LEARNING FROM DK2020 – PILOT MUNICIPALITIES TOWARDS CLIMATE NEUTRALITY AND CLIMATE RESILIENCE

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DK2020
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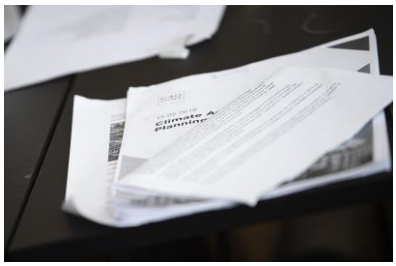

Foreword

In 2019, 20 Danish municipalities became part of the DK2020 pilot project, committing to develop climate action plans in line with the Paris Agreement. The plans will show how the municipalities aim to become climate neutral and climate resilient by no later than 2050 and include ambitious interim targets. The goals are knowledge-based and cover all sectors within the municipalities' geographical area.

The DK2020 work project is based on C40's international standard for climate planning, *the Climate Action Planning Framework*, and follows in the footsteps of the most climate-ambitious cities in the world. However, the Danish DK2020 municipalities have not only applied the international standard but have also further developed the work on local climate initiatives, serving as an inspiration for several types of cities and municipalities both in Denmark, the Nordic countries, and the rest of the world, including rural municipalities.

The association Realdania is behind the DK2020 pilot project together with the international city network C40 Cities and CONCITO – Denmark's Green Think Tank. Since the start, DK2020 has grown into a large partnership consisting of Realdania, KL – Local Government Denmark (the association and interest organisation of the 98 Danish municipalities), and the five Danish regions, with CONCITO and C40 acting as knowledge partners. At present, 95 Danish municipalities are part of DK2020.

This publication presents inspiring examples from the first 20 municipalities' climate planning in DK2020. The municipalities can each provide inspiration with their respective climate planning and initiatives – but also with their collaboration in DK2020, which has created a platform for knowledge and experience exchange and at the same time a common vision and direction for the Danish municipalities' contribution to implementing national climate goals and the Paris Agreement.

In Realdania, we are pleased that DK2020 has contributed to so many Danish municipalities being inspired by C40 cities and finding meaning in working within a common framework for climate action. Through this, the municipalities show us – and the whole world – decisive and action-oriented climate leadership. We look forward to further cooperation in DK2020 – Climate Action Plans for all of Denmark.

Pelle Lind Bournonville

Head of Projects, Urban Climate Action, Realdania

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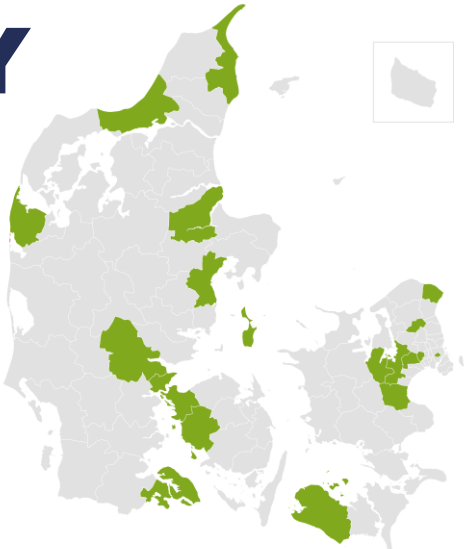
> **A municipality without a climate plan is like a ship without a rudder.**

- Søren Hermansen, Director of Samsø Energy Academy

INTRODUCTION TO DK2020

20 MUNICIPALITIES LEAD THE WAY



In 2019, 20 Danish municipalities joined as participants in the DK2020 project, which was initiated by Realdania in collaboration with C40 Cities and CONCITO. The goal of DK2020 was, and continues to be, to help the municipalities initiate climate action planning with a level of ambition that is aligned with the Paris Agreement's most ambitious goal of limiting global warming to a maximum of 1.5 degrees.

DK2020 has its background in the report Deadline 2020, which was published in the wake of the Paris Agreement in 2016 by C40 Cities and the consulting agency Arup. The report points out that the world's cities and municipalities can contribute with up to 40% of the CO_2 reductions needed to achieve the objectives of the Paris Agreement. Since the report, C40 Cities has developed the Deadline 2020 programme to support and to provide a framework for the work of the now 97 member cities to develop climate action plans that live up to C40 Cities' global standard for Paris-compatible climate action planning – Climate Action Planning Framework (CAPF).

The 20 selected Danish municipalities have now developed, updated, or adapted their climate action plans to be Paris-compatible, based on the C40 Cities' global standard.

In DK2020, the municipalities have been given the opportunity to follow in the footsteps of some of the world's most climate-ambitious cities. At the same time, the 20 Danish municipalities have gained experience with the use of CAPF in a municipal context, providing an inspiration for smaller cities and municipalities internationally. The 20 participating municipalities have thus become frontrunners both in Denmark and globally and have made international climate history.

The purpose of this publication is to highlight particularly inspiring examples from the participating municipalities' climate action planning, so that other municipalities and cities in Denmark, the Nordic countries, and internationally can learn from the DK2020 municipalities' experiences. In addition, the publication presents the results of CONCITO's evaluation of the DK2020 pilot project.

> **The truly great benefit of DK2020 is that it is now well over half of the Danish municipalities that aim for very ambitious goals and interim targets.**
>
> **- Simon Kjær Hansen, Fmr. Managing Director , Climate Solutions and Networks, C40 Cities Climate Leadership Group**

INTERNATIONAL CLIMATE STANDARD

In DK2020, the municipalities' climate action plans have been approved as living up to C40 Cities' global standard for Paris-compatible climate planning. C40 Cities defines a Paris-compatible climate action plan as a strategic document (or a series of plans and documents) that deliver on the following four key elements.

Climate neutrality
A climate action plan must develop a pathway to delivering a climate-neutral municipality by the end of 2050, including ambitious interim targets.

Climate resilience
A climate action plan must demonstrate how the municipality plans to adapt – and improve its resilience – to climate hazards both now and in future climate scenarios.

Inclusion and derived effects
A climate action plan must engage with the local community and outline the wider social, environmental, and economic benefits that can be expected from implementing the plan. It must also help to ensure an equitable distribution of these wider benefits to residents and communities.

Collaboration and governance
A climate action plan must detail the municipality's powers and capacities as well as the partners who must be engaged to ensure the achievement of the municipalities' mitigation targets and resilience goals.

It is within these four key elements that the following chapter will present inspiring examples from the first 20 municipalities that have participated in DK2020.

Climate Action Planning Framework (CAPF)
– an international standard for climate planning

With CAPF, C40 Cities has developed a framework for planning local climate action. CAPF presents the basic elements of a Paris-compatible climate action plan divided into three pillars:

1. Commitment to climate goals and collaboration
2. Identifying challenges and opportunities
3. Acceleration and implementation of comprehensive structural measures

Read more about CAPF here.

"I have been happy with CAPF. It is clear that all the experience gathered in C40 is an addition to the previous climate plans, which have largely focused on climate mitigation so far and not considered the other aspects. It is a more mature way of working with climate.

- Tina Unger, Program Manager Food, Business, and Sustainability in Lejre Municipality

INSPIRATION FROM THE FRONTRUNNERS

CLIMATE NEUTRALITY

In DK2020, the municipalities have pledged to achieve net-zero emissions by no later than 2050 and to set ambitious interim targets.

Being a climate-neutral municipality is defined in DK2020 as follows:

- Net-zero emissions from energy consumption in buildings, transport, agriculture, and industry (scope 1)
- Net-zero emissions from the use of grid supplied energy (scope 2)
- Net-zero emissions from waste generated within the city limits (scope 1 and 3)
- Whenever possible, minimised greenhouse gas (GHG) emissions related to emissions occurring outside the city boundary as a result of goods and services consumed by city residents, businesses and government (scope 3).

