

Climate budget 2025 Proposition 1/2025

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Foto: Fartein Rudjord

Economic Plan for 2025 — 2028 Oslo

Climate budget

The City Government will pursue a more proactive climate and environmental policy. We must reduce greenhouse gas emissions and protect nature so that future generations can live good and free lives. Oslo needs more parks and green spaces, and less pollution. It should always be rewarding to live as environmentally friendly as possible. The City Government's goal is for the Climate Budget to become a more effective governance tool for all municipal agencies.

The Climate Budget includes mitigation measures to be implemented during the 2025–2028 economic planning period, aligned with Oslo's five climate goals. The responsibility for implementing these measures are distributed among municipal agencies and entails reporting requirements similar to those for the overall budget.

Oslo's Climate Goals

The Climate Budget is designed to help Oslo achieve its climate goals. In Case 109/20, Climate Strategy for Oslo towards 2030, the City Council adopted five main goals for climate efforts, outlined below. The Climate Strategy also describes how these goals will be achieved.

The five goals in Oslo's Climate Strategy towards 2030 are:

- 1. Oslo's greenhouse gas emissions in 2030 will be reduced by 95% compared to 2009.
- 2. Oslo's natural environment will be managed to preserve natural carbon sinks in vegetation and soil and increase the uptake of greenhouse gases in forests and other vegetation by 2030.
- 3. Oslo's total energy consumption in 2030 will be reduced by 10% compared to 2009.
- 4. Oslo's resilience to climate change will be strengthened towards 2030, and the city will be developed to be prepared for the expected changes towards 2100.
- 5. Oslo's contribution to greenhouse gas emissions outside the municipality will be significantly lower in 2030 than in 2020.
- 6.

Proposed Decision

The City Council endorses the mitigation measures in the Climate Budget 2025, Proposition 1. Further work will continue on new and strengthened measures to ensure the municipality achieves its climate goals, as outlined in Case 109/20. The City Government will report the status of the implementation of the measures and the likelihood of goal achievement to the City Council alongside the regular financial reporting.

Status of Direct Emissions and Likelihood of Achieving Goal (Goal 1)

Greenhouse gas emissions in Oslo have been reduced by 28% from 2009 to 2022 (latest emissions inventory from the Norwegian Environment Agency). The largest contributions to this reduction are the transition to electric vehicles, biofuels, and the shift from oil-based heating to zero-emission heating.

From 2021 to 2022, emissions decreased by 0.2%. For more detailed information on the emissions inventory and the development of emissions in Oslo, see Chapter 2.1 in the appendix *Supporting material for Climate Budget 2025.* The municipality-specific emissions inventory still has significant uncertainties, and the effect of local measures are not always reflected in the inventory. Oslo will continue to work with the Norwegian Environment Agency and Statistics Norway (SSB) to incorporate local data so that the impact of Oslo's climate measures are included in the emission inventory.



GHG-emissions in Oslo 2009-2022

Greenhouse gas emissions in Oslo by emission sector, 2009–2022. Source: Norwegian Environment Agency's municipality-specific emissions inventory.

Updated calculations from the Agency for Climate show that adopted measures could lead to a 69% reduction in emissions in Oslo by 2030 compared to 2009. This puts the municipality 6 percentage points closer to its climate goal than when the Climate Budget for 2024 was presented. This change is both due to improved methodology that better reflects climate impacts of existing local and national climate measures, and because of new improved incentives from the revised Oslopakke 3 agreement that were decided in spring 2024. It should be emphasized that achieving a 69% reduction will not happen automatically but requires continuous effort and follow-up.

Identified, but not yet adopted, measures could reduce emissions further to 83%. However, Oslo has not yet identified measures to close the gap between 83% and 95%.

Thus, there is a need to identify, strengthen, and implement additional measures if Oslo is to reach its 2030 target. It takes time to introduce new measures and for them to take effect, making the actions taken in the coming years crucial for how emissions will develop towards the end of the decade and whether Oslo will meet its 2030 climate goal.



Estimated emissions trend towards 2030 as a result of adopted measures and the potential for emission reductions if new, identified measures are adopted

Measures to Reduce Direct Emissions

Adopted measures in this Climate Budget are estimated to reduce greenhouse gas emissions within Oslo's borders by 75,000 tonnes of CO2 equivalents in 2025 and 268,100 tonnes of CO2 equivalents in 2028, as shown in the table below. In general, it is easier to calculate the impact of technical measures than that of implementing economic measures or building new infrastructure. The impact of the latter two depends on behavior changes among thousands of individuals and companies. Behavior change often results from a combination of measures, making it challenging to isolate the impact of each individual measure.

For instance, it is easier to estimate the effects of financing carbon capture and storage at Klemetsrud than to calculate the impact of *Oslopakke 3*, which includes toll rates, expansion of cycling infrastructure, and improvements to public transport, among other things. More detailed information about the method used to estimate the effects of the measures in the table is

described in Chapter 2.3 of the appendix *Supporting material for Climate Budget 2025*.

Emission Sector	No.	Measures	Responsible entity	Effect 2025 (tonnes CO2e)	Effect 2028 (tonness CO2e)
Waste Incineration and Energy Supply					
Waste incineration with carbon capture	1	Carbon capture at Klemetsrud : New project plan with timeline and updated, quality- assured cost estimates is delayed. Exact start depends on this.	KON*	0	143,000
Waste and Wastewater					
Landfill gas extraction	2	Maintenance of landfill gas plants at Rommen and Grønmo: Including new drainage solution in 2025 and optimizing methane capture.	EBY*, REG	Not calculated	Not calculated
Road Traffic					
Overarching measures for road traffic	3	Procurement of zero-emission (including biogas) vehicles for the municipality: According to Oslo's action plan for a zero- emission and shared machine and vehicle fleet by 2025. Emergency and special vehicles later than 2025.	All*, UKE*	3,600	4,600
	4	Zero-emission (including biogas) and transport-efficient delivery of goods and services for municipal contracts.	All*, UKE*, KLI	8 600	9 000
	5	Green Mobility Plan: To be developed in 2025 to enhance attractiveness of walking, cycling, and public transport, and to contribute to an emission-free and efficient urban logistics system.	BYM*, KLI, Ruter	Not calculated	Not calculated
Reduced traffic	6	Facilitate increased cycling and walking: In 2025, 10 km of new cycling infrastructure and 300 bike racks will be established, along with maintenance of 180 km of bike lanes in the summer and 130 km in the winter. "Heart zones" and at least 10 shortcuts will be implemented in 2025. The walking strategy will be followed up with a list of measures, and a dedicated resource will work on promoting green commuting for businesses in Oslo.	BYM*, KLI*	Not calculated	Not calculated
	7	Improve public transport: Enhance accessibility, reduce prices for monthly passes, introduce new trams, and implement upgrades to the metro system, among other improvements.	Ruter*, BYM*	Not calculated	Not calculated

