit	Not yet clarified

B-2.2c: Individual action outlines		
Action outline	Action name	**Installing wind and solar**
	Action description	Aarhus Municipality has designated 1.200 ha. for the installation of solar and plan to designate 400 ha. more. Further, areas for a number of windmills are designated as well. The city council emphasises, that the planning process must be flexible and have a clear focus on how to create value for local communities with close involvement of citizens.
Reference to impact pathway	Field of action	Energy system
	Systemic lever	Democracy/participation
	Outcome (according to module B-1.1)	Increase in electricity stemming from RES by more than 1 GW with an expected production of more than 1.000 GWh. 12.000 tonnes CO_2. The CO_2 reduction is relatively low. The calculation is based on the national expectations of the energy mix in 2030. Without extension of RES in Denmark, the outcome will be higher.
Implementation	Responsible bodies/person for implementation	The technical department of Aarhus Municipality
	Action scale & addressed entities	
	Involved stakeholders	Local communities, landowners and investors
	Comments on implementation – consider mentioning resources, timelines, milestones	It is expected that the majority of solar panels and windmills will be finished by 2027.
Impact & cost	Generated renewable energy (if applicable)	More than 1.000 GWh
	Removed/substituted energy, volume, or fuel type	RES will substitute a mix of coal-, oil-, and biomass-based electricity.
	GHG emissions reduction estimate (total) per emission source sector	12.000 tonnes CO_2.

	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO_2e unit	Not yet clarified

B-2.2d: Individual action outlines		
Action outline	Action name	**The Climate Alliance Aarhus**
	Action description	The alliance is a central and successful business partnership which mobilizes and engages the business community around Aarhus. The Climate Alliance will be further developed to perform and scale CO_2 reducing initiatives. There are great potentials in the alliance, as it works with themes such as data and digitalisation, sustainable procurements, circular economy, ESG reporting/SBTi and green skills.
Reference to impact pathway	Field of action	Collaboration with green businesses
	Systemic lever	Democracy/participation + learning & capabilities
	Outcome (according to module B-1.1)	Improving businesses' behaviour changes towards low carbon practices
Implementation	Responsible bodies/person for implementation	Collaboration between the technical department and the Mayor's department
	Action scale & addressed entities	
	Involved stakeholders	Local businesses within several sectors
	Comments on implementation – consider mentioning resources, timelines, milestones	The alliance has already been a major success in recent years, and now it is planned to scale up the alliance.
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	Not yet clarified
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO_2e unit	Not yet clarified

B-2.2e: Individual action outlines		
Action outline	Action name	**Climate-friendly food and habits**
	Action description	Aarhus Municipality will support a change in the design of and approach to agricultural production by contributing to testing and

		development of new cultivation concepts and business models on agricultural areas in the municipality. In addition, the municipality can support local sustainable food value chains with a view to promoting more plant-based production and marketing.
Reference to impact pathway	Field of action	A climate-friendly food system
	Systemic lever	Social innovation + learning & capabilities
	Outcome (according to module B-1.1)	It is expected that a minimum of 10% more citizens in Aarhus will eat according to national dietary guidelines. This will result in CO_2 reductions in scope 3 of 20.000-30.000 tonnes.
Implementation	Responsible bodies/person for implementation	The technical department of Aarhus Municipality
	Action scale & addressed entities	
	Involved stakeholders	Citizens, local business, retail stores, farmers
	Comments on implementation – consider mentioning resources, timelines, milestones	The outcome is reached by entering partnerships with Agro Food Park, agriculture, agricultural organisations, food producers, retail stores, restaurants, etc. In 2030 a tax on CO_2 from non-energy related processed in agriculture will be implemented in Denmark, which will naturally lead to more sustainable ways of producing food.
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	20.000-30.000 tonnes (scope 3)
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO_2e unit	Not yet clarified

The table below account for an example of a fully elaborated impact pathway for the Climate-friendly food system field of action for reaching an estimated 24.000 tonnes of CO_2-reduction annually. Such elaboration of all actions will appear in the final climate plan that is to be forwarded to the City Council for endorsement. Please notice that the same level of detail – as provided in the example below – will also appear in future iterated versions of the CCC Action Plan, when the coalition parties has approved the action portfolio.

There is a reason why the example takes point of departure in the Climate-Friendly Food System:

First of all, the example highlights CO_2 reductions in Scope 3 as a particular area of interest due to its embedding in the transition of the energy system, including the requirement for multifunctional land

use and including the demand for new cultivation methods and fewer livestock. If such a transformation is to succeed, it requires not only that the energy we consume is green, but that citizen and other actors support the transformation and the implications it has for our lifestyles and everyday living. If we are to grow new, climate-friendly crops, it requires that there is a market and a demand for such. And that requires the citizens to change behaviour. Further it requires that business and the food industry work together in innovating new products and sustainable business models. In other words, transitioning the food system is embedded as a premise underlying all strategic focus areas.

Secondly, the example shows how actions related to Aarhus Municipality as a Climate Group (the action entitled Climate policy food strategy) is closely intertwined with actions that reaches beyond the municipality viewed as its own entity. Both to ensure that the municipal administration 'walk the talk' when it comes to the green transition and to ensure that the municipality's experiences from practice provides important learnings to other actors within the agriculture and food community.

Finally, the example shows how actions are managed and organised cross-departmentally. Project managers across the field of action Climate-friendly Food System meet on a regular basis to discuss progression and synergies, and relevant managers from the involved departments constitute a steering committee for the whole Climate-friendly Food System. The climate transition team ensures a close coordination between all field of actions.

Please note that because the final climate plan has not yet been submitted to the coalition parties for endorsement, the example is presented with reservations.

B-2.3: Impact pathway for the field of action Climate-friendly Food System

ACTION 1: Partnership with food actors

Annual CO_2 reduction: 7.000 tonnes (based on estimations)

Management:

The action is anchored in Circular Resources, Technology & Environment, and is implemented in close collaboration with Business and Sustainable Development, the Mayor's Department.

Systemic levers:

Democracy, Social Innovation & Change, Learning & Capabilities, and Finance & Business Models

Key stakeholders:

- Internal partners are the Climate Secretariat, Procurement and Tendering and others.
- External partners are Agro Food Park as well as a large number of companies and knowledge institutions, e.g. SEGES, Innovation Center for Organic Agriculture and others. Furthermore, cooperation with the national "cluster organisations" is expected, e.g. Food & Bio Cluster Denmark, as well as business organizations and interest organisations.

Related actions:

All actions under the "Climate-friendly food system" is closely related to each other. In addition, demand for coordination and collaboration with other actions in the Climate Plan, especially with the Climate Alliance Aarhus.

Action description	Steps towards change	Co-benefits
The transition to a more climate-friendly food system builds on co-creating new, innovative solutions that reduce CO_2 emissions in companies' food production, or new products that enable	Formulate presentations to potential collaboration partners stating possible objectives and lighthouse projects based on the	Contributes to a boost of entrepreneurship and local green companies, which in the long run will

consumers to eat more climate-friendly. Here, Aarhus Municipality can contribute to the transformation of the food industry, as the cluster is strongly represented in Aarhus. Aarhus Municipality wants to gather food actors in partnerships with a view to creating a common direction which contributes to ensuring legitimacy, action and incentive in all parts of the food system to achieve CO_2e reduction. Cooperation and networks, where Aarhus Municipality has a facilitating role, can also help to push market forces and strengthen the transition towards a climate-friendly food system. Establishing lighthouse projects can help bring Aarhus to the forefront on the global stage.	national roadmap for the food sector. Prepare a partnership strategy with proposals for the practical setup. Identify collaboration opportunities with the greatest potential based on the dialogue with food stakeholders. Operate food strategic partnerships, including building networks and other outward-facing activities as well as project management.	increase the number of jobs locally in Aarhus. In addition, there is potential to strengthen Aarhus' position as a nationwide cluster for green solutions within the food sector. In addition, the effort contributes to good cooperation and increased dialogue between Aarhus Municipality and local businesses. According to the Climate Council, there is also a health gain for society.

ACTION 2: Climate-friendly food and habits

Annual CO_2 reduction: 7.000 tonnes (based on estimations)

Management:

The action is managed in a collaboration between Circular Resources (Technical Service & Environment), and Health (Children & Young People).

Systemic lever:

Democracy, Social Innovation & Change, Learning & Capabilities, and Finance & Business Models

Key stakeholders:

- Internal departments under the welfare magistrates
- NGOs in Aarhus and Interest organisations within the area of food

Related actions:

All actions under the "Climate-friendly food system" is closely related to each other. Also, closely related to the individual Climate Action Plans targeted children and young citizens.

Short action description	**Steps towards change**	**Co-benefits**
With the goal of taking responsibility for the largest consumption-based emissions, Aarhus Municipality seeks to create increased knowledge and motivation among the citizens of Aarhus about the value of climate-friendly food. However, it is difficult to change behavior related to food and meals, as this is deeply rooted in our culture. It is important to start an early effort aimed at children and young people, for the future generations to gain an understanding of the connection between the climate and the food we eat.	Building collaboration with internal and external actors to create a common direction. Initiate initiatives that strengthen green food education and food culture among children and young people. Develop a model for green food communities in collaboration with local NGOs, interest organizations and civic groups, etc. Secure a data basis in the area so that development	Significant health benefits, which will also have a positive effect on the economy. In addition, there are positive effects for well-being, as food can contribute to strengthening social communities.

The municipality will also support green food communities. Social relationships and communities have a big impact on citizens' food choices and motivation, and therefore green communal eating can act as a lever to get more people to eat more plant-based food and less meat. In collaboration with various organisations, Aarhus Municipality must therefore facilitate local food communities.	can be monitored, e.g. in relation to CO_2 and behavioural change. The possibility of involving external knowledge partners is sought.	
	Search for external funding opportunities for a lighthouse project in green food production.	

ACTION 3: Transformation of the food production system

Annual CO_2 reduction: 10.000 tonnes (based on estimations)

Management:

Managed by Circular Resources (Technical Services & Environment) and closely coordinated with Circular Resources, Technical Services and Environment. Close coordination with Procurement & Supply (the Mayor's Department)

Systemic levers:

Governance & Policy, Technology & Infrastructure, and Finance & Business Models

Key stakeholders:

- Departments at Technical Service and Environment,
- Companies, knowledge-, business and interest organisations within agriculture and food as well as other municipalities.
- Project partners and collaborators associated diverse EU projects

Related actions:

All actions under the "Climate-friendly food system" is closely related to each other. Also closely related to actions under Agriculture, Forestry and Land use.

Short action description	**Steps towards change**	**Co-benefits**
Aarhus Municipality will actively contribute to the development of innovative concepts and collaborations for climate-friendly food production. As a large municipality that contains both city and open countryside, Aarhus has the prerequisites to shape local opportunities for action and help initiate changes to our food production and food system. Aarhus Municipality will support a change in the layout and approach to agricultural production by contributing to testing and development. In addition, Aarhus Municipality will support local, sustainable food value chains with a view to promoting more plant-based production and marketing. New solutions require new thinking. This must be done in dialogue with and involving the citizens as well as the various strong knowledge and	Formulate a "working vision" for Aarhus in the food sector for subsequent discussion with relevant parties.	A climate-friendly food system that is more plant-based will therefore also be less land-intensive. This contributes to objectives linked to biodiversity, water environment and groundwater protection.
	Develop new climate-friendly cultivation methods, products, outlets and business models for farmers and food producers.	
	Continue EU projects in food, e.g. FoodCLIC.	
	Search for collaborations and opportunities, including projects with external funding, where Aarhus Municipality can be included as a relevant knowledge and/or implementation partner.	
	Share knowledge and spar with other municipalities about the climatic possibilities and potentials	

innovation environments within the food and agriculture area that are based in Aarhus.	in agriculture for a green transition, e.g. in connection with the LifeACT project.	

ACTION 4: Climate policy food strategy

Annual CO_2 reduction: 4.250 tonnes (based on estimations)

Management:

Managed by Procurement & Supply (the Mayor's Department)

Systemic lever: Governance & Policy and Finance & Business Models

Key stakeholders:

- All internal departments in the magistrates
- External wholesalers, manufacturers, other municipalities. The Danish Veterinary and Food Administration, various organizations and project partners.

Related actions:

All actions under the "Climate-friendly food system" is closely related to each other. Also closely related to the other actions under Climate Group.

Short action description	**Steps towards change**	**Co-benefits**
As a partner, Aarhus Municipality makes a strong contribution to developing a climate-friendly food system in society, and can also, as a purchaser, play a major role in ensuring greater production and use of climate-friendly food. By taking the lead in offering climate-friendly food in canteens and the municipality's institutions, the municipality is a lever for a more climate-friendly food system in society. It increases awareness of green food and contributes to normalizing this among the citizens of Aarhus. Through its own purchases and food offers, the municipality supports the green direction and normalizes a climate-friendly diet by serving more green food, testing new products, purchasing special local crops, avoiding food waste, etc. For the food professionals to work even more with green meals, it requires structural measures and continuous competence development. Success also requires financial and managerial prioritization, backing and support from other employees, and involvement of the users of the food offerings. Indicators and new targets are being developed, taking into account care homes and specialized services where other recommendations apply.	Develop and implement a cross-cutting Climate Policy Food Strategy 2026-2030 (to be approved by the City Council in 2025). Develop indicators and targets for Climate Policy Food Strategy 2026-2030 and annual follow-ups. Support internal and external partnerships to achieve goals. Apply for project funds.	According to the Climate Council, eating according to the climate-friendly dietary advice has a positive effect on both health (and thus the economy), well-being and learning, which at the same time has a large CO_2e effect. A demand for more plant-based foods will affect agricultural production and land requirements (it requires less land than meat production).

B-2.4: Summary strategy for residual emissions

The impact pathways outlined above show the way towards carbon neutrality in 2030. It includes natural sinks in the form of afforestation and set-aside of peat soils as well as technological sinks in the form of a Carbon Capture and Storage plant at the municipal waste incineration plant.

In 2030 CO_2 emissions in Aarhus is expected to be 380.000 tonnes of CO_2. The CCS plant is expected to sink 335.000 tonnes CO_2, and natural sinks are expected to sink 45.000 tonnes of CO_2.

Out of the residual 380.000 tonnes of CO_2, 76.000 tonnes stem from Energy, 233.000 tonnes stem from Transport, 37.000 tonnes stem from Waste, 13.000 stem from IPPU, and 21.000 tonnes stem from AFOLU.

It is highly unlikely that these residual emissions will be reduced to zero. Below, is a description of the reasoning for each sector.

1) Energy

The residual emission from energy consists of emissions from import of fossil-based electricity, and since there is no expectations, that the Danish electricity mix will be completely CO_2-neutral in 2030, there will be some emissions from the import of electricity. The remaining emissions stem from the use of natural gas in the industrial sector and the incineration of fossil-based waste.

Aarhus plans to install a CCS plant at the municipal waste incineration plant. It is expected that the CCS plant will capture 335.000 tonnes for CO_2e yearly. Since a CCS plant cannot capture all CO_2 from the incineration process, there will be some emissions left in 2030.

2) Transport

The reductions in emissions related to transport assume a forced restructuring of road transport, implying that the share of EV's will evolve exponentially. This is an optimistic scenario, and it is difficult to assume, that there will be no emissions related to transportation in 2030. Transportation is expected to be the highest emitting sector in 2030, since Aarhus is a highly dense municipality, and citizens still have the need to transport themselves in 2030. The plan to construct a CCS plant is mainly due to the fact, that it is not realistic to reduce emissions to zero within especially road transportation.

3) Waste

The residual emissions from waste are mainly emissions from wastewater. The water utility company, Aarhus Vand, is constructing a new wastewater facility that will reduce emissions significantly, but the facility will not be constructed before the early 2030s. Therefore, some residual emissions will stem from waste in 2030.

4) IPPU

The main emission source within IPPU is cooling and air conditioning. It is not expected that these emissions will decrease significantly in the short term.

5) AFOLU

There will always be some emissions from plant breeding and animal husbandry in the agricultural sector. It will not be possible to maintain an agricultural production without some methane and N_2O emissions.

3.3 Module B-3 Indicators for Monitoring, Evaluation and Learning

The *Climate Strategy Agreement: 2025-2030* addresses different emission domains, for which the level of ambition and specific reduction targets are identified. This implies that if there are initiatives within the domain which turn out not to deliver the desired reductions, or in the event that the coalition parties would like further reductions, any additional measures will have to be found within the same domain, in order to meet the sub-targets, set for that domain. However, Carbon Capture and Storage (CCS) is such a large initiative than any changes to this initiative will have effects across all initiatives.

The coalition parties aim to follow developments in reductions closely. The coalition parties thus mandate an annual status report in connection with the greenhouse gas emission reporting, which includes frozen policy prognoses for each domain, the reduction paths and the reduction targets. Concrete initiatives must also be followed-up, including relevant impact pathways and indicators as well as funding. The coalition parties agree that the annual follow-up reporting must be used to maintain motivation for achieving the target of neutrality towards 2030, and to ensure the necessary momentum through the application of new technologies or changes in framework conditions as necessary.

The approach used in the previous climate plan involved the initiation of compensatory actions for individual years in which deviations from the reduction path occur. In the 2024 budget agreement, it was agreed, in line with the recommendations of the Ministry of Climate, that going forward a running three-year average will be used, and that the annual compensatory actions will no longer apply. Instead, follow-up will take place in connection with the annual political follow-up on the climate strategy, in connection with which data on the ongoing reductions will be presented together with the municipality's greenhouse gas emissions report and frozen-policy prognoses. The annual follow-up report must contain a recommendation regarding the introduction of new or cessation of existing climate initiatives, just as the annual budget negotiations also can be used to ensure agility in the climate plan, ultimately to ensure the achievement of climate neutrality in 2030 and effective reductions through the climate-economic approach.

Below is a list of examples of indicators used to follow up on the action plan.

B-3.1: Impact Pathways			
Outcomes	**Action/ project**	**Indicator**	**City Council's goal**
Reduced emissions		Total scope 1+2 emissions	Neutrality in 2030
		Emissions per capita	TBD

Increased RES	Installing wind & solar	Share of energy consumption stemming from RES	TBD
		Number of ha. solar	1.600 ha of solar
More sustainable energy system	Installing wind & solar	Share of electricity imported	TBD
		Share of district heating as: Oil, coal and gas Electricity based Biomass Waste	TBD
Phasing out oil from the district heating system	Phasing out oil from the district heating system	Amount of oil in the district heating system	Zero oil
Energy efficiency improvements	Energy efficiency improvements	Relative energy efficiency in the municipal organisation	1,9% reduction each year
		Average heat use in existing buildings (kWh/m2)	TBD
		Average electricity use in existing buildings (kWh/m2)	TBD
		Emissions pr. m2 (LCA)	TBD
Reduced truck milage	Sustainable soil management	Truck milage (tonne-km)	TBD
Decreased emissions from waste	Installing biocovers at landfills	Share of organic waste - landfilled	TBD
Reducing material use	Reducing material use and using more sustainable materials in the industrial sector	Total collected waste within city boundaries (tonnes), e.g. divided into categories; metal, plastics, wood, concrete etc.	TBD
More nature	Afforestation	Number of ha. forest and nature	16.000 ha of forest and nature, hereof 2.500 untouched forest
	Set-aside of peat soils		

Below are three examples of indicator metadata. All indicators are followed up annually or more often.

B-3.2a: Indicator Metadata	
Indicator Name	Total scope 1+2 emissions
Indicator Unit	Tonnes CO_2e
Definition	Scope 1+2 GHG emissions within the municipal boundaries
Calculation	According to GHG inventory
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	All sectors
Does the indicator measure indirect impacts (i.e., co- benefits)?	No
If yes, which co-benefit does it measure?	

Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	The overall action plan
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	Yes
Data requirements	
Expected data source	Emissions data compiled in GHG protocol for cities. Bases on local data as well as regional and national statistics.
Is the data source local or regional/national?	Both
Expected availability	Certain
Suggested collection interval	Annually
References	
Deliverables describing the indicator	
Other indicator systems using this indicator	

B-3.2b: Indicator Metadata	
Indicator Name	Emissions per capita
Indicator Unit	Tonnes CO_2e
Definition	Scope 1+2 GHG emissions within the municipal boundaries divided by number of individuals in the municipality
Calculation	According to GHG inventory
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	All sectors
Does the indicator measure indirect impacts (i.e., co- benefits)?	No
If yes, which co-benefit does it measure?	
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	The overall action plan
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	Yes
Data requirements	
Expected data source	Emissions data compiled in GHG protocol for cities. Bases on local data as well as regional and national statistics. Population statistics from Statistics Denmark.
Is the data source local or regional/national?	Both
Expected availability	Certain
Suggested collection interval	Annually
References	
Deliverables describing the indicator	
Other indicator systems using this indicator	

B-3.2c: Indicator Metadata	
Indicator Name	Share of energy consumption stemming from RES
Indicator Unit	%
Definition	The share of energy (not including transportation), that stems from RES
Calculation	MWh of energy produced by RES divided by MWh of total energy consumption
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Energy usage
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Energy systems
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	No
Data requirements	
Expected data source	Energy statistics
Is the data source local or regional/national?	Local
Expected availability	Certain
Suggested collection interval	Annually
References	
Deliverables describing the indicator	
Other indicator systems using this indicator	

Aarhus has established a strong data analytical and climate economic approach to climate work. The procedures can, however, be strengthened with regards to the use of indicators on the effects beyond direct emission reductions. The outcomes (or process deliveries) described in the impact pathways all describe relevant indicators (cf. table B-1.1a + B-1.1b), e.g. number of partnerships, number of graduates from the Green Academy etc. However, we have not currently set specific targets for all the indicators for all actions. An important future task is therefore to set specific targets – qualitative as well as quantitative – for these. Correspondingly, as we do not currently have a complete overview of data sources, an important future task is to identify relevant and accessible data sources. This process could benefit from collaboration with relevant stakeholders. An example of stakeholder collaborations on indicators and data access is related to the monitoring of changed food habits; not only the food served in the municipality's own institutions, but also the spill-over effect that climate actions targeted the municipal institutions have on the food behaviour in the families at home. One way could be to track changes in food buying behaviour using data from local supermarkets. Access to these data would require close cooperation with the supermarkets.

In addition to measuring the direct and indirect impact on CO_2 emissions, the Aarhus goals act as an overall framework for the categorization of co-benefits (cf. table B-1.1). The Aarhus goals are continuously monitored based on the following indicators:

B-3.3: The Aarhus Goals and current indicators

The Aarhus Goals	Indicators
Aarhus must be a good city for everyone	Measured through a survey with focus on whether the citizens of Aarhus perceive and experience Aarhus as a good city for everyone regardless of age and stage in life and whether they feel a high degree citizenship
A city with a place for everyone	○ Self-sufficiency, including difference between vulnerable groups compared to everyone ○ Youth education
A city of community and fellowship	○ Citizenship ○ Loneliness, including difference between vulnerable groups compared to everyone, ○ Security
A city where everyone is healthy, and everyone thrives	○ Mean lifespan/remaining lifespan, including difference between vulnerable groups compared to everyone ○ Well-being
A growing city with a strong private sector	○ GDP for Business Region Aarhus ○ New workplaces
A sustainable city with good urban and local environment	○ Climate ○ Mobility

Continuous follow-up is carried out. The two goals "Aarhus must be a good city for everyone" and the indicator of "Citizenship" are followed-up with a survey among the population of Aarhus, while other indicators are monitored with data from e.g. *Aarhus i Tal* (see reference list).

The strategic alignment between the Aarhus Goals and co-benefits enables measuring co-benefits through established Measurement, Evaluation and Learning procedures, using existing data sources. An important imminent task is to uncover the need for supplementary indicators for monitoring the greening of the Aarhus goals and to assess whether special measurements must be made to ensure a just transition.

The green transition must not create greater economic and social inequality. In the Aarhus goals, there is an explicit focus on creating a city for everyone, regardless of social status, gender, age, religion, ethnicity. The goal of being a good city for everyone is developed with the following vision:

"A city with space to unfold and develop. A city where everyone has the opportunity to take responsibility for their own life and utilize their own abilities. A city where we collectively help those who need it. A city with space for difference and diversity".

The established indicators for the goals *A city with a place for everyone*, *A city of community and fellowship* and *A city where everyone is healthy, and everyone thrives* have a special focus on ensuring the best conditions for vulnerable groups, as can be seen from the table above.

The coalition parties agree that ensuring social balance in the climate plan is crucial. The coalition parties have thus requested the Mayor's Department to analyse the economic inequality effects of the initiatives in the climate plan. Carrying out concrete economic inequality calculations for the initiatives has not been possible. The Mayor's Department has reviewed the actions and assesses that no significant economic inequalities are associated with the current actions. However, particular attention should be paid to the mobility actions as well as climate-related requirements for private home construction, which have the potential to contribute significantly to economic inequality.

The Mayor's Department will conduct regular assessments of economic and social inequality in connection with the annual follow-up on the climate plan and will present recommendations to the coalition parties regarding proposals to compensation for any economic imbalance. In addition, an inequality assessment of the domains will be conducted in connection with the implementation of the climate plan. The coalition parties agree to push for the provision of the necessary framework conditions by the state, as the tools available to the municipality to ensure social balance in the green transition are limited.

As far as learning is concerned, until now there has been a reporting practice which (besides the climate-accounting part) consisted of four parts: A financial follow-up, a follow-up on change indicators (quantitative or qualitative, at field of action level), a brief status (on action level) as well as a learning and reflection part. As for the last part, Learning and Reflection, the project manager had to explain in prose:

- What has succeeded
- What was troubling
- What to change (in the action portfolio)
- What to pass on

The first two questions concern learning in line with the principles of the Aarhus Compass (see Module A-2: Current Policies and Strategies Assessment). Here, the project managers had to describe what has been successful, e.g. success stories internally or in cooperation with external parties, or otherwise gains that should be shared with the City Council. Equally, the project manager had to describe encountered challenges to learn from. The latter can be difficult to share, but perhaps also the most important in a change process such as the green transition.

The last two questions relate to future actions in the form of changes to or reprioritization of the action portfolio. Here, the project manager also had to reflect on the recommendations for the next change phases.

Current reporting practices, thus, also includes the possibility to evaluate specifically on the quality or effectiveness of cross-organisational collaboration, both internally between departments and across magistrates. Such learning and reflection opportunities are crucial to carry forward in new reporting formats.

As the impact pathways become even more developed and as indicators for both outcomes and co-benefits become more and more precise, there is also a need to update and refine the current reporting practice. A practice that considers and is designed to capture the special challenges and action portfolios that are part of the CCC 2030 Climate Neutrality Climate Plan. A practice that for

example does not just follow a fixed annual cycle, but rather gives the individual project manager the opportunity to monitor the indicators, adjust continuously and act accordingly.