Local ferry service converted to biogas from agriculture

Samsø Municipality describes the establishment of a biogas plant on the island as the most important single action, which, by producing fuel for the island's two car ferries, can halve emissions from the transport sector. In addition, the biogas plant helps to reduce agricultural emissions of methane gas from livestock. The municipality's goal is that all slurry is treated in biogas plants by 2025. The establishment of the biogas plant is a major investment considering the municipality's size, but the local production of fuel will ensure stable fuel prices and the creation of local jobs. In addition to the biogas plant, emissions from agriculture will be reduced, e.g. by extracting agricultural land for afforestation or wetlands. In addition to the shift to biogas, emissions from the transport sector will also be reduced by converting buses and refuse collection vehicles to biodiesel.

Three GHG inventories and the phasing out of biomass

Køge Municipality's "DK2020 Climate Plan" presents three different GHG inventories. In addition to one for the municipality as a geographical area, both one including emissions from biomass incineration is presented as well as one including international emissions to visualise the possibility for actions reducing the municipality's global climate footprint. The municipality addresses the emissions in the two additional GHG inventories with a number of measures and estimates their effects on reduction. To create a climate-neutral heat supply, the municipality is working on a future district heating system based on renewable energy sources such as solar heating, large heat pumps, and geothermal energy. The municipality is already working on this, i.e. by using surplus heat from a local factory. The municipality will engage in dialogue with VEKS and Borup Varmeværk for the work, and, in its timeframe, the municipality has taken into account the long lifespan of the current biomass plants.

Goals and interim targets

Most of the municipalities have set reduction targets for their geographical area in line with the Danish Climate Act's 70% target in 2030 and net-zero target in 2050. However, four municipalities have set a target of being climate neutral before 2050. Frederiksberg Municipality will be climate neutral in 2030, Aarhus Municipality in 2030, Roskilde Municipality in 2040, and Helsingør Municipality in 2045.

In addition to these overall goals, many municipalities have set interim targets for the individual sectors, e.g. increased production of renewable energy by 2030.

"DK2020 has deepened the long-term perspective on what will happen after 2029. ProjectZero focuses on CO_2 neutrality in the energy system, while DK2020 is about climate neutrality everywhere by 2050 at the latest.

- Marie Grove Ingildsen, Civil Engineer / Urban Planner in Sønderborg Municipality

Annual binding climate targets and repaid climate debt in 2050

In 2008, Aarhus City Council set a goal of being a CO_2-neutral urban community by 2030. In April 2020, the City Council adopted a decision on binding annual climate targets. With the decision, the City Council commits to take further action if annual climate goals are not met. The binding annual targets are based on a scenario prepared by an external company and shows the effect of a number of known actions. In addition to binding targets, the City Council also agreed to prepare a climate strategy towards 2030 and a climate plan for 2021-2024 to implement the binding targets. After 2030 and until 2050, the municipality is working to pay off CO_2 debt via carbon capture technology based on the view that all emissions after 2018 constitute a built-up climate debt. In order to achieve its goals, the City Council has further decided to prioritise the known options along with carbon capture rather than compensation through the purchase and cancellation of emissions allowances.

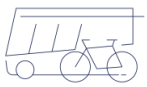
Greenhouse gas inventories and scenario work

In DK2020, via GHG inventories and scenario work, the municipalities have outlined reduction paths leading up to the year of their goal of climate neutrality for the municipality as a geographical area.

The municipalities have typically set up a business-as-usual scenario, a scenario that includes the effect of the reduction measures in the climate action plan, and a scenario for their targets. The scenario work provides clarity on the reductions achieved with the current reduction measures nationally and locally – both existing measures and the new, planned measures in DK2020.

In the evaluation of the project, the municipalities were asked to what extent their participation in DK2020 contributed to more updated and comprehensive GHG inventories (see Figure 1). On a scale of 1-10, their answers averaged 7.6.

The municipalities had methodological freedom when developing GHG inventories and scenarios. The municipalities have – to varying degrees – used consulting companies to support their work, which as an example included making a number of assumptions for dealing with uncertainties about technological and political developments leading up to the target year, but also considerations about the best use of available data within the various sectors.



Reduction measures

In their climate action plans, the municipalities have presented concrete measures that will contribute to achieving the goal of climate neutrality. As prescribed by CAPF, the municipalities have focused in particular on the sectors with the largest sources of emissions (see Figure 2). Below are examples of reduction measures within the sectors and for the municipality as a company.

Energy and buildings
E.g. solar cell systems (for roofs or open fields), wind turbines (sea and land), energy efficiency, and building renovation. Additional measures presented were for example low temperature district heating and phasing out of oil- and gas fired boilers.

Transport and mobility
E.g. deployment of charging infrastructure, more and improved cycle paths, including cycle superhighways. In addition, a shift to fossil-free public transport, promotion of carpooling, for example via apps as well as optimisation and conversion of delivery vehicles to fossil-free fuels.

Agriculture and land use
E.g. rewetting of carbon-rich peat soils, afforestation, and partnership agreements with agricultural businesses and organisations. In addition, a shift to climate-friendly forms of agricultural operation and experiments with biochar.

The municipality as a company
E.g. energy efficiency measures and renovation of municipal buildings, reduction of food waste, green procurement policies, and plans for circular economy. In addition, conversion of the municipality's vehicle fleet to fossil-free fuels.

Active work for transition to electric cars and cycling

In Frederiksberg Municipality, sustainable mobility is in focus. The aim is to be Denmark's number one electric car city, and also to have the highest percentage of trips made by bike. The vision on electric cars stems from their electric car strategy from 2019 and has inter alia been concretized as a charging guarantee, so that citizens will be able to charge their electric car within 250 meters of their home by the end of 2021. Another initiative focuses on parking conditions by reserving a number of parking spaces on public roads for electric cars. The number must be 50% more than the number of registered electric cars and plug-in hybrids in the municipality. The vision of increased cycling is concretized with initiatives such as better cycle paths, the installation of 1,200 new bicycle parking spaces, and by reducing car parking norms for all types of housing and businesses. The municipality's focus on mobility also applies to public transport, which will be electrified.

Figure 1: To what extent would you say that the participation in DK2020 has contributed to more up-to-date and comprehensive GHG inventories?

Residual emissions

As required by CAPF, the municipalities have calculated the residual emissions in their respective target years for climate neutrality understood as the remaining GHG emissions after all technically and economically feasible measures have been implemented. The municipalities all have redisual emissions in their target year after the currently planned initiatives. The municipalities in particular identify the transport and agricultural sectors as sources of the remaining emissions.

The municipalities have different starting points in the mitigation efforts, and it has proved more challenging for the municipalities to reduce within certain sectors. For example, agriculture is a major source of emissions where production is located, and municipalities with a lot of agriculture are challenged with finding effective actions due to the relatively immature technologies and lack of regulations from the national level and the EU. The municipalities also face barriers in their work to make a green transition in the transport sector.

The calculation methods vary among the municipalities, as such the size of their residual emissions may not be readily compared, as it is based on different assumptions and data.

The municipalities must work actively to reduce their residual emissions, and the climate action plans must be revised at least every five years, which involves updating GHG inventories and scenarios and of the calculation of residual emissions.

Catalogue of local measures prepared by advisory committee

In January 2020, Helsingør City Council decided to set up a climate committee to support the municipality's "Vision 2030" to promote nature, make sustainable choices, and act climate-friendly. The climate committee was established to support the municipality's mitigation efforts by uncovering and discussing opportunities and local measures to reduce companies' and citizens' GHG emissions. The climate committee has held five meetings, and the work has resulted in a local catalogue of initiatives. In the work of developing the catalogue, there was a focus on housing and buildings, private transport, public transport, integration of modes of transport, and heavy transport. The purpose of the establishment of the committee was to strengthen cooperation between city council politicians, citizens, and the business community and to ensure active cooperation in implementing climate plans and initiatives.

During the work to revise the plans, the municipalities must keep up to date on new technologies and any changes internally in the municipalities and in national regulations for climate action.

Biomass and the global climate footprint

In DK2020, the municipalities have also shown examples of going further than what was required in CAPF. For example, several municipalities address the fact that the consumption behaviour of the municipality, of companies, and of citizens has a global climate footprint outside of the municipality as a geographical area (scope 3).