	8	Shared solutions: Allocate municipal road areas for car sharing, city bikes, and rental e- scooters and e-bikes. The pilot program with approximately 1,000 parking spaces reserved for car sharing will continue in 2025.	BYM*	Not calculated	Not calculated
	9	Reduced transport of materials and waste: This will be achieved through incentives in municipal procurement. In 2025, Oslo will present an action plan for local, climate- friendly, and circular material management, with the aim of reducing transport related to material handling.	KLI*, FOB*, UKE, OBF, Oslo Port, PBE, EBY, BYM, VAV	Not calculated	Not calculated
Zero-emission passenger cars	10	Charging infrastructure for passenger cars: Establish 50 new standard municipal charging points, upgrade the remaining charging stations built before 2018, and set up 5 new fast-charging points in 2025. Grants for charging stations in housing cooperatives and condominiums will be provided through the Climate and Energy Fund.	BYM*, KLI*	Not calculated	Not calculated
	11	Incentives for zero-emission taxis: From November 1, 2024, all taxis operating within Oslo's municipal boundaries must be zero- emission. In 2025, 8 new fast-charging points for taxis will be established, and grants will be provided for home charging for taxi drivers as well as for fast-charging stations dedicated to taxis.	BYM*, KLI*	12 900	11 000
Zero-emission vans	12	Incentives for zero-emission vans: Toll exemptions until 2030 (as per the revised Oslopakke 3), grants for charging infrastructure for vans and consolidation centers through the Climate and Energy Fund, establishment of 7 new charging points for van and utility transport in 2025, and a pilot project to set up chargers at municipal parking spaces available for electric vans (and others) at night. Additionally, areas for charging stations and consolidation centers for commercial transport will be secured, along with strengthened communication on the benefits of electric vans.	KLI*, BYM*, EBY	3 000	9 800
Zero- emission/biogas buses	13	Incentives for zero-emission and biogas tour and express buses: Toll exemptions until 2030 through the toll ring for zero-emission and biogas buses (as per the revised Oslopakke 3), with a requirement that buses operating on municipal contracts, such as school transport, must be zero-emission or use biogas. Grants for bus chargers and publicly accessible charging stations for heavy vehicles will be provided through the Climate and Energy Fund, along with information to the tour bus industry about the benefits of electric and biogas buses.	UKE, UDE, KLI*, BYM	Not calculated	Not calculated

Zero- emission/biogas trucks	14	Use of emission-free or biogas-powered trucks for city projects (masses and waste): From 01.01.2025, emission-free (including biogas) transport of masses will be required, while award criteria will be used for waste transport.	All*, UKE*	**	
	15	Incentives for zero-emission trucks: Increased toll rates for fossil-fuel trucks combined with toll exemptions for zero-emission and biogas trucks until 2030 (as per the revised Oslopakke 3). In 2025, 7 new charging points for van and utility transport will be established (same as in measure 12). Areas will be secured and coordinated with surrounding municipalities for the establishment of energy stations, and information will be provided to the transport industry.	BYM*, KLI*, EBY	**	18 500
		Grants will be available for public fast chargers, biogas stations, and companies' own charging points through the Climate and Energy Fund. The impact in 2028 is the combined effect of measures 14 and 15.			
Other mobile combustion					
Zero-emission construction	16	Requirement for zero-emission construction work on municipal contracts starting in 2025.	All*, UKE*	18 500	18 600
	17	Requirement for fossil-free construction in zoning plans.	PBE*, KLI*	21 300	35 600
Zero-emission machinery and motorized equipment	18	Facilitate the transition to zero-emission machinery for handling goods and cargo at Oslo Port.	Oslo Port*	1 900	2 600
	19	Procurement of zero-emission machinery for Oslo municipality's fleet: This will be completed by 2025 in accordance with "Oslo's Action Plan for a Zero-Emission and Shared Machine and Vehicle Fleet." Replacement of specialized machinery will occur after 2025.	All*, UKE*	600	2 700
	20	Grants for zero-emission motorized equipment and facilitation of electricity use at outdoor events.	KLI*, BYM*	1 200	4 700
Maritime transport					
Zero-emission docked operations	21	Establish shore power for tankers and cruise ships, and monitor the use of shore power for container ships: The facilities will be built during 2025, with continuous follow-up on shore power usage.	Oslo Port*	3 400	8 000

Total impact of			
measures in the		75 000	268 300
Climate Budget			

*Reporting responsibility. Reported in conjunction with regular financial reporting. ** The effect of the measure in 2025 overlaps with the effect of measure 4. This does not mean that the measure has no effect in 2025, but that the effects cannot be separated. See the appendix Supporting material for Climate Budget.

New Allocations for Climate Measures to Reduce Direct Emissions 2025–2028

In the 2025 budget, NOK 101 million has been allocated to new or strengthened measures aimed at reducing direct greenhouse gas emissions. The tables below show which measures these are and which adopted measures they are relevant to. Additionally, net toll revenues will increase by NOK 50 million in 2025 through the revised Oslopakke 3 agreement. Of the total revenue of NOK 93.2 billion over the period 2025–2045, 99% will be used for public transport, pedestrian, and cycling initiatives, which contribute to reducing car traffic and greenhouse gas emissions.

Agency	Measures in the Operating Budget	2025	2026	2027	2028
Public transport	Maintain public transport ticket prices at the levels applicable at the end of 2024. Relevant to measure 7.	53 000	53 000	53 000	53 000
Agency for Urban Environment	Increased costs due to stricter contract requirements related to climate, environment, and other factors. Relevant to measures 4 and 14.	36 500	36 500	36 500	36 500
Business Development	Cluster initiative for carbon capture, storage, and utilization at Klemetsrud. Relevant to measure 1.	1 500	1 500		
		1			
SUM		91 000	91 000	89 500	89 500
SUM Agency	Measures in the Investment Budget	91 000 2025	91 000 2026	89 500 2027	89 500 2028
SUM Agency Agency for Urban Environment	Measures in the Investment Budget Measures for traffic reduction. Relevant to measure 6	91 000 2025 10 000	91 000 2026 10 000	89 500 2027 10 000	89 500 2028 10 000

Identified Measures to Reduce Emissions within Oslo's Borders

The City of Oslo is undertaking significant efforts to identify potential new measures. The table below provides an overview of measures that could reduce emissions by up to 83%. These include both measures that require national clarifications, legal authority, and decisions, as well as possible local measures that are currently under consideration or not yet fully developed.