4 Part C – Enabling Climate Neutrality by 2030

The City of Aarhus is already deeply committed to the green transition and has, through previous climate action plans, developed and implemented a number of governance and social innovation enablers with a view to ensuring the systemic anchoring of the green transition. These will be further improved and adjusted with the implementation of the *Climate Strategy Agreement: 2025-2030* and the CCC Action Plan.

The climate neutrality transition is complex and presupposes that we use all means and measures. The City of Aarhus can contribute to the green transition in a wide range of areas, directly and indirectly, through its various roles and instruments. CONCITO, the Danish green thinktank and independent knowledge partner for decision-makers across society, suggests four different roles of municipalities in Denmark:

Aarhus can act as a *company* through the operation of its own institutions such as nursing homes, kindergartens, cultural institutions, home care and administrations where they can directly influence the transition.

Aarhus can act as an *authority* in areas where they have regulatory tools at their disposal. This applies, for example, to physical land use planning through municipal and local plans, heating planning, waste planning, water supply and environmental authorizations. As an authority in these areas central to the transition, Aarhus can promote the transition.

Aarhus can act through the role as a *supplier* in the areas where they supply citizens with utilities and provide services. This includes water, wastewater management, district heating, public transport, urban infrastructure etc.

Finally, Aarhus can act as a *facilitator* for the transition in areas where their direct influence is limited. As an inspirer and opinion former, municipalities can indirectly influence emissions from actors such as citizens, businesses and organizations that live or act in the municipality's geographical area. This role can be unfolded through partnerships with e.g., businesses and educational institutions, dialogue with citizens and developers or activation of local communities.

The figure below illustrates the four different roles with regards to influence and emission reduction potential and shows how municipalities typically have the greatest influence through their role as a company and the least in their role as a facilitator, but conversely, they can affect the largest emissions as a facilitator. It is therefore important for municipalities to bring all these roles into play if they are to support the overall transition in the society.

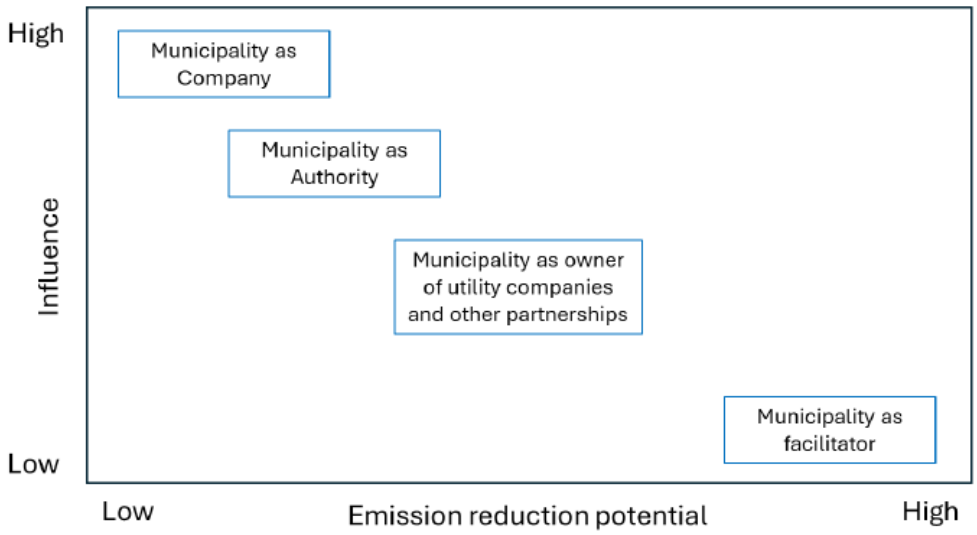


Figure A-3.1: The roles of the City of Aarhus with regards to influence and emission reduction potential (source: CONCITO)

The following sections unfold enabling interventions with regards to organizational setting and collaborative governance models and social enabling interventions respectively, designed to support and enable the climate action portfolios described previously.

4.1 Module C-1 Governance Innovation Interventions

The political climate agreement is ambitious, and the green transition must take place at a rapid pace. Therefore, it is important to continuously secure a political and managerial mandate to progress, and to continuously have the attention of the top management to clarify doubts and dilemmas as they occur. The current climate challenges call for a need to enter new collaborative relationships and for the municipality take on newer and untested roles.

The group of directors has the overall responsibility for the implementation of the climate initiatives across the magistrates' departments. The concrete climate actions and initiatives are anchored in the line management to make sure, that the implementation takes place in close interaction with the other municipal core tasks and services, and close to where the professional knowledge of the local conditions is present. The climate efforts are far-reaching and often cut across the traditional areas of responsibility. This place demands on the management, which must ensure cross-cutting coordination in relation to the many important considerations that the city of Arhus also faces. This is important if we are to succeed with the climate efforts and to ensure that Aarhus is a good city for everybody.

The table below provides *examples* of governance innovations enabling the green transition. The asterisks in the table mark the actions that are further elaborated below.

C.1.2: Relations between governance innovations, systems, and impact pathways

Intervention name	Description	Relevant to the barriers and opportunities associated with	Leadership and stakeholders involved	Enabling impact and co-benefits
The Climate Secretariat*	Develops and manages the Climate Action Plan	Governance & Policy, Learning & Capabilities, Democracy & Participation	An organizational unit under the Technical Services and Environment Department	Ensures a coherent, targeted and focused climate plan in close dialogue with the professional environments and relevant stakeholders
Cross-magisterial working groups	Climate working groups organized around each domain and across the magistrates to ensure cross-departmental collaboration, professional synergies and co-creation	Governance & Policy, Learning & Capabilities	Each working groups consists of a domain partner from the Climate Secretariat and key employees working hands-on with climate actions and initiatives related to the domain in question across the magistrates	Ensures internal collaboration, alignment of actions and transparent processes to gain maximum impact, synergies, and joint learnings
Center for Innovation in Aarhus (CFIA)	An internal innovation unit, which supports municipal innovation projects from idea to implementation by means of a human centred mindset and design driven methodologies and processes	Democracy & Participation Learning & Capabilities and Social innovation	Collaborates across the municipal departments and with both internal and external stakeholders	Involves citizens, local businesses, politicians, employees and civil society in transition processes through co-creation and involvement strategies to ensure a just transition
Co-citizenship	An organizational unit under the Technical Services and Environment Department, which operate operates out in the field among citizens and other actors	Democracy & Participation Learning & Capabilities and Social innovation	Collaborates with both internal and external stakeholders	Facilitates multi-stakeholder dialogue, and develops and scale new approaches and methods for citizen involvement and empowerment to ensure democratic participation and a just transition
The Wicked Problem-collaborations	A cross-magisterial collaboration to ensure that the thoughts and methodologies behind the wicked problems are	Learning & Capabilities, Governance & Policy and Social Innovation	Managed by the Mayor's Department and includes employees from all magistrates	Provides a forum for knowledge sharing and collaboration on de dilemmas associated to wicked problems and has an eye for their transversal interconnectedness. Initiates new approaches and trial actions to climate challenges and other wicked problems

	integrated into practice			
The regional Climate Alliance	A partnership established by the local government, Danish Regions, and RealDania and constitues a common framework for the implemantation of municipalities' climate action plans	Learning & Capabilities and Governance & Policy	The Danish Regions, and RealDania. CONCITO og C40 act as knowledge partners	Provides a development platform for climate action planning. Coordinates and facilitates collaborations and synergies across regional boarders and optimises efforts across municipalities
Energispring Aarhus	A professional energy saving network where building owners together with Kredsløb focus on energy savings through knowledge sharing and close collaboration.	Learning & Capabilities	Kredsløb, Aarhus and 32 of the biggest building owners in Aarhus	Provides the network participants access to a platform with district heating data that is retrieved via remotely read heat meters in the network participants' buildings. In the long term, the platform will also be provided with other consumption data.
Net Zero Cities/100 climate neutral and smart cities	A EU mission platform to pursue ambitious goals to slash emissions rapidly and pioneer innovative approaches with citizens and stakeholders	Learning & Capabilities and Governance & Policy	The EU mission and 112 European Cities	Offers a unique platform of ambitious cities that all have the same goal of climate neutrality in 2030. Strengthens European engagement and cooperation with other cities on the same journey. As an urban community, Aarhus will learn from other cities while at the same time Aarhus can make its own experiences available to cities that are not yet as far in the green transition
Creative Circular Cities	A transnational constellation that supplies municipalities, business support organisations and NGOs in the Baltic Sea Region with guidelines and tools to involve Cultural and Creative Sectors and Industries (CCSI) into the circular transition	Learning & Capabilities, Governance & Policy and Social Innovation	Creative Circular Cities initiates a transnational co-creation process, in which six demo cities jointly develop & test Cultural and Creative Sectors and Industries-driven approaches for an integrated circular transition. In each city, local authorities, business support organisations and NGOs are involved	Induces a "system change" at the local level that includes both the production & the consumption side of Circular Economy by launching enabling environments for CCSI-driven circular transition, and promoting "circular lifestyles" with CCSI assistance

The Climate Secretariat: Ensuring a coherent climate plan and continuous learning

The Climate Secretariat is an organisational unit under Technical Services and Environment and plays a key role with regards to the overall coordination and project management of the climate action plan as well as to ensuring a close dialogue with key internal and external stakeholders in preparing the climate action plan.

The secretariat (in close collaboration with the Mayor's Department) prepares progress and status reports, develop roadmaps, and conduct additional analyses to support these initiatives. Furthermore, the Climate Secretariat monitors, supports, and evaluates the impact of the climate initiatives to ensure continuous learning.

Finally, the Climate Secretariat contributes to strengthening the internal competences related to climate and climate project management, for example through workshops on climate accounts, impact pathways and indicators, through climate events (e.g. Klog på Klima with presentations on relevant topics within climate for employees) and through targeted project support in connection with e.g. funding and international cooperation.

All emission domains have a so-called domain partner represented in the Climate Secretariat to ensure continuous dialogue and coordination with the professional environments and the employees who work hands-on implementing the climate action plan.

4.2 Module C-2 Social Innovation Interventions

As a municipality, we primarily have direct means and tools to influence our own CO_2 emissions and thus only a small part of the municipality's total CO_2 emissions. We do not solve the climate crisis internally but by actively working with civil society through green partnerships and close collaborations. Therefore, it is crucial that we create a shared understanding of the problem, take collective ownership, and together develop large-scale systemic solutions for our city. In other words, we join and act together.

Therefore, to succeed, the green transition requires broad support from all actors. Aarhus is therefore committed to involve citizens, civil society, companies, employers, trade unions and employer organization, and other actors in the climate efforts. With the many value framework (including *The Aarhus Compass. Less System. More Citizen*, *The Collaboration Compass*, *A new Aarhus model for collaboration* as well as *The political mandate for wicked problems*), the City of Aarhus has proven a will to actively prioritize citizen involvement, dialogue and stakeholder collaboration. Both in the process of developing the climate plan and subsequently, in implementing the climate plan.

A number of dialogue activities and workshops have preceded the planning of the climate plan. In addition to the experiences gained from previous climate action plans' dialogue activities and stakeholder involvement, which have naturally been carried forward into the background material that forms the basis of The Climate Strategy Agreement, the Climate Secretariat and Technical Services and Environment have, among other things, held the Annual Conference for Climate Action 2023 (targeted employees in Aarhus Municipality, businesses, citizens, universities and educational institutions, and important decision makers), The Business Conference 2024 (e.g. with special focus on Citizen

Involvement in urban development), and NGO Workshops, inviting local NGOs to discuss and learn about local green initiatives.

Civic engagement is a central pillar in the Climate Strategy Agreement. However, involvement of the public is not achieved through broad information campaigns but requires focused efforts in relation to each individual domain and in relation to those climate projects that affect the behaviour, habits and everyday living of the citizens and other key actors; when it makes sense and where it makes sense. Dialogue, collaboration and co-creation are thus a fundamental premise in the implementation of the climate actions.

The table below provides *examples* of social innovations enabling the green transition. The asterisks in the table mark the actions that are further elaborated below.

C.2.1 Relations between social innovations, systems, and impact pathways

Intervention name	Description	Systemic barriers / opportunities addressed	Leadership and stakeholders involved	Enabling impact and co-benefits
Climate Citizen Assembly	Consists of 36 local citizens who discuss values, themes and solutions to specific climate issues. Originates from the Climate Action Plan 2021-2024	Democracy & Participation	A representative group of citizens and the city council	Contributes to, informs and qualifies the city's climate actions to ensure citizen involvement and democratic processes
Community Councils	Aarhus consists of 34 community councils representing their local communities. They are one of the main actors in the follow-up of the city council's goals for citizen involvement and co-citizenship. The community councils are also a forum for discussing local issues, and they can be catalysts for local activities, events etc.	Democracy & Participation	A community council is an umbrella organization for parish councils, schools, libraries, kindergartens, landowners' and residents' associations, sports clubs and local branches of youth organizations	Ensures a direct link between the citizens and the political system. Involves of local interests in all matters of importance to the local area. Ensures local anchoring of green initiatives. Involves the knowledge and resources available locally in the municipality. Ensures that information and debate proposals from the municipality reach the citizens
Climate Living Labs*	An upcoming collaboration with the city's many and diverse actors,	Governance & Policy, Democracy & Participation, Learning &	Technical Service and Environment and Culture and Citizens'	Facilitates dialogue and cooperation between the actors in the geographically appointed areas and brings them together on the climate agenda. Develops

	based on open-source innovations and co-creation processes	Capabilities, and Social innovation,	Services. Aims to engage all relevant stakeholders in multi-collaborations in selected geographical areas	solutions that benefit both the area's residents and other actors as well as the climate
Climate Alliance Aarhus*	A business partnership aiming to jointly achieve Aarhus' goal of CO_2 neutrality	Learning & Capabilities	Facilitated by the Mayor's Department and includes local companies and public workplaces	Creates a space for development, green innovation and action through close collaboration and co-cration
Academic partnership*	Formal partnership agreement between the City of Aarhus and Aarhus University	Learning & Capabilities	Aarhus University and the City of Aarhus. Specific collaboration constellations and actors are linked to each initiative	Varies according to the initiative and its associated target
The Green Academy*	A collaboration between Culture and Citizens' Service and Technical Services and Environment and the Business Academy Aarhus aimed at further educating unemployed academics to becoming "Green Change Agents"	Learning & Capabilities and Social innovation	Unemployed academics, companies, Culture and Citizens' Service and Technical Services and Environment and the Business Academy Aarhus	Develops a workforce qualified to take part in the green transition, facilitates and enables companies to handle green transition processes, promotes the green agenda and creates value for the company
CO-SHAPE*	A Pilot Cities project where Aarhus tests the application of a co-creation model in the establishment of the energy park	Governance & Policy, Democracy & Participation, Learning & Capabilities	City of Aarhus, Citizens, private developers, Energinet, Landowners, Aarhus School of Architecture	Develops and test co-creation models for new and comprehensive planning methods, replicable to similar urban typologies
LIFE ACT*	A partnership project funded by the SU's LIFE program	Governance & Policy, Democracy & Participation, Learning & Capabilities	The Central Denmark Region (including Aarhus Municipality) is the lead partner. The five Danish regions, 27 Danish municipalities and the Central Denmark EU office (CDEU) are behind the	Facilitates collaboration across municipalities and contributes to knowledge and experience being gained and disseminated in order to create the greatest possible capacity building for all relevant actors

			project as well as a range of associated partners (universities and educational institutions)	
FOODCLIC	An EU-funded Project aiming to create resilient urban food environments and provide access to healthy, just, and sustainably produced food	Governance & Policy, Democracy & Participation, Infrastructure and Social Innovation	The project includes eight European city regions (incl. Aarhus) and brings together actors from politics, science and civil society	Connects people and policies from different sectors for an integrated approach to transform urban food environments and food systems. Facilitate the accessibility and availability of healthy and sustainably produced food for all people and in particular for vulnerable communities.

Climate Living Labs: Involvement of local communities and actors in the green transition

There is a need for new approaches to the dialogue with and involvement of citizens and civil society. With Climate Living Labs, we will transform selected communities in Aarhus into a 'living laboratory' for developing, implementing and testing of local green climate solutions in close cooperation with the citizens, civil society, business and public actors in the community. Climate solutions and green innovation are thus no longer just ideas or fantasies about the future. They become something concrete that we develop together and test in our everyday lives as we continually optimise and scale them. This initiative will be carried out by Technical Services and Environment in collaboration with Culture and Citizens' Services.

In collaboration with the city's many and diverse actors, Climate Living Labs is a methodology based on open source innovations and co-creation processes, inviting the city's many and diverse actors to investigates how specific domains (e.g. the food system) are represented in their local area and how it branches out and interacts with other 'wicked problems' (e.g. physical and mental health) with a view to co-creating and testing innovations and creating new ways to co-combat the climate challenge.

The Climate Alliance Aarhus: Engaging local businesses in a sustainable future

We need to get the companies and public workplaces involved to reach the goal of CO_2 neutrality in 2030. Therefore, it is important that the city administration supports key stakeholders in taking part in the green transition to co-create action and progress.

The Climate Alliance is a partnership between the local companies, institutions and public workplaces to jointly achieve Aarhus' goal of CO_2 neutrality in 2030. The Climate Alliance Aarhus was adopted as part of the 2020 budget settlement.

The partnership creates a space for development and innovation where companies and public organizations (incl. Aarhus Municipality) come together to identify and define common issues, build common knowledge, launch tests and trials, develop recommendations and commit to common goals and actions that reduce the companies' and urban society's CO_2 emissions.

The work is driven by the companies but organized and initiated by the Mayor's Department.

Examples of results delivered by the Climate Alliance include:

- Commitment paper signed by members of the climate alliance on reducing carbon footprint in their respective companies (e.g. within transportation and logistics). At present time a total of 68 companies have signed the commitment paper. In October/November 2023, the 2nd evaluation among the signatories of the Commitment Paper was carried out, which showed that almost 46% of the companies' total car fleet had been converted to electric or hybrid models, corresponding to an increase of approx. 13 percentage points since 2022. In addition, 75% have set up charging stations at the company locations, 20 companies have introduced cycling policies, and several have introduced initiatives with regards to carpooling and the use of public transport.
- Recommendations to the city council on how the municipality can push forth and accelerate the green transition for heavy transport. More specifically the Climate Alliance suggested a payment ring around the inner city on heavy transport.

Indirect positive impacts include an increase of green jobs, knowledge sharing, relationship building and a focus on climate challenges being a common concern and not a competitive parameter

The Climate Alliance Aarhus eliminates the barriers related to:

- A lack of competencies and resources among SMEs preventing them from taking part in the green transition.

Academic Partnerships: Leading the green transition through knowledge

The City of Aarhus and Aarhus University have a common goal of strengthening Aarhus as a leading educational city, where university research and research-based educations are the basis for creating knowledge and for training highly qualified graduates for the business world with a view to creating sustainable growth.

Therefore, in 2021 they have entered into a "Partnership agreement between The City of Aarhus and Aarhus University 2022-2025", signed by the Mayor and the Rector of Aarhus University.

The City of Aarhus and Aarhus University are prerequisites for each other and will together create the best framework conditions for each other. Together, the parties will contribute to fulfilling The City of Aarhus' goal of creating a good and sustainable city for everyone, where everyone is needed, a strong business community, good urban and local environments, community and citizenship, where everyone is healthy and thrives.

The partnership agreement designates a number of strategic areas of action, including climate efforts and sustainability. Under the headline of climate efforts and sustainability, the collaboration between AU and AK involves the exchange of knowledge and experience and the initiation of joint initiatives.

Topics for collaboration and formulation of goals can be an overall goal of reducing CO_2 emissions through, e.g.:

- collaboration on the inclusion of scope 3 in the organizations' climate accounts,
- collaboration in the Climate Alliance (Aarhus) and Energispring,
- collaboration on joint efforts for climate-friendly transport of goods to the municipality and the university, dialogue between The City of Aarhus and Aarhus University at the faculties of Natural Sciences and Technical Sciences about a demonstration plant with a focus on research into the capture and use of CO_2

The formal partnership agreement also includes other strategic areas of action with close connection to climate and the green transition, e.g. within the areas of Water (referring to the overall common goal of a greener and more sustainable water supply) and Entrepreneurship and businesses (referring to a joint establishment of a new transversal organisation, The Link, which will strengthen innovation, entrepreneurship and growth in the Central Jutland Region and Denmark. The Link will be a physical meeting place for investors, companies and venture capital, and aims to build an ecosystem for entrepreneurship within sustainable food, Health Tech and Clean Tech, which can, for example, contribute to the green transition).

The partnership agreement consists of a number of concrete initiatives with individual targets. Specific collaboration constellations and actors are also linked to each initiative.

The Green Academy: Educating for a green future

The Green Academy is a 9-week company-oriented case course that upskills and matches highly educated unemployed people with companies that would like help with a green transition. The course consists of 5 weeks of teaching in green conversion of companies and 4 weeks of company internship.

The participants are matched in interdisciplinary groups with a company for which they develop a sustainability report during the course. The sustainability report is a plan for the company's future work towards more sustainable production and operation. The plan must map out possible measures and show a concrete action plan for implementation. It can be both large innovative initiatives and small actions such as being more energy efficient.

The project participants gain insight into and experience with e.g. Calculation of CO_2, Circular economy, Sustainable business development, Communication, CSR and ESG, and how to mobilize and help companies to promote the sustainable agenda.

Indirect positive impacts include reducing unemployment, increasing knowledge about the green transition in companies (including SMEs), promoting the sustainable agenda and creating value for the company.

The Green Academy eliminates the barriers related to:

- A lack of competencies and resources among SMEs preventing them from taking part in the green transition.

CO-SHAPE: Co-creating, co-designing and co-planning

As cities experience increased pressure on land use and the need to produce renewables locally, CO-SHAPE tests the application of a co-creation model in the establishment of Energy Park Spørring in a peri-urban area of Aarhus Municipality. By engaging locals, energy developers, the authorities, and architects, CO-SHAPE pilots a co-designing approach to planning the landscape through synergistic renewable energy sources and sustainable land use. CO-SHAPE plays a major role in the transition of the area and contributes substantially to Aarhus' net-zero goals by 2030.

A major outcome is a Comprehensive Plan designed to guarantee that future developments are implemented holistically, integrating synergies and sector coupling. The comprehensive planning method is replicable to similar urban typologies across Aarhus, DK, and Europe, and CO-SHAPE demonstrates how cities may reconcile green transition and climate mitigation action with liveability.

The project reaches its objective by employing three levers of change: governance, participatory democracy, and capabilities through the following activities: Co-creation, Technical energy planning & Sector coupling, Scenario-building in the Landscape, Comprehensive Plan, Compilation of Learnings & Transfer of Knowledge, Energy Park Spørring is an energy symbiosis planned on 1,000 ha of land to combine renewables and land use practices. The elements consist of a biogas plant with opportunities for CCUS, and pyrolysis; a PV park (200+ ha); Power-to-X from offshore wind; production of grass protein (utilized in the biogas plant and as groundwater protection); a biochar facility for carbon-capture in agricultural soil.

The park has an annual reduction potential of over 100.000 t CO_2e from the industry, energy, and agricultural sectors combined. This corresponds to approx. 10% of Aarhus' annual emissions.

Indirect positive impacts include nature restoration, new forests, and more attractive communities.

CO-SHAPE eliminates the barriers related to:

- Insufficient governance tools to implement comprehensive planning.
- Residents' negative attitudes towards living near energy projects.
- A lack of competencies and cross-departmental cooperation practice in comprehensive energy planning and sector coupling within the city administration.

Please consult the reference list for link to further information on the project.

LIFE ACT: Collaboration, acceleration and action

All of Denmark's 98 municipalities have climate action plans compatible with the Paris Agreement. This is an important step towards making the necessary decisions to mitigate new climate changes and ensure adaptation to the climate changes we know are coming. The municipalities have allocated funds for actions based on their climate action plans. However, a number of barriers delay or prevent necessary measures from being initiated.

LIFE ACT is created to act on this and includes e.g.:

- Money to develop solutions that do not yet exist.

- Better collaboration on how existing solutions can be adapted to current needs.
- Development of a better framework for collaboration across disciplines and geography.

LIFE ACT will accelerate the implementation of municipal climate action plans nationally by creating partnerships composed of all relevant stakeholders. The project focuses on the problems that the individual municipality cannot solve, but which can only be solved in broader collaborations.

The name, LIFE ACT, indicates that the project is seeking funding from the EU's LIFE program. ACT stands for Action for Climate Transition.

The project has a total budget of just over DKK 200 million (apprx. € 27 mil.) with a 60% grant from the EU LIFE program. The project is planned to last eight years.

Indirect positive impacts include e.g. collaborative synergies, sharing of knowledge and experiences, capacity building for all relevant actors, promotion of the green agenda.

5 Outlook and next steps

This document constitutes the first draft of the CCC Action Plan and builds on the *Climate Strategy Agreement: 2025-2030* and the extensive background material on which the agreement is partly based. The final climate action plan is expected to be submitted to the City Council at the end of 2024. This time lag between the City Council's endorsement of the final Climate Action Plan and the deadline for the CCC Action Plan means that this current first draft has certain shortcomings,

In this CCC 2030 Climate Neutrality Action Plan, weaknesses and deficiencies have been identified that could strengthen implementation. This is particularly relevant within Monitoring, Evaluation, and Learning. Despite a well-established data analytical and climate-economic procedural approach to climate work in Aarhus, there is a need for further strengthening and prioritization in this area in future iterations. Below, the specific areas that will be the focus for future iterations, and which have been addressed throughout the plan, are summarized:

- Set specific targets – qualitative as well as quantitative – for outcomes to ensure the ability to evaluate on the quality of the outcome reached, and secure relevant and accessible data sources.
- Ensure an even further integration of the climate actions into the Aarhus Goals, including an assessment of the need for supplementary indicators for a general monitoring of the greening of the Aarhus Goals and to assess whether special measurements must be made to ensure a just transition.
- Assess the need for supplementary – qualitative as well as quantitative – indicators for monitoring specific co-benefits, and secure relevant and accessible data sources.
- Update and refine the current reporting practice to comply with the special challenges and action portfolios that are part of the CCC 2030 Climate Neutrality Climate Plan. Currently, considerations are made with regards to the possibility to develop a digital application, which allows for real-time monitoring and invites to reflexive learning and continuous adjustments.
- Elaborate in detail on all climate actions – including those related to mobility (cf. *the Green Mobility Agreement*, August 2024) – when the coalition parties have approved the total climate action portfolio.