Several municipalities have measures in place to address these emissions, for example in public procurement strategies or through information campaigns for citizens. In Køge Municipality, there is a focus on both scope 3 emissions and on biomass in district heating.

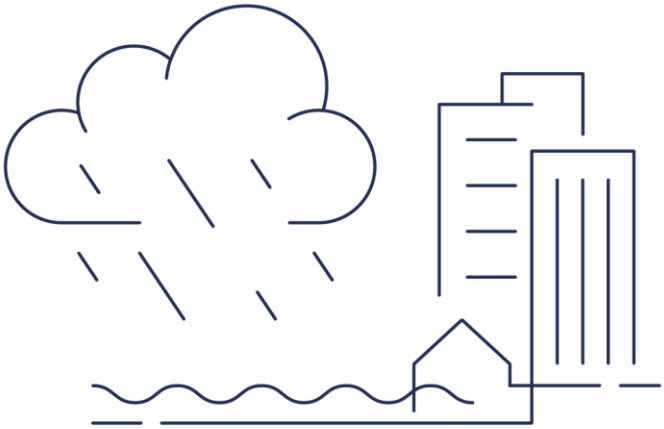
According to the UN's calculation methods, biomass is defined as climate-neutral, but since actual sustainable biomass is a limited resource, CONCITO and others recommend that biomass consumption in Denmark be significantly reduced compared to today. In addition, CONCITO recommends changing the calculation methods, so that biomass is not defined as climate-neutral in the future. It is important that municipalities and utility companies accelerate the transition to a future in which heat production is increasingly electrified and the use of biomass is significantly reduced. They should also be prepared for changes in regulations and the way in which emissions are defined.

Focus on the transport sector in general

For years, Lolland Municipality has focused on leading in demonstration and development of renewable energy sources and storage options. In developing their "Climate and Energy Plan 2020-2050," they focused on new and challenging areas, including the transport sector. With agricultural machinery and four ferries, transport is a significant source of emissions in the municipality. With the construction of the Fehmarnbelt Tunnel from Lolland to Germany, traffic further increases – and thus GHG emissions. The municipality has planned a number of initiatives, and several are already in progress. For example, electrification of the local rail line in collaboration with the rail operator Lollandsbanen before 2030, and examination of options for purchasing electric ferries in future tenders. Other initiatives focus on transitioning to CO_2-neutral fuels in road transport, on increasing alternative modes of transport such as shared vehicles, and the construction of a new and bicycle-friendly station.

Figure 2: To what extent would you say that the participation in DK2020 has contributed to more targeted reduction measures within sectors with the most emissions?

CLIMATE RESILIENCE



According to CAPF, a climate action plan must demonstrate how the municipality will adapt and improve its resilience to the impacts of climate change both now and in the long term. Consequently, the municipalities have set goals and interim targets for their climate adaptation efforts.

With the financial agreement in 2013, the municipalities committed to prepare climate adaptation plans as part of, or as a supplement to, their municipal plans. The work and experience with climate adaptation have varied from municipality to municipality depending on the degree of vulnerability. CAPF prescribes that, where possible, the risk scenarios should be based on either local standard methods or, as a minimum, one of the IPCC's intermediate emission scenarios (RCP 4.5).

The municipalities have thus had to ensure an updated data basis for their climate adaptation efforts. In addition, the risk assessment must encompass all the potential risks, including the entire water cycle.

Climate adaptation in collaboration with key stakeholder and experienced utility company

Allerød Municipality developed their existing "Action Plan for Climate Adaptation" from 2017 in close collaboration with the inter-municipal utility company Novafos. The municipality and Novafos have collaborated on climate-proofing the municipality's sewer system for many years. Likewise, in the preparation of "Climate Plan 2020," there has been a systematic involvement of the utility company which is considered a key player in climate adaptation. In parallel with DK2020, a comprehensive analysis was carried out of the rainwater and wastewater management in the municipality, supplemented with analyses of the consequences of climate change for rural land areas. A detailed development plan is expected to be ready in 2021, which will both identify areas of risk and be used in dialogue with Novafos on how to jointly ensure holistic water management – across infrastructure, watercourses, and natural areas.

High groundwater levels used in district heating – synergy between adaptation and mitigation

Høje-Taastrup Municipality aims to phase out oil and natural gas in all buildings in the municipality in 2030 by expanding district heating and installing individual heat pumps. The district heating company Høje Taastrup Fjernvarme works on transitioning to greener district heating, e.g. by shifting to low-temperature in parts of the municipality and by utilising heat from groundwater. In Høje-Taastrup Municipality, high groundwater levels are the biggest challenge related to climate adaptation. The challenge is addressed through partnerships with companies, utility companies, researchers, and other municipalities to ensure innovative solutions. In 2016-2017, the municipality initiated a project in collaboration with Høje Taastrup Fjernvarme that utilises heat from groundwater and lowers groundwater levels at the same time. The pumped-up groundwater is led into a newly installed electric heat pump, which is expected to cover 4% of the district heating consumption in the municipality.

The municipalities have been waiting for data and tools from the national government, which were made available by the end of 2020. In the DK2020 pilot project, the municipalities therefore only had the opportunity to carry out strategic reviews of their existing initiatives and climate adaptation plans but have committed to update and adopt their climate adaptation plans by the first quarter of 2022. As 18 out of 20 municipalities have used this option, no examples are presented in this section directly from the DK2020 work. Instead, a number of inspiring examples from the municipalities' climate adaptation work over a number of years are highlighted, including before DK2020.

Progressive climate adaptation with Mike Urban modelling

Roskilde Municipality has worked on climate adaptation for years with a focus on water. In 2013, the City Council adopted their "Strategy for Water and Climate Adaptation" with objectives based on thorough mapping and analysis of climate hazards from the entire water cycle in the municipality (streams, lakes, fjords, groundwater, rainwater, and wastewater). In June 2020, the City Council adopted a new "Water and Climate Adaptation Plan" with 26 actions for the period 2020-2023. Being the third action plan in a row, it builds on the strategy from 2013 and has been developed in close collaboration and dialogue with the utility company Fors Ltd, the fire service Roskilde Brandvæsen, and private stakeholders. Fors Ltd is considered a key player and has been a close part of the working group. The municipality's risk mapping is based on Mike Urban modelling, which takes local precipitation and terrain conditions, rising sea levels, and the capacity of the sewer system into account.

In the strategic reviews, the municipalities have stated that they will focus on considering possible synergies when updating the climate adaptation plans. The municipalities say the same in the evaluation of the DK2020 pilot project, in which it is also emphasised that it is new and challenging to integrate mitigation and climate adaptation efforts, which are often located in different places within the administration.

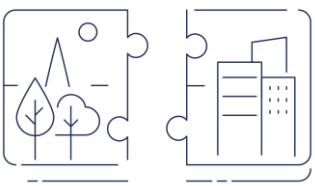
The strategic reviews have provided the municipalities with a basis for updating their climate adaptation plans to comply with CAPF, both in terms of updated data as a basis for calculating risk scenarios and impact assessments, but also in terms of securing the other core elements in a climate adaptation plan, such as inclusion and wider benefits as well as collaboration and governance.

Synergies between mitigation and adaptation

In addition to updates and initiatives to become a climate-resilient municipality, CAPF prescribes a focus in climate planning on possible synergies between mitigation and adaptation efforts.

"The good thing about DK2020 is that the stormwater management plan and climate-proofing have been linked to mitigation efforts, so that the importance of climate adaptation becomes clear.