Economic plan for 2025-2028

Emission Sector	Measures	Estimated Isolated Effect
Cross-cutting Measures	A CO2 tax equivalent to NOK 2,000 in 2030, without reducing other fuel taxes as has been done in recent years. This is a measure that depends on national authorities.	9 000 - 17 000
Road Traffic	An increase in the national biofuel blending requirement to 33% in road traffic by 2030, as announced in the 2024 national budget. The government sets new levels every other year.	
	Double toll rates for new fossil-fuel passenger cars by 2026. This is part of the revised Oslopakke 3 agreement from spring 2024 but requires national authorities to establish a new toll class.	1 500 - 3 000
	Double toll rates for new fossil-fuel vans by 2026. This requires national authorities to establish a new toll class. The Oslopakke 3 agreement states that further incentives to shift the van fleet from fossil fuels to zero emissions will be considered during the agreement period, and double toll rates could be part of that.	2 000 - 4 000
	A zero-emission zone for vans and heavy vehicles within Ring 2 (along the inner toll ring) starting from January 1, 2027. This requires legal authorization from national authorities. The Norwegian Public Roads Administration prepared a proposal in autumn 2022, but the government has yet to send it out for consultation.	9 000 - 17 000
	A zero-emission zone for passenger cars within Ring 2 (along the inner toll ring) starting from January 1, 2028. This also requires legal authorization from national authorities, similar to the measure mentioned above.	1 000 - 2 000
	Introduce fees and reallocate parking spaces at municipal workplaces. This can be implemented with a local decision.	1 000 - 2 000
	Enhanced local measure package for vans (rollout of nighttime charging at municipal parking spaces, reserving delivery areas, increased differentiation between fossil and zero-emission vehicles in tolls, expanded requirements for the use of electric vans in procurement, etc.).	2 000 - 4 000
	National package of economic measures for heavy vehicles. In 2024, the government set a goal of 100% zero-emission or biogas in new vehicle sales for heavy vehicles by 2030. However, no new measures have been introduced to support this goal.	4 000 - 8 000
	Requirements in licenses for buses operating in Oslo (beyond Ruter). In 2023, the Norwegian Parliament asked the government to propose legislative changes to allow zero-emission requirements for all licensed operations. As of September 2024, no changes have been made.	2 000 - 3 000
	Taxation of employer-paid parking. This requires a national change in the tax regulations.	Not calculated
	Requirement for private entities to charge for parking at workplaces, shopping centers, etc. This requires national legal authorization.	Not calculated
	Facilitate the transition from passenger cars to electric motorcycles by reallocating parking spaces and through targeted communication efforts.	Not calculated

	Extend the current requirement for zero-emission transport in procurement to cover all procurements, including deliveries under NOK 500,000 and those delivered less frequently than once a week.	Not calculated
	Access for zero-emission/biogas-powered heavy vehicles and vans in bus lanes. This depends on national authorities. In connection with the closure of Ring 1, the City of Oslo has asked the Minister of Transport to consider this.	Not calculated
	Reduced speed limits from 80 to 70 km/h.	Not calculated
Waste incineration and energy supply	Carbon capture from household waste in Oslo Municipality. The municipal facility at Haraldrud, which incinerates household waste, is nearing the end of its lifespan. In 2022, the municipality explored the possibilities of household waste incineration with carbon capture, comparing in-house operation with procuring the service from the market.	40 000 - 50 000
	Carbon capture or fuel type conversion at the Hafslund Celsio waste incineration plant at Haraldrud.	21 000 - 27 000
	Materials recovery facility for household waste from Oslo Municipality. A new waste regulation requires 60% sorting of plastic suitable for material recycling by 2030. The Agency for Waste Management has developed a concept evaluation.	15 000 - 22 000
	Increased textile recycling. The sorting rate could potentially be increased by introducing household collection units for textile waste.	2 000 - 4 000
	100% fossil-free district heating. During periods of high electricity prices and low temperatures, some fossil gas is still used.	1 000 - 9 000
	Measures for carbon capture of CO2 from biological sources (e.g., reverse auctions). Following a decision by the Norwegian Parliament, the government commissioned an external study of such measures, which was completed in March 2024.	lkke effekt- beregnet
	Differentiation of waste incineration fees based on CO2 content at Hafslund Celsio (gate fee). This means that actors with high plastic content in their waste will pay more for incineration.	lkke effekt- beregnet
Other mobile combustion	Requirement for all construction sites to be zero-emission by 2030. In August 2024, the Norwegian Environment Agency submitted a proposal for a legal basis that would allow municipalities to impose such requirements for public consultation. This could also help ensure the effectiveness of measure 17 under the adopted measures.	7 000 - 9 000
	Increase in the national blending requirement for advanced biofuels to 28% for non-road machinery. In the 2024 National Budget, the government announced plans to increase the blending requirement, with specific steps to be determined every two years.	9 000 - 12 000
	Requirement for zero-emission machinery and motorized equipment in all contracts for the municipality, regardless of contract type.	lkke effekt- beregnet
	Enova support for machinery used at freight terminals, in industry, etc.	lkke effekt- beregnet
Maritime transport	Requirements or incentives for zero-emission inbound and outbound sailings for international ferries.	8 000 - 10 000
	Establishment of shore power for cargo ships.	1 000 - 3 000

	Environmental differentiation of port fees for the use of shore power.	Enabling measures
	Incentives for zero-emission inbound and outbound sailings for all types of vessels (environmental differentiation of port fees, prioritization of quay access and other areas).	Not calculated
	Strategic collaboration with other cities/ports (refuelling infrastructure, environmental differentiation, and green corridors).	Enabling measures
Heating	National ban on the use of gas for heating and building heat. A proposed regulation banning the use of fossil gas for building heat was under public consultation in the summer of 2024.	15 000 - 20 000
Waste and wastewater	Improvement of manholes at Rommen landfill.	Not calculated
	New top cover at Rommen landfill.	Not calculated

Status of indirect emissions and the possibility of achieving the 2030 target (Goal 5).