6 Additional sources of information

Please consult the electronic resources provided below for additional insights into the City of Aarhus:

- Aarhus in Numbers provides direct access to the figures that Aarhus City Council also uses to make decisions on the basis of (in Danish): AARHUS_I_TAL (aarhuskommune.dk)
- Climate Action Plan 2021-2024: Green Transition in Aarhus: Green Transition in Aarhus
- *Climate Strategy Agreement: 2025-2030*
    - Danish version: samlet-klimaaftale-underskrevet.pdf (aarhus.dk)
    - English version: climate-neutral-aarhus-2030.pdf
- *Green Mobility Plan Agreement: 2025-2030* (only in Danish): Aftale om grøn mobilitetsplan
- Information about the CO-SHAPE project: CO-SHAPE – CO-Shaping Areas in Peri-urban Environments - Aarhus School of Architecture
- Latest figures and statistics on car traffic, bicycle traffic and infrastructure in Aarhus (in Danish): Infrastruktur og trafik (aarhus.dk)
- Policy for active citizenship: Politik for medborgerskab (aarhus.dk)
- Policy for nature and greenery: A GREENER AARHUS
- Recommendations from the citizens' Climate Assembly (in Danish): klimaborgersamlingens-anbefalinger-marts-2022.pdf (aarhus.dk)
- Reports prepared based on involvement activities with:
    - Aarhus' green associations and communities
    - Families with children
    - Children
- The Children and Young People's Climate Plan (in Danish): Børn og Unges Klimaplan (aarhus.dk)
- The Citizens' Climate Assembly (in Danish): Klimaborgersamlingaarhus
- The climate adaptation strategy (in Danish): klimatilpasningsstrategi-aarhus-med-mere-blaat-2020.pdf
- The extensive background material on which The *Climate Strategy Agreement: 2025-2030* is partly based (in Danish): Ny Klimaplan (aarhus.dk)
- The mandate for Climate and Sustainability as a Wicked Problem (in Danish): Den globale klimakrise 2023 (aarhus.dk)
- The plast strategy 2020-2025 (in Danish): Plaststrategi Aarhus kommune (e-pages.dk)
- The shared narrative about Aarhus Municipality's work with climate, biodiversity and afforestation (in Danish): En del af løsningen (aarhus.dk)

- The waste plan 2021-2026 (in Danish): affaldsplan_2021-2026_paavejmodcirkulaertaarhus.pdf
- The Wastewater Plan 2021-2026 (in Danish): spildevandsplan_2021-2026-vedtaget-25-maj-2022.pdf

NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

Climate City Contract

2030 Climate Neutrality Commitments

Climate Neutrality Commitments of

the City of Aarhus

CITY OF AARHUS

tZeroCities has received funding from the H2020 Research and Innovation
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1 Introduction

On 29 April 2024, the coalition parties signed a new political agreement Climate Neutral Aarhus 2030. Central to the agreement is a reaffirmation of the objective that the city of Aarhus and the surrounding area must be CO2 neutral in 2030, and that we must take responsibility for reducing the most significant consumption-based emissions. With the CCC action, the political direction is translated into concrete actions.

With the plan, Aarhus demonstrates a path to achieve its high ambitions based on international standards through concrete action and joins a small group of municipalities in the world that continue to aim for CO2 neutrality in 2030. The municipality's goal of reaching net zero emissions is, however, dependent on strong and good partnerships with companies, knowledge institutions and citizens.

Together, we have reduced our emissions by 55% over the past 16 years (since 2008). We have achieved several of our climate goals, but there is still a long way to go before we reach our goal. We have provided knowledge of where the challenges are greatest and what changes the green transition requires. Our society is built around fossil energy sources, and therefore the changes are far-reaching for many of the systems we depend on in everyday life. This climate city contract shows our way to reach the goal of climate neutrality in 2030.

The climate crisis is a global crisis. Around the world we are experiencing massive floods and prolonged droughts, extensive forest fires and wild weather. 100-year events have become the norm, and climate change threatens our living conditions, from food production and water supply to safety and health. Climate change is primarily due to our extensive use of fossil energy sources, but there are also challenges with other greenhouse gases that, among other things, originates from agriculture and waste management.

On the international scene, an important step has been taken with the Paris Agreement from 2015. Here it was agreed that the global temperature increase must be kept significantly below 2 degrees, and preferably at 1.5 degrees. But the agreement alone is not enough to mitigate the crisis. The latest forecast from 2023 from the UN climate panel, IPCC, predicts that the temperature has already risen by approximately 1.1 degrees and will reach at least 3.2 degrees in the year 2100, in case the countries do nothing to further to slow the development. Further action has been taken by the EU, where a European Green Deal was approved in 2020 with plans to become a climate neutral union by 2050, and it passed the European Climate Law in 2021 with a binding target of reducing greenhouse gas emissions by 55% in 2030.

In Aarhus, climate change is experienced mainly as floods from the sea, lakes, streams, cloudbursts and groundwater rises. Aarhus lies close to the coast on a slightly raised bank and has through its urban development spread down into river valleys and other low-lying areas. We are therefore particularly vulnerable to weather conditions, which climate change is making increasingly extreme. Particularly threatened are Aarhus' low-lying city centre, areas close to groundwater at risk of flooding and existing buildings along the coast exposed to storm surges.

Like other western countries, Denmark and Aarhus have a large climate burden in relation to our population, especially due to our high consumption. According to CONCITO's updated assessment of Denmark's global consumption-based emissions, each Dane emits an average of 13 tonnes of CO2e

annually, which is about twice as much as an average world citizen, and it far exceed the sub-3 tonnes per global citizen required by 2030 to meet the Paris Agreement's ambitious 1.5-degree target. The large climate burden gives a special obligation to make an extra effort to reduce CO2 emissions as quickly and efficiently as possible.

Aarhus must be a good city for everyone, now and in the future. But the climate crisis challenges us in everything from health and social cohesion to economy and growth. Therefore, Aarhus must also be a green city. In cooperation with the citizens of Aarhus, Aarhus City Council has set a common framework for the municipality's development, which secures that Aarhus continues to be a good city for everyone. The framework is referred to as the Aarhus Goals and consist of the following five goals:

The main objective of the green transition is to reduce CO2 emissions and contribute to the national and international objectives. But the green transition must not create greater economic and social inequality. The Aarhus Goals serve as a benchmark to ensure that the green transition is just and fair. The City of Aarhus must therefore continuously ensure that its climate actions do not have social or economic side effects that affect certain citizens disproportionately, and that the good conditions for business, growth and urban development are continued.

The green transition of Aarhus must pave the way for creating value for citizens, businesses and communities, and thus acts as a lever for the Aarhus goals. If the City of Aarhus, its companies, knowledge institutions, civic society, and citizens join forces, we can not only realize the goal of a CO2 neutral Aarhus by 2030, but also together create an even better city for everyone.

One of such trailblazing endeavours where green interventions walk hand in hand with just transition and co-creation with local actors, knowledge institutions, and businesses is seen in the planning of a large energy park in the peri-urban area of Spørring. The City of Aarhus and The Aarhus School of Architecture has developed the project, CO-SHAPE, aiming to test innovative methods of sector coupling and citizen engagement. The project was funded by The Mission and received a 591,803.75€ grant. As part of the project, energy operators and locals will collectively participate in the city's comprehensive planning of the peri-area, its land use, and its energy park with renewable energy sources, in order to ensure that value is properly added back to the community.

Reaching net zero emissions requires a large portion of will and courage. And it requires action and cooperation. Politically, administratively and not least collaboratively between the city's many actors. We have a strong tradition in Aarhus to jointly develop the city – and on developing a green city. We

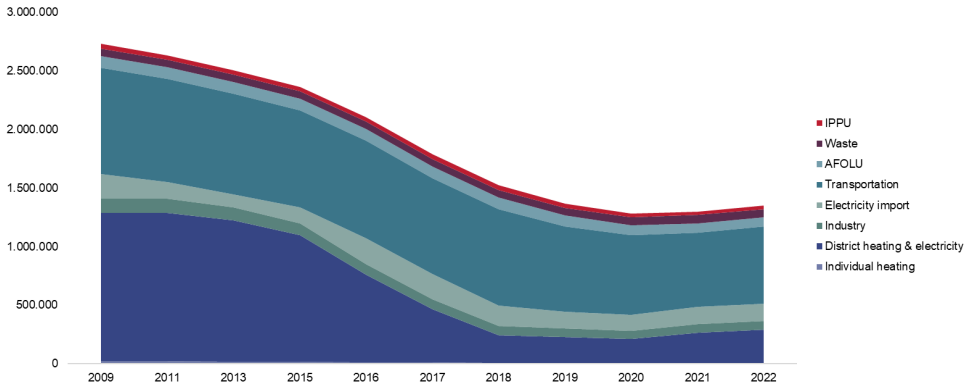
have proven this with the previous climate action plans, with concrete projects like e.g. CO-SHAPE, and we will continue to do so with the new climate action plan.

The recent political settlement for a CO2-neutral Aarhus in 2030, reiterated the city's ambitious goals which has existed since 2008. Aarhus may only be a small municipality, but the visions are high and the will to act is clear. The EU Mission for "100 climate-neutral and smart cities by 2030" highlights the importance of ambitious cities to lead the way and to show that climate neutrality is possible. By participating in this mission, Aarhus takes its position and duty seriously. By showing the way to a future of net zero emissions, we can inspire and show other cities the way to a sustainable future. We can demonstrate that the green transition can succeed.

Aarhus Climate Summit with citizens, 14 November 2023

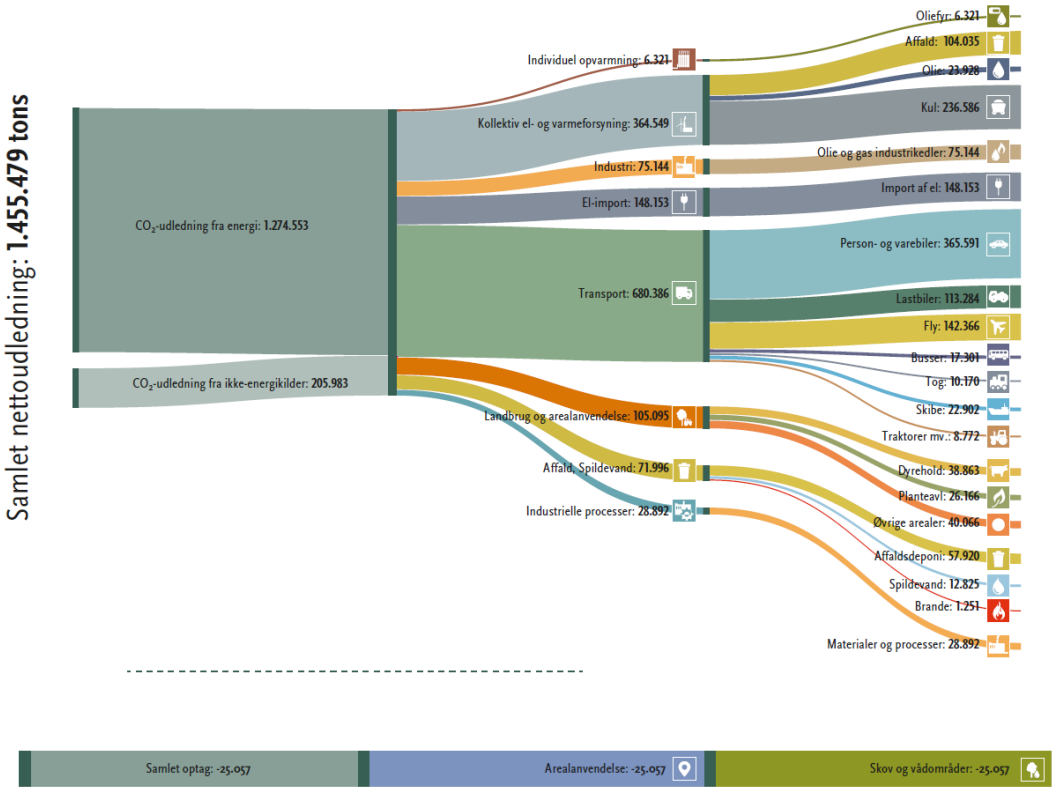
2 Goal: Climate neutrality by 2030

Since 2008, the Aarhus City Council has committed to an ambitious goal of CO2-neutrality by 2030. Many years of targeted climate work have shown that we are on the right track, as the development of the GHG emissions shows:



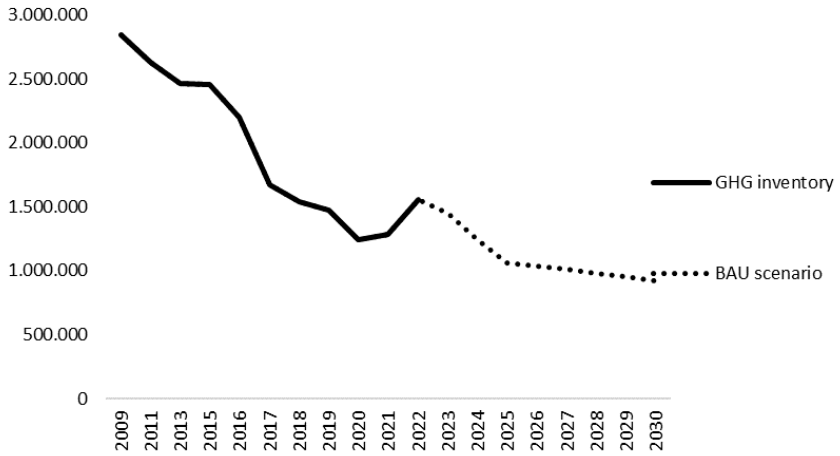
Note: GHG-emissions are calculated as three-year averages following recommendations from the Climate Council in Denmark.

The figure below provides a visual representation of the 2022-inventory divided into detailed sub-sectors:



(Note: The visualisation of the detailed 2022-inventory only exists in a Danish version)

Projections show that with the current pace of climate efforts, we fail to achieve the goal of CO2 neutrality by 2030. With the already adopted initiatives and the new national framework conditions, Aarhus will lack reducing approximately **846,000 tons of CO2 by 2030** to make our emissions within the municipal boundary (scope 1 and 2) reach net zero:



The BAU scenario is based on the Energy and Transportation sectors. For the sectors Waste, IPPU and AFOLU, it is assumed that emissions will be at 2022-level up to 2030.

In continuation hereof, it should be noted that the BAU scenario includes emissions within the entire transportation sector. However, due to separate negotiation processes and budget settlements, the strategy related to the Green Mobility area is not elaborated in this CCC. A political settlement agreement on the Green Mobility area was landed in August 2024 and a final Green Mobility Plan is expected to be presented for the coalition parties in 2025.

All the primary greenhouse gasses are included in the City of Aarhus greenhouse gas inventory (i.e. CO_2, CH_4, N_2O, SF_6, NF_3 and F-gases).

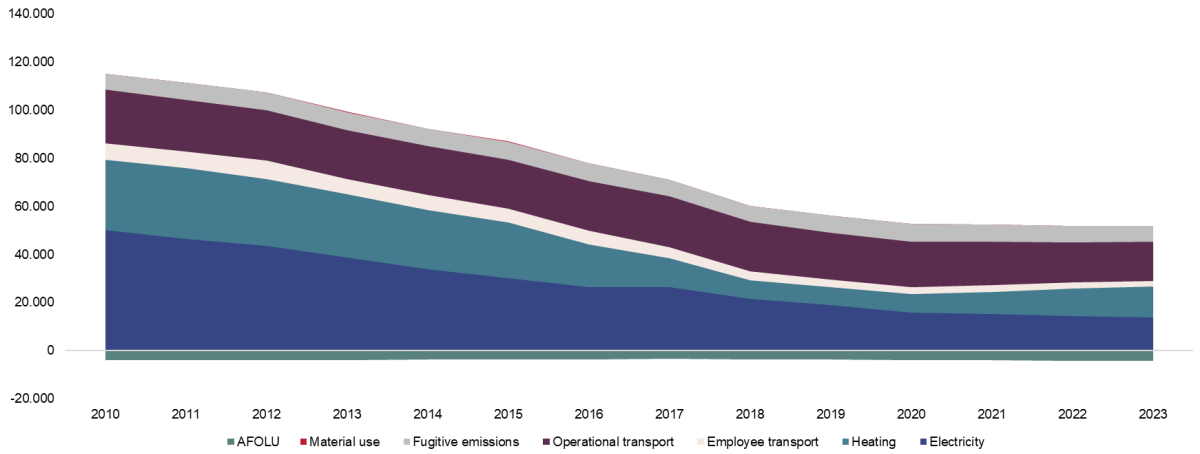
Based on the BAU scenario, the Climate Strategy Agreement sets targets for the domains below (scope 1 and 2):

- Energy, incl. carbon capture: 405,000 tonnes (scope 1 and 2)
- Transport: 319,000 tonnes (scope 1 and 2)
- AFOLU: 79,000 tonnes (scope 1 and 2)
- Landfill and wastewater: 46,000 tonnes (scope 1 and 2)

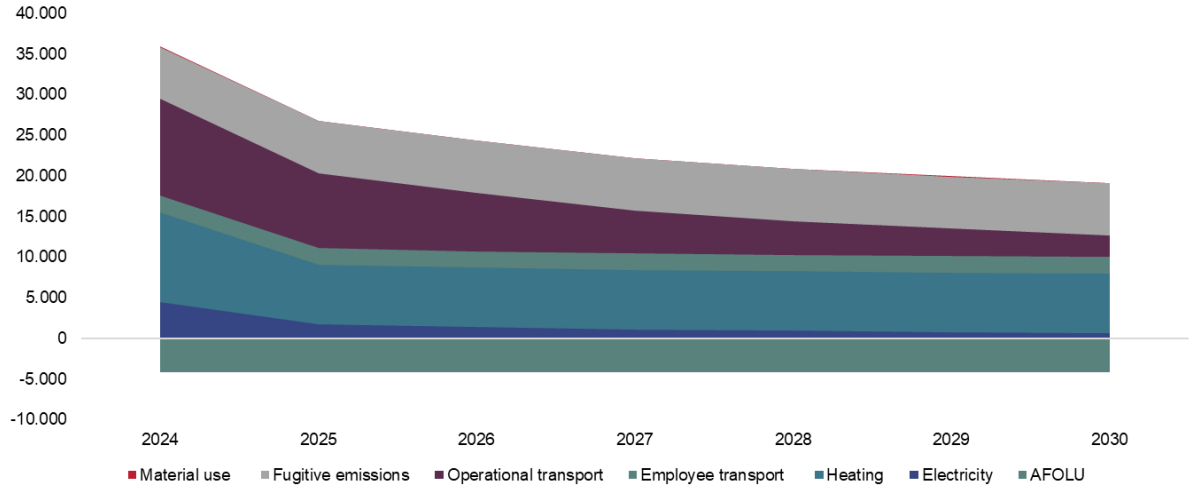
With the Climate Strategy Agreement, The City of Aarhus has decided to set emission reduction targets for some of the largest emission domains within scope 3, including:

- Construction and urban development: 40,000 tonnes (scope 3)
- Food: 24,000 tonnes (scope 3)

Finally, the City of Aarhus has decided to lead by example when it comes to the green transition. Viewed as its own entity (labelled "climate group"), the City of Aarhus emitted 45.091 tonnes of CO2e in 2023. The figure below illustrates which categories and sectors are causing these emissions as well as the historical development in emissions for the climate group.



As for the inventory above, Aarhus Municipality has prepared a BAU scenario up to 2030 for the climate group emissions. The BAU scenario is a frozen policy forecast, which considers national forecasts of energy usage, emissions factors etc.



Concerning the Climate group, the Climate Strategy Agreement sets the following target:

- Climate Group: 138,000 (scope 3)

Accordingly, a total of **849,000 tonnes of CO2e in Scope 1 and 2** will thus be saved annually, which will enable Aarhus to achieve climate neutrality in 2030. In addition, a total reduction of **202,500 tonnes of CO2e in Scope 3** will be achieved. The difference between the politically set CO2 target and the total CO2 reduction is thus due to the expectation of mitigating more CO2 than is emitted.

As an integrated part of working with the EU Mission for 100 Climate-neutral & Smart Cities and the CCC action plan – and not least as a natural extension of the previous years' climate actions in Aarhus

– the municipality is currently working on defining co-benefits. The more difficult and comprehensive actions towards CO2e reductions become, the more important it is to focus on the co-benefits that the green transition brings with it and thus formulate a value-based vision beyond CO2 reductions.

The green transition of Aarhus should not only contribute to realizing the national and international CO2 goals. It must also pave the way for creating value for citizens, businesses and communities, thus, act as a lever for the Aarhus goals:

How can the climate transition act as a lever the Aarhus Goals?	
A city with a place for everyone	e.g. by creating a city with space to learn and develop. A city where all citizens have the best opportunities, conditions and prerequisites to join the green transition. A city that invites all stakeholders to engage in dialogue about the climate - even when it's difficult. Or as exemplified in CO-SHAPE, funded as part of Aarhus' participation in the Mission, where citizens, architects, local farmers, civil servants, and the agricultural collaborate.
A city of community and fellowship	e.g. by creating a city where green development is something we co-create and co-shape, and where new ideas are cultivated and tried out in non-traditional ways of working. A city where fellowship is a key path to rethinking the possibilities for living in and developing our city together. Or as exemplified in CO-SHAPE, by co-creating a comprehensive plan for peri-urban area with locals a diverse group of stakeholders.
A city where everyone is healthy, and everyone thrives	e.g. by creating a city where green lifestyles promote health, well-being and security. A city that offers the best conditions for sustainable living. Or as exemplified in CO-SHAPE, where plans are made with the agricultural sector to ensure practices that are beneficial for groundwater protection, such as the planting of grass protein.
A growing city with a strong private sector	e.g. by creating a city with sustainable growth, green partnerships and innovations driven by new sustainable business models and green workplaces. Or as exemplified in CO-SHAPE, where extensive sector coupling is facilitated and avenues for new technologies regarding PtX and pyrolysis are explored.
A sustainable city with good urban and local environment	e.g. by creating a city with thriving local areas in both urban, peri-urban and rural areas, where biodiversity and recreational areas are in focus. A city with good conditions for both people, animals, nature and water Or as exemplified in CO-SHAPE, where comprehensive planning ensures that the transformation of Spørring adds value back to the locals by e.g. increasing liveability and developing green areas.

The Aarhus goals have been developed in collaboration with the citizens and serve as the benchmark for the City Council's decisions, for the strategic directions and tactical plans that are developed by the city administration, for the everyday work of the municipal employees, and not least for practicing active Aarhus citizenship. With a direct link between the Aarhus goals and the CCC Action Plan, we therefore ensure a continued strong focus on Aarhus as a good city for everyone. And we ensure that everyone works together, for a sustainable city and for a sustainable future.

Aarhus District Heating Utillity, Studstrup

3 Strategic priorities

The GHG inventory and BAU scenarios shows the areas where Aarhus has the largest emissions. This applies to Energy, Transport, AFOLU as well as Landfill, Wastewater and Industrial Processes. The Climate Strategy sets goals for these emission domains. In addition, the Climate Strategy takes responsibility for reducing the most significant consumption-based emissions related to Construction and Urban Development as well as Food.

The domains and areas are, however, closely linked and influence each other. This means, for example, that the transformation of the energy system is influenced by and intervenes in land use, which in turn has a close link to the food area. It is therefore important to work across sectors with a view to potential synergies and well as their interrelated challenges.

Today, 82% of the supply in Aarhus comes from renewable energy sources, including biomass, which covers 63% of the need for energy. 17% of the energy is still covered by fossil energy, which is the source of emissions of 466,000 t/CO2e distributed between electricity imports, as well as the burning of coal, oil and waste.

In the 2030 projection, the energy area makes up 1/3 of the total emissions in Aarhus, if no efforts are initiated in this area. It is therefore crucial to take ambitious steps to ensure that the energy sector becomes CO2-neutral by 2030.

The climate plan must contribute to a real energy transformation in Aarhus away from both fossil energy sources and biomass. All over the world, large amounts of renewable energy are installed, but typically in addition to existing or growing amounts of fossil energy sources. In Aarhus, we want to become one of the rare examples of a real energy transformation, which phases out one type in favour of another.

But the green energy transition requires space, and the open spaces in Aarhus are limited. To meet this dilemma, it is therefore necessary to plan based on the idea of multifunctional land use, i.e. use the same area for several purposes. For example, by combining afforestation with the installation of wind turbines.[1]

The city of Aarhus consists of a combination of both rural, urban and peri-urban areas. This combination provides Aarhus with a unique space of opportunity. The large land areas, for example, offer opportunities for the establishment of larger renewable energy facilities, biogenic parks, and afforestation.

[1] It should be mentioned that the legislation in this connection prevents the possibility of using areas multifunctionally. The Green Tripartite, which consists of the Government, Agriculture & Food, the Food Federation NNF, Danish Metal, Danish Industry and the National Association of Municipalities must, however, reach an agreement on principles for recommendations and solutions on how to create areas in the future where agriculture, nature, renewable energy and recreational areas can coexist. Note further in this connection that in August 2024 the Government presented a new Ministry for Green Tripartite, which will, among other things, be responsible for climate analysis in the agricultural area, development of green technologies and bioeconomy and it must ensure progress and implementation of the agreed initiatives in the green tripartite. There is thus a great deal of political attention to ensure the right political leeway for the municipalities' green transition, including the opportunities associated with multifunctional land use.

However, these opportunities also come with a range of challenges and complexities that arise from, for example, decreasing property values because of neighbouring VE plant, the battle for land, and multi-functional land use, as well as a potentially unequal distribution between neighbourhoods with high emissions and neighbourhoods with space for renewable energy (RE). In addition, the green transition will create a fundamentally different allocation of land areas with less agriculture and animal husbandry in favour of more renewable energy plants, forests and other nature.

This poses special requirements for the green energy transition, with integrated thinking and synergies between domains, internally coordinated collaboration, and the breaking down of organizational barriers, as well as the involvement and cooperation with stakeholders to ensure democratic participation and a just transition.

The green transition is not something we as a municipality can do alone. It requires close cooperation with both commercial, political and civil actors. Therefore, green partnerships and strategic cooperation are a crucial focus area in the upcoming climate work – and a key principle for success.

Based on the above, this plan focuses on the following four strategic focus areas for realizing the neutrality goal:[2]

- Enough green energy for future needs
- Multi-functional land use
- Transversal approach to the green energy transition
- Green Partnerships

The four strategic focus areas thus form a causal chain: Because we aim to establish enough green energy for future needs, this requires multifunctional land use. And because we operate with multifunctional land-use, it is crucial to think of the entire energy sector and all domains as interconnected and integrated, and this requires that we work cross-organisationally, cross-disciplinary and across private and public institutions and across stakeholder groupings and industries. In other words, it requires strategic collaborations and green partnerships.

Below, the strategic opportunities associated with entering and facilitating new green partnerships and strategic multi-stakeholder relationships are listed and exemplified with current practice. The list is structured according to how different stakeholders can support different systemic levers. Systemic levers are the structural means of actions that preconditions the realization of direct CO2-reductions and fall first and foremost within the categories of 1) Governance & Policy, 2) Technology & Infrastructure, 3) Finance & Business Models, 4) Democracy, Social Innovation & Change, and 5) Learning & Capabilities.