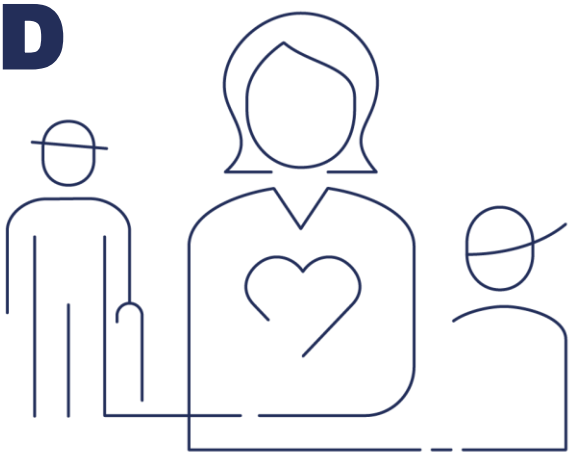
- Anne Adamsen, Civil Engineer in Albertslund Municipality



"It is new for us that we have to think about climate adaptation and mitigation at the same time. We have not done it before, although we have talked about possible synergies.

- Jacob Skjødt Nielsen, Green Ambassador in Køge Municipality

INCLUSION AND WIDER BENEFITS



Citizens must be involved in the preparation of the climate action plans, and it must be described what wider social, environmental, and economic benefits are expected to follow from the implementation of the plans. In addition, the plans must help to ensure a fair distribution of the wider benefits.

The municipalities have approached the work with inclusion and wider benefits in different ways, but a common feature is that they have drawn to a large extent on their existing experience and ways of working with wider benefits. For example, many municipalities – who have also worked with the UN Sustainability Development Goals (SDGs) – have used these as a way to operationalise and think in terms of wider benefits. Several of them have translated the way of thinking in terms of wider social, environmental, and economic benefits into different types of sustainability that are incorporated into their climate action planning.

Sustainable urban development provides wider benefits for the general population

Albertslund Municipality is facing a transformation where large parts of the city are modernised and new urban areas developed. In line with the values in the municipal planning strategy "More Albertslund," sustainable urban development is a cross-disciplinary element in their "Climate Plan 2050." The climate plan focuses on urban development balanced by climate action and highlights a number of derived qualities or wider benefits for the general population, including access to nature experiences, attractive buildings, and water as a recreational value. The purpose of creating wider benefits has also been to attract new citizens to the municipality. Like the municipal planning strategy, the climate plan is based on a set of values building on the UN's 17 SDGs. As such, the creation of wider benefits through the simultaneous consideration of nature and increased biodiversity, innovation, jobs, and a robust economy, as well as health and well-being is in line with the SDGs 15, 8, and 3.

Job creation and growth as a wider benefit of climate action

In Frederikshavn Municipality, green transition is to be an engine of growth. With key figures from the Economic Council of the Labour Movement (ECLM) and the United Federation of Workers in Denmark (3F), the municipality estimated the potential for increased employment from their planned reduction measures. With a total public-private investment in climate-friendly projects in 2020-2050 of DKK 23.75 billion, it is estimated that 485 permanent jobs can be created. In addition, it is estimated that 1,831 temporary jobs will be created annually from 2020-2030. As the municipality is in the process of revising the climate adaptation plan, the employment potential of the adaptation measures has not yet been estimated. For years, a green transition of the energy system has been part of the green growth track in their development strategy in Frederikshavn Municipality. With the City Council's adoption of the development strategy 2020-2024, the green track is expanded to also focus on recycling.

In the evaluation, the municipalities average 7.3 on a scale from 1-10 on the question on how central the work with wider benefits and derived effects has been in their DK2020 work (see Figure 3). It can be said from this to have been relatively central to the municipalities.

> **The challenge of working with derived qualitative effects is not to articulate them or write them into a plan. The challenge is that qualitative effects can be difficult to measure.**
>
> **- Tina Unger, Program Manager Food, Business, and Sustainability in Lejre Municipality**

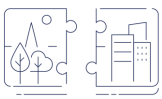
Figure 3: How central has the work with wider benefits and derived effects been in your DK2020 work?

Climate on the school curriculum

Lemvig Municipality considers the dissemination and generation of knowledge as an important element in the green transition. Accordingly, they have an ambition to raise the level of knowledge on climate in the population at large but focusing in particular on children and young people. With the project “Climate, Technology, and Us,” the municipal primary and lower secondary schools focus on increasing the understanding of subjects of technology. At Lemvig Gymnasium, the first climate students in the years 2020-2023 will complete a number of courses with a focus on climate challenges as part of their upper secondary education programme. As part of the annual climate meeting in Lemvig, Klimatorium, a Children’s Climate Meeting was held for the first time in 2020. It was a virtual meeting with more than 4,000 children mainly from the 4th and 5th grade (9 to 10 years old) from all over the country. In future, the children’s Climate Meeting will be an integral part of the annual climate meeting.

Most municipalities state that they have already worked with wider benefits in the municipality, for example in connection with climate adaptation efforts, e.g. recreational areas and nature in connection with rainwater management. The majority of the municipalities also state that it suits their existing way of working, for instance, considering that investments should return as much value as possible. One municipality further states that DK2020 contributes to maintaining and strengthening the approach. The biggest challenge of working with wider benefits has been the quantification of it, including for the purpose of comparing initiatives. In addition, it has been challenging to assess how big and how valid the effect must be in order to be counted. One municipality states that wider benefits have been an element in the prioritisation of the reduction measures, while another states that wider benefits are also essential for engaging politicians, businesses, and citizens.

Examples of wider benefits in the municipalities' climate action plans are: increased biodiversity, more nature and better access to it, as well as the development of recreational areas through rainwater management. In addition, several municipalities are thinking in terms of growth and job opportunities as well as the development of skills in the green transition (see below). Furthermore, increased health is included in several of the plans, e.g. less air and noise pollution though the promotion of cycling and the electrification of cars.



Growth, skill formation, and education

As already mentioned, several municipalities focus on the fact that the green transition contains a potential for growth, and that there is a need for more green skills. Concrete examples of this include courses for people in the municipality who are unemployed, but there is also a particularly common focus in the municipal climate action plans on educating the next generation to demonstrate greater knowledge on climate and a greener behaviour by making climate change a standard part of the school curriculum in the municipality.

Inclusion

Several municipalities apply social and economic sustainability or the UN SDGs when it comes to working with inclusion. Some have assessed each of the initiatives with equality as a parameter, while others address inclusion on an ongoing basis or in a separate section of the plan. Several initiatives include wider benefits for all of the city’s citizens, such as recreational areas or increased mobility. Others focus on specific groups, such as young people or residents in social housing areas. Several municipalities highlight the costs for some groups of citizens in implementing the plan. For example, the phasing out of oil- and gas fired boilers, whether via heat pump solutions, connection to district heating, or by other means, will carry financial costs for homeowners.

Sustainability courses for the unemployed – green skills

With sustainability courses, Randers Municipality wants to strengthen the ability of unemployed citizens and entrepreneurs to act as green agents of change in local companies. The municipality collaborates with local companies and integrates the sustainability courses into the new job centre project “The road to jobs,” in which unemployed people are selected and matched with relevant companies with the possibility of upskilling. Jobcenter Randers Erhverv is a central partner in the project, and the upskilling of the unemployed may take place in collaboration with Dania – the Danish Academy of Business and Technology, among others. Furthermore, the municipality will adapt an existing entrepreneurial course to also include sustainability. With the skill formation, better job opportunities are created for the unemployed, and at the same time, more local knowledge about the green transition and sustainable production is developed for the benefit of local companies.

”We already have a tradition in Denmark of trying to give equal status to people regardless of where they live or what education they have.

- Gunilla D. Ørbech, Biologist in Assens Municipality

COLLABORATION AND GOVERNANCE

To ensure the achievement of the objectives in the climate action plans, the municipalities have had to describe their own powers and capacities and also identify relevant partners and key stakeholders that need to be engaged in order for the plans to be implemented.

Governance and leadership

The municipalities have organised their DK2020 work differently, both in terms of where it has been delegated to and how city councils and political committees have been involved. During the evaluation, the municipalities were asked to what extent cross-disciplinary collaboration in the municipality had been necessary. The municipalities average 8.6 on a scale from 1-10 (see Figure 4), and several municipalities clarify that they have collaborated with other parts of the municipality's organisation. For some, however, the work has been mostly delegated to the Technical and Environmental Administration with collaboration between departments within the administration.