Oslo's contribution to greenhouse gas emissions outside the municipality (indirect emissions) shall be significantly lower in 2030 compared to 2020. Indirect emissions mainly stem from the consumption of goods and services produced and transported outside of Oslo. The Agency for Climate estimates Oslo's indirect emissions to range between 7.5 and 9 million tons of CO2 equivalents, based on <u>estimates from the Norwegian Environment Agency for consumption-based emissions</u> in Norway (2024) and <u>Asplan Viak's consumption-based emissions inventory for the</u> City of Oslo (2018).

Material use in construction projects is one of the main sources of Oslo's indirect emissions. Although Oslobygg has reduced its material emissions and several private developers are focusing on reducing emissions from materials, it is likely that indirect emissions from the construction sector have increased since 2015. This is partly due to large infrastructure projects like the Fornebubanen and the New Water Supply.

Production of transport vehicles, machinery, and fuels used in Oslo is another major source of indirect emissions. The production of electric vehicles and machinery generally results in higher emissions than fossil-fuel-based vehicles and machinery, while the production and use of fossil fuels result in significantly higher emissions than electricity. Over the life cycle (indirect and direct emissions), electric cars have up to 70% lower emissions than fossil fuel cars in Europe, according to the International Council on Clean Transportation. In Norway, this difference is even greater due to a cleaner electricity mix. In Oslo, the share of electric vehicles has increased significantly across all vehicle categories in recent years, including for construction machinery.

Food is also a significant source of indirect emissions. The production of red meat is highly emission-intensive, contributing about 60% of emissions from agriculture in Norway, according to <u>Nibio</u>. The municipality's procurement of meat increased by around 4% between 2019 and 2023.

There are no available figures for the consumption of meat by Oslo's residents and businesses.

Measures to reduce indirect emissions.

The climate budget for indirect emissions includes measures within the main categories of Consumption, Vehicles, Machinery and Fuel, and Construction Materials. measures that reduce indirect emissions largely overlap with initiatives that promote a more circular economy.

Most measures contribute to reducing indirect emissions from the municipality's own operations. However, indirect emissions from Oslo's population and businesses are significantly larger than those generated by the municipality itself, making it more challenging for the city to find targeted measures. Moving forward, it will be crucial to leverage the available opportunities when identifying new measures to reduce indirect emissions.

The table below shows approved measures in the Climate Budget, but does not include estimates for reduced emissions resulting from these, except for measure 15 on construction. This is due to the uncertainty of the data. For more information, refer to the document *Supporting material for Climate Budget 2025*. It is assumed that measures contributing to a more circular consumption of construction materials have the greatest emission-reducing potential.

Sector/measure category	No	Measures	Responsible entity
Consumption			
Overall	1	Communication to encourage changes in consumer behavior and a more circular society: Through klimaoslo.no and social media.	KLI
Sustainable food and reduced food waste.	2	Increase the use of joint procurement agreements with a climate- friendly menu planning tool tailored for kindergartens: This will be done in collaboration with suppliers and users.	UKE*, the districts
	3	Vegetarian food as the default at meetings and events: Internal communication and adjustment of joint procurement agreements.	UKE*, all*
	4	Measure food waste in entities with food production and service: Develop indicators and test measurement tools, as well as create guidance materials for relevant measures.	UKE*, HEL, SYE, The districts
A more circular consumption of textiles, single-use plastics, ICT, recreational equipment, tools, and furniture.	5	Increase the circulation of goods on the reuse platform Loopfront for the City of Oslo: Ensure access for most entities by 2025, adapt the platform, and carry out campaigns to promote increased reuse.	UKE*
	6	Reduce furniture consumption and increase the use of joint procurement agreements for repair, redesign, and second-hand purchases: Follow up with suppliers.	UKE*, all

	7	Reduce waste and unnecessary disposal in the rental and washing agreements for Lyocell clothing in the health and care sector: including through the use of digital tracking.	UKE*, HEL, SYE, The districts
	8	Citizen-directed initiatives and collaboration with volunteers, private actors, other municipalities, and academia for more sustainable and reduced consumption: This includes work on loan schemes, sharing solutions in housing cooperatives, condominiums, and neighborhood associations, free/discounted rental of premises, a pilot project for increased reuse of playground equipment, and communication.	BYM*, REG, Deichman, ByKuben, FutureBuilt, KUL, bydelene, UDE
Vehicles, machinery, and fuel.			
Reduced emissions from fuel production.		See measures for road traffic in the chapter on direct emissions above.	
Reduced emissions from the production of vehicles and machinery.	9	Shared services and common fleet management system for vehicles and machinery: Manage the system and propose measures to increase the use of car-sharing services within the municipality.	UKE*, all
	10	New guidelines and climate requirements for the purchase of new electric vehicles: In 2025, guidelines to promote climate-friendly production and value chains must be followed up.	UKE*, all
Construction materials.			
A more circular consumption of construction materials.	11	Set climate requirements for construction materials in own projects.	Oslobygg*, Boligbygg
	12	Reuse of construction materials: Implement digital systems to track construction materials and components and participate in collaboration/pilot projects with <i>Sirkulær Ressurssentral</i> to develop open marketplaces for reuse.	Oslobygg*
	13	Climate requirements in procurement of construction materials and contracts: Agency for Water and Sewerage Works (VAV): Continue climate requirements for concrete and steel, consider extending requirements to encompass other materials, and increase the use of environmental product declarations in requirements. Fornebubanen (FOB): Reduce material use and mandate climate- friendly materials (such as low-carbon concrete class A) in contracts. Use of climate-friendly materials reduces project emissions by about 40,000 tons of CO2. Additionally, contractors are required to impose climate and environmental requirements on material suppliers for major material groups (concrete, cement, steel, etc.). FOB also mandates greenhouse gas accounting and related reporting in contracts. Agency for Urban Environment (BYM): Follows up on greenhouse gas budgets and accounts in two pilot projects and will launch at least one competition with award criteria based on greenhouse gas emissions in 2025.	BYM*, VAV*, FOB*

14	Reuse and recycling of soil and stone: BYM, VAV, and FOB reuse and recycle soil and stone in their own projects where possible and appropriate.BYM sets requirements for the use of recycled gravel in procurement and stores and reuses surplus stone from municipal projects.	BYM*, VAV*, FOB*
15	Develop standard material requirements for the municipality's own construction projects.	UKE*, PBE, KLI, OBF, VAV, BYM, FOB, Oslo havn, BBY

* Reporting responsibility

Identified measures to reduce indirect emissions

The table below shows potential new measures that can be implemented in Oslo to further reduce indirect emissions. These are both measures that require national decisions and possible local measures that can be further explored or considered, or that are not yet fully developed.