1) *Governance & Policy, e.g.:*
    - Businesses: understand the specific challenges and opportunities that the green transition brings with it in relation to various industries

[2] Although the transport and mobility sector accounts for the second highest level of emissions in Aarhus in 2030 and therefore naturally constitutes a significant strategic focus area, it is not included as a strategic focus area in the first edition of the CCC Action Plan due separate political and budget negotiation processes.

- NGOs and interest organisations: secure that the interests of various actors are accommodated in the political and organizational processes
- Internal stakeholders: ensure the best possible framework for cross-functional cooperation and managerial prioritization and political support for the green agenda.

An example of how the systemic lever *Governance & Policy* is supported by collaboration with various stakeholders to push forth policy making, is the Climate Alliance Aarhus. Based on dialogues between the partnership's members, the Climate Alliance Aarhus handed over recommendations to the city council on how the municipality can push forth and accelerate the green transition for heavy transport. More specifically, the Climate Alliance Aarhus suggested a payment ring around the inner city on heavy transport.

2) *Technology & Infrastructure, e.g.:*
   - Businesses and industries and knowledge institutions: develop and test new innovations

An example of how the systemic lever *Technology* is supported by multistakeholder collaborations to ensure applied research, is the current partnership agreement between The City of Aarhus and Aarhus University at the faculties of Natural Sciences and Technical Sciences about a demonstration plant with a focus on research into the capture and use of CO2.

3) *Finance & Business Models, e.g.:*
   - Private and public investors: fund larger projects
   - Knowledge institutions: research new models for financing
   - Local communities and investors: implementation of new models for financing for local projects, for instance with local co-ownership

An example of how the systemic *Finance and Business Models* requires collaboration and is important to consider green transition processes, is within the food sector. The transformation of the food system requires the development of new sustainable business models and models for product and market innovation.

4) *Democracy, Social Innovation & Change, e.g.:*
   - NGO and interest organisations: ensure that minorities and the particularly vulnerable also get a voice in the transition
   - Citizens and local communities: engage and mobilise the public, not only inviting citizens to join the classic political consultation process or informing them about the climate work, but to active involve them

An example of how the systemic lever *Democracy, Social Innovation and Change* is driven by citizen and stakeholder involvement in the climate work is Climate Living Labs, which is open-source approach to innovation. Climate Living Labs is a Public-Private-People Participation model with a people-oriented approach where all stakeholders including government, cultural institutions, knowledge institutions private sector and civil society work together on a particular problem, issue or challenge relevant for a geographically defined area.

5) *Learning & Capabilities, e.g.:*
   - Knowledge institutions: research in new management models for handling and facilitating green transition processes and development of educational programs and further educations with inclusion of sustainability related issues, competence development/further training
   - Businesses and industries: understand current practices and key challenges concerning capacity and capabilities to ensure relevant and applied research projects and teaching programs.

Examples of how the systemic lever Learning & Capabilities gains from collaborations, include the partnership Energispring Aarhus, where building owners, together with Kredsløb, focus on energy savings through knowledge sharing and close collaboration. The partnership also includes Aarhus University; Another example is the partnership between the municipality and VIA university collage on the Green Academy. The Green Academy offers highly educated unemployed people in Aarhus a further training in sustainability, the green transition and related issues with a combination of theory and practice. The course participants act as green agents who can make a difference in the companies and organizations where they are employed. The partnership also includes internship agreements with companies.

In Aarhus, we are already well underway. We are engaged in a range of collaborations and corporations, and we have formalized strong partnerships as part of the Aarhus Climate Plan 2021-2024. With the CCC Action Plan, we will continue to strengthen and expand partnerships and collaborations with businesses and industries, knowledge institutions, cultural institutions, civil society, and citizens.

The Infinite Bridge, Aarhus

4 Process and principles

The development of new climate actions in Aarhus builds on the notion that a thorough understanding of the climate challenges from multiple perspectives and learning from past actions has significant potential to accelerate the impact of climate efforts. Accordingly, the CCC Action Plan builds upon many years of experiences. Shared knowledge and learning are therefore a focal point. A clear procedure for how we monitor, evaluate and harvest learning from our climate actions is essential to establish a solid knowledge base for action and thus ensure that we move along the best and most efficient path to climate neutrality.

But the path to CO2 reductions is not always direct. An important tool in this connection is the action's impact pathway, i.e. a review of the steps necessary to achieve the direct CO2-reduction. When Aarhus Municipality, for example, works strategically to facilitate new partnerships in the energy or transport sector, it is because partnerships are an important step towards developing a common understanding of problems, which in turn is an important step towards being able to develop and scale new technological solutions. Partnerships do not in themselves create a CO2 reduction. But experience shows that when companies join forces for e.g. green innovation or formulation of joint guidelines, then the green transition can be strengthened and accelerated. In other words, the impact pathway unfolds the story of how we expect the changes to happen.

An understanding of a climate action's impact pathway contributes to us being able to monitor an action's development and make the necessary adjustments accordingly. Instead of only measuring the effort's direct CO2 effect, which will often only be visible in the long term, we follow the impact pathway's early and late signs of change and thus get an indication of the impact of the actions. Such continuous monitoring ensures an agile climate plan, driven by knowledge, learning and data.

On an ongoing basis, we become wiser on the impact pathways – new steps are added, while others turn out to be dead ends. A climate economic approach ensures that no matter how the path winds, CO2 reduction and cost efficiency are the primary benchmarks. And always with an eye on how impact pathways also contribute to Aarhus as a good city for everyone.

The city council follows the development of the climate work closely. The Climate Secretariat (Technology & Environment) prepares, in collaboration with Budget and Plan (the Mayor's Department), an annual status in connection with the reporting on the climate accounts, which includes frozen policy forecasts for the individual domains, reduction paths and reduction targets. The concrete initiatives, their impact pathway and indicators as well as the funding are also followed up.

The annual follow-up also contains a recommendation on whether new climate initiatives are initiated or closed. Similarly, the annual budget negotiations can be used for adjustments to the investment portfolio to ensure that the political objective of climate neutrality in 2030 can be realized.

In the CCC Action Plan, weaknesses and deficiencies have been identified, especially within the area of Monitoring, Evaluation, and Learning. Despite a well-established data analytical and climate-economic procedural approach to climate work in Aarhus, there is a need for further strengthening and prioritizing this area in future iterations.

It is crucial that all actors take collective ownership and that we develop common solutions for our city together if the green transition is to succeed. As a municipality, we therefore have an important role in ensuring the best possible frameworks, structures and conditions for cooperation on the green transition – in both urban, peri-urban and rural communities, for the citizens and for businesses.

Dialogue, cooperation and co-creation are prerequisites for the green transition and a central foundation for the approach to climate work in Aarhus. With the *Aarhus Compass*, the *Collaboration Compass* and the *New Aarhus Model for Citizen Involvement* as important parts of the green transition toolbox, and with the many good experiences gained from previous climate initiatives in Aarhus, we are already well underway. With this climate plan, we must constantly become better at inviting all citizens to join the green transition to ensure that Aarhus is a good city for everyone.

With the CCC Action Plan, Aarhus Municipality will continue to work purposefully to ensure the right opportunities and conditions for everyone to take part in the green transition.

Partnerships and strategic collaborations play a central role for the climate work in Aarhus. Whether it concerns Aarhus Municipality's own consumption-based climate footprint, planning processes and policy making, and in authority-based dialogues, it is important that the Municipality leads the way by example and creates opportunities for the parties involved. It is, in other words, important that the municipality – by virtue of its role as company, authority and company owner – ensures the best possible conditions and opportunities for Aarhus' many actors to take part in the green transition. But it is also important that the municipality takes on other measures if we are to succeed in the green transition. This means taking on a more facilitating, supportive and dialogue-creating role, both in relation to citizens, local knowledge institutions, cultural institutions and companies. But it also requires the willingness of the many actors to collaborate and become part of the solution. To ensure close collaboration, local anchoring and ownership, the preparatory work for the Climate Action Plan has been made in close collaboration with key stakeholders.

We look forward to making the plan a reality. Together!

5 Signatories

The table below enlists the signatories[3] who are committing to this CCC, and thereby to help the city achieve its goal to reach climate neutrality by 2030. Specific agreements that articulate the details of the climate action(s) between the municipality and signatories are added to the individual contracts in Appendix 1 (see sample in section 6). The number and relevance of signatories' commitments is likely to increase over time.

Name of the signatory (organisation)	Sector / Domain / Level of operation[4]	Legal form	Name of the responsible person	Position of the responsible person
The City of Aarhus	Local	Municipality	Jacob Bundsgaard	Mayor of Aarhus
The City of Aarhus	Local	Municipality	Nicolaj Bang	Alderman of the Department of Technical Services and the Environment
The City of Aarhus	Local	Municipality	Martin Østergaard Christensen	CEO, City Manager, Mayors Department
The City of Aarhus	Local	Municipality	Henrik Seiding	CEO, Department of Technical Services and the Environment
Aarhus Business Contact Committee	Local	Partnership	Jacob Bundsgaard	Mayor of Aarhus
Aarhus School of Architecture	International	University	Kristine Leth Juul	Rector
Aarhus University	International	University	Kristian Thorn	University Director

[3] Climate City Contract signatories may be individuals or organisations. They ideally include national and/or regional governments, for example concrete agreements/ commitments made through the multi-level governance engagement processes supported by NetZeroCities, CapaCities, and other emerging national level initiatives.
[4] Please mention if the organisation is active at local, regional, national, or international level.

AURA Energy	National	Company	Carten Höegh Christiansen	CEO
Erhverv Aarhus/ Business Aarhus	Regional	Partnership	Poul Dalsgaard	CEO
INNARGI, Geothermal Energy	National	Company	Asbjørn Haugstrup	Chief External Relations Officer
Kredsløb Waste and Energy Utility	Regional	Municipality owned Utility	Bjarne Munk Jensen	CEO
Lifestyle And Design Cluster	International	Cluster Organisation	Betina Simonsen	CEO
NRGI Energy	National	Company	Jacob Vittrup	CEO

AARHUS KOMMUNE

Climate-neutral Aarhus 2030

CLIMATE STRATEGY AGREEMENT: 2025-2030

Aarhus, 29 April 2024

CLIMATE STRATEGY AGREEMENT: 2025-2030

We are in the midst of a global climate crisis with local impact right here in Aarhus: severe weather, flooding and prolonged periods of drought. These challenges are caused by globally high levels of CO_2 in the atmosphere, and emissions continue to increase. We must act now.

Denmark is committed to taking the lead on the green transition. And the climate effort of the City of Aarhus can play a central role. We are a small metropolis. But by charting our own path to a CO2-neutral future, we can inspire other cities and show them the way to a sustainable future.

Since 2008, the Aarhus City Council has been committed to an ambitious target: a CO2-neutral Aarhus in 2030. The coalition parties behind this agreement confirm their commitment to the 2030 target.

According to our projections, if we continue the current pace of our climate effort, we will fail to reach our goal of CO2 neutrality in 2030. With the initiatives already agreed on and the new national framework conditions, the City of Aarhus will fall short of achieving zero emissions (Scope 1 and 2) within municipal borders in 2030 by about 846,000metric tons of CO2.

What this means is that in order to achieve a successful green transition, additional political action is necessary. The coalition parties aim to set a new course for the City of Aarhus' climate effort and to ensure that we will be able to achieve the necessary carbon reductions to achieve CO2 neutrality. This agreement on climate strategy for 2025-2030 creates a framework for reaching this goal.

A decisive event that paved the way for the climate strategy was the adoption of a climate-economic approach by a majority in the City Council in the budget agreement for 2024. A climate-economic approach involves prioritizing the initiatives that generate the greatest possible CO_2 reduction for the money. This will provide the best prospects of reaching the 2030 target and making a genuine difference for the climate.

The coalition parties also agree that the climate strategy must also take responsibility for the most significant sources of consumption-based emissions. The coalition parties also agree that the guiding principle with regard to consumption-based emissions must be a focus on the greatest possible CO_2 reduction for the money.

Climate is an issue that affects every aspect of our society. We will only reach our goal of climate neutrality through a joint effort involving government, the business community, knowledge institutions, citizens and civil society, creating the best possible conditions for setting a common course, developing new technology and green innovation, as well as changed habits and behaviors.

This is why civic engagement is a central pillar of a new climate strategy. The coalition parties agree that targeted civic involvement initiatives in connection with the different domains and sub-targets, in order to ensure that dialogue take place on the premise of the issues that affect citizens, businesses and organisations.

The political agreement will be implemented in the form of a climate action plan drafted by Technical Services and Environment in collaboration with the Mayor's Department. The climate action plan will be presented to the City Council before the end of 2024.

It is vital that we ensure that real reductions are achieved as quickly as possible, so that we set our course towards climate neutrality from the very beginning. To this end, the coalition parties agree to revisit the climate effort annually. On the background of the annual greenhouse gas emissions report and frozen policy prognoses, the coalition parties will consider any necessary adjustments and new

actions on the journey towards climate neutrality in 2030.

Strategic focus areas

ENERGY

TRANSPORT

AGRICULTURE, FORESTRY AND LAND USE

LANDFILLS AND WASTEWATER

FOOD

CONSTRUCTION AND URBAN DEVELOPMENT

CITIZENS AND THE

BUSINESS COMMUNITY

CLIMATE GROUP

ENERGY

In 2022, the energy sector in Aarhus emitted 698,000 metric tons CO2e. Today, about 70% of Aarhus' energy needs are met by sustainable energy sources, including biomass, which covers 69% of the municipality's energy needs. Aarhus is committed to taking the next steps toward an even greener energy supply system, and with 'the green district heating of the future', we can phase out fossil fuels and get down to 15% biomass in 2030.

To achieve climate neutrality in 2030, the coalition parties have agreed that the energy sector must contribute negative emissions of approx. -259,000 metric tons CO2e. This corresponds to a reduction of approximately 405,000 metric tons of CO2e incl. CO2 capture and storage.

At the same time, power consumption will increase significantly in future. In 2022, Aarhus consumed 1,700 GWh of power, and an increase in consumption is projected, reaching 2,900 GWh in 2030. It is thus absolutely crucial that we expand renewable energy capacity in order to meet the demand for power in Aarhus and ensure security of supply. The coalition parties agree that Aarhus must increase the amount of power generated within the municipality in order to ensure security of supply and meet future needs.

The Green District Heating of the Future

The Green District Heating of the Future project is a prerequisite for reducing the use of biomass for heating in 2030 and represents a significant contribution to phasing out coal. In particular, the Green District Heating of the Future will contribute to phasing out wood pellets as fuel, which currently account for 1.5 million metric tons of C02. The coalition parties agree that Kredsløb, the municipal utility, should pursue technologies that enable the greatest possible reduction in biomass fuels.

Geothermic district heating will make it possible to exploit heat from subterranean water as a sustainable source of energy that is available every day, all year round. Kredsløb and Innargi have drilled two test wells, one on the Port of Aarhus and one in Skejby. Results from both test wells have been positive, and the project will continue. The objective is to begin supplying geothermal heat to residents of Aarhus in the fall of 2025.

In the long-term, the objective is a heating system in Aarhus that does not use any biomass that is not captured using CCS, with the exception of necessary waste incineration. The coalition parties recognize that hay biomass in Lisbjerg will continue to be a component of the district heating system for some years. The Green District Heating of the Future project will lead to a 28,000 metric ton reduction of C02 in 2030.

CO2 capture and storage (CCS)

A C02 capture facility at the Lisbjerg Plant is projected to be able to capture approx. 335,000 CO2e annually. CCS is thus a decisive factor in our efforts to achieve climate neutrality in 2030 and contribute to negative emissions from the energy sector. The coalition parties agree that Kredsløb must apply to establish a CCS facility, including that the City of Aarhus may provide a municipal guarantee in connection with the construction project. The coalition parties emphasize the importance of collaboration with external partners in this connection, as well as the expectation that operations achieve financial equilibrium, government funding taken into account.

Due to the fact that the by-laws for Kredsløb stipulate that owner approval is necessary for investments over DKK 500 million, the City Council will have to make a final decision on the approval of the Circuit's CCS facility. If needed, a municipal guarantee will be considered at the same time.

A prerequisite for the introduction of CSS is that Kredsløb must be able to sell C02 credits in order to ensure the financial viability of the project. Of the 335,000 metric tons of C02e captured, approx. 25% will come from fossil sources and 75% from biogenic sources. The coalition parties support allowing Kredsløb to sell CO2 credits from biogenic sources to help finance the project. The coalition parties agree that the market for C02 credits is immature, that principles for C02 credits must be developed, and that the City Council will be responsible for setting the framework for the responsible sale of credits that will continue to ensure the necessary financing. The coalition parties also support Kredsløb applying for funding from the government operating grant pool in order to help fund the start-up of CSS.

The coalition parties also acknowledge that the effectiveness of CCS facilities has not yet been demonstrated on a large scale, and that there is a risk with regard to technology, transport and storage. The adoption of CCS technology is thus associated with significant uncertainty. For this reason, the coalition parties request that Kredsløb, Technical Services and Environment and the Mayor's Department provide regular status reports to the City Council on the progress of the project, including in the event that it is considered necessary to discuss risks with the coalition parties.

The coalition parties will also explore the possibilities for additional CCS projects elsewhere in the municipality than at the Lisbjerg Plant. Additional CSS facilities could potentially reduce the municipality's total C02 emissions. The coalition parties agree that additional CSS facilities must not impose restrictions on the phasing out of biomass in connection with the Green District Heating of the Future.

For this reason, the coalition parties request that Technical Services and Environment and the Mayor's Department explore potential synergies between the Lisbjerg Plant and potential additional CSS facilities elsewhere in the municipality, including but not limited to in connection with the biogenic energy park or in connection with private point sources. CO2 reduction from additional CCS facilities will be included in the CO2 buffer. A status report must be submitted to the coalition parties in the third quarter of 2024.

Accelerated deployment of sustainable energy (solar and wind)

Nationally, the target is to quadruple onshore sustainable energy production by 2030. The coalition parties agree that the City of Aarhus must contribute to reaching this target. The City Council has already earmarked 1,200 ha for the establishment of renewable energy facilities (RE) in the form of solar energy. The coalition parties that the earmarked locations are to be fully exploited, corresponding to installation of solar panels with the target of producing 1,000 GWh annually in total.

The coalition parties agree that it is necessary to find many locations as possible for solar energy, and that installing solar panels in areas with vulnerable groundwater reserves would be advantageous, as this will achieve synergy effects. The coalition parties agree that the solar panels must be installed so as to prevent seepage of substances harmful to groundwater. The coalition parties agree that the ambition is to earmark an additional 400 ha for solar cells, and that possible locations will be explored in connection with the drafting of the 2025 municipal plan. In connection with the drafting of the municipal plan, new and more flexible tools must be explored in connection with the selection of locations.

A number of the 20 wind turbines that currently provide Aarhus with green power are inadequate or obsolete. The coalition parties agree to replace the existing wind turbines in the municipality with new turbines on the same sites, and in this connection to promote dialogue with the owners of the turbines

and work to promote better framework conditions that provide incentives for owners to invest in new,

modern wind turbines. Replacing 5 existing wind turbines and installing 2 new 150-meter wind turbines on existing sites would generate enough power for an additional 2,500 households (10 MW).

The coalition parties also agree that in connection with the drafting of the 2025 municipal plan, sites for wind turbines will be proposed with a view to installing an additional 8 new wind turbines in the City of Aarhus that would be able to generate power for an additional 16,000 households (40 MW) in Aarhus. Sites in Vosnæs and Kasted have already been earmarked with capacity for a total of 5 wind turbines. The Danish Liberal Party has previous expressed opposition to the installation of wind turbines in Vosnæs and Kasted but accepts that the majority agrees to continue work towards installing wind turbines in these locations.

Site identification for and installation of 3 additional wind turbines remains to be carried out. The coalition parties agree that installing wind turbines on the harbour is not a precondition for the agreement. In addition, the Liberal Party's agreement is conditional on the new 3 wind turbines being installed as replacements for existing wind turbines.

Installing new wind turbines may involve purchase or expropriation of homes in the countryside in a radius of 600 m to the wind turbine area (for wind turbines with a total height of 150 m), in addition to deprioritizing buffer zones around larger towns.

The coalition parties request that Technical Services and Environment explores the possibilities for and consequences of a new model for RE planning that can deliver greater speed in land-use planning, clear prioritization of different land-use considerations and to a higher degree accommodate citizen-driven energy communities. Designation of sites for solar cells, for example, would take place in dialogue with private actors and relevant stakeholders, including the agricultural sector.

It is estimated that the combination of 1,600 hectares of solar energy and 10 new wind turbines combined would lead to a reduction in CO2 emissions of 12,000 metric tons in 2030 and generate approx. 1,450 GWh annually, which corresponds to about 50% of Aarhus' projected electricity consumption in 2030.

The coalition parties aim for Aarhus to generate more of its own electricity in future and have therefore agreed to set a minimum target of 1,750 GWh. As Aarhus Municipality's electricity consumption increases, efforts must be to establish additional renewable energy, with the goal of reaching 65% self-sufficiency. The coalition parties agree that this presupposes that Kredsløb can deploy RE throughout Denmark. For this reason, the coalition parties request that Technical Services and Environment and Kredsløb present a plan for deploying renewable energy in the form of solar and wind energy outside the municipal boundaries to achieve the target.
Any CO2 reduction that would be possible to include in the municipality's greenhouse gas emissions report will be included in the CO2 buffer.

The coalition parties note that Technical Services and Environment has already received a considerable number of applications for the installation of solar cells. In 2022, the City Council allocated DKK 7 million annually for RE case processing in the period 2023-2027. The coalition parties agree to extend the RE case- processing effort, and the coalition parties request that Technical Services and Environment speed up regulatory processing and increase simultaneous citizen involvement.

The coalition parties note that the national energy crisis staff (NEKST) intends to reduce barriers to faster deployment of RE. The coalition parties also agree that green funding pools should benefit local communities and neighbors of RE installations to an even greater extent, including with a focus on biodiversity, and that steps should be taken towards increasing the available forms of neighbor compensation, for example through sale of electricity from RE installations to their neighbors.

Energy efficiency improvements and solar cells on roofs

Through the Aa+ project, the City of Aarhus has implemented ambitious energy-efficiency retrofits. With the formation of Aarhus Ejendomme, it is now possible to carry out additional energy-efficiency retrofits on an even larger scale and contribute to the implementation of the EU's energy efficiency directive, which sets a target of overall energy savings from all buildings of 11.7% for the period 2024-2030. This goal applies to society as a whole and includes citizens and businesses in addition to the municipality. To achieve this target, a partnership with business and industry to reduce energy consumption will be established. In addition, the municipality will launch a public information campaign focussing on energy-efficiency retrofits. In total, energy efficiency retrofits will lead to a reduction of 16,000 metric tons of CO2e annually.

The City of Aarhus has taken the lead and has already formed a solar cell entity that will install solar cells on the roofs of all municipal buildings where this is financially feasible. The solar cell entity is expected to install 71,000 m2 solar cells on about double the roof area. Electricity production from 2029 with 71,000 m2 is estimated at 12.8 GWh annually. The projected CO2e reduction in 2030 is estimated at approx 100 metric tons.

The private sector is taking a proactive approach and is offering installation of solar cells on existing private detached houses. Before the summer holiday, the City of Aarhus will launch a website that can calculate the solar cell potential for all roof surfaces in the municipality, including private homes. The coalition parties are committed to promoting the expansion of solar cells in all new and existing urban and commercial zones, and to this end a partnership will be established between the City of Aarhus and relevant contractors, developers, and advisers. The coalition parties are also committed to providing support for the installation of solar cells on the roofs of housing associations and cooperatives. The coalition parties will also work to ensure that the state provides the necessary national framework for a rapid energy efficiency effort, including solar cells on roofs.

Biogenic energy park

Biogenic energy parks use biological materials as fuel to produce energy, for example manure from livestock, crop residues or other organic waste. A biogenic plant can contribute to strengthening the link between agriculture and the energy sector. The coalition parties agree to work to promote the establishment of a pyrolysis plant that can sequester up to 50% of the biomass carbon in biochar, which means it will not be returned to the atmosphere, in addition to a grass protein plant that produces a sustainable feed for swine. It is estimated that the annual CO2e effect will be approximately 47,000 metric tons of CO2e in Scopes 1+2 and 6,000 metric tons in Scope 3. At the same time, the coalition parties will also explore the possibility of implementing CO2 capture in connection with the establishment of the biogenic energy park. In addition, it must be ensured that any emissions of environmentally harmful substances must remain below threshold values.

TRANSPORT

The transport sector will account for two-thirds of all CO2 emissions in the 2030 projections. This means that it will be the largest source of CO2 emissions in the City of Aarhus. Despite the fact that more residents are driving EVs, most busses are electric and air transportation has gotten greener, the transport sector
emitted 729,000 metric tons of CO2e in 2022. With changes in the framework conditions for transport, the transport sector will still emit 549,000 metric tons in 2030. To reach the goal of climate neutrality in Aarhus, a transition from fossil transport to greener forms of transport is necessary: collective transport, cycling and walking, along with EVs.

Being able to get around easily and quickly is decisive for the quality of everyday life in the City of Aarhus – whether it's the commute to work, the bike ride to school or a walk in the city centre. A reduction of CO2 from transport must take the mobility perspective into account, to ensure a focus on promoting accessibility and a high-quality urban environment for residents, commuters and visitors.

The coalition parties agree that the point of departure for the green mobility plan is an annual reduction of road transport of
270,000 metric tons CO2 towards 2030. This means that the target for the transport sector as a whole is total maximum annual C02 emissions of 230,000 metric tons in 2030, taking into account improvement achieved via the national framework conditions. There will additionally be a reduction of 44,000 metric tons from aviation and shipping as well as 5,000 metric tons from sustainable soil handling.

Aarhus is a good and attractive city to live and work in. The conciliation parties acknowledge that with the growth in the number of inhabitants and jobs, the pressure on the mobility system in Aarhus will increase significantly in the coming years, and that a number of mobility measures must be initiated in response. The coalition parties thus agree that a green mobility plan must be developed with a focus on active forms of transport such as cycling and walking and a sustainable city with collective transport.

The coalition parties also agree that the prerequisite for the green mobility plan is an ongoing assessment of whether new technologies or changed framework conditions can lead to improvements.

The coalition parties see the development in the number of EVs as positive, and thus it is assumed that at least 37% of all vehicles in Aarhus in 2030 will be EVs, which will result in an additional reduction in CO2 emissions of
56,000 metric tons annually. This reduction will be included in the mobility negotiations. If this assumption is not realised, the shortfall will have to be made up within the transport sector. A transition to EVs will not lead to any improvements in mobility.