Change management

Middelfart Municipality has planned and implemented several management initiatives to integrate climate and sustainability into the everyday actions of the municipality – for example, an initiative to integrate climate and sustainability in all municipal case presentations in order to influence thinking and decisions. The municipality has been working on the initiative since the autumn of 2019. According to climate manager Morten Westergaard, the experience is that it requires time, since it is new for the people who make the case presentations. In order to better equip the employees, monthly training meetings are held, in which both the mayor and the municipal director participate. The advice for other municipalities is to get the top management involved, because political leadership is crucial for change. Another example is that in November 2020, the City Council decided that Middelfart Municipality must consider greenhouse gas emissions in the review of budget proposals from 2021 onwards.

Climate ambassadors throughout the municipality

The municipality of Assens has organised the DK2020 work in a climate secretariat and appointed a climate ambassador under each department with primary responsibility for related initiatives. The climate ambassadors have been the climate secretariat's entry point to the given departments and have been responsible for bringing the initiatives to the relevant political specialist committees for decision. Following the adoption of the municipality's "Climate Strategy 2020-2050," the organisation with the climate secretariat and climate ambassadors for each department has continued. The climate work is organised on the basis that all political committees, council members, and associated departments have a responsibility. Since the adoption, a climate coordinator has been hired to organise, structure, and run the climate work in the municipality, as well as to mobilise and engage people to start climate initiatives and to ensure that others take (co-)responsibility for progress.

According to the municipalities, ownership from the entire organisation is essential. Management must back up and communicate that climate action is a goal and task for the entire municipality. In addition, there should be a clear picture of how different employees are to contribute, including allocated working hours. Several municipalities state that it is new for many of their employees to work with climate and that it is important to be aware that it is a learning process.

Figure 4: To what extent has cross-disciplinary collaboration in the municipality been necessary?

Climate partnership with agricultural organisations

Jammerbugt Municipality has been in dialogue with the agriculture industry for many years, and it has always been the wish to support agriculture in taking climate action. DK2020 has given rise to the establishment of a more formal and strong collaboration with agricultural organisations Agri Nord and Landbonord to combat climate challenges and work together on specific issues. Several politicians, including the mayor, have been involved in establishing the partnership. At present, the collaboration is formalised in a climate partnership agreement that contains seven points on which the parties agree to cooperate. Among other things, the parties agree to set up a steering group to develop the process of climate action in the partnership. Already now, the parties are collaborating on a pilot project involving the rewetting of carbon-rich peat soils, which will give the municipality and the agricultural organisations experience to benefit similar projects.

Involvement of key stakeholders and partners

The municipalities describe how they can take the lead on climate action in their own work, but it requires cooperation with and contributions from a large number of key stakeholders in order to achieve the goals of the climate action plans – not only in the implementation but also in the planning phase. In the evaluation, the municipalities have been asked to what extent they feel that they have succeeded in involving relevant stakeholders in their climate planning. On a scale of 1-10, they average 7.5 (see Figure 5), and they clarify that although the year was marked by lock-downs, several of them have had a strong focus on co-creation and involvement.

"I call it going from review to co-creation.

- Morten Westergaard, Head of Climate in Middelfart Municipality

It varies with whom the municipalities have focused on creating a dialogue and more binding collaboration and partnerships. In the questionnaire survey, the municipalities listed the key players that they find to be the most important to include in climate planning. Below are the stakeholders that the municipalities have mentioned as relevant to include:

- Businesses, both large companies, SMEs, and heavy industry
- Knowledge institutions and experts
- Citizens and civil society, e.g. climate councils and green associations
- Municipal politicians
- Employees in other departments and administrations in the municipalities
- Utility companies
- Interest groups
- Transport companies and other stakeholders in the transport sector
- Agriculture
- The other DK2020 municipalities
- Consulting companies, for data basis and mapping of emissions
- Neighbouring municipalities
- Waste companies
- CONCITO

Figure 5: To what extent do you feel that you have succeeded in involving relevant stakeholders in your climate planning?

When asked about their experiences with stakeholder involvement, the municipalities state that they have experienced a great interest and willingness to cooperate. Several municipalities point out that it is important to involve relevant key stakeholders early in the process, e.g. for input for the initiatives in the climate action plans. Another takeaway is that the involvement ensures that the external stakeholders in the municipality feel a sense of ownership and drive for action. However, it is also pointed out that it might be easier to engage organisations than citizens to contribute to climate action.

The challenges that the municipalities mention of engaging relevant stakeholders include both resources and time pressure but also the difficulty of dealing with initiatives and areas that have unexpected costs and consequences for those involved, such as phasing out biomass or reducing meat in citizens' diet.

The involvement and organisation of the collaboration varies both from municipality to municipality, and, especially, from one stakeholder to another. This is partly due to the fact that the municipalities have several roles with various degrees of decision power: the municipality as a company, the municipality as an authority, the municipality as an owner, and the municipality as a facilitator.

Community as a driving force for the green transition

In Lejre Municipality, green solutions will be found in the community and in the drive for action that characterises the 49 small urban communities. The slogan of Lejre is "Our Place," and the municipality has worked with sustainability for years with the initiative "Lejre, the Organic Municipality". A passion for sustainability and the ability to inspire as well as the will for change are seen as the drivers of the municipality's green transition. The goal is 2,000 climate employees in the municipality and 28,000 ambassadors for climate action – all of the citizens, associations, and companies. The climate plan is based on "Our Place" and the 17 UN SDGs and represents a holistic approach to development that integrates multiple bottom lines with social, economic, and natural and environmental conditions. The climate plan is about more than reducing GHG emissions, as the green transition must be holistic and integrated into the existing life and communities in the municipality.

The municipality as owner

Several municipalities describe that through their role as owners, they plan to use ownership strategies of e.g. utility companies to increase focus on the green transition. Some municipalities have also worked in close collaboration with wastewater management companies on climate adaptation efforts, which they say will continue as they update their climate adaptation plans.

Climate action in the spirit of a musketeer with ProjectZero and Sønderborg Forsyning

Sønderborg Municipality has worked determinedly for more than 10 years to become a CO_2-neutral municipality. The work in DK2020 and the implementation of the climate action plan are organised in a partnership with ProjectZero and utility company Sønderborg Forsyning, whose boards have committed to the "spirit of a musketeer" in partnership statements. ProjectZero was founded in 2007 and is a public-private partnership between Sønderborg Municipality and a number of key stakeholders with a vision to reduce Sønderborg's energy system emissions to zero by 2029. According to Peter Rathje, the holistic approach of DK2020 is a good match with Sønderborg's existing and ambitious ProjectZero project. Like DK2020, ProjectZero is not about scaling one kind of solution to reach zero emissions by 2029. The ambition of the DK2020 steering group is that the DK2020 Sønderborg project will strengthen the area's already existing and ambitious climate efforts in the future.

"One tip is to write action into the partnership agreements with companies.

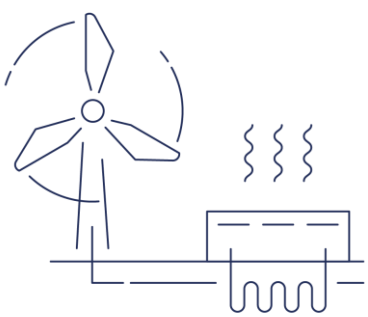
- Gunilla D. Ørbech, Biologist in Assens Municipality

Energy and climate forum emerges from existing business cooperation

Fredericia Municipality has worked with climate for many years, and with DK2020, the work of developing a climate plan was extended to include a project manager who had experience from the collaboration with the companies in the municipality. Companies are a major source of the municipality's emissions and became a central focus in the municipality's DK2020 work and in the organisation of it. The municipality's existing collaboration with companies via the business organisation Business Fredericia was linked to the DK2020 work, and the municipality was able to support the organisation's work to develop a business network with a focus on energy and climate. This has resulted in a new energy and climate forum for businesses with a focus on how the green transition can help boost Fredericia and provide jobs and growth opportunities for companies while also contributing to lower CO_2-emissions for Fredericia Municipality as a geographical area.

We have been met with considerable goodwill from the local agricultural organisations. They have been very open and accommodating and want to take action now .