Climate requirements for materials is the local measure with the greatest potential impact. This measure could reduce emissions from construction materials by 30% across all projects in Oslo, including private and state projects.

Sector/measure category	Measures
Consumption	
More circular consumption	Incentives for purchasing used furniture in procurement.
	Establish a reuse warehouse connected to the municipality's reuse platform to ensure sufficient storage space.
	Loan scheme for high-quality snowsuits for children in municipal kindergartens, with the supplier responsible for maintenance and repairs. This can help develop the market in a more circular direction, extending the lifespan of the suits and reducing consumption.
	National VAT exemption on second-hand trade, repair, and redesign services to shift relative prices in favor of more circular goods and services rather than new purchases.
	National regulation on the import of ultra-fast fashion/textiles to reduce the consumption of low-quality, plastic-based textiles that cannot be recycled.

Sustainable food and reduced food waste	More fish and other seafood, legumes, vegetables, grains, pork, chicken, dairy products, and eggs instead of beef and lamb in menus at the municipality's nursing and elderly care homes, in line with the Action Plan for Sustainable Meals in the Nursing Home Agency.
	Vegetarian days and always a vegan option in cafeterias included in lease agreements, through renegotiation processes and collaboration with other tenants. These cafeterias are not currently covered by the action plan for sustainable, healthy, and more plant-based food.
	Lower prices for plant-based meals compared to equivalent meat or fish meals in the municipality's cafeterias and cafeterias included in lease agreements.
Vehicles, machinery, and fuel	
Reduced emissions from the production of vehicles and machinery	Increase the number of parking spaces designated for electric shared cars on municipal land in central areas.
Reduced emissions from travel to and from Oslo	A common travel policy for municipal entities, with guidelines to choose climate-friendly options whenever possible.
Construction materials	
Use of more circular construction methods that reduce emissions from materials	Climate considerations in concept selection studies to ensure climate goals are part of the outcomes for construction projects.
	Improved planning and routines for municipal excavation work to avoid unnecessary digging, material use, and mass transport.
	Gradually increasing material emission reduction requirements for all developers, potentially leading to annual reductions of 100,000–150,000 tons of CO2 equivalents by 2030.
	Requirements for reuse mapping in municipal construction projects that involve removing old infrastructure generating over 10 tons of waste. While TEK 17 mandates reuse mapping of construction materials, there are currently no similar requirements for construction materials.

Status of energy and possibility for target achievement (Goal 3)

Energy consumption in Oslo has decreased by 13% since 2009. Oslo has thus reached the adopted goal of reducing total energy consumption by 10% in 2030 compared to 2009, with per capita energy consumption reduced by 28%. The largest reductions have come from phasing out oil heating, more energy-efficient buildings, and electrification of the passenger vehicle fleet, as electric motors are more efficient than combustion engines. According to Elvia, peak power demand (the amount of electricity used during the coldest hour of the year) has also shown a slight downward trend in recent years. This is ascribed to increased use of district heating, the transformation of industrial areas into residential areas, and lower energy use in new buildings. Energy use in buildings accounts for 75% of Oslo's total energy consumption.



Energy use in oslo from 2009-2022

Energy consumption in Oslo from 2009 to 2022 (GWh)

To achieve the goal of a 95% reduction in emissions, we must electrify energy- and powerintensive sectors such as heavy transport, construction sites, and port operations. The energy system must adapt to support a zero-emission city by ensuring sufficient grid capacity for the climate transition we are undergoing.

Energy Measures

The measures in this climate budget aim to ensure that Oslo's energy system is better suited for a zero-emission city. Combined, the measures contribute to reducing energy consumption by 57,000 MWh annually and increase local energy production by 33,600 MWh annually by 2030. This is equivalent to the energy consumption of more than 5,300 households. In addition, the measures can provide over 77 MW of flexible power annually. By reducing the demand for energy and increasing flexible power in the city, the need for increased grid capacity and energy supply is reduced. Moreover, reduction of grid capacity and energy demand may also reduce pressure on natural areas by decreasing demand for new renewable capacity and distribution.

The table below contains approved measures for contribution to energy efficiency, energy flexibility and local renewable energy production. Detailed information on the method used to calculate the impact of the measures are described in Chapter 4 of the annex *Supporting material for the Climate Budget2025*.

Several of the measures have no specific impact calculated, as they serve as enabling measures. In the autumn of 2023, Enova launched an energy program with grant schemes for large-scale energy upgrades of housing cooperatives, condominiums, and commercial buildings. This energy program will trigger additional energy measures in Oslo beyond the measures presented below.

Sector/measure category	No	Measures	Responsible entity	Energy savings/productio n in 2030 (MWh/year)	Installed flexible capacity in 2030 (kW)
Cross-cutting measures	1	FutureBuilt model program: Participate and contribute with projects.	PBE*	Enabling	_
	2	Evaluate models for realizing energy savings in Oslo municipality's lease contracts: By 2025, Oslobygg will assess various models to incentivize more energy measures in the municipal building stock.	OBF*, BBY, UKE, FIN	Enabling	_
	3	Assess the need and possibility for more ambitious energy requirements in the municipality's standard lease agreements for commercial premises: This could involve adjusting energy labeling requirements and evaluating absolute minimum requirements in certain cases. The Department of Finance will assess the need by 2025, involving entities that lease/own buildings.	FIN*, OBF, BBY, UKE	Enabling	
	4	Establish collaboration arenas between the municipality and building/property actors: KLI will organize network meetings in 2025 under Business for Climate on energy measures in buildings, aimed at construction and real estate actors in Oslo.	KLI (Næring for klima)	Enabling	_
Energy efficiency	5	Campaigns on energy efficiency: To be conducted in 2025, targeting the public and businesses, especially during renovations.	KLI	Enabling	_
	6	Identify and implement efficiency measures in the municipality's building stock: It is estimated that it will be profitable to implement energy measures in one-fifth of the 2,000 buildings managed by Oslobygg.	OBF*, BBY*, BYM*, VAV*, REG*, HAV*	54,000 MWh/year	_
	7	Increase energy efficiency and reduce energy consumption in water and wastewater facilities: This will include reducing water pressure at night, replacing older pumps, and optimizing temperature control.	VAV*	2,500 MWh/year	_