The coalition parties agree that emissions from the transport sector are significant in relation to consumption-based emissions. The coalition parties thus request that Technical Services and Environment and the Mayor's Department draft a recommendation during the first year of the climate

action plan that sets out proposal for the development of a data-based baseline for achieving reductions win consumption-based emissions in the transport sector.

Emissions from aviation and shipping will, according to projections, account for approx. 30% of the transport sector's emissions in 2030. The coalition parties thus agree to work to promote the electrification of the aviation and shipping to the greatest possible extent, and for the replacement of fossil fuels by more climate-friendly alternatives. The coalition parties agree to reduce emissions by 15-30% annual from 2030 onwards through partnerships with actors in the industry.

AGRICULTURE, FORESTRY AND LAND USE

Conversion to forest and nature

The conversion of agricultural land into forest and natural habitats can be achieved, among other things, through the establishment of 'blue-green parks'. These parks protect groundwater, reduce nutrient leaching and provide recreational opportunities and water retention capacity. The coalition parties agree to earmark a total of 8,000 ha (including existing natural habitats) as blue-green parks in the 2025 municipal plan. The blue-green parks will mean the conversion of 4,000 ha of agricultural land to natural habitats, woodland and other groundwater-protective uses. The coalition parties agree to earmark an additional 4,000 ha, bringing the total ambition for woodland and natural habits in Aarhus to 16,000 ha, which corresponds to one-third of the municipality's area. To achieve this, it will be necessary to think in terms of multi-functional land use, with multiple uses on the same site.

The coalition parties acknowledge that a transformation of this scale will take time and will be difficult. These targets will be reached through a collaboration with landowners, agriculture and businesses. The coalition parties request Aarhus Vand to contribute to the realisation of the blue-green parks in the earmarked areas, and that groundwater protection measures are implemented in these areas. In addition, the coalition parties also require Technical Services and Environment to present an ambitious, balanced strategy for groundwater protection within a radius of 300 m from a water bore in connection with the 2025 municipal plan, and that this strategy become the basis for the practice of both Technical Services and Environment and Aarhus Vand with respect to groundwater protection.

Reforestation, with diverse species-rich stands of untouched forest, will also contribute to groundwater protection and groundwater formation, biodiversity, water retention, outdoor recreation and public health.
At the same time, these types of forest are an efficient, long-term carbon sink. The amount of carbon sequestered depends on the tree species planted and how the resulting wood is used.

The greatest CO2 impact can achieved in the short term by private operators planting fast-growing commercial forests, which also have the potential to provide valuable material in the furniture, paper and textile industries, and especially in the construction industry, where wood is increasingly in demand as a sustainable building material. The amount of carbon sequestered depends on the tree species planted and how the resulting wood is used.

The conciliation parties agree to initiate the establishment of 2,500 ha of untouched forest and 1,500 ha of natural habitats in the blue-green parks. In addition, private commercial forestation projects on 1,200 ha of privately-owned sensitive soils outside the blue-green parks, as well as 300 ha of forest in the 'Green Denmark Map'.
In addition, the possibility of establishing an additional 300 ha of commercial forest will be explored. The CO2 reductions from this will be included in the CO2 buffer. Commercial forests will be established with a view to partnerships with the private sector to make us of these forests, for example in construction. A priority will be placed on planting untouched forests as close to urban areas as possible, to enable residents to use them for recreational purposes to the greatest extent, while also maintaining a focus on biodiversity.

It is estimated that multifunctional forests will sequester 15 metric tons of CO2e per ha annually, a total of 60,000 metric tons CO2e annually; the full effect will only be achieved after many years of growth. The carbon sequestration effect in 2030 is estimated at 30,000 metric tons of CO2 annually,

depending on the speed of establishment, the land on which the forest is established and the type of forest. Reforestation has a long-lasting effect and is costly. See the section on the funds for the land fund regarding financing.

Set-aside of lowland soils and holistic planning

When carbon-rich lowland soils are drained for cultivation, they are oxygenated, and emit large amounts of greenhouse gases to the atmosphere. The City of Aarhus has already planned the set-aside of specific areas on 500 ha of lowland soils: the lowland soils will be taken out of cultivation and the water table will be raised in these areas in order to reduce CO2 emissions from agriculture.

The coalition parties agree to a more ambitious target for set-aside of lowland soils, from 500 ha to 1,300 ha of lowland soils, in addition to ensuring rapid processing of applications by the City of Aarhus. It is expected that 1,000 ha will be financed by the state and 300 ha financed by the City of Aarhus.

The projects are conditional on voluntary agreements being made with the local landowners. The possibilities and consequences in relation to purchasing buildings and stables and the like are also being explored. The initiative will lead to an annual reduction in CO2e of 15,000 metric tons in 2030. Technical Service and Environment estimates that over a number of years, it will become necessary to add approx. DKK 200 million to the land fund. See the section on funding for the land fund in relation to assigning funding.

The green transition of the countryside will require that all initiatives are implemented at once within a very few years before 2030. The coalition parties agree that a tool must be developed to support the creation of a master plan for the countryside that will facilitate the implementation of nature restoration projects, local development plans, development projects and construction projections within geographically defined locations.

Agricultural holdings and climate monitoring

Agriculture in the City of Aarhus emits approx. 61,500 metric tons of CO2e. Reductions can be achieved by strengthening the dialogue between agriculture and the municipality, including by having climate as a recurring element in monitoring and regulatory approval process. Climate action plans for both livestock and crop-producing farms must also be developed. A partnership with central players in the agricultural sector and across municipalities and industries must be established with a view to promoting climate-optimized food production.

The coalition parties agree that Agro Food Park in Skejby has great potential to lead the play towards the food system of the future. The coalition parties are thus prepared to promote a new ‘Climate, Health and Food Systems Valley’ in Skejby with a view to maintaining the Aarhus region’s position as a world leader in this area. A reduction of 1,000 metric tons of CO2e annually is estimated by 2030.

LANDFILLS AND WASTEWATER

Discharge from landfills, biocover and ReWater and industrial processes

It is estimated that on an annual basis, approx. 25,000 metric tons of CO2e are emitted from landfills, 13,000 metric tons of CO2e from wastewater, 9,500 metric tons of CO2e from composting, 23,500 metric tons of CO2e from leakage and 6,000 metric tons of CO2e from fires. This amounts to significant emissions. The data necessary for targeted reduction initiatives is not currently available. The coalition partners thus agree that a process must be initiated to generate better local data, and that on the background of this new precise data, initiatives must be put in place to help reduce the CO2e emissions from the specific sources.

Old landfills can potentially release large amounts of methane, which is a potent greenhouse gas. As a mitigation technology, a biocover can be put in place: a meter-thick layer of compost is spread over the area, which then breaks the methane down into water and CO2. The possibility of a partnership with Kredsløb will be investigated, with a view to using biocovers to reduce emissions.

The coalition partners agree on the target of an approx. 46,000 metric ton Co2e reduction annually in 2030. This target assumes that ReWater is realized, and that it is possible to reduce virtually all emissions from landfills by means of biocovers, in addition to the assumption that emissions from this domain will be significantly reduce in the greenhouse gas emissions report when local data becomes available.

An Aarhus with less waste

By working more intensively with the waste hierarchy and waste generation, the City of Aarhus can move towards phasing out waste through a greater focus on recycling and reuse rather than disposal, in addition to behavioural design and new habits. The coalition parties agree that a circularity policy must be developed for the City of Aarhus as a client in connection with construction projects, and that the City of Arhus must support business and industry in developing circular solutions through industrial symbioses. This initiative will result in an annual reduction of approx. 14,000 metric tons C02 in scope 3.

FOOD

A large proportion of the greenhouse gas emissions in Aarhus are generated by our consumption. The coalition parties thus agree that a coming climate strategy must launch beacon projects in theconsumption-based emissions. The consumption of food and beverages accounts for 26% of emissions from Danish households – second only to transport. The most effective individual factor in relation to reducing CO2e emissions from our food consumption would be a significant shift from red meat toward a more plant-based diet.

The coalition parties agree that Aarhus must take the lead and, together with business and industry, initiate ambitious projects to reduce emissions from food production in Scope 3. The estimated effect of these initiatives is a 10% increase in the number of Aarhus residents whose diets conform to the official dietary guidelines, corresponding to 24,000 metric tons of C02 annually in 2030 in Scope 3.

Partnerships with the food industry

Danish agriculture and the food industry have a significant role to play in achieving climate neutrality. In recognition of this, efforts must be made to establish partnerships with the food industry. For example, a partnership with Agro Food Park can attract companies and institutions that create sustainable solutions for the food industry, both in Denmark and abroad. The coalition parties are committed to supporting Agro Food Park in establishing concrete partnerships, for example with regard to land use, drought/water issues, soil health and resilience, biodiversity, regenerative agriculture (conversion of cultivation methods), sustainable building materials based on the products of nature and the automatization and AI-driven digitalization of agriculture, in addition to project development through national and EU partnerships with relevant cluster organisations.

The coalition parties agree that Agro Food Park is to be expanded to include companies within health and renewable energy, in addition to food and agriculture. The coalition parties request an investigation into whether Agro Food Park's locations outside the municipal plan development area might be used in future for renewable energy production that can contribute to the City of Aarhus' climate targets and strategy. A working group is to be established comprised of Agro Food Park ,the Mayor's Department and Technical Services and Environment, with a view to ensuring alignment between the municipality's climate targets and business policy objectives, the development potential of Agro Food Park and the physical development of the area, including the municipal planning framework.

Promote climate-friendly diets and habits

Food production is under great pressure today. The municipality must take the lead by promoting climate-friendly dietary habits and skills among children and young people through enhanced education in primary school, in addition to providing support for climate-friendly food communities in the municipality. '*Climate-friendly meals and sustainable food habits*' is included in the terms of reference for the committee on climate and sustainability; there is potential for synergy here. The Department of Children and Young People, the Department of Health and Care and the Department of Social Affairs and Employment are all working with climate plans aimed at children, the elderly and marginalized populations, for example, which include climate-friendly diets and foods.

Transformation of food production

The City of Aarhus can help support the transformation of agricultural production by contributing to the test and development of new cultivation concepts and business models on agricultural sites within

the municipality. In addition, local sustainable food value chains can be supported, with a view to promoting more plant-based production and sale. If more Aarhus residents follow the official dietary guidelines, a significant annual CO2e reduction in Scope 3 can be achieved.

CONSTRUCTION AND URBAN DEVELOPMENT

Sustainable urban development

Aarhus is a good and attractive city, and a growing city as well, both in terms of population and jobs. Analyses show that urban growth with new construction can be climate-positive, as long as elements like housing typologies, collective waste and heating systems, collective traffic and ride-sharing develop in line with population growth. The coalition parties agree on an ambition to achieve sustainable urban development, but that Aarhus must continue to accommodate social balance with a focus on social cohesion and an inclusive, diverse city with more families with children. The coalition parties will promote the continuation of a sustainable urban development in Aarhus in connection with the 2025 municipal plan.

National frameworks and Reduction Roadmap

If the City of Aarhus is to succeed in reducing emissions from construction, more tools will be necessary. The national legislative framework, in the form of the planning act and the building regulations, are not ambitious enough. Agreements can be made with private construction project clients and developers, and the coalition parties will engage in targeted political advocacy with a view to securing statutory authority for achieving climate targets. The coalition parties thus agree that the City of Aarhus will accede to the Reduction Roadmap with a view to promoting more climate-friendly building regulations.

The coalition parties are committed to supporting new partnerships with the construction industry in Aarhus, as well as consultancy and research, in order to promote sustainable construction projects. The City of Aarhus must take the lead with our own construction projects and develop concrete solutions to serve as inspiration for others.

Municipal construction

In relation to the municipality's own buildings, the best square meters are the ones we do not build. For this reason, the coalition parties aim for Aarhus Ejendomme to reduce the municipality's administrative square meters by at least 10-15%, and to review the total property portfolio from a climate-conscious perspective in addition to new ways of working, in the form of more remote work. The coalition parties agree to revisit the target for the number of administrative square meters in 2026, once an activity-based layout has been implemented, including a consideration of whether further reductions in administrative square meters are possible.

The coalition parties agree that the municipality must build fewer new structures, renovate more structures and increase the geographical consolidation of services across functions. Aarhus Ejendomme must take an ambitious approach to meeting new needs in new ways based on the most climate-friendly model when it comes to the municipality's building needs. The coalition parties thus agree that Aarhus Ejendomme must make targeted use of CO2 budgets in the City of Aarhus in relation to municipal construction projects. The coalition parties agree that the Mayor's Department and Technical Services and Environment must present a recommendation that sets out a target for municipal construction projects, which includes a focus on requirement and the future frameworks for construction of structures such as schools, nursing homes and sports facilities.

The coalition parties agree that the municipality – within the framework of the Reduction Roadmap – has a special obligation to take the lead and set ambitious targets for municipal construction projects.

At the beginning of 2023, the Aarhus City Council pledged that all new construction over 1,000 m2 will comply with the low-emission class standard, which means a threshold value of max. 8 kg CO2e/m2/pr. year in 2024, falling to 5 kg CO2e/m2/pr. year in 2030. The City of Aarhus has started working with LCA assessment tools. LCA assessment tools will contribute to making

Scope 3 reductions in construction projects possible by enabling calculation of emissions form the building materials used, for example.

The recommendation must also illuminate implications for other political priorities, for example prioritizing sports, health and/or education initiatives, as well as social balance and attracting more families with children to the city, including whether there may be a need to continue to exempt certain construction projects, such as sports club-financed sports facilities from the requirements, based on a climate-economic approach and drawing on the funding pool for climate-friendly construction.

CITIZENS AND THE BUSINESS COMMUNITY

To succeed, the green transition requires broad support from citizens and the business community. The coalition parties agree

climate action and to prioritize the strategic initiatives described below. The coalition parties are committed to encouraging the involvement of citizens, civil society, companies; employers, trade unions and employer organizations, and other actors in the climate effort. Both as part of the process of developing the climate plan and subsequently, when the plan is implemented. The climate plan will draw both on existing knowledge as well as new knowledge acquired from dialogue-promoting activities. It is expected that the municipality, through partnerships with the business community, will be able to reduce CO2 emissions by 20,000-25,000 metric tons in Scope 3 in 2030.

Green Business and the climate alliance

The coalition parties agree that the City of Aarhus must provide support for the green transition in business and industry by facilitating partnerships across industries and between businesses of different sizes, herby creating a platform for knowledge, innovation and action.

Climate Alliance Aarhus is a business partnership that mobilizes and engages the business community around Aarhus in the green transition. Going forward, it will address topics such as data and digitalization, green procurement, circular economy, ESG reporting/SBTI and green competencies, etc. The coalition parties aim for the City of Aarhus to take the lead as a climate-friendly organisation and, through its own ESG reporting, lead the way for small and medium-sized enterprises (SMEs) in the municipality through new concepts.

Green innovation, SMEs and circular resources

The business community has an important role to play in the development of green solutions that can contribute to reaching our climate targets. We will continue to give companies the opportunity to exploit the innovation power and synergy between companies and the City of Aarhus through the 'green investment pool', thus actively contributing to the development of green solutions as well as testing and proof of concept. SMEs in particular need support, and so the City of Aarhus, through the exercise of its regulatory powers, highlight initiatives that contribute to the provision of the knowledge and resources needed to launch a green transition to SMEs.

A focus on circular resources is essential for the green transition in business and industry. Supporting companies in their efforts to minimize, sort, recycle and reuse waste and ensure that regulatory processes support and develop this work has great potential.

International efforts

The climate knows no boundaries. This means that we are dependent on strong partnerships and international collaboration. Aarhus has made good progress on international collaboration on climate, and the City of Aarhus will strengthen international efforts and work to put Aarhus on the map as a climate frontrunner. The coalition parties will continue participation in the EU's '100 Cities' mission, both in order to ensure the export of the technologies and approaches we have discovered here and to get access to the latest knowledge from elsewhere. The coalition parties support the re-establishment of the delegation service in order to ensure that visiting cities, special interest organisation and others get the maximum possible benefit of a visit to Aarhus.

Climate LivingLabs

There is a need for new approaches to the dialogue with and involvement of citizens and civil society. With Climate Living Labs, we will transform selected communities in Aarhus into a 'living laboratory' for the development, implementation and testing of local green climate solutions in close cooperation with the citizens, civil society, business and public actors in the community. Climate solutions and green innovation are thus no longer just ideas or fantasies about the future. They become something concrete that we develop together and test in our everyday lives as we continually optimise and scale them. This initiative will be carried out by Technical Services and Environment in collaboration with Culture and Citizens' Services. A joint recommendation will be submitted for the allocation of the funding.

CLIMATE GROUP

A target for consumption-based emissions

The City of Aarhus must take the lead when it comes to the green transition. The coalition parties agree to set an ambitious reduction target for the City of Aarhus' consumption-based climate footprint of 50% by the end of 2035. The municipality will achieve this reduction through three reduction tracks: initiatives already launched, reduced and more circular consumption and green strategic partnerships. Taken together, these tracks will achieve a reduction of 100,000 metric tons CO2 from consumption-based emissions in 2030, increasing to 138,500 metric tons CO2 in 2035. Specifically, strategies are being worked on that can translate the objectives into initiatives that will be evaluated annually. At the same time, the impact of a climate-economic approach of a forced transition must be assessed, including the importance for the level of services in the areas of social welfare in particular.

The municipality must lead the way with a major cultural transformation in regard to consumption, while at the same time promoting a greener supplier market in Denmark, to the benefit of the City of Aarhus and the country's public and private sectors. In addition, the coalition parties will explore the possibilities of achieving Scope 3 reductions in the municipality's entities through owner strategies, and concrete targets will be set for this. The coalition parties agree that these entities must comply with the City of Aarhus' climate objectives.

The City of Aarhus makes DKK 8 billion in purchases annually, which emits approx. 24,000 metric tons CO2 in Scopes 1 and 2 in addition to approx. 250,000 metric tons CO2 in Scope 3 not including the entities. By mapping the group's total consumption-based emissions, it will be possible to develop recommendations for the optimization of consumption, enabling the municipality to be a frontrunner in the market with regard to green specifications for goods and services as well as circular economy.

Climate policy food strategy

The City of Aarhus' climate policy food strategy has set a target of a 25% reduction in CO2e from the food products purchased for municipal food services. A 20% reduction has been achieved since 2019. The coalition parties agree to extend and expand the strategy, with a greater focus on food waste, concrete targets for purchasing specific foods, such as food, legumes, fruit and vegetables, climate taxes and new methods of measurement and procurement agreements.

The Climate Council estimates that if everyone follows the official dietary guidelines, emissions from food production and consumption can be significantly reduced. This would lead to a reduction in CO2e of approx. 5,000 metric tons in 2030 in Scope 3.
The coalition parties note that the municipality's consumption of beef has fallen by 33% since the introduction of CO2 taxes in 2022. The coalition parties agree that work on CO2 taxes in connection with the procurement portal are to continue, and that in 2025, the Mayor's Department must present a recommendation to the City Council describing how this work can be continued, based on the positive experiences gained up this point, with a focus on food literacy in schools and daycare centers, but that special consideration for the elderly in assistant cares homes may be shown.

Zero-emissions vehicle fleet in the City of Aarhus

The municipality's fleet of passenger cars and small vans must be fossil-free in 2025. These efforts can be strengthened through harmonized rules and behavioral changes, in addition to artificial

intelligence. An investigation must also be made of whether ride sharing can contribute to the green transition. Simulations have shown that vehicular transportation needs can be met with up to 15% fewer vehicles than today. The municipality has developed a tool called

FleetOptimiser in collaboration with other municipalities, and results have been positive from the last eighteen months of use. The coalition parties agree to extend the project, which is set to expire at the end of 2024. The coalition parties also agree to explore the possibility of using transport allowances to encourage municipal employees to choose green modes of transportation.

Circular Aarhus and frugal consumption

'A Circular Aarhus' aims to ensure strategic focus and synergy across the municipality's current and future circular economy initiatives. Through the 'frugal consumption' effort, the goal is to create a process of cultural change for both managers and employees, with a focus on changing behaviors and mindsets in relation to consumption and consumption patterns. City of Aarhus employees must therefore rethink their purchasing needs before buying new goods, use the Genbrugsportalen recycling portal, buy more durable quality products and repair and share what they already have, as well as when the City of Aarhus defines specifications in tender documents.

Zero-emissions machinery and driving

The construction unit uses heavy machinery, including trucks, excavators and sweepers. Charging infrastructure has been installed in the unit, and the process of conversion to electrically powered machines is well underway. The coalition parties agree that the construction unit must, as far as possible, be CO2-neutral in 2030. However, this requires the generation of solar power for the machines, and the use of HVO fuel for the heaviest machinery. The conversion to CO2-neutrality in the construction unit must take place on the background of an assessment of the costs of such a transition, in terms of the costs of the new machines relative to the CO2 savings. In addition, it is necessary to investigate whether a green transition of the machinery used can be carried out more efficiently through cooperation with external partners.

§ NATIONAL FRAMEWORK CONDITIONS

New national framework conditions

The government and the Danish parliament have contributed to reducing CO2 emissions in Aarhus towards 2030 through several national initiatives: The 'green tax reform 1' of 2022, which introduced kilometer-based tolling for trucks and the 'green tax reform 2', which will be implemented in 2024. This green tax reform will impose a tax of DKK 375-750 per metric ton CO2 emitted by companies. These taxes will affect energy supply, industry and non-road transport, and it is expected that it will result in a reduction in emissions in Aarhus of 26,000 metric tons C02 from energy, 70,000 metric tons from transport and 11,000 metric tons from industrial processes.

'Green tax reform 2' will impose CO2 taxes on non-energy related emissions from agriculture (for example nitrous oxide and methane). This tax will be between DKK 250-750 per metric ton. The City of Aarhus estimates that model 3a will reduce emissions by 15,000 metric tons C=2e annually. A kilometer-based toll for trucks, introduced in 2022, is expected to reduce emissions by 32,000 metric tons CO2e in the City of Aarhus. The amount of the toll depends on how much CO2e the individual truck emits.

It is also a prerequisite that the state adopts the necessary frameworks in regard to road pricing for a green mobility plan.

Partial implementation of the 'green fund'

According to the latest national agreement on the partial implementation of the 'green fund' concluded on 15 April 2024, DKK 625 million have been allocated to reforestation in the period 2024-2027. Whether the municipalities will receive any of this funding is not yet known, as the agreement states that the allocation of the funding will be decided based on a proposal from the government, and must be viewed in connection with the coming forest plan. However, if the municipalities receive any of this funding, the City of Aarhus, based on the usual allocation key, can expect to receive approx 6.1%, corresponding to approx. DKK 40 million.

Under the agreement, it has been decided to increase the diesel tax by 50 øre per liter from 2025. The agreement is expected to reduce emissions by 16,000 metric tons CO2e in the City of Aarhus, which has been included in the baseline in the section on transport. In addition, the agreement allocates funds for the green transition of agriculture (funds for methane-reducing feed, etc.), which, it must be assumed, will be granted to the industry and not to municipalities, as well as plant-based foods, in regard to which there is an obvious link to Scope 3, but in regard to which the funds will go to the plant-based food fund, which finances innovation projects in the food sector.

FINANCING AND FOLLOW-UP

Sub-targets and domains

In the above review of the domains and initiatives, the individual reduction targets for the domains are defined. With this agreement, the coalition parties agree to set targets for the following

- Energy incl. CCS: reduction targets: 405,000 metric tons in (Scopes 1 and 2)
- Transport — reduction targets: 319,000 metric tons (scope 1 and 2)
- Forestry, agriculture and land use – reduction targets: 79,000 metric tons (scope 1 and 2)
- Landfills and wastewater – reduction targets: 46,000 metric tons

(Scope 1 and 2) In addition to the following reductions in Scope 3:

- Construction, energy, circular resources and partnerships – reduction: 40,000 metric tons (Scope 3)
- Food – reduction: 24,000 metric tons (scope 3).
- The climate group – reduction: 138,500 metric tons (Scope 3)

A total of 849,000 metric tons of CO2e under Scopes 1 and 2 will thus be saved annually, which will enable the municipality to achieve climate neutrality in 2030. In addition, a total reduction of 202,500 metric tons of CO2e in Scope 3 will be achieved.

The coalition parties agree to establish a CO2 buffer. New technology, new state-sector regulatory initiatives, initiatives from the private sector and new strategies in the municipality can contribute to reaching the goal of CO2 neutrality. Many industries and companies are working to reduce their emissions as well as replacing parts of their production. For this reason, a CO2 buffer has been included in the strategy with a technical reduction potential.

The CO2 buffer may include reductions from, for example, additional CSS plants (including discussions with Ørsted), an additional 300 ha of commercial forest and the installation of an addition 400 ha solar energy in the City of Aarhus. In addition, power from wind turbines and solar energy – associated with the City of Aarhus' entities – outside of the municipal boundaries can be included in the City of Aarhus' goal of greater self-sufficiency. CO2 from wind turbines and solar energy outside the municipal boundaries cannot be included in the City of Aarhus green house gas emissions reporting. Green power from wind turbines and solar energy can, however, contribute in connection with other CO2-reduction initiatives, for example Carbon Capture and Storage, which requires large amounts of electricity. The CO2 buffer is to be followed up on annually i connection with updates to the frozen policy scenarios.

Climate agreement follow-up

The climate action plan agreement addresses a number of different emission domains, for which the level of ambition and specific reduction targets are identified. This implies that if there are initiatives within the domain which turn out not to deliver the desired reductions, or in the event that the coalition parties would like further reductions, any additional measures will have to be found within the same domain, in order to meet the sub-targets set for that domain. However, Carbon Capture and Storage (CCS) is such a large initiative than any changes to this initiative will have effects across all initiatives.

The coalition parties aim to follow developments in reductions closely. The coalition parties thus mandate an annual status report in connection with the greenhouse gas emission reporting, which includes frozen policy prognoses for each domain, the reduction paths and the reduction targets. Concrete initiatives must also be followed up on, including relevant change theories and indicators as well as funding. The coalition parties agree that the annual follow-up reporting must be used to maintain motivation for achieving the target of neutrality towards 2030, and to ensure the necessary momentum through the application of new technologies or changes in framework conditions as necessary.

The approach used in the previous climate plan involved the initiation of compensatory actions for individual years in which deviations from the reduction path occur. In the 2024 budget agreement, it was agreed, in line with the recommendations of the Ministry of Climate, that going forward a running three-year average will be used, and that the annual compensatory actions will no longer apply. Instead, follow-up will take place in connection with the annual political follow-up on the climate strategy, in connection with which data on the ongoing reductions will be presented together with the municipality's greenhouse gas emissions report and frozen-policy prognoses. The annual follow-up report must contain a recommendation regarding the introduction of new or cessation of existing climate initiatives, just as the annual budget negotiations also can be used to ensure agility in the climate plan, in order to ensure the achievement of climate neutrality in 2030 and effective reductions through the climate-economic approach.

