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City of Oslo - input mitigation ambition and implementation

With reference to decision 4/CMA.4, para 14 FCCC/PA/CMA/2023/L.16, para 9, the Climate Agency of the City of Oslo would like to answer the call for submission for SB60 for Sharm el-Sheikh mitigation ambition and implementation work programme on «Parties, observers and other non-Party stakeholders to submit their views on opportunities, best practices, actionable solutions, challenges and barriers relevant to the topics of the dialogues referred to in paragraph 13 of Decision 4/CMA.4."

The Intergovernmental Panel on Climate Change (IPCC) has concluded that cities contribute to over two-thirds of global consumption based GHG emissions. Today, the 100 highest-emitting urban areas account for 18 percent of the global carbon footprint. And, the global population continues to grow and concentrate in and around cities. In other words: there is no net zero future without cities.

The United Nation estimates that urban infrastructure equivalent to the size of Stockholm will be constructed weekly between now and 2050 to meet the demands of global urbanisation. In this century, the construction of physical infrastructure such as houses and roads, could seize a large share of the remaining carbon budget allowable under the Paris agreement.

Oslo, among other cities are responding by stepping up their climate actions, setting clear goals, and deploying new policies and innovative frameworks for climate governance. And even though the challenge we are facing is both urgent and formidable, the options available for cities to act are many.

Below we outline the key areas Oslo is focusing on in its climate strategy, and some central governance tools and solutions the city has implemented to be able to meet its mitigation and adaptation targets. While both the targets and the tools have been developed to match the specific circumstances in Oslo, we believe both other cities and countries can learn from Oslo's approach.

Oslo believes that:

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- Cities are a key part of the solution to the climate crisis. The speed of action at the local level makes cities well suited to pilot and test innovative solutions that can be scaled up nationally and internationally. See below for some examples.
- Targeted transformation of key urban systems such as energy, transportation and built environment should be facilitated by national level policies, incentives, and regulations.
- National and regional regulations can serve as barriers to climate action at the local level and such frameworks might need to be updated to allow cities the flexibility to act quickly.
- Electrification is a key enabler to remove emissions from transport and buildings, and investments in the power supply and grid infrastructure is critical for climate mitigation in urban areas.
- Nature based solutions plays a critical role for climate resilient urban development.

Ambition – The Oslo Climate Strategy

If the world is to achieve the targets of the Paris Agreement to limit global warming to maximum two degrees, cities must take responsibility for a large share of the reductions in greenhouse gas emissions. This will mean emissions cuts across vast range of sectors including how we travel within our cities, how we build, the materials we use, how we heat our homes, and how we manage waste. Oslo is also surrounded by a large forested area known as "Marka", that constitutes significant carbon storage, and plays a role in the city's ability to withstand climate change. All these issues are covered by Oslo's climate strategy.

The most recent climate strategy for Oslo was adopted by the City Council at the start of May 2020. The strategy comprises five targets for Oslo's work on climate change, to be achieved by 2030.



1. A 95% reduction in Oslo's greenhouse gas emissions by 2030, compared to 2009. This target focuses on the reduction of *direct emissions* –emissions that occur within the City of Oslo's boundaries. One fourth of direct emissions are generated by private vehicles and close to one fourth by vans, lorries and buses. The remaining share is mainly from the construction sector and from waste incineration at two incineration plants within Oslo. All these emissions must be eliminated for Oslo to achieve its target of a 95% cut in emissions.



 Management of Oslo's natural areas to protect carbon storage in vegetation and soil, and to increase sequestration of greenhouse gases in forests and other vegetation leading up to 2030.
Trees and soil provide carbon storage. When trees and other plants grow, they bind carbon in tree trunks, branches and roots. Carbon from old plants is stored in soil, and moors provide particularly high carbon storage. The aim is to protect and increase this natural form of carbon storage in Oslo, both in Marka (recreational forested area on Oslo's outskirts) and in the city.

3. A 10% decrease in total energy consumption in Oslo by 2030, compared to 2009. The target for energy relates to energy consumption for heating buildings, transport, etc. Electric cars are more efficient than cars running on combustion engines, so the transition to electric cars represents a reduction in energy consumption.

4. Oslo's capacity to withstand climate change is strengthened towards 2030, and the city develops so that it can withstand the changes expected leading up to 2100.

Oslo, and its residents should be better able to withstand the weather that will be produced by climate change. This requires solutions such as green roofs and space for water runoff in the city. Marka and other green areas are important resources that help regulate local temperatures and protect against floods and erosion.

5. Oslo's impact on greenhouse gas emissions outside the city are significantly lower in 2030 than in 2020

The City of Oslo is also responsible for emissions that take place outside its borders. These are known as *indirect emissions* and originate from production of goods and services outside of Oslo, but which are used by persons and businesses in the city. Emissions from consumption and economic activity are often higher than direct emissions within the city limits. These emissions are everyone's responsibility,

but the city will facilitate increased reuse and repair of products and will provide information on climate-friendly consumer choices.