	8	Reduce energy consumption for lighting in street and park areas and urban spaces: This will include replacing old lighting	BYM*	Not calculated	_
	9	fixtures. Further develop and disseminate guidelines for energy efficiency in older and protected buildings: In 2025, Byantikvaren will further develop the citizen guidelines. PBE, KLI, and OBF will be involved.	BYA*, PBE, KLI, OBF	Enabling	_
	10	"Catch the energy thief" in buildings managed by Oslo municipality: Annual campaign where energy advisors review energy systems in selected buildings, identifying operational issues and energy drains. In 2025, OBF will implement the campaign in at least 10 buildings.	OBF*	500 MWh/year + indirect	_
Total energy savings				57,000 MWh/year	_
Increased energy flexibility	11	Pilot project on flexibility services with municipal resources: In 2025 participating entities will offer to disconnect flexible power, such as electric boilers, to free up capacity in flexibility markets.	KLI*, OBF, HAV, SYE		12,700 kW
	12	Comprehensive energy planning in Oslo towards 2030: In 2025, KLI, PBE, Elvia, and Celsio will further develop and pilot an energy planning tool and assess its potential for use in public case processing.	KLI*, PBE, Elvia, Celsio	Enabling	_
	13	Grant scheme for participation in flexibility markets: Encourages offering flexible power from commercial buildings in the markets.	KLI*	_	30,000 kW
	14	Develop a guide for mapping flexibility potential in high energy-consuming buildings: This will increase knowledge of flexibility solutions and markets in Oslo's business sector. KLI will develop the guide during the economic plan period, based on the pilot project in measure 11.	KLI*	Enabling	_
	15	Seasonal storage of district heating at Furuset: Construction of an energy well for seasonal storage of surplus heat from the district heating network, combined with a low-temperature	KLI*	Not calculated	_

		network to deliver energy- efficient heating to the buildings at Furuset.			
Total energy flexibility				-	42,700 kW
Increased local energy production	16	Increase local energy production at municipal entities that own buildings and facilities: Oslobygg will establish a total of 3 MWp of new solar production by 2026, equivalent to about 2,200 MWh. The Agency for Water and Sewerage will complete a water turbine at St. Hanshaugen in 2025, producing 500 MWh annually.	OBF*, BBY*, BYM*, VAV*, REG*, HAV*	23,600 MWh/year	27,000 kW
	17	Support scheme for solar energy installations for housing cooperatives and condominiums.	KLI*	7,000 MWh/year	8,000 kW
	18	Further develop guidance on requirements for energy production (solar panels) in building applications in 2025.	PBE*	Enabling	_
	19	Map grey areas for solar energy production: This could include solar shading at park-and-ride facilities and solar panels on sports facilities. The mapping will be conducted by OBF in 2025, and KLI will initiate mapping of grey areas at municipal enterprises.	OBF*, KLI	Enabling	_
	20	Roadmap for solar energy development in Oslo : Will define annual production goals and present measures.	KLI*, PBE, OBF	Enabling	_
Total production and flexibility from increased energy production				33,600 MWh/year	35,000 kW
Grand total				90,600 MWh/year	77,700 kW

*Reporting responsibility

New allocations for energy measures 2025 - 2028

In the 2025 budget, NOK 11 million has been allocated for new energy measures. The following tables contains these measures.

Agency	Measure in the operating budget	2025	2026	2027	2028
Oslobygg	Support for energy efficiency measures, relevant for measure 6.	6 000	8 333	8 333	8 333
SUM		6 000	8 333	8 333	8 333
Agency	Measure in the investment budget	2025	2026	2027	2028
Boligbygg	Integrate and systematize energy measures alongside the planning of replacement, upgrading, and development of the portfolio. Relevant for measures 6 and 15.	5 000	5 000	5 000	5 000
SUM		5 000	5 000	5 000	5 000

Identified measures in the energy sector

There is still a need for additional measures to ensure that Oslo has sufficient energy and grid capacity to meet the climate target. The table below provides an overview of identified measures that may contribute to this.

Sector/measure category	Identified measures
Cross-cutting measures	Changes to the national electricity support scheme to better encourage energy efficiency and new local energy production.
Energy efficiency	Differentiate property taxes based on the building's energy rating. The municipality currently lacks legal authority for this, requiring legislative changes.
	Increased public funding for energy efficiency in building stock from national authorities and the municipality.
	Minimum energy label requirements in municipal lease contracts.
Energy flexibility	Support scheme for converting to water heating, encouraging increased use of district heating in buildings, which helps relieve the electricity grid.
	Pilot area for a low-temperature district heating network that facilitates the use of surplus heat and is a more energy-efficient district heating solution.
Energy production	Increased subsidies for solar energy systems for homeowners and commercial buildings from both national authorities and the municipality.
	Make municipal land available and open for local energy production, such as solar panels.
	Require local renewable energy production.

Status of climate adaptation and natural carbon storage and possibility of achieving goals (Goals 2 and 4)

Oslo aims to strengthen its resilience to climate change by 2030 and to develop the city in a way that prepares it for the expected changes by 2100. The goal for carbon storage is to manage Oslo's nature so that natural carbon sinks in vegetation and soil are preserved, and the uptake of greenhouse gases in forests and other vegetation is increased by 2030.

Oslo's climate is becoming warmer and wetter, leading to increased challenges with stormwater, flooding, landslides, erosion, droughts, and difficult winter conditions. For more detailed information on these climate challenges, see the <u>Klimaprofil for Oslo og Akershus</u>.

<u>The climate vulnerability analysis for Oslo</u> shows that the city is relatively well-prepared for current weather conditions but not as well-equipped for future changes. There are challenges related to extreme rainfall and higher temperatures that require more knowledge and better prevention, such as river flooding, landslides, storm surges, heat islands, and droughts. There is a particular need to examine how operations and maintenance can be more climate-adapted. The city still faces a significant backlog in maintenance of the road network and water and wastewater systems.