Social balance in the green transition

The green transition must not create greater economic and social inequality. The coalition parties agree that ensuring social balance in the climate plan is crucial. The coalition parties have thus requested the Mayor's Department to analyse the economic inequality effects of the initiatives in the climate plan. Carrying out concrete economic inequality calculations for the initiatives has not been possible. The Mayor's Department has reviewed all of the initiatives, and assesses that no significant economic inequalities are associated with the current initiatives. However, particular attention should be paid to the mobility initiatives as well as climate-related requirements for private home construction, which have the potential to contribute significantly to economic inequality.

The Mayor's Department will conduct regular assessments of economic and social inequality in connection with the annual follow-up on the climate plan, and will present recommendations to the coalition parties regarding proposals to compensation for any economic imbalance. In addition, an inequality assessment of the domains will be conducted in connection with the implementation of the climate plan. The coalition parties agree to push for the provision of the necessary framework conditions by the state, as the tools available to the municipality to ensure social balance in the green transition are limited.

Funding for the land fund

Reforestation has a long-lasting effect and is costly. Technical Services and Environment estimates that over a number of year, it will be necessary to add approx. DKK 200 million to the land fund. To begin with, the coalition parties agree to allocate a one-off grant of DKK 30 million to the land fund for reforestation purposes. The financing for these funds must be found in connection with the budget negotiations.

In addition, with the agreement on partial implementation of the 'green fund', a total of DKK 625 million has been allocated to reforestation in the period 2024-2027. Assuming that these funds are distributed to the municipalities in accordance with the standard allocation key, it is to be expected that the City of Aarhus will receive the equivalent of approx. DKK 40 million. The coalition parties

agree that these funds will be added to the land fund.

The coalition parties also agree on an initial allocation of DKK 20 million to the land fund – which is expected to correspond to 80-100 ha – in a one-off grant earmarked set-aside of lowland soils. The financing for these funds must be found in connection with the budget negotiations.

A total of DKK 50 million will be added to the land fund; in addition to the DKK 30 million for reforestation, DKK 20 million will be allocated for the purchase of lowland soils. In addition, an additional DKK 40 million from the state green fund may be accessible. The coalition parties will work to influence the national frameworks in order to ensure the necessary legislation and financing. At the same time, the coalition parties request that Technical Services and Environment takes action to explore the possibilities for additional external financing with a view to obtaining at least DKK 75 million in co-financing. In addition, there may be substantial unfunded items in the form of lost revenue and compensation for expropriation. The coalition parties agree to allocate funding to cover these items.

Financing

The negotiations are based on a total financial framework of DKK 300 million. In the investment plan towards 2034, a total of approximately DKK 250 million has been allocated. Based on the 2024 budget, the climate plan and the climate fund funds have been reviewed and the unallocated funds that can be used to prioritize climate action in conjunction with climate negotiations for 2025 and beyond have been identified. In total, this amounts to approximately DKK 50 million, including the funds transferred from the climate fund to the climate pool in connection with the 2024 budget.

The attached annex contains a financial statement of funds allocated to each initiative during the period.

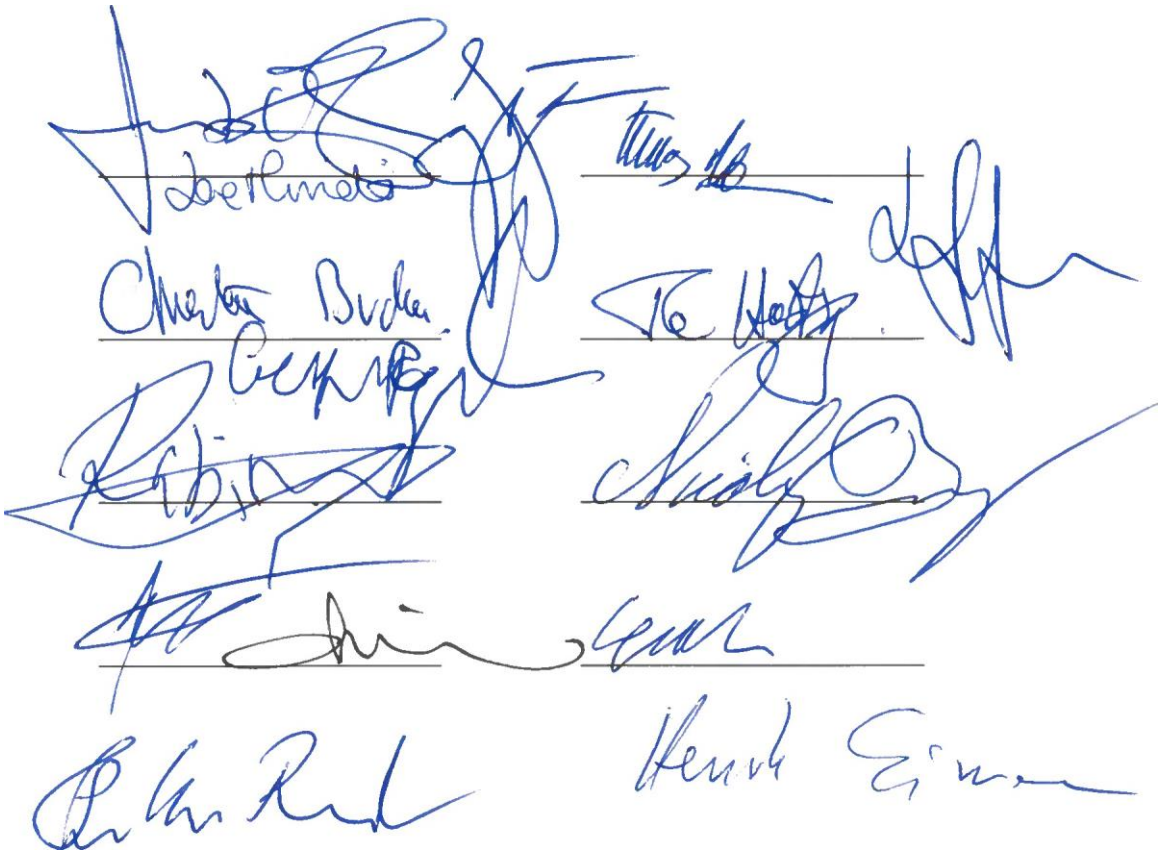
The coalition parties agreed to seek external funding for the initiatives, including in particular reforestation, set-aside and renewable energy, as well as partnerships. The coalition parties are working on the assumption that a total of DKK 75 million in external funding can be obtained, in addition to the total financial framework of DKK 300 million.

The agreement on the climate plan for 2025-2030 should be considered a draft budget from the coalition parties for budget negotiations in the context of the 2025 budget, and the parties of the City Council will thus be in a position to prioritize all or some of the elements from the new political agreement in the budget negotiations.

PARTICIPATION IN THE AGREEMENT

The parties agree that participation in the agreement regarding the climate strategy for 2025-2030 is binding, and that the parties jointly assume responsibility for the agreement as a whole. This means that, in the exceptional event that one party desires an amendment to the agreement, the proposed amendment must be submitted to the parties to the agreement for negotiation, and agreement is a precondition for the presentation of any proposed amendment.

The parties also agree in principle to endorse the final climate action plan when it is submitted to the City Council in 2024.



go green with Aarhus

GREEN TRANSITION IN AARHUS

Climate Action Plan 2021-2024

CITY OF AARHUS

APPROVED DK2020 BY C40 & CONCITO

CONTENTS

INTRODUCTION

Just over ten years ago, Aarhus City Council set an ambitious goal of a CO_2-neutral urban society by 2030. Since then, municipal employees, companies, knowledge institutions and citizens have been working to reduce the city's emissions. During this period, emissions have successfully been halved. Aarhus is now among the cities in the world to have experienced the greatest positive change in terms of greenhouse gas emissions. For this, we are rightly proud. This shows the benefit of sharing high ambitions.

At the same time, Aarhus as a city region is a global leader in getting green transition and business development to go hand in hand. We must exploit this even more at a time when business development is particularly important.

With the green transition come a number of investments. We will use them to get started – not just in the green transition - but also in one business sector that needs a new beginning. But we can do much more than that.

Being climate-friendly is no longer just for the few. This is an increasing demand from all kinds of citizens and customers. It is therefore important for all companies to adapt. As a municipality, we must support this change through, among other things, training future employees with new knowledge and new skills. The municipality has a huge operational responsibility. Through partnerships in climate-friendly procurement and by using the municipality's operational functions to support the development, testing and demonstration of new solutions, the municipality can make a significant contribution to the necessary change. In this way, we can help inspire the rest of the world with precisely those solutions, developed in local partnerships.

The climate crisis is global, but can only be solved locally. As citizens, we are not only part of our communities, we are also part of the world. In the same way that we rely on others to create change around the world in order to resolve the climate crisis, they also depend on us. Nobody reaches the goal until everyone reaches the goal. The same applies in Aarhus. 90% of the remaining CO_2 emissions in Aarhus come from sources that are outside the city council's direct influence. Therefore, the last part of our journey towards a climate-friendly urban society requires that we take that journey together. If we are smart, we resolve not only the climate crisis. We can also create an even better city for everyone!

In short – we are part of the solution!

Kind regards,

Bünyamin Simsek

Technical and Environmental Councillor,
Aarhus Municipality

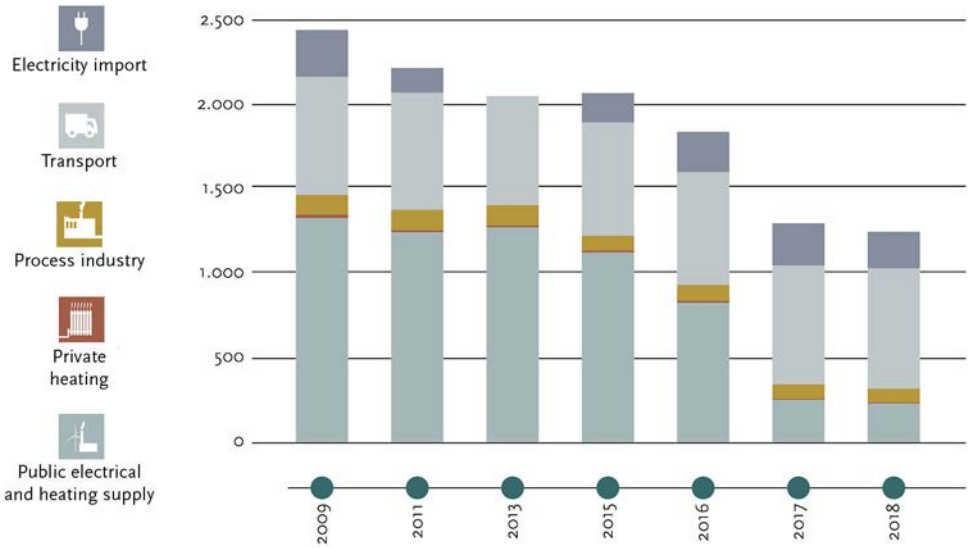
A DECADE OF LOCAL CLIMATE ACTION

For more than 10 years, Aarhus has worked systematically for climate action. Emissions have halved, and Aarhus is now among the cities in the world to have undergone the greatest positive change in terms of emissions. The lowest hanging fruits have been harvested, which means that the challenges for the next 10 years are even greater.

We have gained a great deal of experience, which provides us with a good starting point for the work over the coming years. We know what needs to be done, and we know what this will require. We have gone from understanding that the climate challenge was a simple exercise in reduction, to seeing the complete jigsaw puzzle, with all the many pieces that must fit in order to build a society without fossil fuels. Now it's all about putting this knowledge into practice and putting the puzzle together.

Major changes have been made in the energy sector in particular and with that, a reduction in energy consumption. Over the next 10 years, the issue will be generating a greater transition to renewable energy in the other sectors, and of building a society in which all sectors interact, and where we have reaped all possible benefits along the way. There will be three particular sectors in focus during the coming period up to 2024; transport, essential infrastructure and clean-up:

CO_2-Emissions for Aarhus as a society



Transport

The transport sector is particularly challenged in relation to the green transition and is therefore a particular focus during the coming planning period in Aarhus. The sector has not come very far in the transition to renewable energy. Light transport must be reduced and the composition of transport must be changed, while the remaining light transport must switch to electrical technology and be converted to renewable energy. Aircraft, ships and heavy transport are more demanding and are bound to fossil technology through many large and long-term investments. No viable alternatives to fossil technology have yet been developed. For us to overcome the climate challenge in a timely manner, it will be necessary to find other ways to convert to renewable energy in the short term.

Necessary infrastructure

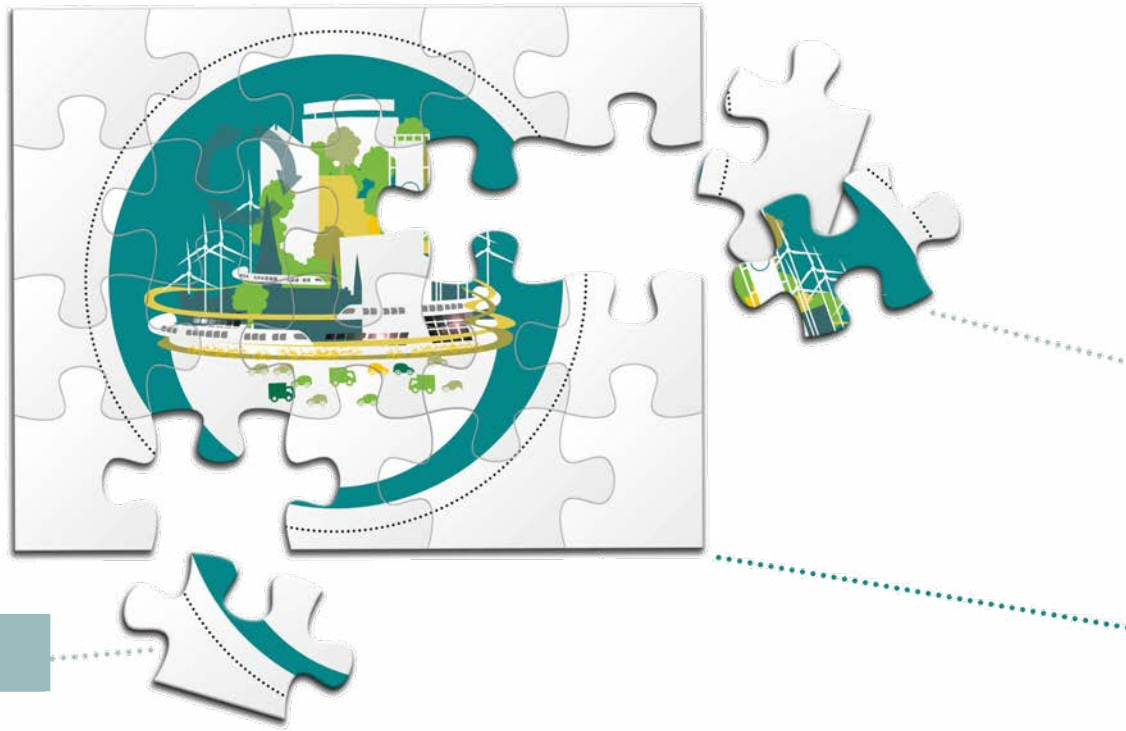
Through work with strategic energy planning, it has also become apparent that preparing Aarhus for the future is essential for a timely and cost-effective transition. We must carefully plan and future-proof energy infrastructure. Energy planning is therefore also a special focus area in the coming period.

Clean-up

Becoming a carbon neutral society is no longer enough to solve the climate crisis. Although we have put a lot of effort into reducing emissions, too much CO_2 has been released into the atmosphere to avoid severe climate change. In order to meet the goals of the Paris Agreement, this challenge must be taken seriously. Therefore, the preparation and construction of facilities for future large-scale CO_2 capture is also an important aspect of the coming period.

VISION AND ACTION

Many pieces of the puzzle must be placed in the green transition before we reach our goal as a society. At the same time, developments are happening fast. For us to succeed, it is therefore important to keep our eyes on the goal, and divide the task into smaller pieces which can be systematically pursued, while at the same time exploring new opportunities that arise with increasing knowledge and technology.



COMBINED CLIMATE INITIATIVES

Climate strategy

It is important that we have a common vision of the changes that need to be made for us to achieve the goal. Together with the City Council's binding climate targets and a number of ambitious goals for change in all sectors, they set the direction for our work on the green transition. The framework for this work is defined in a number of fundamental principles for the green transition in Aarhus. The direction and framework for this are combined in the 2030 Climate Strategy.

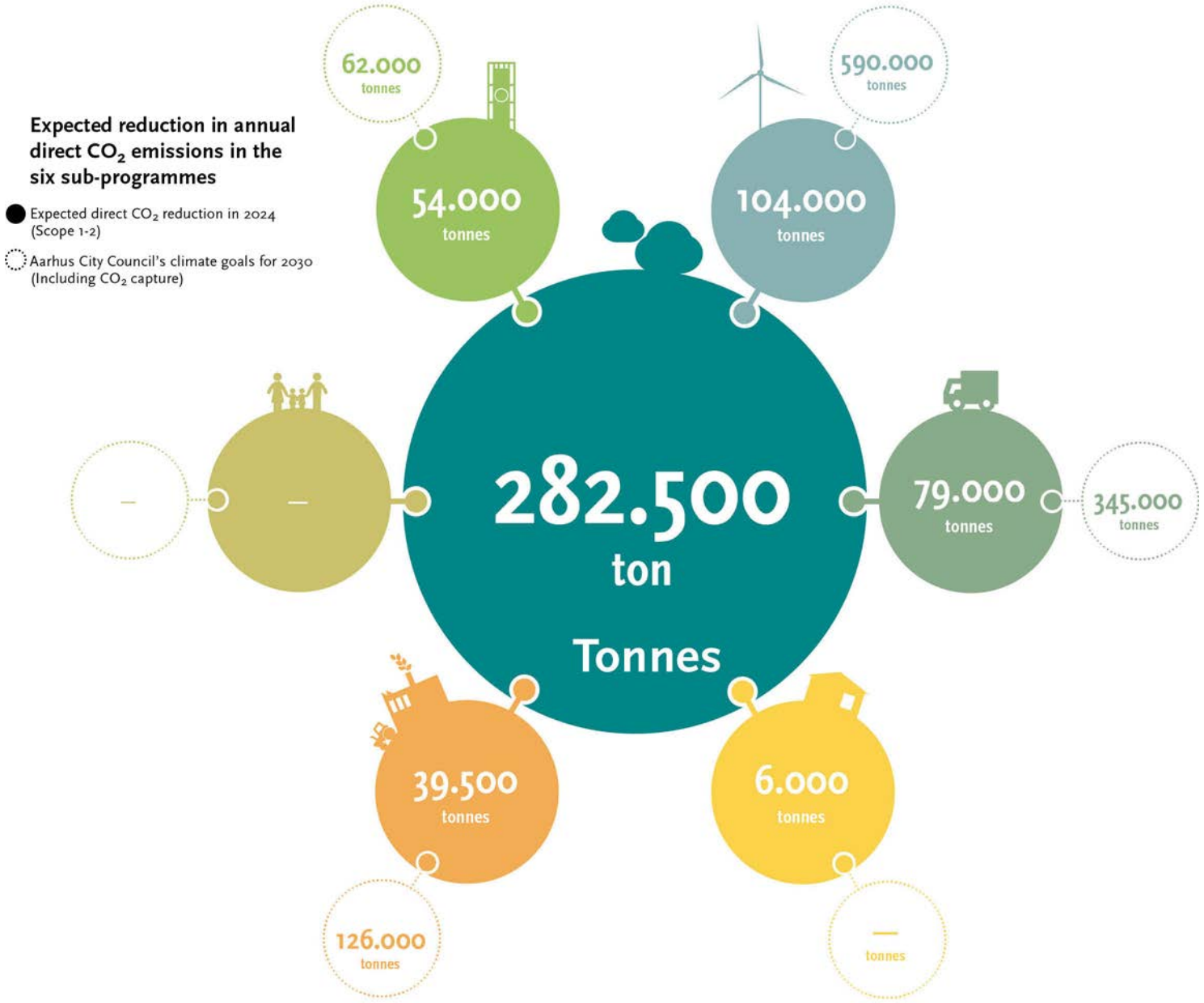
Climate Action Plan

The Climate Action Plan describes the focus areas to be worked on in the coming four-year period. It will help to ensure that the most important changes during this period are implemented and that the desired benefits are realised. The focus areas have been chosen both to ensure the possible short-term changes with direct benefit, but also to carefully form the basis for long-term changes.

Climate Action Initiatives

In order to ensure the implementation of the focus areas and the realisation of the desired benefits, it is necessary to work systematically and in a targeted manner to implement specific changes. So, as a supplement to the Climate Action Plan, a number of initiatives are associated with each focus area, which describe the concrete changes that must be implemented in the plan period up to 2024.

EFFECTIVE GREEN TRANSITION



The transformation of society as a whole requires a transformation of all sectors. The key to creating the necessary changes in climate action is having a good overview of the desired changes as well as the actual results created in society. **We call this gains.**

Naturally, the Climate Action Plan focuses on climate change. The most important benefit is to reduce the amount of greenhouse gas emissions in the atmosphere and in the slightly longer term to actually extract CO_2 from the atmosphere. But what does this mean? In the climate strategy, this translates into a description of the changes that must be created in society. The paths to these can be many, and there are many secondary effects that need to be considered.

When you take a closer look at the transition, there are many other important benefits to pursue along the way to achieving the goal. This is either because they are important prerequisites for the transformation of society, or because they help to ensure that the green transition creates a better urban society, with more jobs, better health, etc. The climate strategy describes the primary benefits being worked on with climate action in Aarhus. For the period up to 2024, the Climate Action Plan describes which direct benefits the individual sub-programmes are expected to create and a brief assessment of potential secondary effects. A more detailed description of the individual initiatives and their benefits can be found in the "Action Catalogue" for the Climate Action Plan.

The Climate Action Plan shows the total expected benefits for each sub-programme.

"Total direct CO_2 reduction in Aarhus" is the expected reduction in greenhouse gas emissions up to 2024 within the municipal limits (Scope 1-2).

"Reduction in indirect CO_2 emissions" is the expected gain on reduction outside the municipal boundary up to 2024 (Scope 3).

"Important prerequisites for conversion" is the degree of importance that the sub-programme's initiatives consider as a prerequisite for the overall green conversion of society, e.g. increased knowledge and infrastructure.

"Positive secondary effects" is the degree of other positive effects that actions in the sub-programme create for society, e.g. increased health and more jobs.

"Additional effects" is a comprehensive description of the effects that focus areas have in addition to a reduction in direct CO_2 emissions (Scope 2).

SPECIAL FOCUS ON THE GREEN INDUSTRY

Aarhus has a particularly favourable position in terms of combining green transition with growth. We call this green growth. At a time when the world licks its wounds from the Coronavirus epidemic there is, if anything, a particular need for green growth. The climate crisis is still present and by paying special attention to the many opportunities for creating growth and jobs through the green transition, even major challenges can present opportunities. Many companies in and around Aarhus thrive by providing climate-friendly solutions to the whole world. There have to be more of them.

Business development is therefore a special focus in all efforts in the Climate Action Plan. Together with the overall business plan "partnership for sustainable growth", this creates a platform for green growth. This is achieved by continuing to:

- Work closely with local businesses of all sizes and stages, e.g. on joint development, testing and demonstration of climate solutions
- Cooperation with educational institutions on future climate-competent workforces
- Develop cluster- and innovation environments locally and nationally
- Through partnerships and safeguarding interests with relevant stakeholders that create value for everyone
- Have an international outlook

UNITED FOR THE GREEN TRANSITION

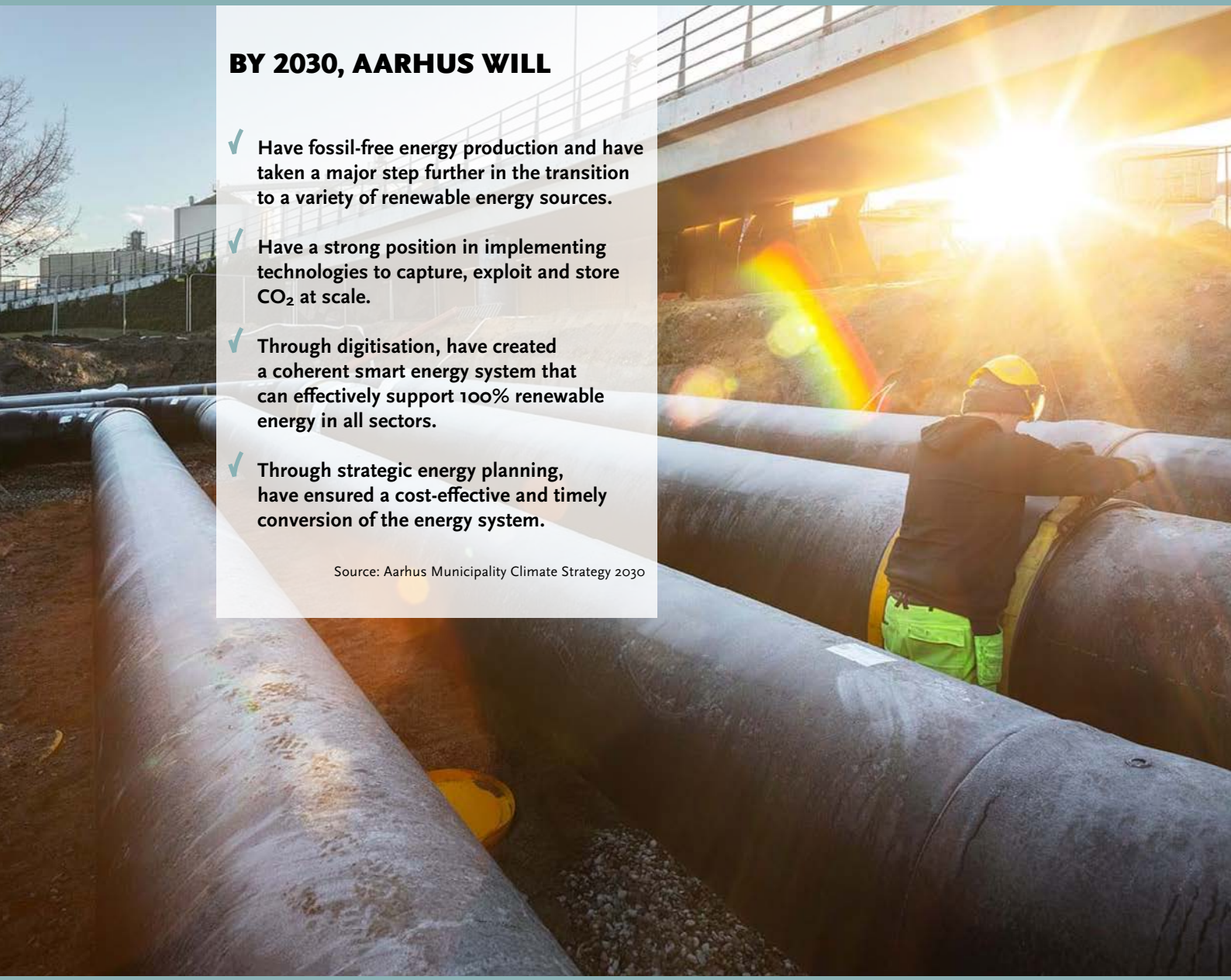
Solving a challenge like the climate crisis requires major changes throughout society. No-one can do it alone. 90% of the CO_2 emissions that remain in Aarhus Municipality come from sources over which the City Council has no direct influence. This is a challenge that can only be solved by all players in society as a whole. We call this 'The municipality leading the way'.