- **Arendse Dahlstrøm-Kronborg, Climate Coordinator in Jammerbugt Municipality**



Partnerships

As a way to engage companies, agriculture, and others in municipal climate action, several municipalities have established more formalised partnerships, in which the municipality and the partners pledge to work for the green transition.

Citizens and civil society – climate councils and education

The municipalities have also focused on engaging citizens in the green agenda. The climate action plans include a number of different initiatives to this end. For example, several municipalities already had community centres that can act as green platforms for citizen engagement. As already mentioned, several municipalities have had a special focus on education and the dissemination of knowledge, including for children and young people in the municipality in primary and lower secondary schools, etc. Several municipalities also had or have since established climate councils, citizens' groups, or committees as more direct interfaces between citizens and municipal politicians.

Commitment from political committees

It is important for the climate committee in Vejle Municipality that the work on climate is supported in all political committees. For this reason, the climate committee made all ten political committees start on their own climate action plans. The ten now approved climate action plans show a diverse picture of how to approach climate action in each committee. The Department of Children and Young People works with #greenteams of young climate ambassadors and climate gardens in schools and institutions. Initiatives for seniors and adults deal with consumption, transport, and food waste in the individual homes, and the Culture Committee will work on sustainable cultural production. The Committee for Local Communities and Local Democracy has distributed funds to a village that wants to be a climate village, and the Technical Committee and the Nature and Environment Committee is about to launch major climate action related to energy, transport, agriculture, and construction. The Finance Committee is responsible for green procurement policy, partnerships with the business community, green tourism, and the management of sustainability for the municipality's employees.

LEARNING FROM DK2020

> **The DK2020 project has set in motion a near national movement that I had not imagined even in my wildest dreams.**
>
> **- Pelle Lind Bournonville, Head of Projects, Urban Climate Action, Realdania**

As is clear from the paragraphs above, DK2020 has provided new experience and learnings. The learning in DK2020 on the four key elements are summarised below.

Climate neutrality

- The municipalities have pledged to meet the goals of the Paris Agreement but have also formulated their own interim targets within the various sectors.
- The municipalities have planned a wide range of reduction measures, but they still have residual emissions in their respective target years for climate neutrality. Reducing the residual emissions requires the maturation of technologies, innovation, and the right national regulations, but also continued ambitious and targeted climate action and the acquisition of knowledge in the municipalities.
- The work with GHG inventories and scenarios contains challenges in relation to the use of the data basis as well as in relation to assumptions and uncertainties in the scenario work.

Climate resilience

- Many municipalities have to update their climate adaptation efforts. They have carried out strategic reviews and have made political commitment to ensure that the updates comply with CAPF, including in terms of risk assessments and impact assessments, possible synergies, involvement and cooperation, and possible wider benefits.
- It is new to many of the municipalities to work with the full risk picture, including the entire water cycle.

Inclusion and wider benefits

- It was already common among the municipalities before DK2020 to work with wider benefits.
- In the work with the climate action plans, the municipalities have drawn to a large extent on existing experience and ways of incorporating wider benefits in the planning, e.g. via the UN SDGs.
- DK2020 has helped to maintain a broader approach to planning with a focus on both social, economic, and environmental wider benefits.
- The municipalities state that the difficulty has not been to consider possible wider benefits but rather to quantify the benefits, e.g. for use in the prioritisation of initiatives.

Collaboration and governance

- Climate action is a task for the entire municipality, and it requires managerial and political prioritisation and commitment.
- The municipalities can and want to take the lead, but it is necessary to engage citizens and other relevant stakeholders through partnerships and binding collaboration in order to be able to achieve the mitigation and adaptation goals.

> **DK2020 has brought knowledge into play and shown what it means for a municipality to be ambitious on the climate agenda.**
>
> **- Christian Peter Villefrance Ibsen, Director of CONCITO**

IN THE FOOTSTEPS OF DK2020

DK2020 AS A COMMON PLATFORM

In DK2020, the municipalities have created both climate action plans and inspiring initiatives. At the same time, a community of collaborative climate action has been formed between the 20 Danish municipalities. Since then, 75 additional municipalities have started developing climate action plans and the DK2020 community is expanding.

DK2020 has helped to create a framework for like-minded people to meet and for ambitious municipalities to be ambitious. It allows mayors to work together, and that is unique.

- Morten Westergaard, Head of Climate in Middelfart Municipality

The municipalities were asked about the cooperation between them in DK2020. On a scale of 1-10, where 1 is bad and 10 is good, they gave an average score of 7.6 (see Figure 6). The municipalities were divided into peer groups, but it is especially the more informal cooperation and discussion that the municipalities highlight in the evaluation. Several municipalities state that the cooperation between municipalities was strengthened with DK2020, which, among other things, strengthened joint advocacy. Others point out that they already had regional working relationships, which, however, are also described as consolidated.

Figure 6: How was the cooperation between the municipalities in the DK2020 pilot project?

From the very beginning, the ambition was to create a network between the municipalities for peer-based dialogue and discussion on climate action. Several municipalities state that they have found great inspiration in other municipalities that face similar issues as themselves. The collaboration in DK2020 is described by several municipalities as contributing to greater knowledge for their climate work but also as contributing to idea generation in the work of preparing climate action plans based on the common framework of CAPF. More specifically, the DK2020 project managers say that they now know each other and know with whom to exchange ideas.

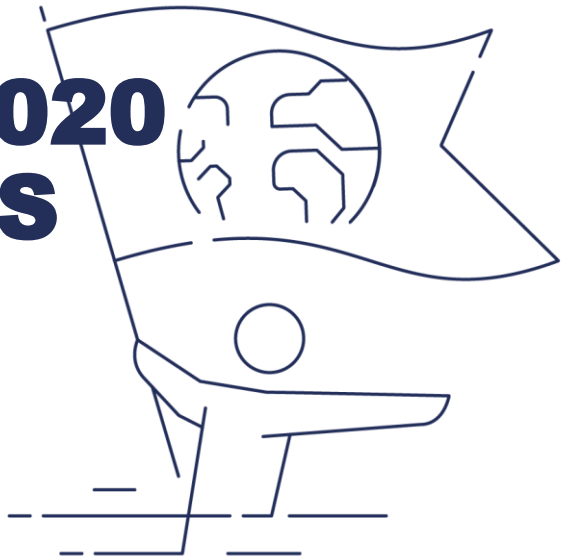
DK2020 has led to new working relationships, and we have consolidated existing relationships with other municipalities.

- Anja Schaumburg, Sustainability Consultant in Fredericia Municipality

I had missed something where one could identify with other municipalities and say that we are acting together on this. DK2020 has provided that. It has given us a common platform.

- Arendse Dahlstrøm-Kronborg, Climate Coordinator in Jammerbugt Municipality

GOOD ADVICE FROM THE DK2020 MUNICIPALITIES



In the evaluation of the DK2020 pilot project, we asked the municipalities about their advice to other municipalities that are going to make similar climate action plans. We have compiled their advice in the seven points below. The advice can also be an inspiration beyond DK2020 for other local political authorities and entities that want to develop Paris-compatible climate action plans.

1) Be courageous

Both the preparation of climate action plans and the subsequent implementation of them are quite large and – for most – new tasks, and, according to the frontrunner municipalities in DK2020, you have to be courageous as a municipality. This applies both in the accumulation of knowledge and experience from working with new initiatives but also in changing the way that the municipality works with climate. It is also important when engaging in dialogue and entering into partnerships with relevant stakeholders. Venture into it is the message from the municipalities in DK2020.

> **Make sure to engage both politicians, managers, and employees. Motivation and engagement are the most important things to make a united team.**
>
> **- Arendse Dahlstrøm-Kronborg, Climate Coordinator in Jammerbugt Municipality**

2) Share and inspire

A clear message from several of the first 20 DK2020 municipalities is that the new municipalities should draw inspiration and learning from the pilot municipalities – both from the completed climate action plans but also by reaching out to municipalities that have faced similar issues. In addition, the new municipalities are encouraged to also share their experience and knowledge with each other. Discussion and knowledge sharing are both important for the process, e.g. for understanding CAPF as a framework but also to learn which climate measures have worked for others.