Oslo's blue-green infrastructure provides essential ecosystem services, such as water retention, carbon storage, and temperature regulation. The *Marka* forest area makes up nearly two-thirds of the municipality's land, and Oslo also has large green spaces both within and outside the building zone. However, <u>Oslo's *Grøntregnskap* (Green Accounts)</u> shows a 6% reduction in green areas within the building zone between 2017 and 2021.

Efforts to increase carbon sequestration and strengthen ecosystems for a more climate-resilient city have overlapping measures, which is why these goals are included in the same measure table in the climate budget.

This is the first time climate adaptation and natural carbon storage have been included in the climate budget.

Measures for climate adaptation and natural carbon storage

Oslo has a broad range of measures to strengthen the city's ability to handle climate change. Efforts to enhance ecosystem services in a changing climate, through the preservation of green areas and sustainable management of nature, also contribute to reinforcing natural carbon storage. The table below shows the measures Oslo will implement during the economic planning period.

During this period, it is expected that flooding caused by heavy rainfall will be the natural event posing the greatest challenges. The measures related to planning and building main floodways and detention networks across the city (no. 15) and developing a cloudburst plan for Oslo (no. 6) are therefore two of the most crucial measures to be implemented. Measures that enhance biodiversity are also important for ecosystem services related to climate adaptation and carbon

storage.

Sector/measure category	No.	Measures	Responsible
Cross-cutting processes and overarching measures			
Strengthen private climate adaptation initiatives	1	Communicate the municipality's stormwater management efforts and solutions for private landowners : In 2025, an information campaign targeting homeowners will be launched to prevent building flooding and further develop fact sheets on open, local, and nature- based stormwater measures for developers. Continue coordination of complaint management for stormwater.	PBE*, VAV*, BYM, Oslobygg, KLI
	2	Support scheme for stormwater measures : Establish a grant in 2025 aimed at homeowners, housing cooperatives, and condominiums in defined areas where the need is greatest, to help infiltrate and retain stormwater.	KLI*, VAV
	3	Communicate how Oslo's residents can support local nature conservation : Develop a communication strategy for Oslo's biodiversity efforts. The work will start in 2025 and be completed by 2026. Inform landowners about identified valuable nature types.	BYM*, PBE, VAV, REG, RKL, KLI
Climate and nature criteria in procurement	4	Develop measures, requirements, and methods for procuring wood from climate- and nature-friendly forestry: The work will be conducted in 2025.	UKE*, KLI, BYM
Urban land use, the Marka, and the fjord			
Prevent risks of stormwater, flooding, and landslides in the city	5	Plan to allocate areas for stormwater and snow management: PBE will continue to coordinate the stormwater management action plan during the economic plan period. Investigate the potential for using municipal land for stormwater retention. Produce stormwater assessments for zoning plans.	PBE*, EBY, VAV, BYM
	6	Create a cloudburst plan (thematic map) for Oslo : In 2025, PBE will assess the potential, risk, consequences, and costs of different measures in a catchment area to create a cloudburst plan (thematic map) for Oslo.	PBE*, BYM
	7	Improve follow-up on natural hazard assessments in planning and construction: Oslo's cross-agency natural hazard resource group will continue during the economic plan period. The group advises municipal agencies and businesses on handling natural hazards and evaluates how the city should address known and unknown natural hazard risks.	PBE*, EBY, BER, BYM, BRE, OBF, VAV, HAV
Preserve and expand green areas in the city	8	Ivareta grønnstruktur og arealer for naturmangfold i byen : In 2025, PBE will develop a green accounting system for the 2021-2025 period and map areas with potential for creating or restoring nature (BYM). A priority list of zoning plans for re-zoning based on biodiversity and valuable nature types will be made.	PBE*, BYM*

Preserve and improve blue- green infrastructure in Marka	9	Limit new agricultural roads: In 2025, guidelines for the Regional Agricultural Office will be assessed to ensure road applications are approved only as exceptions.	MOS*, BYM, KLI
Buildings and outdoor spaces			
Climate-adapt the design and material selection of buildings and outdoor spaces	10	 Ensure stormwater management and green features in developments: PBE will continue to coordinate the action plan for green roofs and facades. Further develop the knowledge bank on green roofs and facades. Oslobygg will complete three pilot projects on green roofs. KLI will in 2025 create guidelines for combining solar power installations with green roofs and facades. 	PBE*, Oslobygg*, KLI*, BYA
		Climate-adapt the management, operation, maintenance, and development of buildings and outdoor spaces:	Oslobygg*, BYA*
	11	Oslobygg will implement climate adaptation measures in its outdoor areas and incorporate climate adaptation assessment tools into condition assessments of existing properties.	
		The Cultural Heritage Management Office will develop and use a guide for climate adaptation of protected buildings and structures in 2025, tailored to different building types and site conditions.	
Streets and infrastructure			
Climate-resilient water and sewer system	12	Climate-adapt the development, operation, and maintenance of the water and sewer system: Continue work on the New Water Supply Oslo to ensure delivery security. Complete a new transfer pipeline to Holmenkollen and Voksenåsen with a high-level reservoir near the Tryvann tower. The projects will be completed in 2025. Continue developing methods for prioritizing larger sewer areas with capacity problems, and improve monitoring of the sewer network to reduce emissions. Measures to improve wastewater treatment are also planned during the economic plan period. The Cemeteries and Burials Agency will continue reducing the use of drinking water for watering cemeteries by an additional 5% by improving its watering routines.	VAV*, GPE*
	13	Reduce stormwater in sewer pipes : In 2025, 50 investment projects will be carried out at various locations in Oslo to improve the capacity of the sewer network. Continue identifying misconnected pipes, mapping sources of stormwater that should not enter the sewer system, and implementing operational measures to reduce stormwater in sewer pipes.	VAV*
Climate-resilient streets, public areas, and green spaces	14	Climate-adapt the development, operation, and maintenance of streets, green structures, and other public areas: BYM will reduce stormwater runoff in its street, park, and urban space projects. Stormwater solutions such as rain	BYM*, GPE*, PBE