Aarhus is full of players who have taken up the baton. By leading the way, they are helping to light the way for us others, and they are helping take decisive new steps into unknown terrain and to inspire others in the common movement to bring all of society to its goal.

The baton will regularly pass to different players – and a selection of them have found their way to this climate action plan. Meet them over the next few pages.

The climate relay can be found in the municipality's annual magazine for the green transition and regular newsletters, and helps to put a face on the climate initiatives and inspire people across society to act.
See more at gogreenwithaarhus.dk

ENERGY



BY 2030, AARHUS WILL

- ✓ Have fossil-free energy production and have taken a major step further in the transition to a variety of renewable energy sources.
- ✓ Have a strong position in implementing technologies to capture, exploit and store CO_2 at scale.
- ✓ Through digitisation, have created a coherent smart energy system that can effectively support 100% renewable energy in all sectors.
- ✓ Through strategic energy planning, have ensured a cost-effective and timely conversion of the energy system.

Source: Aarhus Municipality Climate Strategy 2030

In order to achieve 100% renewable energy in all sectors in the future, and ensure the optimisation and exchange of energy between everything from buildings to transport, transition to an integrated energy system is vital, and as such, a high priority task.

The Energy sub-programme will help ensure that the key players in the energy system of the future deliver a common, cost-effective and secure transition; that the production of renewable energy is increased and that long-term investment initiatives in green technology are initiated, so that Aarhus contributes to creating greater diversity and resilience across the energy system, and to supplying sustainable fuel (Power-2-X) to the transport sector.

Up to and including 2024, we will work with a common framework for conversion so that energy planning, urban development and urban planning work together on an integrated energy system, with a focus on removing the last residues of fossil fuels from energy production and up to the establishment of several local plants for renewable energy production. Together with the major building owners, we will continue to work on reduced and more intelligent energy consumption, and focus on long-term initiatives such as 'Energy Parks' and 'CO_2 capture', which can, up to and after 2030, begin the major task of 'clearing up after ourselves' while at the same time guaranteeing the heavy part of the transport sector's need for sustainable fuel.

GAINS ARE

Total direct CO_2 reduction in Aarhus

104,000
tons

Reduction in indirect CO_2 emissions

LOW

Important prerequisites for transition

MEDIUM

Positive derived effects

LOW

Common framework for conversion

Joint strategy and planning is one of the keys to creating a timely and cost-effective – and thus possible – conversion of the energy system in Aarhus. A joint energy strategy has been drawn up with the actors responsible for the production and delivery of energy, and has established a community around the strategy, which coordinates the most important initiatives.

It is now time to realise the strategy, which covers initiatives such as minimising inconvenience for citizens in the construction of energy infrastructure, large-scale solar cell installations, the preparation of new urban areas for renewable energy and infrastructure for electric cars.

The agreements and projects that are co-created in the energy strategy are supported by the planning of all partners. For Aarhus Municipality, this means that energy is incorporated into all relevant levels of urban planning, urban development, etc. so that work on climate-friendly construction and the deployment of charging infrastructure for electric cars is supported.

Additional effects

This focus area is the crucial prerequisite for other actions in the energy area and a number of other areas. This is where the necessary knowledge and solutions can be found within the community between those who share responsibility.

Initiatives

E-1 Implementation of Energy Strategy Aarhus

Related initiatives

- New Heating Plan
- New Waste Plan
- Construction and urban development

Increased renewable energy generation

Aarhus has come a long way with local generation of renewable energy in its work with previous climate action plans. However, as all sectors switch to renewable energy, even more generation will be needed to meet an expected significantly increased energy demand.

Through these initiatives, we will achieve our goal of reducing the last residues of fossil fuels in energy production and, at the same time, establish several local plants for energy production with renewable sources such as solar and wind power.

Additional effects

In addition to providing significant direct reductions in greenhouse gas emissions, this focus area could help create a local supply of green and cost-effective energy solutions. This will strengthen the competitiveness of the business sector in Aarhus, as green energy solutions become an increasingly competitive parameter.

Initiatives

E-2 Phasing out fossil energy production

E-3 Large-scale renewable energy

Related initiatives

- Geothermal energy in Aarhus
- Test of seawater heat pump in Aarhus Ø

The efficient and flexible energy system

Aarhus has a unique opportunity to utilise existing energy infrastructure by creating the energy parks of the future, which can utilise surplus wind energy to produce electrofuels, ensure large-scale energy storage, deliver district heating as a by-product and create the basis for CO_2 capture and storage.

Reducing energy consumption is a prerequisite for a cost-effective green transition. Therefore, we create 'Energispring, which is a data-driven initiative with a focus on better management and optimisation of energy consumption,together with the city's largest building owners.

In order to establish an efficient and flexible energy system, together with energy parks, CO_2 capture and reduction in energy consumption, we must also ensure that the district heating system can utilise its strength to minimise energy waste and create cost-effective collective solutions, e.g. by absorbing excess heat and providing district cooling.

Additional effects

Long-term initiatives in this area can result in very large reductions up to and after 2030, and great potential for creating the framework for technological development, jobs and exports from Aarhus.

Initiatives

E-4 Surplus heat and district cooling
E-5 Energy parks and CO_2 capture
E-6 Energy Jump

Related initiatives

- Climate alliance
- GoGreenWithAarhus (Delegations service)

OVERVIEW OF INITIATIVES

Common framework for conversion

E-1	**Implementation of 'Energy Strategy Aarhus'**

Increased renewable energy generation

E-2	**Ending fossil energy produktion**
E-3	**Large-scale renewable energy**

The efficient and flexible energy system

E-4	**Surplus heat and district cooling**
E-5	**Energy parks and CO_2 capture**
E-6	**Energy Leap Aarhus**

CLIMATE RELAY

Jacob Vittrup, CEO, NRGi.

What do you see as the biggest challenge for the green transition in Aarhus?

We face challenges in the the tax system. The wise men of economics have recommended that electricity tax be reduced. Both in terms of CO_2 content and energy content, tax on electricity is higher than on other fuels, which distorts the energy consumption of companies and households, resulting in loss of productivity and welfare, and which delays the green transition.

> *The challenge is primarily to get the right business models – the technologies are already there.*

A reduction in taxes will also make it possible to convert a larger proportion of passenger- and goods transport to more sustainable forms of energy, such as electricity.

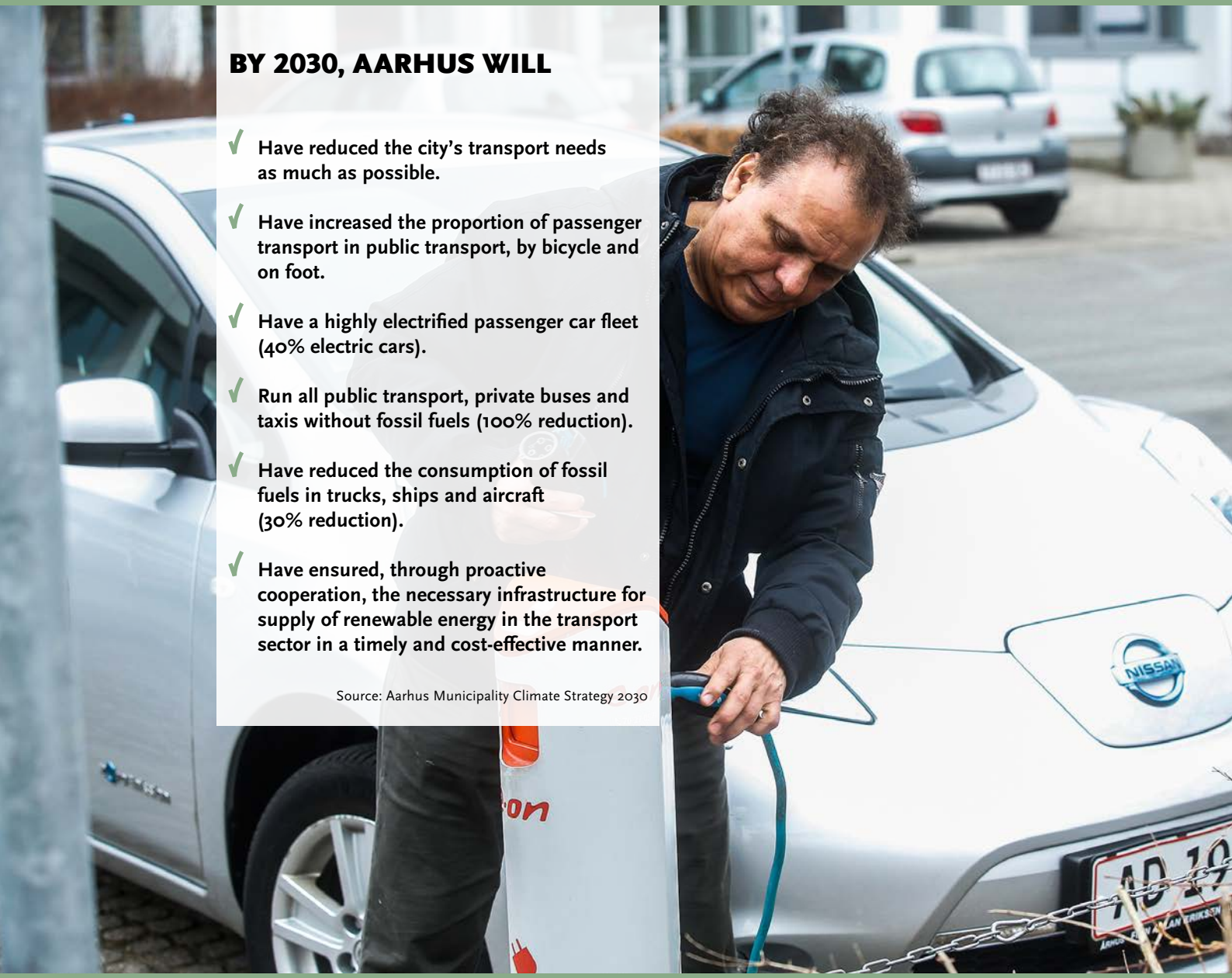
In addition, new tax structures will support the reduction of energy consumption in buildings from before 1979, which have not yet been energy renovated. The challenge is primarily to get the right business models – the technologies are already there.

TRANSPORT AND MOBILITY

BY 2030, AARHUS WILL

- ✓ Have reduced the city's transport needs as much as possible.
- ✓ Have increased the proportion of passenger transport in public transport, by bicycle and on foot.
- ✓ Have a highly electrified passenger car fleet (40% electric cars).
- ✓ Run all public transport, private buses and taxis without fossil fuels (100% reduction).
- ✓ Have reduced the consumption of fossil fuels in trucks, ships and aircraft (30% reduction).
- ✓ Have ensured, through proactive cooperation, the necessary infrastructure for supply of renewable energy in the transport sector in a timely and cost-effective manner.

Source: Aarhus Municipality Climate Strategy 2030



Transport is by far the largest contributor to greenhouse gas emissions in Aarhus. The number of passenger cars is increasing and the proportion of renewable energy is small. One important tool is to minimise the need for transport. In this way, the need for new energy production, storage and infrastructure will be reduced and the costs will therefore also be reduced. This is particularly important in the green transition, where transport requires large amounts of new renewable energy. For this reason, we continue to work on smart urban development and behavioural changes in order to minimise the need for transport.

However, consumption of energy is not the same across all modes of transport. Therefore, work is also being carried out to change the composition of means of transport. This is achieved by working to ensure that more people choose a bicycle, carpooling or use the light rail system.

However, conversion to renewable energy also requires a major shift in transport technology. Petrol cars must be replaced with electric cars. And aircraft, ships and trucks must replace fossil fuels with new types of fuels produced with wind turbine power. For this to be possible, buildings and cars must intelligently share energy.

GAINS ARE

Total direct CO_2 reduction in Aarhus

79,000
tons

Reduction in indirect CO_2 emissions

LOW

Important prerequisites for transition

HIGH

Positive derived effects

LOW

Reduced transport needs

Reducing the need for transport minimises the expected increase in the need for renewable energy and infrastructure for this sector. This helps to make the conversion more affordable and at the same time has a number of positive effects. Aarhus Municipality therefore actively uses municipal plans and local plans to set requirements for the development of the city, so that the need for transport is minimised. In existing urban areas, the municipality will focus on changing behaviour, both in the transport of people and goods, e.g. by promoting office communities and the possibility of working from home and joint deliveries in collaboration with the city's businesses.

Additional effects

The focus area is an essential prerequisite for achieving the goals for mobility and transport, as less transport is easier and cheaper to convert. In addition, reduced driving also helps to reduce air and noise pollution, as well as congestion in the city, thus making room for other purposes.

Initiatives

TM-1 Ensuring alternatives to motorised transport in urban planning
TM-2 Fewer fossil miles per person in daily life
TM-3 Implementation of City logistics

Related initiatives

- Parking policy
- Municipal plan

Change the composition of transport

An important tool to reduce greenhouse gas emissions and create more energy efficient transport in the city is to change the nature of transport. This can be done by getting more people using modes of transport with less energy consumption, such as light rail, carpooling and bicycles. The climate-friendly choice must also be the easy and natural choice. Aarhus Municipality is working to create a good framework for cyclists and improve public transport. This is done, for example, through the bicycle action plan and the forthcoming public transport plan for Aarhus Municipality.

Additional effects

In addition to reducing the need for energy for transport, a change in the composition of transport also helps to increase health and well-being by reducing particulate emissions and increasing exercise.

Initiatives

TM-4 More choose public transport
TM-5 More bicycles

Related initiatives

- The bicycle action plan
- Collective traffic plan

Change of technology and fuels

Even though the need for transport is reduced and many people are changing modes of transport, there will still be relatively high fossil fuel emissions in the sector. In order to achieve the goal of the green transition, it is essential that the municipality works to increase the proportion of renewable energy in transport. This can be done, for example, through electrification of private cars and alternative fuels for aircraft, ships and heavy transport. And by ensuring access to renewable energy in the form of electricity and alternative fuels, from an energy system in balance with the transport sector. Aarhus Municipality will therefore engage in targeted dialogue and cooperation with companies, to develop transport plans and work to increase the production and availability of the alternative fuels.

Additional effects

In addition to having one of the greatest potentials for direct GHG reduction locally, this also offers significant commercial potential for the development of new technologies, products and services that can generate increased local exports. There is also a health benefit from electrification of transport in relation to particulates and noise.

Initiatives

TM-6 Promotion of Electric Vehicles
TM-7 Taxi Electrification
TM-8 Phasing out fossil fuels in the transport sector

Related initiatives

- Green transport plan
- Energy strategy Aarhus

Tools and infrastructure

In order to succeed in a green transition of the transport sector, it is important to create the necessary prerequisites for change. For this reason, the focus area will be the incentive-creating tools to increase motivation among citizens and companies, both through cooperation on changed transport, but also with regulation, where necessary. Necessary charging and energy storage infrastructure must be developed so that the transition in technology to electricity and fossil-free fuels can succeed, and companies must be offered support in the transport transitions. This major shift to renewable energy and new technology provides many opportunities for efficiency, e.g. in the area of lighting, but it also places great demands on planning and ensuring the necessary infrastructure for the energy supply of the city's transport in a timely manner.

Additional effects

In addition to supporting the overall transport effort, this focus area contains significant efficiency potentials for municipal operations, as well as considerable potential for support of local innovation and business development in creating a more attractive city.

Initiatives

TM-9 Regulation and incentive for climate-friendly passenger transport
TM-10 Ensure adequate charging and energy storage infrastructure
TM-11 Replacement of Road Lighting for LED

Related initiatives

- Charging infrastructure strategy
- Lighting strategy

OVERVIEW OF INITIATIVES

Reduce transport needs

TM-1	**Ensure alternatives to car-dependency in urban planning**
TM-2	**Fewer fossil person-kilometres in daily life**
TM-3	**Implementation of City logistics**

Change the transport composition

TM-4	**More people choosing public transport**
TM-5	**More cyclists**

Change of technology and fuels

TM-6	**Driving electric cars**
TM-7	**Taxi electrification**
TM-8	**Ending fossil fuels in the transport sector**

Tools and Infrastructure

TM-9	**Regulation and incentives for climate-friendly passenger transport**
TM-10	**Ensure adequate charging and storage infrastructure**
TM-11	**Replacing street lights with LEDs**

CLIMATE RELAY

Kristian Buus and Anders Bjørnlund,
Buus Anlægsgartner A/S.

What do you see as the biggest challenge for the green transition in Aarhus?
One of the major challenges for the green transition of Aarhus is transport. It is not only passenger transport, but also commercial transport that places a strain on it. That's why we are trying to convert our own fleet. So far we have five electric cars out of 45 cars. One of the challenges in acquiring more electric cars is that the charging infrastructure is still not sufficient. There are simply too few charging stations.

> *"It is obvious that private individuals could use our electric cars during the periods when they are standing still.*

In addition, we would like to contribute to even more people considering electric cars. As a company, we do not use our cars all the time. In fact, we wanted to increase the coverage of our electric cars. It is obvious that private individuals could use our electric cars during the periods when they are standing still. Unfortunately, we are challenged by the taxation system for commercial vehicles, which means that it is not possible for private individuals to rent a commercial car. In addition, there is a lack of insurance solutions for these issues. We believe that sharing economy – for example in cars – can help to reduce the general consumption of resources and thus contribute to resolving the climate challenge.

CONSTRUCTION AND URBAN DEVELOPMENT

BY 2030, AARHUS WILL

- ✓ Have a city that supports a society of renewable energy as optimally as possible.
- ✓ Have grown larger without increasing energy consumption.
- ✓ Significantly reduce greenhouse gas emissions from materials and activities for construction and urban development (70%).
- ✓ Have implemented changes ensuring that soil from construction and civil engineering activities is generally not transported outside the districts in which they take place (maximum 5km).
- ✓ Be among the country's leading test and demonstration cities for climate-friendly construction.

Source: Aarhus Municipality Climate Strategy 2030

In order for future buildings and open areas to support a city with renewable energy in all sectors, they need to use minimal energy, use energy correctly, produce and store energy, supply energy for e.g. electric cars, be flexible and durable and not emit CO_2 in the construction phase.

The Construction and Urban Development sub-programme will help to ensure this, so that we can create a reliable and robust energy system and infrastructure, such as batteries, that will handle fluctuations in renewable energy. Work must be focused on construction designed for a long lifespan, flexibility and high recycling, so that the CO_2 footprint from the construction phase is reduced.

By 2024, we will work together with the construction stakeholders on a common green direction for climate-friendly construction and urban development. Through partnerships, pilot projects and innovation laboratories, we will work to ensure that Aarhus can become a leading test and demonstration city for climate-friendly construction, and work for a circular city, whith the goal of a 70% reduction in greenhouse gas emissions from materials and activities to construction and civil engineering.

GAINS ARE

Total direct CO_2 reduction in Aarhus

6,000

tons

Reduction in indirect CO_2 emissions

MEDIUM

Important prerequisites for transition

MEDIUM

Positive derived effects

MEDIUM

Common green direction

As with the Energy Strategy, which sets the direction for climate work up to 2030 in the energy sector, a common strategy for building, construction sites and urban development must be developed, which will ensure close cooperation between all key players within construction. The strategy must be formulated in close collaboration with the upcoming plan strategy and revision of the municipal plan.

Energy production on roofs and facades, energy storage, energy renovations and increased waste sorting equipment will be part of the urban landscape, and the architecture policy will therefore help raise the debate around how a city of 100% renewable energy with the necessary climate adaptation should look.

The framework for the green conversion of construction is largely determined by legislative changes. Input concerning barriers to legislation, legislative changes and experiences with the scope of the law are collected and passed on to actors with an influence on the formation and adaptation of legislation.

Additional effects

The focus area is a crucial prerequisite for realising the ambitions for the conversion and development of tomorrow's urban development and construction. This is where knowledge, initiatives and relationships are created, together with the responsible stakeholders, who enable many of the sub-programme's other activities.

Initiatives

BB-1 Climate-friendly buildings, construction sites and urban development strategy
BB-2 Green Architecture Policy
BB-3 Energy in urban planning

Related initiatives

- Architecture policy
- Plan strategy and revised municipal plan
- Acquisition and land-sale strategy

Leading city for test and demonstration

Aarhus has great potential to be a leading test and demonstration city for climate-friendly construction, plant solutions and urban development. A joint effort is therefore being launched to create a partnership for climate-friendly building culture. This can make it possible to unite the many players in the construction and civil engineering industry, who together can realise this potential.

Aarhus already has a number of experiences and competencies to draw on in relation to new building materials and solutions. Together with the partnership, a laboratory will be established for climate innovation and the testing of new solutions, in which the municipality, private players, educational and innovation environments can put their knowledge into play in pilot projects.

Additional effects

Cooperation, testing, and development of new solutions contributes to creating jobs and increasing opportunities for green exports within construction and urban development, just as the focus area can contribute to increased international awareness of Aarhus within product innovation, urban development and construction.

Initiatives

BB-4 Climate Forum

Related initiatives

- Business plan

The circular city

Through previous climate initiatives, Aarhus already has a strong position when it comes to circular construction. The circular city builds further, with a focus on the overall value chain of construction and a more holistic way of building, developing and planning, (for example through the promotion of renovation and recycling rather than new construction) material banks and demonstration buildings with climate-friendly materials. The circular city has visible sustainable resource management, reducing the municipality's overall CO_2 footprint. This is achieved through sustainable land management, smart waste sorting, reduced fossil-driven machinery and optimal planning of the city's layout.

Additional effects

Promoting recycling of building materials and other resources will create significant secondary CO_2 reductions, thereby reducing the need for the production of new ones. A focus on circular economy can be a transverse platform for construction sector's players in the development of climate solutions, which can only be achieved by thinking across industries and sectors.

Initiatives

BB-5	Circular economy in construction and civil engineering
BB-6	Sustainable soil management
BB-7	CO_2 neutral construction sites
BB-8	Climate-neutral construction strategy
BB-9	Climate-friendly social housing strategy

Related initiatives

- Circular economy recommendations

OVERVIEW OF INITIATIVES

Common green direction

BB-1	**Strategy for climate-friendly building, construction sites and urban development**
BB-2	**Green architecture policy**
BB-3	**Energy in urban planning**

Leading test and demonstration city

BB-4	**Climate Forum**

The circular city

BB-5	**Circular economy in construction**
BB-6	**Sustainable soil management**
BB-7	**CO_2 neutral construction sites**
BB-8	**Climate-neutral construction strategy**
BB-9	**Climate-friendly social housing strategy**

CLIMATE RELAY

Lars Kvist and Heidi Hjort Thuesen, Arkitema Architects.

What do you see as the biggest challenge for the green transition in Aarhus?

Aarhus is undergoing major changes. The city is being transformed, becoming more densely populated, and new neighbourhoods are growing. It's happening fast. The traffic infrastructure and the city's breathing spaces are under pressure. Online shopping and digitisation are changing and affecting the life of the city – for better and for worse.

> ***The city and its architecture must be developed in a balance between new technological opportunities and spaces for social communities.***

Technical solutions are available, but not necessarily used. The sustainable city requires holistic thinking towards new ways of living, building and developing.

The city and its architecture must be developed in a balance between new technological opportunities and spaces for social communities.

The challenge is to get everyone involved in the development of a social, attractive and green city.

INDUSTRY AND AGRICULTURE

BY 2030, AARHUS WILL

- Have implemented a comprehensive energy efficiency improvement in industry (30%).
- Have an industry that no longer uses fossil fuels for process energy and that has converted internal transport to renewable energy (100%).
- More climate-friendly local agriculture, that has significantly reduced greenhouse gas emissions (25%).
- Industrial companies and agriculture have integrated climate and circular economy into their business models.

Source: Aarhus Municipality Climate Strategy 2030

Aarhus is still an industrial city. It is not always obvious, but many people work in the process industry that continues to characterise the city. Around the city, active farming is flourishing, which is the origin of a strong produce-cluster growing food for the whole world. Both sectors are still dependent on fossil fuels, but also have great potential to contribute to the green transition. The municipality will therefore support minimising energy and resources and that the city's industry and agriculture achieve production without the use of fossil fuels.

At the same time, we must ensure that as much surplus energy or waste as possible is reused, for example as extra heating or in a symbiosis with other companies. In the future, one company's waste must become another company's raw material. Agriculture has a good weighting between climate-friendly food production, CO_2 storage and energy production that supports the needs of society. This requires new types of business models, technologies and collaborations.

GAINS ARE

Total direct CO_2 reduction in Aarhus

39,500

tons

Reduction in indirect CO_2 emissions

MEDIUM

Important prerequisites for transition

MEDIUM

Positive derived effects

LOW

From soil to soil

Until now, there has been no focus on targeted cooperation with the agricultural industry on the climate agenda in Aarhus. For this reason a platform for project collaborations between important local players is being created. There is particular focus on climate-friendly use of private land and food value chains, and together with other stakeholders, new forms of land-use are being identified and supported. These benefit both the economic bottom line and the climate in interaction with national legislation and national policy initiatives for the area. The municipality's contact with the agricultural authorities acts as a lever for cooperation, dialogue and development.

Additional effects

Increasing the speed of the green transition within the food industry can strengthen the robustness and competitiveness of the industry and help to create precisely the products that will meet tomorrow's demand for climate-friendly food. By using land for CO_2 storage, more nature can also be created and with that, a richer life for citizens, animals and plants.

Initiatives

- IL-1 Food value chains from soil to soil
- IL-2 Climate-friendly agricultural land use
- IL-3 Enhanced supervision and dialogue with agriculture

Industry processes

Today, many industrial companies use fossil fuels for heating and processes. Some of this can be replaced by locally produced energy and new fuel-free technologies, but not all. Therefore, the production of renewable energy for companies must be increased and fossil fuels replaced by alternative fuels. The use of fossil and virgin materials in production must also be replaced by increased recycling and circular models, where materials are cycled, so that one's waste is the other's raw material. As an authority and partner, the municipality will continue to develop statutory supervision into an even more active tool that can help identify energy streams and materials, share knowledge and create new collaborations to promote the green transition in the industry.