> **Reach out to one of us [pilot municipalities], because we have all been there.**
>
> **- Anja Schaumburg, Sustainability Consultant in Fredericia Municipality**

3) Find highly dedicated individuals and create strong ownership

Several municipalities emphasise that it requires people who are highly dedicated within the municipality to drive climate planning and implementation. In addition, the municipalities note that it is important to prioritise building commitment at the political level, as climate action requires 100% support.

> **Find highly dedicated individuals among the employees who can drive the process forward.**
>
> **- Anne Adamsen, Civil Engineer in Albertslund Municipality**

GOOD ADVICE CONTINUED

4) Climate must become part of the core of the municipality

In addition to finding highly dedicated people and establishing political priorities, according to several of the municipalities, it is crucial that climate becomes part of the inner workings of the municipality. They point out that it is necessary to engage people and create broad ownership in the municipality's organisation as a whole. Climate must be seen as a task for the entire municipality.

> **A climate plan must reach all the way into the inner workings of the municipality. Climate is about more than technical policies and has to be integrated into all the life that the municipality is a part of, and which is therefore an area of responsibility for the mayor and the municipal director.**
>
> **- Tina Unger, Program Manager Food, Business, and Sustainability in Lejre Municipality**

5) Set aside funds and build competencies

In addition to political and managerial priorities, according to the municipalities, it is important to ensure the resources required not only to develop the climate action plans but also to carry out the plans in the implementation phase. Among other things, it is important to set aside time for stakeholder involvement in the preparation of the climate action plans.

> **A good tip for other municipalities: Set aside funds, so that there are enough resources for employees. Do not spend all the money on consulting assistance but get in-house knowledge that can be used afterwards to follow up on things.**
>
> **- Jacob Skjødt Nielsen, Green Ambassador in Køge Municipality**

6) Engage relevant stakeholders

Stakeholder involvement is central to DK2020, and the municipalities have several tips related to it. Several municipalities point out that stakeholders must be involved early in the process, preferably already in the idea generation phase. There should be a close link between efforts and possible partnerships, and if possible, action points should be written into the partnership agreements. It is important to listen to the wishes, needs, and ideas of the other stakeholders.

7) Ownership and clarity prior to implementation

Already in the planning phase, there must be an awareness of the implementation phase. According to the municipalities, a sense of ownership must be ensured among the stakeholders who will contribute to the implementation of the plans, both within and outside of the municipality's own administrations. There needs to be clarity on who will take forward which actions in implementation, and how progress and follow-up will be ensured.

THE PLANS IN PRACTICE

FROM PLAN TO ACTION

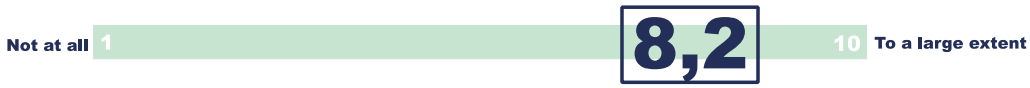
Following political adoption and approval, the climate action plans must be implemented. CAPF focuses on climate planning setting the course for implementation, especially in relation to short-term measures. Therefore, the municipalities have both prepared timelines, described the necessary financial resources, and identified barriers to the implementation of the planned initiatives in the climate action plans.

"The big task now is to get the climate plans out there – for consideration, discussion, a sense of ownership, and for action. People need to personally feel the urgency and do something that has an impact. Necessity arises when people can see and feel why.

- Søren Hermansen, Director of Samsø Energy Academy

In the evaluation of the project, the municipalities were asked to what extent they feel equipped to implement their climate plans. They averaged 8.2 on a scale from 1 to 10, where 10 indicates 'to a large extent' (see Figure 7). The municipalities thus see themselves as well-equipped for the implementation phase. Several municipalities add that the work of implementing the planned initiatives is already well underway. However, they also emphasise that it is a big task that is also dependent on other stakeholders.

Figure 7: To what extent do you feel equipped to implement your climate plan?



Challenges and prerequisites

The municipalities feel well-equipped for the implementation, but they also state a number of challenges and prerequisites for the implementation to be successful. The municipalities emphasise the need for the right regulatory framework both in national legislation and in the EU as well as the need for national coordination within several sectors, e.g. transport. Several municipalities mention the financial aspect as a potential challenge in funding the initiatives. In addition, it is a prerequisite that all employees are involved.

Engaging civil society is also crucial, but it can be a challenge. The progress of the implementation will also depend on how different technologies mature, e.g. CCS / CCU and Power-to-X. Several municipalities highlight as a crucial condition the continued attention to and prioritisation of implementing climate action in a long-term perspective with changing city councils and political agendas.

Monitoring and evaluation in the implementation phase

The municipalities have established procedures for monitoring and evaluating progress in their implementation of the climate action plans. Their procedures are different, but a common feature is updates of GHG inventories, either annually or every two years. The procedures for evaluating and updating the plans vary, but most of the municipalities have chosen a four-year cadence, so that new city councils and municipal councils are presented with updated climate action plans for political consideration and decision.

"Creating the climate plan has been a very big communication task. Now that we need to move from plan to action, communication between citizens, stakeholders, and politicians is a crucial factor in achieving the goals.

- Lisbet Wolters, City Architect and Climate Manager in Vejle Municipality

DK2020 LEAVES AN IMPRESSION

With the first 20 municipalities' climate action plans now adopted and approved and another 75 municipalities in the process of preparing Paris-compatible climate action plans, DK2020 leaves an impression on both Danish and international climate action.

Danish climate action

In the evaluation, the municipalities were asked what DK2020 means for the municipalities' role in Danish climate action. The answers are: DK2020 has accelerated the municipalities' climate action and raised the level of ambition. It has created even greater political ownership, will, and capacity for action. It has also formed a national focus on DK2020 and on the municipalities as key players in climate action. DK2020 has the potential to affect the national regulatory framework for municipalities' contribution to Danish climate action, including identifying regulatory barriers that could benefit from adjustment. One of the responses is that each of the 98 municipalities has 1/98 share of responsibility for Denmark's climate action.

> **With 95 Danish municipalities now participating, DK2020 is well on its way to becoming the new national climate platform for the municipalities' green transition and cooperation.**
>
> **- Peter Rathje, Managing Director of ProjectZero**

International climate action

DK2020 also has the potential to leave an impression on international climate action, as the project makes Denmark the first country in the world in which a majority of local political authorities use the C40 standard for Paris-compatible climate planning.

> **Realdania developed the project from the idea that there is a lot of international knowledge that can be sourced to Denmark. But also knowledge from Denmark that could be exported into the C40 network and beyond to accelerate the local green transition internationally and promote Danish interests.**
>
> **- Pelle Lind Bournonville, Head of Projects, Urban Climate Action, , Realdania**

Municipalities have gained, and will continue to gain, experience in applying the C40 standard in a municipal context and in smaller units that can provide inspiration for other local political authorities worldwide and showcase how it may be done.

> **The first 20 municipalities will be part of the leading cities at COP26, and we are only just beginning to look at what knowledge DK2020 can bring to the world. In short, DK2020 is also a pilot project from a global perspective.**
>
> **- Christian Peter Villefrance Ibsen, Director of CONCITO**

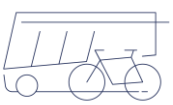
Besides providing inspiration, DK2020 can also help to highlight the importance of transnational stakeholders when it comes to global climate cooperation. Leading up to COP26, C40 Cities, as a partner in the UN campaign Race to Zero, is focusing on mobilising cities to build momentum ahead of the government climate negotiations. Almost all DK2020 municipalities have signed up for Race to Zero.