		 gardens, sediment traps, grates, and ditches will be included in regular operations for park, urban, and street management from 2025. Upgrade the Åsland snow depot and continue work on the SMELT snow-handling procurement in 2025. GPE will collaborate with Oslotrær during the economic plan period on tree planting, maintenance, mapping, and preservation. In 2025, assess the possibilities of establishing pond systems with retention chambers at more cemeteries. 	
		Plan and build main floodways and retention networks:	BYM*, KLI*, VAV. PBF
	15	BYM will develop a cross-agency management document in 2025 for planning and building a main floodway and retention network in Oslo.	,
		KLI will further develop a pilot project on retention measures in the Marka to reduce downstream damage risks in urban areas.	
		Clean stormwater from roads and streets:	BYM*, VAV
	16	In 2025, infiltration-based cleaning solutions will be established in new street projects. The Oslo water area, coordinated by BYM, will work to establish limits for pollution in stormwater that is discharged from roads and streets into watercourses.	
Nature management and restoration			
Strengthen nature in the Marka	17	Continue and promote locally adapted multi-age forestry with selective cutting methods: BYM will continue during the economic plan period to convert forest areas in the municipal forest to multi-aged forest where conditions allow. The agency strives for selective cutting methods on 90% of the treated forest area each year. BYM and KLI will assess the possibility of certifying all or parts of the municipal forest under a certification scheme for nature-friendly forestry with selective cutting methods in 2025.	BYM*, KLI
	18	Prohibit logging and interventions in old-growth forest and intact peatlands In line with the biodiversity action plan, in 2025, the municipality will assess what instructions should be given to the Regional Agricultural Office to ensure that applications for logging and other interventions in old-growth forest and peatlands, which negatively affect biodiversity and climate, are not approved.	MOS*, BYM, KLI
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	20	Promote native and climate-resilient tree species : This will be done by planting pine or deciduous trees after logging where conditions for these species are more suitable than for spruce, particularly in dry and fire-prone areas.	BYM*
Strengthen and restore nature in urban areas			
		Reopen culverted streams and establish nature along watercourses	VAV*, BYM*, EBY*, PBE
		VAV will continue work on reopening Bakåsbekken at Furuset and Gaustadbekken.	
	21	BYM will collaborate with the Oslotrær project (PBE) during the economic plan period to plant mini-forests and riparian vegetation along rivers and streams.	
		EBY: In 2025, technical reports on stormwater, climate adaptation, and greenhouse gas emissions related to the reopening of Vestre watercourse over Gladengveien 18 at Ensjø will be prepared. The zoning plan will be submitted for public consultation in 2025. The zoning plan for reopening Trosterudbekken will be submitted for public consultation at the turn of 2024/2025.	
		Preserve and plant native trees in the city	PBE*, BYM*
		BYM will continue mapping large, old trees in the urban zone.	
	22	PBE will collaborate with agencies, districts, and the private sector through the Oslotrær project to increase the proportion of trees in the city and care for existing trees. PBE will also continue its work on involving residents in this effort.	
		Strengthen management and maintenance of natural assets	BYM*
	23	In 2025, BYM will continue and improve the management of 45 valuable flower meadows managed by the municipality and intensify efforts to combat invasive plant species with very high ecological risks. A status report for endangered species will be prepared during the economic plan period, including preservation measures for securing a selection of the most threatened species.	
	24	Restore meadow environments and ponds	BYM*
		In 2025, at least five hectares of degraded meadow environments and at least three ponds will be restored.	
Strengthen nature in and around the fjord			
	25	Continue the pilot project on re-establishing eelgrass beds in Frognerkilen and near Gressholmen	BYM*
		BYM: Reopen Refstadbekken as part of the Refstad Park development, reopen Østensjøbekken in accordance with the management plan for the Østensjø area environmental park, and continue the preliminary project for reopening Aurevannsbekken through Huken.	
Preparedness and public safety			

26	Climate-adjusted health preparedness	VAV*
	Preparedness routines for secure drinking water supply of high quality: In 2025, VAV will implement a new crisis management tool (Rayvn) to improve handling of critical drinking water incidents. Conduct preparedness exercises for the water and sewer system, in addition to ongoing work on evaluating and improving the preparedness plan.	
27	Preparedness routines for air quality limit breaches	BYM*
	In 2025, BYM will assess new measures to improve air quality in Oslo. Preparedness routines for air quality limit	
	breaches will also be revised in this process.	

*Reporting responsibility

New Appropriations for Climate Adaptation and Natural Carbon Storage 2025 – 2025

In the 2025 budget, NOK 51 million has been allocated to new/strengthened measures contributing to climate adaptation and natural carbon storage. The tables below show which measures these funds will support, as well as the existing approved measures they are relevant for. The projects will often also include other work not directly related to the measures in the climate budget.

Agency	Measure in the operational budget	2025	2026	2027	2028
Planning and Building Agency (PBE)	Cloudburst plan, relevant to measure 6.	6 000	6 000	4 000	2 000
Climate Agency (KLI)	Support scheme for stormwater measures, relevant to measure 2.	5 000	5 000	5 000	5 000
SUM		11 000	11 000	9 000	7 000
<u> </u>					
Agency	Measure in the investment budget	2025	2026	2027	2028
Agency Agency for Urban Environment (BYM)	Measure in the investment budget Reopening of Østensjøbekken, relevant to measure 21.	2025	2026 7 100	2027 2 600	2028
Agency Agency for Urban Environment (BYM) Agency for Urban Environment (BYM)	Measure in the investment budget Reopening of Østensjøbekken, relevant to measure 21. Park and local nature, relevant to measure 14.	2025 40 000	2026 7 100 40 000	2027 2 600 40 000	2028 40 000

Identified measures for Climate Adaptation and Natural Carbon Storage

The table below shows identified measures for climate adaptation and natural carbon storage that have not been approved but are potential new measures. In 2024, the primary focus has been

on integrating approved measures for climate adaptation and natural carbon storage into the climate budget. Therefore, the table is not exhaustive and does not include measures that could strengthen climate adaptation in buildings, streets, infrastructure, and preparedness. The City of Oslo will work to identify additional measures that can enhance Oslo's climate resilience and natural carbon storage for the 2026 Climate Budget.

Sector/measure category	Measures
Limit the reduction of natural areas	Development of a land-use accounting system, as per the biodiversity action plan.
	Implement measures to enable Oslo to become a land-neutral municipality, as per the Urban Development Strategy in the draft of the Municipal Plan's societal section, which is under consultation until 28.10.24.
Protect green areas in the urban zone	Review old zoning plans to safeguard areas with important biodiversity, carbon storage, and/or that contribute to the city's climate adaptation.