Implementation

Governance through climate budgeting

In 2016, the City Council adopted ambitious plans to cut greenhouse gas emissions in the city. This resulted in the launch of the Climate Budget as a governance tool. As the first municipality in Norway, the City of Oslo prepared its first climate budget in 2017. Several municipalities have now followed suit.

The Climate Budget presents reduction targets and mitigation measures that are implemented in Oslo to reduce emissions, and achieve the targets set out in the Climate Strategy. Responsibility for implementing these measures is delegated to the relevant municipal entities, who are required to report on their mitigation measures in line with their financial reporting cycles. The current Climate Budget covers the 2024-2027 economic plan period.

Context: This appendix describes the establishment of the emission limits, use of the baseline trajectory, choice of methods and analysis for calculating climate effects and potential, and the need for further reductions in emissions to achieve the emission reduction targets for Oslo.

Climate friendly mobility

Oslo focuses on facilitating climate-friendly choices daily, aiming to reduce traffic by encouraging walking, cycling and public transport. The City of Oslo also collaborates with businesses on how to make goods transport more efficient and greener. All public transport – including buses and ferries – is on track to be emissions free in 2024.

By 2030, Oslo aspires to have zero greenhouse gas emissions from traffic. This implies that all vehicles will be zero emission – or run on biogas or other sustainable biofuels. Biogas and other sustainable biofuels are particularly relevant for heavy vehicles, where there are currently few zero-emissions solutions in place. In 2023 87% of new cars sold in the city were electric vehicles. Electric vehicles currently make up 38% of the city's car stock.

Green areas are also important for recreation, biodiversity, and air quality. In a city, areas are scarce, and climate friendly city planning that makes it easy for citizens to make climate-friendly choices is key. This implies, for example, making sure that the places citizens need to access daily, such as schools, grocery stores, libraries and sports centres, can be reached with climate-friendly transport.

Carbon Capture and Storage from waste-to-energy plant

In Oslo, municipal waste that is not recycled is incinerated with energy recovery. The heat from the incineration process is fed into the district heating infrastructure, providing more than a fifth of the energy used for heating in Oslo's building stock. As plastics is a significant share of the waste, the waste-to-energy plant at Klemetsrud is currently responsible for 17 per cent of the city's emissions and is the biggest single emitter of CO2 in Oslo.

For several years the city has worked together with the company running the incineration facility to develop a project for carbon capture and geological storage of CO2. When implemented, up to 400,000 tons of CO2 will be captured each year. This corresponds to the annual emissions from 200,000 cars. Part of these emissions are from renewable plant-based waste fractions, and the project therefore will provide significant negative emissions in addition to emissions reductions.

Zero emissions construction

Construction (along with mobility in all its forms) are major sources of air pollution and noise, and electrification provides significant co-benefits that improve people's lives in densely populated areas.

Oslo has decided that any public building and construction work shall be done without greenhouse gas emissions. The city has a 20-30% market share in the Oslo construction market, and in 2023 more than 60% of all public works were performed with electric, zero emissions construction equipment. The rest was served with sustainable biofuels, such as HVO100.

Regulatory planning requirements are crucial tools in reducing emissions from construction activities. As mentioned below, the draft for the new zoning part of Oslo's municipal plan introduces new requirements limiting embodied carbon from construction machinery.

Climate requirements in zoning plans

Oslo's draft municipal plan proposes new climate requirements unprecedented in scope. These include demands for emission-free construction at both public and private sites, emission limits for materialuse, mandates for local renewable energy sources. These requirements, if adopted and could reduce embodied emissions from city development with more than 50% by 2030 compared to business as usual.

There is some legal uncertainty associated with some of the provisions. If objections are raised, the implementation of the proposed provisions then depends on the approval of national authorities.

The construction sector's material use is a major source of indirect greenhouse gas emissions. Thus, the municipal plan proposes several requirements aimed at reducing demolition, promoting rehabilitation, reusing building components and materials, and extending buildings' lifespans. Developers contemplating demolition must first explore rehabilitation or deconstruction possibilities before obtaining a demolition permit. The plan also proposes reducing material emissions by up to 50% by 2030, encouraging the use of climate-friendly materials and reuse.

Moreover, the proposal includes mandates for increased local renewable energy production, like solar panels, a potent measure to support the climate transition while preserving natural habitats elsewhere.

Regarding the excavation of large quantities of earth and stone, the municipality advocates for minimal transportation and, preferably, local reuse, aligning with circular principles to avoid extracting new materials from nature.

The draft includes requirements for climate gas assessments and calculations in regulatory plans, marking a novel approach at a strategic level in Oslo. By imposing these requirements early in the planning phase more climate-friendly decisions can be made from the outset.

Green procurement

The proposed framework would imply a major step towards a more climate resilient city. Legally binding requirements for all private and public real estate developers has been made possible because of the strategic use of green procurement, where the city over years has demonstrated at scale how climate resilient development can be an affordable option. The case of Oslo shows the potential for cities to advance the transformation to a low-emission future. Oslo has demonstrated how a combined and timely step by step deployment of procurement and spatial planning regulations can accelerate innovation and change.