> **When municipalities can, when companies can, and when cities can – why shouldn't states be able to?**
>
> **- Simon Kjær Hansen, Fmr. Managing Director, Climate Solutions and Networks, C40 Cities Climate Leadership Group**

RECOMMENDATIONS

CONCITO'S RECOMMENDATIONS

In 2019, CONCITO carried out an analysis of the municipalities' climate planning in terms of mitigation efforts at the time before DK2020 was implemented. The analysis led to five recommendations for how to strengthen efforts significantly in the future. Twenty municipalities have now prepared and adopted climate action plans that have been approved on the basis of C40's standard. They have shown what is possible for climate-ambitious municipalities, and it has become clearer where there is still room to improve municipal efforts and national regulations that conditions it. Against this background, CONCITO has revisited the previous recommendations and presents below an updated proposal on what is needed to support and further develop municipalities' contribution to Danish climate action.



1) Better regulatory framework for municipal climate initiatives

- A review of relevant legislation and regulation should be undertaken to create the best possible conditions for municipal climate action. The review should be carried out in close cooperation with municipalities on the basis of their experience.
- In DK2020, municipalities have identified specific barriers to the implementation of their climate action plans. Framework conditions are a key challenge, particularly in the transport and agriculture sectors.
- In transport, many municipalities want better opportunities to promote electric cars by helping to ensure adequate charging facilities. Municipalities also have very limited possibilities to apply smart taxes for driving and parking. The green transition in heavy transport in particular could also be promoted if it were made easier to establish environmental and zero-emission zones.
- In agriculture, land consolidation and rewetting of carbon-rich peat soils are high on the climate agenda. Municipalities can play an important role as facilitators, but there is a need to speed up the process of rewetting of carbon-rich soils and to increase funding for the work, including compensating for the land that is rewetted. There needs to be clarity on the role of municipalities in the process of rewetting.

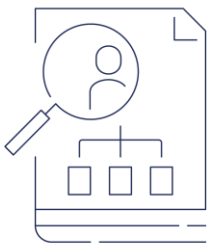
2) Climate plans for all municipalities

- All municipalities should have a climate action plan that supports the Paris Agreement. Climate action plans should include ambitious targets and concrete actions in areas where municipalities can play a key role. The plans should be developed with the involvement of citizens and the establishment of partnerships and binding collaboration with key stakeholders.
- It is important that municipalities use all opportunities to work together on idea generation and developing climate initiatives, including through DK2020 and other inter-municipal and joint initiatives.
- It would be useful for the overall effort and coordination if the municipalities' preparation of Paris-compatible climate action plans were made mandatory as part of legislation or political agreements.

3) Significant improvement of data basis for municipal climate action

- The national government must ensure that municipalities have access to up-to-date data and projection tools as a basis for their climate action. In recent years, for instance, data for climate adaptation efforts have been improved and updated. However, there are still issues with obtaining updated data for agriculture and transport and with the ability to make projections. In this context, municipalities and the national government should work together to create more uniform GHG inventories and reporting standards.
- A data basis and a methodological basis should be created for the inventory of municipalities' consumption-based emissions at the municipal level in order to strengthen municipal efforts to support climate-friendly lifestyles, corporate supply chain responsibility, and the municipalities' own procurement and construction activities.
- In addition, there should be cooperation on the development of action-oriented climate indicators, e.g. on climate awareness and behaviour among citizens and businesses in the municipality, as this can be used to target the green transition locally and at the same time support the implementation of the Climate Act's targets.

4) Ongoing monitoring and evaluation of municipal climate plans

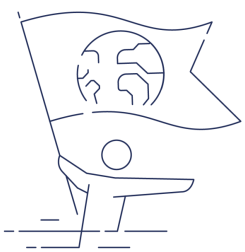


- Municipalities should prepare and publish GHG inventories annually.
- At least every five years, municipalities should evaluate the impact of their climate action efforts and assess the progress and the need for changes due to, among other things, changing circumstances, new framework conditions, and new technologies. It can also be done in the middle of a municipal term or prior to the revision of the municipal plan.
- It is recommended that a common platform for reporting, monitoring, and evaluation be developed, ensuring that the best solutions and takeaways are shared across the country. In addition to mutual exchange of experience, the platform can ensure the ability of relevant stakeholders continuously to provide new knowledge in municipal climate action broadly.
- The ongoing monitoring and evaluation should be actively used to ensure progress and the upholding of climate ambitions across changing city councils.

5) Ongoing development and application of new knowledge on policy measures

- Municipal climate action should continuously be supported by knowledge on policy measures, especially in sectors that are new or challenging for municipalities to work with, or where new solutions are emerging.
- In their ongoing review of their climate plan, municipalities should commit to pursue new knowledge on policy measures and to include it in revisions of the climate action plans. Future development and knowledge efforts are crucial in the municipalities' work to reduce their residual emissions.

6) Ambitious climate leadership and political collaboration in implementation



- Political leadership is crucial for the municipalities' contribution to achieving Danish climate targets, and for this reason, it should be upheld and consolidated throughout the preparation, implementation, and further development of the climate plans.
- It is recommended to make the DK2020 Climate Alliance a central platform for a common political focus on municipal climate action and for cooperation on better framework conditions for municipal climate action, including national legislation and data basis.
- There should be transparency and obligation for the municipalities to act in the Climate Alliance, which requires municipalities to comply with a 'follow-or-explain' principle. If they cannot meet their own targets or implement agreed actions, municipalities should be accountable to peers and professionals. This should be used to find new solutions to climate challenges.

A big thank you

to the first 20 participating municipalities in DK2020, including for their contribution to this evaluation and compilation of experience. Thank you also to Realdania for initiating the DK2020 pilot project. For their professional contribution and inspiration to the project, thanks are also due to C40 Cities. Finally, thank you to the project steering group consisting of Pelle Lind Bournonville (Realdania), Simon Kjær Hansen (C40 Cities), and Christian Peter Villefrance Ibsen (CONCITO) for their management of the DK2020 pilot project.

DK2020 presents an important front

in Danish climate action, and municipalities have emerged as key players in delivering and contributing to the achievement of the Climate Act's targets. With the project, municipal climate planning has moved forward. This is a development that is crucial to hold on to. The municipalities must continue to develop both their own climate action and the inter-municipal cooperation in order to maintain the common level of ambition and to create new, important knowledge together. We look forward to further cooperation in DK2020 – Climate plans for all of Denmark.

METHODOLOGY

METHODOLOGY

This publication was prepared in connection with the evaluation of the DK2020 pilot project in the spring of 2021. The purpose was to gather experience and knowledge for use in the further work with DK2020 - Climate Plans for all of Denmark and to present the experience of the first 20 municipalities as inspiration for both national and international cities and municipalities.

The content of the publication is based on the pilot municipalities' climate action plans and related material, a questionnaire survey among the pilot municipalities, and interviews with selected project managers and with the project steering group. Further details on the data collection are set out below.

Questionnaire survey

A questionnaire survey was conducted in April 2021 among all of the 20 municipal project managers in the DK2020 pilot project.

The response rate for the questionnaire survey was 95% with 19 respondents out of a population of 20 DK2020 pilot municipalities.

The municipalities were asked about eight topics in the questionnaire survey: the participation in DK2020, the Climate Action Planning Framework, the work in DK2020, the cooperation with CONCITO, the cooperation within the municipality, the results, the implementation, and the cooperation with other municipalities in DK2020.

Interviews and quotes

Interviews were conducted with project managers in eight municipalities that were selected based on a wish to shed light on a wide range of experiences from municipalities with different focus areas and characteristics. The selected municipalities were:

- Albertslund Municipality
- Assens Municipality
- Fredericia Municipality
- Jammerbugt Municipality
- Køge Municipality
- Lejre Municipality
- Middelfart Municipality
- Sønderborg Municipality

In addition, interviews were conducted with the project steering group consisting of Pelle Lind Bournonville (Realdania), Simon Kjær Hansen (C40 Cities), and Christian Peter Villefrance Ibsen (CONCITO) with a focus on their observations and reflections on the DK2020 pilot project.

Besides the interviewees, quotes have been obtained from Peter Rathje, Managing Director of ProjectZero, Lisbet Wolters, City Architect and Climate Manager of Vejle Municipality, and Søren Hermansen, Director of Samso Energy Academy.