Additional effects

Replacing the use of fossil fuels with cheaper renewable energy, and following this up with more efficient use of energy and materials, not only benefits the climate, it also benefits the bottom line in industry and increases competitiveness. Increased symbiosis on the use of resources, will allow new products and companies to arise.

Initiatives

- IL-4 Solar energy for industrial companies
- IL-5 Alternative sources of liquid gas
- IL-6 Strengthened supervision and dialogue with industry
- IL-7 Circular economy and symbiosis

Knowledge and cooperation

Being a small company alone can make the journey to a fossil-free world difficult. The partnership for green growth introduces a partnership for conversion. With this, small businesses and agriculture can join forces and commit to reducing greenhouse gas emissions in a voluntary partnership. Building new knowledge and skills is an important part of this partnership. For example, by enhancing the qualifications of newly qualified academics with competencies in green transition and finding precisely the companies in the partnership that lack these competencies, green transition, employment and growth are created. We call this win-win-win and it is the stuff that generates valuable changes. But even with the best intentions and will to change, there can be bumps along the way. Knowledge from the partnership must therefore be translated into a joint effort when laws and regulations stand in the way of transition.

Additional effects

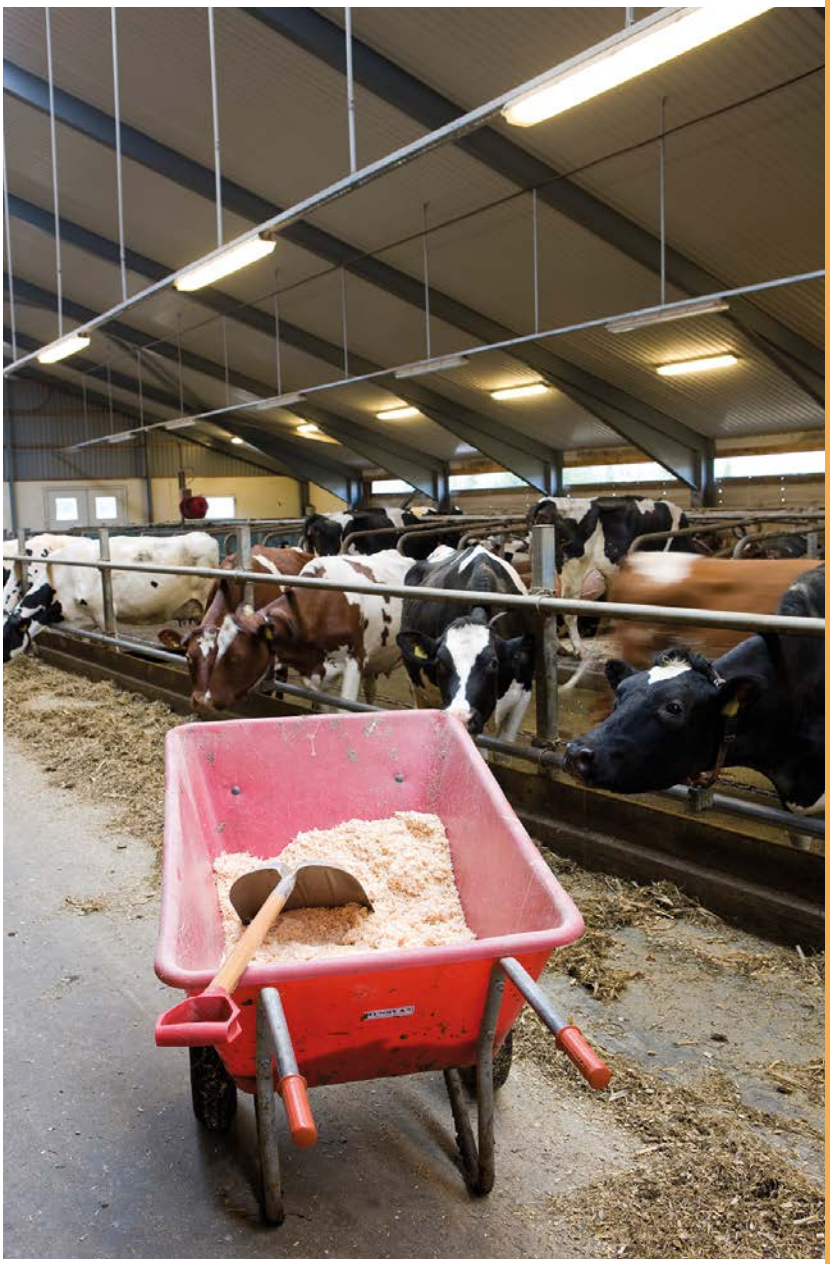
Transforming the city's businesses and agriculture doesn't just help reduce local greenhouse gas emissions. The transition also creates demand outside the municipality for climate-friendly solutions, and companies become more resilient, with increased demand for climate-friendly products. This not only helps to resolve the climate crisis, but also ensures and creates new local jobs.

Initiatives

IL-8 Green change agents for industrial and agricultural concerns

Related initiatives

- Aarhus Municipality's climate alliance
- "Partnerships for sustainable growth", Business Plan Aarhus



OVERVIEW OF INITIATIVES

From soil to the earth

IL-1	**Food value chains from soil to soil**
IL-2	**Climate-friendly land use of agricultural land**
IL-3	**Strengthened supervision and dialogue with the agriculture sector**

Industry processes

IL-4	**Solar energy for industrial companies**
IL-5	**Alternative sources of liquid gas**
IL-6	**Strengthened supervision and dialogue with industry**
IL-7	**Circular economy and symbiosis**

Knowledge and cooperation

IL-8	**Green agents of change for industrial and agricultural concerns**

CLIMATE RELAY

Anne Zachariassen, Chief Operating Officer, Port of Aarhus.

What do you see as the biggest challenge for the green transition in Aarhus?
At Aarhus Harbour, we are committed to making things happen so that ideas, plans and strategies are translated into action.

> ***We are currently working to establish an energy guild that can ensure green power for the operation of all the companies at the port.***

Our own strategy has two sides. On the one hand, we aim to be CO_2 neutral by 2030 and be the most sustainable port in the Baltic Sea Region – and we are well on our way. On the other hand, we want to establish a framework that can support green development for all the companies at the port. This means that our contribution to the green transition will also benefit our customers and partners.

Currently, we are working to establish an energy guild that can ensure green power for the operation of all the companies located at the port, regardless of whether they need power for cooling a cold store or for the many electric cars and electrified machines that we already see around the port.

An energy guild will enable companies to contribute to a common green project, reaping both investment and utilisation benefits, because more companies can work together more.

TRANSFORMING AARHUS

BY 2030, AARHUS WILL

- ✓ Have developed new technologies and innovative forms of cooperation that help support the transition to a CO_2 neutral society, and doubled exports of climate-friendly solutions.
- ✓ Have the most climate-friendly and competent citizens and companies in Denmark.
- ✓ Be in a strong position among the leading cities in green transition.

Source: Aarhus Municipality Climate Strategy 2030

In order for Aarhus to become a CO_2-neutral city in the future, supported by green, innovative and digital companies, as well as local and educational communities, it requires a strong public movement and strong business partnerships.

In close cooperation with the research and education sector, Aarhus Municipality will be an attractive municipality to study, work and do business in; through knowledge, cooperation, drive and joint commitment from the cultural community to the business community. Aarhus Municipality will become a magnet for the most talented and innovative citizens, students, researchers and entrepreneurs. At the same time, Aarhus will retain its international position as a leader in a number of green and climate-friendly solutions.

Up to and including 2024, the focus will be on innovation, partnerships and funding within the climate area, as well as development of Aarhus as a leading innovation platform, test and demonstration city for green solutions. Strengthening the knowledge of citizens and companies is a prerequisite for companies to find employees with the necessary qualifications within climate, green transition and innovation. In order to increase drive towards the green transition in Aarhus, access to and opportunities for active participation in decisions are being strengthened through the consultation portal, the Danish Council of Citizens and the public budgets.

GAINS ARE

Total direct CO_2 reduction in Aarhus

—

Reduction in indirect CO_2 emissions

MEDIUM

Important prerequisites for transition

HIGH

Positive derived effects

MEDIUM

Innovation and export

Under this focus area, the business and growth initiatives that focus on innovation in the climate area and the development of Aarhus are brought together as a leading innovation platform and test and demonstration city. Partnerships and funding are essential for this to succeed.
A commitment to start-ups and growth environments, as well as established companies, is essential for innovation across sectors. These initiatives must be seen in the context of the business plan, where the focus is on supporting players in green transition as a driving force for innovation and growth, thereby helping all companies to maintain their competitiveness.
Aarhus is already internationally recognised as a leader in a number of green and climate-friendly solutions. This will continue and develop through strengthening existing local, national and international networks and experience with business delegations.

Additional effects

This focus area contributes significantly to the international branding of Aarhus as a climate and innovation city, and the city's companies as suppliers of green solutions. This benefits exports and opportunities for major international collaborations on green conversion around the world.

Initiatives

AO-1 Promoting innovation in climate and green transformation
AO-2 Strengthened exports of climate solutions and branding of Aarhus as a climate-friendly city

Related initiatives

- Business plan
- Energy strategy Aarhus
- Climate alliance
- GoGreen Delegations service
- Acces Cities and collaboration with Pittsburgh, USA

Knowledge and capability

There is a need to raise the level of knowledge and competence about climate change and green transition, and to strengthen citizens' and local communities' opportunities for action. This is a prerequisite for companies to attract employees with the necessary qualifications within climate, green transition and innovation.
The focus area includes initiatives aimed at children and young people, families, adults, local communities and cultural institutions, as well as various professions, associations and NGOs.

Existing and new digital platforms are being utilised, as well as physical manifestations of climate action, and binding partnerships are being established with the city's short, medium and higher education institutions. Concerning adults, both traditional citizen information and educational activities are being considered, as well as brand new initiatives such as mobilisation through the training of climate ambassadors with strong contact with citizens throughout the urban community.

Additional effects

By building up climate knowledge and competence among children, young people and adults, manpower with the right qualifications within the climate and green transition is ensured for companies. The same applies to partnerships and collaborations with the city's many educational institutions. The municipality's cultural institutions and cultural stakeholders will be able to bring citizens' thoughts, hopes and dreams into play regarding a CO_2-neutral future.

Initiatives

AO-3 Education – knowledge and learning about climate
AO-4 Democracy – citizen involvement and co-creation

Related initiatives

- Citizenship policy
- Culture policy

Mobilisation and behaviour

One thing is to inform and reach out to citizens. Another thing is involvement. The focus area will strengthen citizens' opportunities for, and access to, active participation in decisions on the green transition in Aarhus. This will ensure greater ownership and drive among citizens through active citizens' councils and budgets.

We must think about strengthening local climate action and how we develop and adapt together with citizens. A central initiative is the establishment of Climate Centre Aarhus, with the purpose of providing information and guidance on active climate action in the city; to citizens, NGOs, companies and other stakeholders. This will make it easier for everyone with ideas for climate initiatives to realise them and provide a flexible dialogue with the municipality where necessary.

Additional effects

With increased involvement and ownership, the drive to create a CO_2-neutral urban society is increased, as well as the demand for climate-friendly products and solutions for the benefit of companies.

Initiatives

AO-5 Community – united for the green transition
AO-6 Partnerships – knowledge-sharing and strong collaborations
AO-7 Measurement and communication – ensure and make results more visible

Related initiatives

- Citizenship policy

OVERVIEW OF INITIATIVES

Innovation and export

AO-1	**Promoting innovation in climate change and green transition**
AO-2	**Strengthened exports of climate solutions and branding of Aarhus asa climate-friendly city**

Knowledge and capability

AO-3	**Education – knowledge and learning about climate**
AO-4	**Democracy – citizen involvement and co-creation**

Mobilisation and behaviour

AO-5	**Community – united for the green transition**
AO-6	**Partnerships – knowledge-sharing and strong collaborations**
AO-7	**Measurement and communication – ensure and visualise results**

CLIMATE RELAY

Arnold Boon, University Director, Aarhus University.

What do you see as the biggest challenge for the green transition in Aarhus?

One of the major challenges for the green transition in Aarhus is to translate sustainable ideas and research into concrete actions. With a broad-based research and study environment, Aarhus University is in a strong position when it comes to developing new sustainable solutions. And we see that many of our students and employees are highly motivated to promote environmental sustainability.

We want to integrate sustainable development even more into our activities, and we want to think more about the university as a form of living lab, where we test sustainable ideas. At the moment, we have an internal sustainability seminar where we ask students and employees to provide input on how we promote sustainability and create a greener future.

> *"We want to integrate sustainable development even more into our activities, and we want to think of the university as a form of living lab to a greater extent.*

A GREEN ORGANISATION

BY 2030, AARHUS WILL

- ✓ Have its own and purchased transport work that does not use fossil fuels.
- ✓ Have more energy efficient municipal buildings (30% less energy) as well as municipal building and construction activities with significantly reduced direct and indirect CO_2 emissions from materials and construction work (70% compared to 1990).
- ✓ Have municipal tender and procurement systems that proactively support the green transition.
- ✓ Have ensured a green transition of municipal companies through dialogue and follow-up, thereby exploiting the opportunity to support the transition in society.
- ✓ Have managers and employees who have the necessary knowledge to be climate-friendly employees and fellow-citizens.

Source: Aarhus Municipality Climate Strategy 2030

The main focus of the initiative is on the municipality's largest emissions, especially transport, and the removal of the associated use of fossil fuels. At the same time, there is a strong focus on the consumption of energy in the municipality's own buildings. This must be reduced and made flexible so that it can also support a society on renewable energy.

There is also a focus on exploiting the opportunities the municipality has to influence the outside world and to support the transition, both locally and internationally. We are therefore working hard to make ever-increasing demands on suppliers, and to maintain a close dialogue with partners and municipally-owned companies.

In order for us to succeed in changing Aarhus Municipality's own operations, we have to ensure the necessary capability among the municipality's managers and employees. New knowledge must be used, behaviour must be changed and we must ensure that it is as easy as possible to participate in the green transition. For this reason, one important job in this sub-programme is to increase knowledge and motivation, as well as create a visible and up-to-date green transition. This will also help to make employees more climate-competent citizens in their private lives.

GAINS ARE

Total direct CO_2 reduction in Aarhus

54.000

tons

Reduction in indirect CO_2 emissions

MEDIUM

Important prerequisites for transition

MEDIUM

Positive derived effects

MEDIUM

Procurement and tendering

The municipality is a major purchaser, which is why it has an effect on market development when the municipality makes demands. Especially when this happens strategically and in collaboration with other major purchasers. A green procurement strategy will be drawn up to support the right requirements for the municipality's partners and suppliers. However, the municipality is a large body, and many people make purchases. An important part of the focus area is therefore to make it easy to create lasting behavioural changes, so that green conversion becomes a natural part of purchasing throughout the municipality. For us to be able to monitor results, new tools for measuring and assessing purchases are being developed through specific trials, for example with office furniture purchases.

Additional effects

The City of Copenhagen's procurement counts for a significant part of its climate impact outside the City, and therefore affects the outside world, even though the local effect may be small. By entering into strategic partnerships for the development of new solutions with the business community and knowledge institutions, the municipality can utilise its own operations for testing and demonstration, and to strengthen development and increase green exports.

Initiatives

KA-1	Strategic initiative for green changeover in procurement and tendering
KA-2	Sustainable circular furniture
KA-3	Green balance – monitoring and measurement methods for green procurement and tendering

Related initiatives

- Climate-friendly food purchasing

My climate-friendly workplace

Change in behaviour requires the building up of knowledge, skills and motivation among all employees in Aarhus Municipality. These characteristics are all necessary for employees to be proactive and valuable in the green transition. Not only as part of the municipality as an organisation, but also in their daily work outside the workplace. Motivation requires an understanding of the importance of, and opportunities for, concrete actions, and it also requires a visible green transition. The focus area therefore relies on close cooperation in the municipality's MED system.

Additional effects

The municipality's employees constitute a relatively large proportion of the municipality's citizens. A climate-friendly workplace therefore also creates climate-friendly citizens who can be good role models for the rest of society. At the same time, being part of a working community with a responsible green profile helps to generate pride and attract talent.

Initiatives

KA-4	Building motivation and knowledge among employees in Aarhus Municipality
KA-5	Capacity building and training of employees in Aarhus Municipality
KA-6	Changed workflows, digitisation, data and surveys in the workplace
KA-7	Communication and climate at eye level

Fossil-free municipal transport

The municipality's own transport is the largest contributor to greenhouse gas emissions for the municipality as an organisation. The City Council has therefore decided that the municipality's own and purchased transport must be fossil-free by 2030 at the latest and that a separate plan "The Green Transport Plan" should be drawn up. The implementation of this plan is one of the most important initiatives within the climate-friendly workplace. Important elements of the plan are the electrification of the municipality's fleet and purchased transport, but the focus area is also about electrification of city buses. We will create visibility by sending a signal through the cityscape about a changing city, and by motivating others to participate in the transition. Employee-transport must also be converted, e.g. by creating good opportunities for bicycleand electric car parking at the municipality's buildings, as well as through behavioural design and incentives to minimise the need for driving their own cars, and by getting more people to choose fossil-free transport at work.

Additional effects

In addition to the direct reduction in local greenhouse gas emissions from the municipality's own activities, this focus area also contributes to an effect on the rest of society. For example, this could be suppliers changing transport technology used for other deliveries than just those to the municipality, and by the municipality leading the way and helping to push for expectations in the market, as well as testing and demonstrating new solutions to others.

Initiatives

- KA-8 Implementation and operation of Green Transport Plan
- KA-9 Urban bus electrification
- KA-10 Climate-friendly employee transport during working hours
- KA-11 Climate-friendly transport to and from work

The municipality's properties and subsidiary companies

The municipality has come a long way in reducing energy consumption from the many buildings and properties that the municipality itself owns. This work will continue, but at the same time serious work on reducing consumption and greenhouse gas emissions from the construction and civil engineering phase will be initiated. Buildings must be prepared to interact with an intelligent energy system for clean renewable energy and a world where virgin resources are not used. Energy must be used correctly, energy must be produced, and the buildings must be flexible, utilised optimally and they must be able to be reused and converted to the users' changing needs. Energy must not burden the climate or the world's resources, and must also make it easy to be a climate-friendly employee. This requires new models and tools, partnerships with industry, testing of new solutions and a systematic monitoring of results.

Additional effects

This focus area has great potential, not only to reduce the impact of greenhouse gas emissions and resource consumption outside the municipal borders through market impact, but it also offers great opportunities through the construction programme and partnerships with industry to support the development, testing and demonstration of new solutions.

Initiatives

- KA-12 New financial and budget models for buildings
- KA-13 Climate-friendly and profitable operation of buildings
- KA-14 Requirements, tools and methods for operational and climate-conscious solutions in construction
- KA-15 Buildings as a framework for employees' climate efforts in their everyday work
- KA-16 Green ownership

OVERVIEW OF INITIATIVES

Climate-friendly procurement and supply

KA-1	**Strategic initiatives for green changeover in procurement and tendering**
KA-2	**Sustainable circular furniture**
KA-3	**Green balance – monitoring and measurement methods for green procurement and tendering**

My climate-friendly workplace

KA-4	**Building motivation and knowledge among employees in Aarhus Municipality**
KA-5	**Capacity building and training of employees in Aarhus Municipality**
KA-6	**Changed workflows, digitalisation, data and surveys in the workplace**
KA-7	**Communication and climate at eye level**

Fossil-free municipal transport

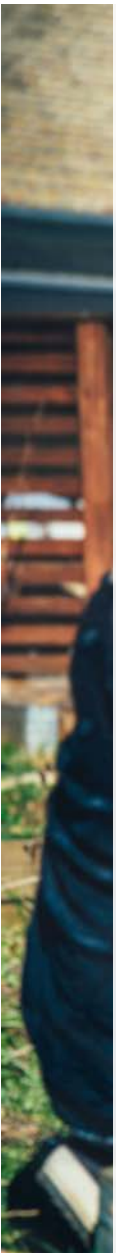
KA-8	**Implementation and operation of Green Transport Plan**
KA-9	**Urban bus electrification**
KA-10	**Climate-friendly employee transport during working hours**
KA-11	**Climate-friendly transport to and from work**

The municipality's properties and companies

KA-12	**New financial and budget models for buildings**
KA-13	**Climate-friendly and profitable operation of buildings**
KA-14	**Requirements, tools and methods for operation and climate-conscious solutions in construction**
KA-15	**Buildings as a framework for employees' daily climate efforts**
KA-16	**Green ownership**

CLIMATE COLLEAGUE

Birthe Jason, teacher, Sabro-Korsvejens Skole.
Winner of the 2018 Climate Colleague Award.



Every year, Aarhus Municipality names an employee as the Climate Colleague of the year.
The award will focus on all the different ways in which employees work with climate challenges in their daily work. One of the winners is Birthe Jason, a teacher at Sabro-Korsvejen School.

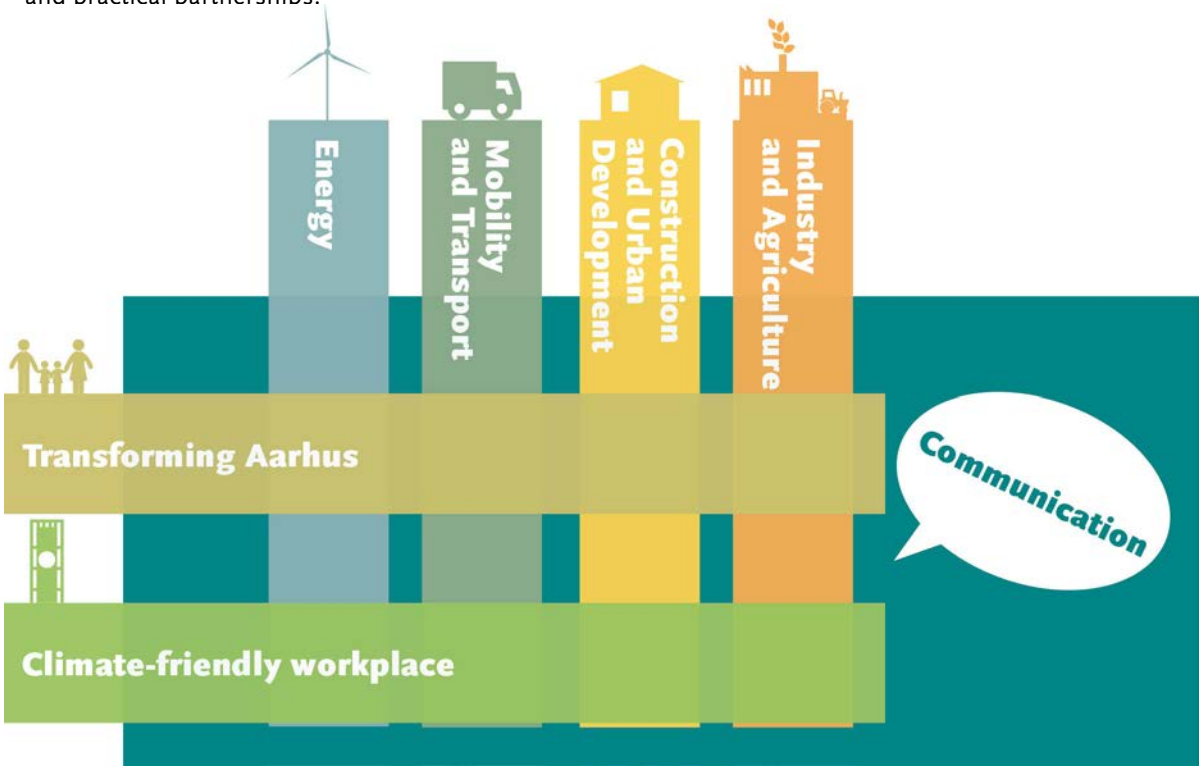
"The role of the school is to enable the children to take care of the planet. They are the ones who will inherit it. That's why it is obvious for us as a school to integrate climate and sustainability into the school day," says Birthe Jason.

At Sabro-Korsvejens Skole, this is worked on at two levels. Themes are based on selected subjects such as geography and social studies. In addition, there are annual project weeks based on topics related to climate and sustainability. And the students are happy about it.

"Once a year we have an 'international week' where all the students at the school work on the same topic. For example, recycling and sustainable entrepreneurship have been the focal point. In this way, you can work with what is appropriate for the individual age group in the different classes. At the same time, pupils see what the other pupils have worked on at the end of the week. It gives a sense of community and ownership of the challenges we face," says Birthe Jason.

LEADING CHANGE IN THE COMMUNITY

Climate action is one of the biggest projects for change in modern times. All parts of society and all citizens, businesses, etc. are affected by the changes. Ensuring direction, progress, knowledge, motivation and results therefore requires management for change on a large scale. In Aarhus, the municipality is leading the way and it contributes to supporting the necessary changes. As part of this, the municipality works according to the principles of program management and has organised the work not only across the municipality's own administrative areas, but also across society as a whole, in a number of strategic and practical partnerships.



Progress and results of the initiative are communicated through a variety of media, gathered together under *gogreenwithaarhus.dk*

PLATFORM FOR GREEN TRANSITION

In order to run a programme for change as large as the entire green transition of the organisation and society, a range of supporting measures are required. These are grouped in this focus area and anchored with the program management. The purpose of this is to ensure the best possible conditions for the many employees and other stakeholders who will have to create the necessary changes in society. This applies not only in relation to gaining knowledge and skillsets with stakeholders concerning green transition and change-management, but also to creating a common, visible platform for collaboration and dissemination of results, creating the best framework for the transition through shared safeguarding of interests among central legislators, and raising funds from foundations, etc.

Initiatives

PK-1 Strengthened interest management
PK-2 Fundraising and cross-project support
PK-3 Joint communication and dissemination

Related initiatives

- Aarhus Municipality's Green Innovation Fund
- Go Green Delegation Service
- GoGreenWithAarhUs

COLLABORATION ACROSS BORDERS

The climate crisis is a global challenge that requires local solutions. For this reason Aarhus is participating in a large number of national and international networks. It is here that experiences are shared and tasks are approached across the groups. Aarhus Municipality participates in the following collaborations:

- Covenant of Mayors
- Eurocities
- DK2020
- DN Climate Municipality

The Climate Action Plan and related documents have been prepared in collaboration with more than 400 local, national and international players. This means that the plan itself has been created in and by the community that will also implement the changes to help us reach the goal of green transition. Aarhus Municipality would like to thank you very much for all contributions, both large and small. They have all been important.

THANK YOU!

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